Commission Delegated Regulation (EU) 2019/981 of 8 March 2019 amending Delegated Regulation (EU) 2015/35 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (Text with EEA relevance)

COMMISSION DELEGATED REGULATION (EU) 2019/981
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(Text with EEA relevance)

## THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,
Having regard to Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) ${ }^{(1)}$ and in particular Article 35(9), point (a) of Article 50(1), Article 56, points (a) and (b) of Article 86(1), Article 97(1), points (a), (b), (c), (e), (f), (fa), (i), (j), (k) and (1) of Article 111(1), Article 211(2) and Article 234 thereof,

Whereas:
(1) Experience gained by insurance and reinsurance undertakings during the first years of application of Directive 2009/138/EC should be used to review the methods, assumptions and standard parameters when calculating the Solvency Capital Requirement standard formula.
(2) The Commission proposal for a new Regulation establishing the InvestEU Programme ${ }^{(2)}$ focusses on addressing EU-wide market failures and sub-optimal investment situations. That proposal includes the establishment of the InvestEU Advisory Hub that should support the development of a robust pipeline of investment projects and the InvestEU Portal that should provide investors with an easily accessible and user-friendly database of investment projects. InvestEU will thereby support investments in finance for small and medium-sized businesses in the form of bonds, loans or private equity as well as other long-term investments in equity. The standard formula for the calculation of the Solvency Capital Requirement does not provide for specific rules for investments in privately placed debt, private equity and longterm investments in equity. In light of the expected improvement in the accessibility of such investments by means of the InvestEU portal, such specific rules should be introduced. In addition, in light of the Action Plan on Building a Capital Markets Union of 30 September 2015, more investments in Europe should be encouraged and access to equity and debt funding for European small and medium-sized enterprises should be facilitated. The prudential treatment of private equity and privately placed
debt should therefore be amended to remove unjustified barriers to investments in those asset classes.
(3) In order to ensure a level playing field between economic operators active in the insurance sector and economic operators active in other financial sectors, some of the provisions applicable to insurance and reinsurance undertakings should be aligned with the provisions applicable to credit and financial institutions, to the extent that such an alignment is commensurate with their different business models.

Trade exposures to qualifying central counterparties (CCPs) benefit from the multilateral netting and loss-sharing mechanism provided by qualifying CCPs. Those trade exposures have lowered counterparty credit risk and should therefore be subject to lower own funds requirement than exposures to counterparties not benefiting from CCP mechanisms. In accordance with Article 111(1)(fa) of Directive 2009/138/ EC, the calculation of counterparty default risk with the standard formula should treat trade exposures to qualifying CCPs in a manner that is consistent with the capital requirements for such exposures applicable to credit institutions and financial institutions.

In order to contribute to the Union's objective of long-term sustainable growth, investments by insurers in privately placed debt should be facilitated. To that end, criteria should be established that allow for the assignment to credit quality steps 2 or 3 of bonds and loans for which a credit assessment by a nominated ECAI is not available, on the basis of the insurance or reinsurance undertaking's own internal credit assessment.
(6) Substantial changes in the data used for the determination of the technical information on the relevant risk-free interest rate term structures may lead to a situation where data sources that were used in the past are no longer available. Furthermore, improved data availability may render obsolete the techniques used for the determination of the technical information on the relevant risk-free interest rate term structures. A substantial change in market conditions may also necessitate a re-assessment of parameters, including the ultimate forward rate, the starting point for the extrapolation of riskfree interest rates or the convergence period to the ultimate forward rate. Conditions should therefore be laid down to assess whether potential changes to data and techniques used for the determination of the technical information on the relevant risk-free interest rate term structure are commensurate with the objectives of transparency, prudence, reliability and consistency of the methods to determine the technical information on the relevant risk-free rate term structure over time. To this end, EIOPA should submit to the Commission an assessment of the impact of modified techniques, data specifications or parameters and the proportionality of the modification with respect to the substantial change in the data.
(7) The objective of transparent, prudent, reliable and consistent methods to determine the technical information on the relevant risk-free interest rate term structures over time should also apply at the level of the components, and in particular, the volatility adjustment. In order to ensure transparency, prudence, reliability and consistency over time, the method to determine the technical information on the volatility adjustment

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applied by the European Insurance and Occupational Pensions Authority (EIOPA), in particular the activation of the country component as set out in Article 77d(4) of Directive 2009/138/EC, should be re-examined where evidence shows that the method fails to meet the objectives, and as part of the Commission review under Article 77f(3) of Directive 2009/138/EC.
(8) Own-fund items in the form of paid-in subordinated mutual member accounts, paidin preference shares and the related share premium account, and paid in subordinated liabilities, may provide for a partial principal loss absorbency mechanism for cases where the Solvency Capital Requirement is breached during three consecutive months. Criteria should be established that specify to what extent such items qualify as Tier 1 own funds.
(9) Losses of basic own funds due to tax effects when the principal loss-absorbing mechanism is triggered should be avoided. Insurance and reinsurance undertakings should therefore be able to request a waiver of the application of that mechanism. Before granting the waiver however, supervisory authorities should assess whether there is a high and credible likelihood that the tax effects of the mechanism could significantly weaken the solvency position of an insurance or reinsurance undertaking.
(10) A level playing field between economic operators in the insurance sector and in other financial sectors should be ensured. Insurance and reinsurance undertakings should therefore have the possibility, subject to prior supervisory approval, to repay or redeem an own-fund item within the first five years after the date of its issuance in case there is an unexpected change in the regulatory classification of the own-fund item which is likely to result in the exclusion of that item from the own funds, or in case there is an unexpected change in the applicable tax treatment of that item.
(11) The look-through approach should ensure that the risks the insurance or reinsurance undertaking is exposed to are properly captured, irrespective of the undertaking's investment structures. That approach should therefore be applied to undertakings related to that insurance or reinsurance undertaking, that have as their main purpose the holding or management of assets on behalf of that insurance or reinsurance undertaking.
(12) Where the look-through approach cannot be applied to a collective investment undertaking or investment packaged as funds, insurance or reinsurance undertakings should be allowed to use a simplified approach based on the last reported asset allocation of the collective investment undertaking or fund, provided that that simplified approach is proportionate to the nature, scale and complexity of the risks concerned.

The lapse risk sub-modules require complex calculations based on the level of single insurance policies. Where such complexity is not proportionate to the nature, scale and complexity of the risks falling under those sub-modules, it should be possible to base the calculations for those sub-modules on groupings of insurance policies, rather than on single insurance policies, unless such groupings would lead to a material error.
(14) The calculation of natural catastrophe risk with the standard formula should account for the nature, scale and complexity of the exposure of the insurance or reinsurance undertakings to that risk. The calculation of natural catastrophe risk with the standard
formula requires that insurance and reinsurance undertakings map their sum insured in risk zones. Not all insurance and reinsurance undertakings have the information on risk zone level required for that calculation in their internal systems, and for those undertakings it may be costly to produce this information. Those undertakings should therefore be able to base their calculation on groupings of risk zones where such grouping is well substantiated and proportionate to the exposure.
(15) The calculation of the capital requirement for the fire risk sub-module of the standard formula requires that insurance and reinsurance undertakings identify the largest fire risk concentration. In order to limit the calculation burden, insurance or reinsurance undertakings should be able to restrict their identification process for the largest fire risk concentration to the surroundings of their largest fire risk exposures, provided that that approach is proportionate to the nature, scale and complexity of the exposure to fire risk of the insurance or reinsurance undertakings.
(16) The simplified calculations of the capital requirement for life and health mortality risk sub-modules of the standard formula should be amended to reflect that the capital at risk of insurance policies may vary over time.
(17) The cost for acquiring ratings for the calculation of the Solvency Capital Requirement using the standard formula should be proportionate to the nature, scale and complexity of the associated asset risk. Insurance and reinsurance undertakings that have nominated an external credit rating agency should therefore be able to use a simplified calculation for those parts of the debt portfolio for which external ratings are not provided by the that external credit rating agency.
(18) The standard formula calculation of the Solvency Capital Requirement for counterparty default risk requires insurance and reinsurance undertakings to take into account the share of the counterparty's assets that are subject to collateral arrangements. A disproportionate burden in the calculation with the standard formula should be avoided. Insurance and reinsurance undertakings using the standard formula for the calculation of the Solvency Capital Requirement for counterparty default risk should therefore be able to calculate the Solvency Capital Requirement for counterparty default risk on the basis of the assumption that more than $60 \%$ of the counterparty's assets are subject to collateral arrangements.
(19) Insurance and reinsurance undertakings using the standard formula for the calculation of the Solvency Capital Requirement for counterparty default risk have to use a specific formula for the calculation of the capital requirement for counterparty default risk on type 1 exposures where the standard deviation of the loss distribution of type 1 exposures is lower than $7 \%$. Disproportionate burden when calculating that requirement should be avoided. Insurance and reinsurance undertakings should therefore be able to calculate the capital requirement for counterparty default risk on type 1 exposures using the same formula that is applied where the standard deviation of the loss distribution for type 1 exposures is between $7 \%$ and $20 \%$.
(20) The calculation of the risk mitigating effect on underwriting risk is complex and may be a disproportionate burden for insurance and reinsurance undertakings operating in non-life lines of business. It is therefore appropriate to enable insurance and reinsurance

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undertakings to use a simplified formula, provided that the use of that simplified formula is proportionate to the nature scale and complexity of the undertakings' counterparty risk profile.
(21) The risk charge for premiums for future contracts should not unduly penalise contracts with an initial term of more than one year in order to take into account the lower risk associated to future premiums from contracts with longer terms. Therefore, for future contracts the term of which is more than one year, the volume measure for non-life and NSLT health premium and reserve risk should account for only $30 \%$ of future premiums.
(22) The actual risk exposure of the undertaking in the calculation of the Solvency Capital Requirement for natural catastrophe risk should be reflected in the calculation of the Solvency Capital Requirement with the standard formula. The calculation of the Solvency Capital Requirement for natural catastrophe risk with the standard formula should therefore take into account contractual limits for the compensation for natural catastrophes.
(23) The calculation of the Solvency Capital Requirement for man-made catastrophe risk should reflect the risks that insurance and reinsurance undertakings are exposed to. The scenario-based calculations of that requirement for marine, aviation and fire risk should therefore be based on the largest exposures, after deduction of amounts recoverable from reinsurance or special purpose vehicles.
(24) It is not appropriate to apply the tanker collision scenario of the marine risk submodule to pleasure craft or rigid inflatable boats. That scenario should therefore only be applicable to vessels with a minimum sum insured of at least EUR 250000.
(25) Direct investments by insurers in unlisted equity can contribute to the Union's objective of long-term sustainable growth. Those investments should therefore be facilitated. When calculating the capital requirement for equity risk with the standard formula, portfolios of high-quality unlisted equity investments should therefore be able to benefit from the same treatment as equities that are listed in regulated markets. Criteria should be established to ensure that a high-quality unlisted equity portfolio has a sufficiently small systematic risk.

Insurers have an important role as long-term investors and equity investments are important for the financing of the real economy. Long-term equity investments by insurance and reinsurance undertakings should therefore be encouraged by aligning the treatment of long-term equity investments and strategic equity investments when calculating the Solvency Capital Requirement with the standard formula including the correlation matrices. To ensure the long-term character of the investments, a portfolio of long-term equity investments and other assets matching a portfolio of clearly identified insurance or reinsurance obligations should be introduced within the equity risk submodule. To avoid regulatory arbitrage, the portfolio of assets and the portfolio of obligations should have similar values, and each of them should not represent more than half of the total size of the balance sheet of the insurance or reinsurance undertaking.
(27) Individual equities listed in the EEA and investments via certain types of funds should be treated in the same manner. Insurance and reinsurance undertakings should therefore be allowed to apply the rules applicable to long-term investments at the level of qualifying social entrepreneurship funds, qualifying venture capital funds, closed-ended and unleveraged alternative investment funds or European long-term investment funds, provided that the fund manager is authorised in the EEA.
(28) The calculation of the capital requirement for the spread risk sub-module with the standard formula should not impede insurance or reinsurance undertakings from investing in high-quality private placements, which are often unrated. An insurance or reinsurance undertaking may have concluded an agreement with a credit institution or investment firm to co-invest in bonds and loans for which a credit assessment by a nominated ECAI is not available. In that case, the insurance or reinsurance undertaking should be allowed to use the results of the approved internal ratings based approach of that credit institution or investment firm to calculate the Solvency Capital Requirement, provided that that credit institution or investment firm has its head office in the European Economic Area. The same should apply where an insurance or reinsurance undertaking has concluded an agreement with another insurance or reinsurance undertaking that uses an approved internal model in accordance with Article 100 of Directive 2009/138/EC.

The legislation covering the financial sector should be consistent, while taking into account differences in the business model of the sectors, diverging elements in the determination of capital requirements, or other factors. Therefore, the rules for insurance and reinsurance undertakings for the recognition of guarantees that are issued by regional governments and local authorities should be aligned with the rules for credit institutions and investment firms.
(30) Derivatives expose insurance and reinsurance undertakings to counterparty default risk, irrespective of whether those derivatives are held for hedging or speculation. All derivatives should therefore be treated as type 1 exposures in the counterparty default risk module of the standard formula.
(31) Discrepancies in the sequence of the calculations for the capital requirement for market risk concentrations with the standard formula should be avoided. Individual exposures should therefore first be mapped to credit quality steps and relative excess exposure thresholds, and risk factors should subsequently be applied at the level of single name exposures.

Insurance and reinsurance undertakings should not use overly optimistic assumptions when projecting future taxable profits after an exceptional loss scenario. Therefore, when calculating with the standard formula the loss-absorbing capacity of deferred taxes, insurance and reinsurance undertakings should take into account their financial and solvency position after the instantaneous loss, and the increased uncertainty regarding the projection of future taxable profits. Furthermore, the assumptions for projecting future taxable profits following the instantaneous loss, including the assumed rates of return on the insurance or reinsurance undertaking's investments, should not be more favourable than the assumptions applied to the valuation of deferred taxes on the balance sheet, and the projected total amount of new business should not exceed that of

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the business planning. Insurance and reinsurance undertakings should only be allowed to assume higher returns than those implied in the relevant interest rate term structure where they can demonstrate that those returns will be realised after the instantaneous loss.
(33) The calculation of the Solvency Capital Requirement with the standard formula should reflect developments in risk management practices, in particular on the use of risk mitigation techniques. Insurance and reinsurance undertakings should therefore be able to take into account the effect of risk-mitigation techniques, including where those techniques are replaced with a similar arrangement when they expire or where those techniques are adjusted to reflect changes in the exposures covered, provided that such replacement or adjustment is limited to once per week. The standard formula should also allow for netting arrangements between derivatives and hedging strategies where several contractual arrangements together have the effect of a risk mitigation technique. Possible deviations between the risk mitigating effect reflected in the standard formula on the one hand and the actual risk mitigation effect on the other, and an assessment of basis risk, should be included in the undertakings own risk and solvency assessment.

Insurance or reinsurance undertakings should not be disproportionately penalised where a reinsurance counterparty ceases to comply with its Solvency Capital Requirement while still complying with the Minimum Capital Requirement. Insurance and reinsurance undertakings should therefore be allowed, for a period of up to six months, to partially take into account the risk-mitigating effect of reinsurance arrangements entered into with that reinsurance counterparty. Where a reinsurance counterparty ceases to comply with its Minimum Capital Requirement, the insurance or reinsurance undertaking should no longer take into account any risk-mitigating effect from reinsurance arrangements entered into with that reinsurance counterparty.

Stop loss reinsurance contracts should receive a similar treatment as excess of loss reinsurance contracts in the calculation of the Solvency Capital Requirement with the standard formula. Insurance and reinsurance undertakings should therefore be able to take into account the risk mitigation provided by stop loss reinsurance contracts in the Solvency Capital Requirement standard formula calculation with undertaking-specific parameters by laying down a standardised method to calculate an undertaking-specific parameter to replace the standard parameter for non-proportional reinsurance.

The loss-absorbing capacity of deferred taxes has a significant impact on the solvency position of insurance and reinsurance undertakings. The administrative, management or supervisory body of insurance or reinsurance undertakings should therefore adopt a risk-management policy related to deferred taxes, which takes into account the lossabsorbing capacity of those deferred taxes. In particular, that policy should set out the responsibilities for assessing the underlying assumptions applied to the projection of future taxable profits.
(37) The calculation of the Solvency Capital Requirement at solo and group level should be consistent. Where the look-through approach is applied at solo level to collective investment undertakings, or to investments packaged as funds which are related undertakings of a participating insurance or reinsurance undertaking, the look-through
approach should also be applied at group level. Where those collective investment undertakings or funds are subsidiaries of insurance or reinsurance groups, the calculation of the Solvency Capital Requirement should be based on the assumption of full diversification with other consolidated assets and liabilities.
(38) The calculation of the capital requirement for currency risk for a group should reflect the specific economic situation of that group, in particular in cases where the insurance or reinsurance activities are denominated in different currencies. For that reason, participating insurance and reinsurance undertakings, insurance holding companies or mixed financial holding companies should be able to select a reference currency other than the one used for the preparation of the consolidated accounts where the currency risk in the consolidated group Solvency Capital Requirement is calculated on the basis of the standard formula. That choice should be based on objective criteria, such as the currency in which a material amount of the group's technical provisions or own funds are denominated.
(39) The standard formula calculation for the non-life premium and reserve risk submodules, the health premium and reserve risk sub-modules, and for the natural catastrophe risk sub-module, should be modified to reflect the recent empirical evidence on premium provisions and provisions for claims outstanding.
(40) The complexity of the calculation of the capital requirement for mass accident and accident concentration should be proportionate to the nature, scale and complexity of the risk undertakings offering health insurance are exposed to. The event type referring to disability that lasts 10 years caused by an accident should therefore be removed from that calculation.
(41) Commission Delegated Regulation (EU) 2015/35 ${ }^{(3)}$ contains a number of typographical errors, such as wrong internal cross-references, which should be corrected.
(42) In order to avoid disruptions in the non-life and health insurance market, in particular for insurance and reinsurance undertakings operating only in one line of business, sufficient time should be given to enable insurance and reinsurance undertakings to prepare for the changes in the calculation of the non-life and health premium and reserve risk. Those changes should therefore not apply before 1 January 2020.
(43) Delegated Regulation (EU) 2015/35 should therefore be amended accordingly,

HAS ADOPTED THIS REGULATION:

## Article 1

## Amendments to Delegated Regulation (EU) 2015/35

Delegated Regulation (EU) 2015/35 is amended as follows:
(1) in Article 1, the following points 59 to 63 are added:
59. "CCP" means a CCP as defined in point (1) of Article 2 of Regulation (EU) No $648 / 2012$ of the European Parliament and of the Council ${ }^{(4)}$;

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60. 'bankruptcy remote', in relation to client assets, means that effective arrangements exist which ensure that those assets will not be available to the creditors of a CCP or of a clearing member in the event of the insolvency of that CCP or clearing member respectively, or that the assets will not be available to the clearing member to cover losses it incurred following the default of a client or clients other than those that provided those assets;
61. 'client' means a client as defined in point (15) of Article 2 of Regulation (EU) No 648/2012 or an undertaking that has established indirect clearing arrangements with a clearing member in accordance with Article 4(3) of that Regulation;
62. 'clearing member' means a clearing member as defined in point (14) of Article 2 of Regulation (EU) No 648/2012;
63. 'CCP-related transaction' means a contract or a transaction listed in paragraph 1 of Article 301 of Regulation (EU) No 575/2013 between a client and a clearing member that is directly related to a contract or a transaction listed in that paragraph between that clearing member and a CCP.;
(2) Article 18 is amended as follows:
(a) in paragraph 5, the first subparagraph is replaced by the following:

Obligations that do not relate to premiums which have already been paid do not belong to an insurance or reinsurance contract if all of the following requirements are met:
a) the contract does not provide compensation for a specified uncertain event that adversely affects the insured person;
b) the contract does not include a financial guarantee of benefits;
c) the undertaking cannot compel the policyholder to pay the future premium for those obligations.;
(b) paragraph 6 is replaced by the following:
6. Where an insurance or reinsurance contract can be unbundled into two parts and where one of those parts meets the requirements set out in points (a), (b) and (c) of paragraph 5, any obligations that do not relate to the premiums of that part and which have already been paid do not belong to the contract.;
(3) Article 43 is replaced by the following:

## Article 43

## General provisions

The rates of the basic risk-free interest rate term structure shall meet all of the following criteria:
a insurance and reinsurance undertakings are able to earn the rates in a risk-free manner in practice;
b the rates are reliably determined based on financial instruments traded in a deep, liquid and transparent financial market.

The rates of the relevant risk-free interest rate term structure shall be calculated separately for each currency and maturity, based on all information and data relevant for that currency and that maturity.

The techniques, data specifications and parameters used for determining the technical information on the relevant risk-free interest rate term structure referred to in Article 77 e(1) of Directive 2009/138/EC, including the ultimate forward rate, the last maturity for which the relevant risk-free interest rate term structure is not being extrapolated and the duration of its convergence towards the ultimate forward rate, shall be transparent, prudent, reliable, objective and consistent over time.

EIOPA shall inform the Commission of any substantial change in the data used for determining the technical information on the relevant risk-free interest term structure. A substantial change shall mean any change which renders the techniques, data specifications or parameters invalid, including the ultimate forward rate, the last maturity for which the basic risk-free interest rate term structure is not being extrapolated and the duration of its convergence towards the ultimate forward rate. EIOPA may submit to the Commission a proposal containing such modifications to the techniques, data specifications or parameters as are needed to address the invalidity and are proportionate to the substantial change in question. That proposal shall be accompanied by an assessment of the appropriateness and impact of those proposed modifications.

A technique, data specification or parameter, including the ultimate forward rate, the last maturity for which the basic risk-free interest rate term structure is not being extrapolated and the duration of its convergence towards the ultimate forward rate, shall be modified by EIOPA at the request of the Commission to ensure that the rates of the relevant risk-free interest rate term structure are determined in a transparent, prudent, reliable and objective manner that is consistent over time.;

Article 71 is amended as follows:
(a) in point (e) of paragraph 1, points (i) and (ii) are replaced by the following:
(i) the nominal or principal amount of the basic own-fund item is written down as set out in paragraphs 5 and 5a;
(ii) the basic own-fund item automatically converts into a basic ownfund item listed in point (a)(i) or (ii) of Article 69 as set out in paragraphs 6 and 6a of this Article;;
(b) the following paragraph 5 a is inserted:

5a. For the purposes of point (i) of point (e) of paragraph 1, the provisions governing the write-down of the nominal or principal amount of the basic own-fund item shall provide for all of the following:
a) if the trigger event specified in paragraph 8 has occurred in the circumstances described in point (c) of the second subparagraph of that paragraph and a partial write-down would be sufficient to reestablish compliance with the Solvency Capital Requirement, there is a partial write-down of the nominal or principal amount for an

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amount that is at least sufficient to re-establish compliance with the Solvency Capital Requirement;
b) if the trigger event specified in paragraph 8 has occurred in the circumstances described in point (c) of the second subparagraph of that paragraph and a partial write-down would not be sufficient to re-establish compliance with the Solvency Capital Requirement, the nominal or principal amount as determined at the time of original issuance of the basic own-fund item is written down at least on a linear basis in a manner which ensures that full write-down will occur when 75 \% coverage of the Solvency Capital Requirement is reached, or prior to that event;
c) if the trigger event specified in paragraph 8 has occurred in the circumstances described in point (a) or point (b) of the second subparagraph of that paragraph, the nominal or principal amount is written down in full;
d) following a write-down in accordance with point (b) of this paragraph ("the initial write-down"):
(i) if the trigger event specified in paragraph 8 subsequently occurs in the circumstances described in point (a) or point (b) of the second subparagraph of that paragraph, the nominal or principal amount is written down in full;
(ii) if, by the end of the period of three months from the date of the trigger event that resulted in the initial write-down, no trigger event has occurred in the circumstances described in point (a) or point (b) of the second subparagraph of paragraph 8 but the solvency ratio has deteriorated further, the nominal or principal amount as determined at the time of original issuance of the basic own-fund item is written down further in accordance with point (b) of this paragraph to reflect that further deterioration in the solvency ratio;
(iii) a further write-down is made in accordance with point (ii) for each subsequent deterioration in the solvency ratio at the end of each subsequent period of three months until the insurance or reinsurance undertaking has re-established compliance with the Solvency Capital Requirement.

For the purposes of this paragraph, "solvency ratio" means the ratio of the eligible amount of own funds to cover the Solvency Capital Requirement and the Solvency Capital Requirement, using the latest available values.;
(c) the following paragraph 6 a is inserted:

6a. For the purposes of point (ii) of point (e) of paragraph 1, the provisions governing the conversion into basic own-fund items listed in points (i) or (ii) of point (a) of Article 69 shall provide for all of the following:
a) if the trigger event specified in paragraph 8 has occurred in the circumstances described in point (c) of the second subparagraph of that paragraph and a partial conversion would be sufficient to re-establish compliance with the Solvency Capital Requirement, there is a partial conversion of the item for an amount that is at
least sufficient to re-establish compliance with the Solvency Capital Requirement;
b) if the trigger event specified in paragraph 8 has occurred in the circumstances described in point (c) of the second subparagraph of that paragraph and a partial conversion would not be sufficient to re-establish compliance with the Solvency Capital Requirement, the item is converted in such a way that the remaining nominal or principal amount of the item decreases at least on a linear basis ensuring that full conversion will occur when $75 \%$ coverage of the Solvency Capital Requirement is reached, or prior to that event;
c) if the trigger event specified in paragraph 8 has occurred in the circumstances described in point (a) or point (b) of the second subparagraph of that paragraph, the item is converted in full;
d) following a conversion in accordance with point (b) of this paragraph ("the initial conversion"):
(i) if the trigger event specified in paragraph 8 subsequently occurs in the circumstances described in point (a) or point (b) of the second subparagraph of that paragraph, the item is converted in full;
(ii) if, by the end of the period of three months from the date of the trigger event that resulted in the initial conversion, no trigger event has occurred in the circumstances described in point (a) or point (b) of the second subparagraph of paragraph 8 but the solvency ratio has deteriorated further, the item is converted further in accordance with point (b) of this paragraph to reflect that further deterioration in the solvency ratio;
(iii) a further conversion is made in accordance with point (ii) for each subsequent deterioration in the solvency ratio at the end of each subsequent period of three months until the insurance or reinsurance undertaking has re-established compliance with the Solvency Capital Requirement.

For the purposes of this paragraph, "solvency ratio" has the same meaning as it has for the purposes of paragraph 5a.;
(d) the following paragraphs 10 and 11 are added:
10. Notwithstanding the requirement in point (e) of paragraph 1 for the principal loss absorbency mechanism to be triggered at the trigger event specified in paragraph 8 , the basic own-fund item may allow for the principal loss absorbency mechanism not to be triggered at that event where all of the following conditions are met:
a) the trigger event occurs in the circumstances described in point (c) of the second subparagraph of paragraph 8 ;
b) there have been no previous trigger events in the circumstances described in point (a) or (b) of the second subparagraph of that paragraph;
c) the supervisory authority agrees exceptionally to waive the triggering of the principal loss absorbency mechanism on the basis of both of the following pieces of information:
(i) projections provided to the supervisory authority by the insurance or reinsurance undertaking when that undertaking submits the recovery plan required by Article 138(2) of Directive 2009/138/EC, that demonstrate that triggering the principal loss absorbency mechanism in that case would be very likely to give rise to a tax liability that would have a significant adverse effect on the undertaking's solvency position;
(ii) certificate issued by that undertaking's statutory auditors certifying that all of the assumptions used in the projections are realistic.

11 Notwithstanding the requirement in point (ii) of point (f) of paragraph (1), the basic own-fund item may allow for repayment or redemption earlier than that period where all of the following conditions are met:
a the undertaking's Solvency Capital Requirement, after the repayment or redemption, will be exceeded by an appropriate margin taking into account the solvency position of the undertaking, including the undertaking's medium-term capital management plan;
$b$ the circumstances are as described in point (i) or point (ii):
(i) there is a change in the regulatory classification of the basic own-fund item which would be likely to result in its exclusion from own funds or reclassification as a lower tier of own funds, and both of the following conditions are met:
the supervisory authority considers such a change to be sufficiently certain;

- the undertaking demonstrates to the satisfaction of the supervisory authority that the regulatory reclassification of the basic own-fund item was not reasonably foreseeable at the time of its issuance;
(ii) there is a change in the applicable tax treatment of the basic own-fund item which the undertaking demonstrates to the satisfaction of the supervisory authority is material and was not reasonably foreseeable at the time of its issuance.;
(5) in Article 73, the following paragraph 5 is added:

Notwithstanding the requirement in point (c) of paragraph 1, the basic ownfund item may allow for repayment or redemption before 5 years where all of the following conditions are met:
a the undertaking's Solvency Capital Requirement, after the repayment or redemption, will be exceeded by an appropriate margin, taking into account the solvency position of the undertaking, including the undertaking's mediumterm capital management plan;
b the circumstances are as described in point (i) or point (ii):
(i) there is a change in the regulatory classification of the basic ownfund item which would be likely to result in its exclusion from own funds or reclassification as a lower tier of own funds, and both of the following conditions are met:

- the supervisory authority considers such a change to be sufficiently certain;
- the undertaking demonstrates to the satisfaction of the supervisory authority that the regulatory reclassification of the basic own-fund item was not reasonably foreseeable at the time of its issuance;
(ii) there is a change in the applicable tax treatment of the basic ownfund item which the undertaking demonstrates to the satisfaction of the supervisory authority is material and was not reasonably foreseeable at the time of its issuance.;
(6) in Article 77, the following paragraph 5 is added:

Notwithstanding the requirement in point (c) of paragraph 1, the basic ownfund item may allow for repayment or redemption sooner than 5 years after the date of issuance where all of the following conditions are met:
a the undertaking's Solvency Capital Requirement, after the repayment or redemption, will be exceeded by an appropriate margin, taking into account the solvency position of the undertaking, including the undertaking's mediumterm capital management plan;
$b$ the circumstances are as described in point (i) or point (ii):
(i) there is a change in the regulatory classification of the basic ownfund item which would be likely to result in its exclusion from own funds, and both of the following conditions are met:

- the supervisory authority considers such a change to be sufficiently certain;
- the undertaking demonstrates to the satisfaction of the supervisory authority that the regulatory reclassification of the basic own-fund item was not reasonably foreseeable at the time of its issuance;
(ii) there is a change in the applicable tax treatment of the basic ownfund item which the undertaking demonstrates to the satisfaction of the supervisory authority is material and was not reasonably foreseeable at the time of its issuance.;
Article 84 is amended as follows:
(a) paragraph 3 is replaced by the following:

3. Where Article 88 is complied with and the look-through approach cannot be applied to collective investment undertakings or investments packaged as funds, the Solvency Capital Requirement may be calculated on the basis of the target underlying asset allocation or, if the target underlying asset allocation is not available to the undertaking, on the basis of the last reported asset allocation, of the collective investment undertaking or fund, provided that, in either case, the underlying assets are managed in accordance with that target allocation or last reported asset allocation, as

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applicable, and that exposures and risks are not expected to vary materially over a short period of time.

For the purposes of that calculation, data groupings may be used provided they enable all relevant sub-modules and scenarios of the standard formula to be calculated in a prudent manner, and that they do not apply to more than $20 \%$ of the total value of the insurance or reinsurance undertaking's assets.;
(b) the following paragraph 3 a is inserted:

3a. For the purposes of determining the percentage of assets where data groupings are used as referred to in paragraph 3, insurance or reinsurance undertakings shall not take into account underlying assets of the collective investment undertaking, or the investments packaged as funds, backing unit-linked or index-linked obligations for which the market risk is borne by the policyholders.;
(c) paragraph 4 is replaced by the following:
4. Paragraphs 1 and 2 shall not apply to investments in related undertakings, other than investments in respect of which all of the following conditions are met:
a the main purpose of the related undertaking is to hold and manage assets on behalf of the participating undertaking;
b the related undertaking supports the operations of the participating undertaking related to investment activities, following a specific and documented investment mandate;
c the related undertaking does not carry on any significant business other than investing for the benefit of the participating undertaking.

For the purposes of this paragraph, "related undertaking" and "participating undertaking" shall have the meaning given to those terms in Article 212(1) and (2) of Directive 2009/138/EC.;

Article 88 is amended as follows:
(a) in paragraph 1, the introductory wording is replaced by the following:

For the purposes of Article 109 of Directive 2009/138/EC, insurance and reinsurance undertakings shall determine whether the simplified calculation is proportionate to the nature, scale and complexity of the risks by carrying out an assessment which shall include all of the following:;
(b) paragraph 2 is replaced by the following:
2. A simplified calculation shall not be considered to be proportionate to the nature, scale and complexity of the risks where the error referred to in point (b) of paragraph 1 leads to a misstatement of the Solvency Capital Requirement that could influence the decision-making or the judgement of the user of the information relating to the Solvency Capital Requirement, unless the simplified calculation leads to a Solvency Capital Requirement which exceeds the Solvency Capital Requirement that results from the standard calculation.;

## Article 90a

## Simplified calculation for discontinuance of insurance policies in the non-life lapse risk sub-module

For the purposes of point (a) of Article 118(1), where Article 88 is complied with, insurance and reinsurance undertakings may determine the insurance policies for which discontinuance would result in an increase of technical provisions without the risk margin on the basis of groups of policies, provided that the grouping complies with the requirements laid down in points (a), (b) and (c) of Article 35.

## Article 90b

## Simplified calculation of the sum insured for natural catastrophe risks

Where Article 88 is complied with, insurance and reinsurance undertakings may calculate the sum insured for windstorm risk referred to in point (b) of paragraph 6 , and in paragraph 7 , of Article 121 on the basis of groups of risk zones. Each of the risk zones within a group shall be situated within one and the same particular region set out in Annex V. Where the sum insured for windstorm risk referred to in point (b) of Article 121(6) is calculated on the basis of a group of risk zones, the risk weight for windstorm risk referred to in point (a) of Article 121(6) shall be the risk weight for windstorm risk in the risk zone within that group with the highest risk weight for windstorm risk set out in Annex X.

Where Article 88 is complied with, insurance and reinsurance undertakings may calculate the sum insured for earthquake risk referred to in point (b) of paragraph 3 , and in paragraph 4, of Article 122 on the basis of groups of risk zones. Each of the risk zones within a group shall be situated within one and the same particular region set out in Annex VI. Where the sum insured for earthquake risk referred to in point (b) of Article 122(3) is calculated on the basis of a group of risk zones, the risk weight for earthquake risk referred to in point (a) of Article 122(3) shall be the risk weight for earthquake risk in the risk zone within that group with the highest risk weight for earthquake risk as set out in Annex X.
may calculate the sum insured for flood risk referred to in point (b) of paragraph 6, and in paragraph 7, of Article 123 on the basis of groups of risk zones. Each of the risk zones within a group shall be situated within one and the same particular region set out in Annex VII. Where the sum insured for flood risk referred to in point (b) of Article 123(6) is calculated on the basis of a group of risk zones, the risk weight for flood risk referred to in point (a) of Article 123(6) shall be the risk weight for flood risk in the risk zone within that group with the highest risk weight for flood risk as set out in Annex X.

Where Article 88 is complied with, insurance and reinsurance undertakings may calculate the sum insured for hail risk referred to in point (b) of paragraph 6 , and in paragraph 7 , of Article 124 on the basis of groups of risk zones. Each of the risk zones within a group shall be situated within one and the same particular region set out in Annex VIII. Where the sum insured for hail risk referred to in point (b) of Article $124(6)$ is calculated on the basis of a group of risk zones, the risk weight for hail risk

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referred to in point (a) of Article 124(6) shall be the risk weight for hail risk in the risk zone within that group with the highest risk weight for hail risk as set out in Annex X.

Where Article 88 is complied with, insurance and reinsurance undertakings may calculate the weighted sum insured for subsidence risk referred to in Article 125(2) on the basis of groups of risk zones. Where the weighted sum insured referred to in Article 125(2) is calculated on the basis of a group of risk zones, the risk weight for subsidence risk referred to in point (a) of Article 125(2) shall be the risk weight for subsidence risk in the risk zone within that group with the highest risk weight for subsidence risk as set out in Annex X.

## Article 90c

## Simplified calculation of the capital requirement for fire risk

(b) $\quad \theta$ denotes the market share based residential fire risk exposure.

For the purpose of paragraphs 2,3 and 4 , the total exposure within the perimeter of the $k$-th largest industrial, commercial or residential fire risk exposure of an insurance or reinsurance undertaking is the sum insured by the insurance
or reinsurance undertaking with respect to a set of buildings that meets all of the following conditions:
a in relation to each building, the insurance or reinsurance undertaking has obligations in lines of business 7 and 19 set out in Annex I which cover damage due to fire or explosion, including as a result of terrorist attacks;
b each building is partly or fully located within a radius of 200 meters around the industrial, commercial or residential building with the $k$-th largest sum insured after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles.
For the purposes of determining the sum insured with respect to a building, insurance and reinsurance undertakings shall take into account all reinsurance contracts and special purpose vehicles that would pay out in case of insurance claims related to that building. Reinsurance contracts and special purpose vehicles that are subject to conditions not related to that building shall not be taken into account.

The market share based residential fire risk exposure shall be equal to the following:

$$
\theta=S I_{a v} \cdot 500 \cdot \max \left(0,05 ; \max _{\mathrm{c}}\left(\text { marketShare }_{c}\right)\right)
$$

where:
(a) $\quad S I_{a v}$ is the average sum insured by the insurance or reinsurance undertaking with respect to residential property;
(b) $\quad c$ denotes all countries where the insurance or reinsurance undertaking has obligations in lines of business 7 and 19 set out in Annex I covering residential property;
(c) marketShare $c_{c}$ is the market share of the insurance or reinsurance undertaking in country $c$ related to obligations in those lines of business covering residential property.;

Article 91 is amended as follows:
a) the formula is replaced by the following:

$$
S C R_{\text {mortaity }}=0,15 \times q \times \sum_{n}^{k-1} C A R_{k} \times \frac{(1-q)^{k-1}}{\left(1+i_{k}\right)^{k-0, s}}
$$

b) point (a) is replaced by the following:
(a) $\quad C A R_{k}$ denotes the total capital at risk in year $k$, meaning the sum over all contracts of the higher of zero and the difference, in relation to each contract, between the following amounts:
the sum of:

- the amount that the insurance or reinsurance undertaking would pay in year $k$ in the event of the death of the persons insured under the contract after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles;
- the expected present value of amounts not covered in the previous indent that the insurance or reinsurance undertaking would pay after year $k$ in the event of

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the immediate death of the persons insured under the contract after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles;
(ii) the best estimate of the corresponding obligations in year $k$ after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles;;
c) point (b) is replaced by the following:
(b) $\quad q$ denotes the expected average mortality rate over all the insured persons and over all future years weighted by the sum insured.;
the following Article 95a is inserted:

## Article 95a

## Simplified calculation of the capital requirement for risks in the life lapse risk sub-module

Where Article 88 is complied with, insurance and reinsurance undertakings may calculate each of the following capital requirements on the basis of groups of policies, provided that the grouping complies with the requirements laid down in points (a), (b) and (c) of Article 35:
(a) the capital requirement for the risk of a permanent increase in lapse rates referred to in Article 142(2);
(b) the capital requirement for the risk of a permanent decrease in lapse rates referred to in Article 142(3);
(c) the capital requirement for mass lapse risk referred to in Article 142(6).;
(12) the following Article 96a is inserted:

## Article $96 a$

## Simplified calculation for discontinuance of insurance policies in the NSLT health lapse risk sub-module

For the purposes of point (a) of Article $150(1)$, where Article 88 is complied with, insurance and reinsurance undertakings may determine the insurance policies for which discontinuance would result in an increase of technical provisions without the risk margin on the basis of groups of policies, provided that the grouping complies with the requirements laid down in points (a), (b) and (c) of Article 35.;
(13) Article 97 is amended as follows:
(a) the formula is replaced by the following:

$$
S C R_{\text {healh-mortality }}=0,15 \times q \times \sum_{n}^{k=1} C A R_{k} \times \frac{(1-q)^{k-1}}{(1+i k)^{k-0, s}}
$$

(b) point (a) is replaced by the following:
(a) $\quad C A R_{k}$ denotes the total capital at risk in year $k$, meaning the sum over all contracts of the higher of zero and the difference, in relation to each contract, between the following amounts:
(i) the sum of:

- the amount that the insurance or reinsurance undertaking would pay in year $k$ in the event of the death of the persons insured under the contract after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles;
- the expected present value of amounts not covered in the previous indent that the insurance or reinsurance undertaking would pay after year $k$ in the event of the immediate death of the persons insured under the contract after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles;
(ii) the best estimate of the corresponding obligations in year $k$ after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles;;
(c) point (b) is replaced by the following:
(b) $\quad q$ denotes the expected average mortality rate over all insured persons and over all future years weighted by the sum insured.;
(14) the following Article 102a is inserted:

Article $102 a$

## Simplified calculation of the capital requirement for risks in the SLT health lapse risk sub-module

Where Article 88 is complied with, insurance and reinsurance undertakings may calculate each of the following capital requirements on the basis of groups of policies, provided that the grouping complies with the requirements laid down in points (a), (b) and (c) of Article 35:
(a) the capital requirement for the risk of a permanent increase in SLT health lapse rates referred to in Article 159(2);
(b) the capital requirement for the risk of a permanent decrease in SLT health lapse rates referred to in Article 159(3);
(c) the capital requirement for SLT health mass lapse risk referred to in Article 159(6).;
the following Article 105a is inserted:

## Article 105a

## Simplified calculation for the risk factor in the spread risk sub-module and the market risk concentration sub-module

Where Article 88 is complied with, insurance and reinsurance undertakings may assign a bond other than those to be included in the calculations under paragraphs (2) to (16) of Article 180 a risk factor stress $_{i}$ equivalent to credit quality step 3 for the purposes of Articles 176(3) and assign the bond to credit quality step 3 for the purpose of calculating the weighted average credit quality step in accordance with 182(4), provided that all of the following conditions are met:
(a) credit assessments from a nominated ECAI are available for at least $80 \%$ of the total value of the bonds other than those to be included in the calculations under paragraphs (2) to (16) of Article 180;
(b) a credit assessment by a nominated ECAI is not available for the bond in question;
(c) the bond in question provides a fixed redemption payment on or before the date of maturity, in addition to regular fixed or floating rate interest payments;
(d) the bond in question is not a structured note or collateralised security as referred to in Annex VI to Commission Implementing Regulation (EU) $2015 / 2450^{(5)}$;
(e) the bond in question does not cover liabilities that provide profit participation arrangements, nor does it cover unit-linked or index-linked liabilities, nor liabilities where a matching adjustment is applied.;
in Article 108(1), the introductory wording is replaced by the following:
Where both Article 88 is complied with and the best estimate of amounts recoverable from a proportional reinsurance arrangement and the corresponding debtors for a counterparty $i$ is not negative, insurance and reinsurance undertakings may calculate the risk-mitigating effect on underwriting risk $j$ of the proportional reinsurance arrangement for counterparty $i$ referred to Article 196 as follows:;

Article 110 is replaced by the following:

Article 110

## Simplified calculation - grouping of single name exposures

Where Article 88 is complied with, insurance and reinsurance undertakings may calculate the loss-given-default set out in Article 192, including the risk-mitigating effect on underwriting and market risks and the risk-adjusted value of collateral, for a group of single name exposures. In that case, the group of single name exposures shall be assigned the highest probability of default assigned to single name exposures included in the group in accordance with Article 199.;
in Article 111, point (a) is replaced by the following:
(a) the sum of the hypothetical capital requirement for the sub-modules of the underwriting and market risk modules of the insurance or reinsurance undertaking affected by the risk-mitigating technique, calculated in accordance with this Section and Sections 2 to 5 of this Chapter but as if the reinsurance arrangement, securitisation or derivative did not exist;;
the following Article 111a is inserted:

## Article 111a

## Simplified calculation of the risk-mitigating effect on underwriting risk

For the purposes of Article 196, where Article 88 is complied with and the reinsurance arrangement, securitisation or derivative covers obligations from only one of the segments (segment $s$ ) set out in Annex II or, as applicable, Annex XIV, insurance and reinsurance undertakings may calculate the risk-mitigating effect of that reinsurance arrangement, securitisation or derivative on their underwriting risk as follows:
where:
a) $\quad S C R_{C A T}{ }^{h y p}$ denotes the hypothetical capital requirement for the non-life catastrophe underwriting risk module referred to in Article 119(2), or, as applicable, the hypothetical capital requirement for the health catastrophe risk sub-module referred to in Article 160, that would apply if the reinsurance arrangement, securitisation or derivative did not exist;
b) $\quad S C R_{C A T}{ }^{\text {without }}$ denotes the capital requirement for the non-life catastrophe underwriting risk module referred to in Article 119(2) or, as applicable, the capital requirement for the health catastrophe risk sub-module referred to in Article 160;
c) $\quad \sigma_{s}$ denotes the standard deviation for non-life premium risk of segment $s$ determined in accordance with Article 117(3) or, as applicable, the standard deviation for the NSLT health premium risk of segment $s$ determined in accordance with Article 148(3);
d) $\quad P_{s}{ }^{\text {hyp }}$ denotes the hypothetical volume measure for premium risk of segment $s$ determined in accordance with Article 116(3) or (4), or, as applicable, Article

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147(3) or (4), that would apply if the reinsurance arrangement, securitisation or derivative did not exist;
e) $\quad P_{s}{ }^{\text {without }}$ denotes the volume measure for premium risk of segment $s$ determined in accordance with Article 116(3) or (4) or, as applicable, Article $147(3)$ or (4);
f) Recoverables denotes the best estimate of amounts recoverable from the reinsurance arrangement, securitisation or derivative and the corresponding debtors.;
the following Articles 112a and 112b are inserted:

Article 112a
Simplified calculation of the loss-given-default for reinsurance
Where Article 88 is complied with, insurance or reinsurance undertakings may calculate the loss-given-default on a reinsurance arrangement or insurance securitisation referred to in the first subparagraph of Article 192(2) as follows:
$L G D=\max \left[90 \% \cdot\left(\right.\right.$ Recoverables $\left.+50 \% \cdot R M_{\text {re }}\right)-F \cdot$ Collateral; 0$]$
where:
a) Recoverables denotes the best estimate of amounts recoverable from the reinsurance arrangement or insurance securitisation and the corresponding debtors;
b) $\quad R M_{r e}$ denotes the risk mitigating effect on underwriting risk of the reinsurance arrangement or securitisation;
c) Collateral denotes the risk-adjusted value of collateral in relation to the reinsurance arrangement or securitisation;
d) $\quad F$ denotes a factor to take into account the economic effect of the collateral arrangement in relation to the reinsurance arrangement or securitisation in case of any credit event related to the counterparty.

Article $112 b$

## Simplified calculation of the capital requirement for counterparty default risk on type 1 exposures

Where Article 88 is complied with and the standard deviation of the loss distribution of type 1 exposures, as determined in accordance with Article 200(4), is lower than or equal to $20 \%$ of the total losses-given default on all type 1 exposures, insurance and reinsurance undertakings may calculate the capital requirement for counterparty default risk referred to in Article 200(1) as follows:

$$
S C R_{d e f, 1}=5 \cdot \sigma
$$

where $\sigma$ denotes the standard deviation of the loss distribution of type 1 exposures as determined in accordance with Article 200(4).;
(22) in Article 116(3), point (d) is replaced by the following:
(d) $\quad F P_{(f u t u r e, s)}$ denotes the following amount with respect to contracts where the initial recognition date falls in the following 12 months:
(i) for all such contracts whose initial term is one year or less, the expected present value of premiums to be earned by the insurance or reinsurance undertaking in the segment $s$, but excluding the premiums to be earned during the 12 months after the initial recognition date;
(ii) for all such contracts whose initial term is more than one year, the amount equal to $30 \%$ of the expected present value of premiums to be earned by the insurance or reinsurance undertaking in the segment $s$ after the following 12 months.;

Article 121 is amended as follows:
(a) paragraph 5 is amended as follows:
(i) the formula is replaced by the following:

$$
L_{(\text {windetorm }, r)}=\sqrt{\sum_{(i, j)} \operatorname{Corr}_{(\text {windetorm }, r, i, j)} \times W S I_{(\text {vindeterm }, r, i)} \times W S I_{(\mathrm{wi}}}
$$

(ii) point (a) is deleted;
(b) paragraph 6 is amended as follows:
(i) the formula is replaced by the following:

$$
W S I_{(\text {windstorm }, r i)}=Q_{(\text {windstorm }, r)} \cdot W_{(\text {windstorm }, r, i)} \cdot S I_{(\text {windstorm }, r, i) ;}
$$

(ii) the following point (c) is added:
(c) $\quad Q_{(\text {windstorm,r) }}$ denotes the windstorm risk factor for region $r$ as set out in Annex V.
(iii) the following subparagraph is added:

Where the amount determined for a particular risk zone in accordance with the first subparagraph exceeds an amount (referred to in this subparagraph as "the lower amount") equal to the sum of the potential losses without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles, that the insurance or reinsurance undertaking could suffer for windstorm risk in that risk zone, taking into account the terms and conditions of its specific policies, including any contractual payment limits, the insurance or reinsurance undertaking may, as an alternative calculation, determine the weighted sum insured for windstorm risk in that risk zone as the lower amount.;

Article 122 is amended as follows:
(a) paragraph 2 is amended as follows:
(i) the introductory sentence is replaced by the following:

For all regions set out in Annex VI, the capital requirement for earthquake risk in a particular region $r$ shall be equal to the loss in basic own funds of insurance and reinsurance undertakings that would result from an instantaneous loss of an amount that, without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles, is equal to the following amount:;
(ii) the formula is replaced by the following:

';
(iii) point (a) is deleted;
(b) paragraph 3 is amended as follows:
(i) the formula is replaced with the following:

$$
W S I_{(\text {earthquake, }, i)}=Q_{(\text {earthquake,r) }} \cdot W_{(\text {earthquake, }, i)} \cdot S I_{(\text {earthquake, }, i) ;}
$$

(ii) the following point (c) is added:
(c) $\quad Q_{(\text {earthquake } r)}$ denotes the earthquake risk factor for region $r$ as set out in Annex VI.;
(iii) the following subparagraph is added:

Where the amount determined for a particular risk zone in accordance with the first subparagraph exceeds an amount (referred to in this subparagraph as "the lower amount") equal to the sum of the potential losses, without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles, that the insurance or reinsurance undertaking could suffer for earthquake risk in that risk zone, taking into account the terms and conditions of its specific policies, including any contractual payment limits, the insurance or reinsurance undertaking may, as an alternative calculation, determine the weighted sum insured for earthquake risk in that risk zone as the lower amount.;
(25) Article 123 is amended as follows:
(a) paragraph 5 is amended as follows:
(i) the formula is replaced by the following:
';
(ii) point (a) is deleted;
(b) paragraph 6 is amended as follows:
(i) the formula is replaced by the following:

$$
W S I_{(f l o o d, r i)}=Q_{(f l o o d, r)} \cdot W_{(f l o o d, r i)} \cdot S_{(f l o o d, r i) ;}
$$

(ii) the following point (c) is added:
(c) $\quad Q_{(f l o o d, r)}$ denotes the flood risk factor for region $r$ as set out in Annex VII,;
(iii) the following subparagraph is added:

Where the amount determined for a particular risk zone in accordance with the first subparagraph exceeds an amount (referred to in this subparagraph as "the lower amount") equal to the sum of the potential losses, without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles, that the insurance or reinsurance undertaking could suffer for flood risk in that risk zone, taking into account the terms and conditions of its specific policies, including any contractual payment limits, the insurance or reinsurance undertaking may, as an alternative calculation, determine the weighted sum insured for flood risk in that risk zone as the lower amount.;
(c) in paragraph 7, the introductory wording is replaced by the following:

For all regions set out in Annex VII and all risk zones of those regions set out in Annex IX, the sum insured for flood risk for a particular risk zone $i$ of a particular region $r$ shall be equal to the following:;

Article 124 is amended as follows:
(a) paragraph 5 is amended as follows:
(i) the formula is replaced by the following:

$$
L_{(\text {hoil }, s)}=\sqrt{\sum_{(i, j)} \operatorname{Corr}_{(\text {anill }, i, i, j)} \times W S I_{(\text {hoill }, r i)} \times W S I_{(\text {hail } l, j)}}
$$

';
(ii) point (a) is deleted;
(b) paragraph 6 is amended as follows:
(i) the formula is replaced by the following:

$$
W S I_{(h a i l, r, i)}=Q_{(h a i l, r)} \cdot W_{(h a i l, r, i)} \cdot S I_{(h a i l, r i)} ;
$$

(ii) the following point (c) is added:
(c) $\quad Q_{(\text {hail,r) }}$ denotes the hail risk factor for region $r$ as set out in Annex VIII.;
(iii) the following subparagraph is added:

Where the amount determined for a particular risk zone in accordance with the first subparagraph exceeds an amount (referred to in this subparagraph as "the lower amount") equal

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to the sum of the potential losses, without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles, that the insurance or reinsurance undertaking could suffer for hail risk in that risk zone taking into account the terms and conditions of its specific policies, including any contractual payment limits, the insurance or reinsurance undertaking may, as an alternative calculation, determine the weighted sum insured for hail risk in that risk zone as the lower amount.;

Article 130 is replaced by the following:
Article 130

## Marine risk sub-module

The capital requirement for marine risk shall be equal to the following:

$$
S C R_{\text {marine }}=\sqrt{S C R_{2}^{c e n e l}+S C R_{2}^{\text {phat form }}}
$$

where:
a) $\quad S C R_{\text {vessel }}$ is the capital requirement for the risk of a vessel collision;
b) $\quad S C R_{\text {platform }}$ is the capital requirement for the risk of a platform explosion.

The capital requirement for the risk of a vessel collision shall be equal to the loss in basic own funds of insurance and reinsurance undertakings that would result from an instantaneous loss of an amount equal to the following:

$$
L_{v e s s e l}=\max _{v}\left(S I_{(h u l l, v)}+S I_{(l i a b, v)}+S I_{(\text {pollution }, v)}\right)
$$

where:
(a) the maximum relates to all sea, lake, river and canal vessels insured by the insurance or reinsurance undertaking in respect of vessel collision in lines of business 6, 18 and 27 set out in Annex I where the insured value of the vessel is at least EUR 250 000;
(b) $\quad S I_{(h u l l, v)}$ is the sum insured by the insurance or reinsurance undertaking, after deduction of the amounts that the insurance or reinsurance undertaking can recover from reinsurance contracts and special purpose vehicles, for marine hull insurance and reinsurance in relation to vessel $v$;
(c) $\quad S I_{(i a b, v)}$ is the sum insured by the insurance or reinsurance undertaking, after deduction of the amounts that the insurance or reinsurance undertaking can recover from reinsurance contracts and special purpose vehicles, for marine liability insurance and reinsurance in relation to vessel $v$;
(d) $\quad S I_{(\text {pollution,v) }}$ is the sum insured by the insurance or reinsurance undertaking, after deduction of the amounts that the insurance or reinsurance undertaking can recover from reinsurance contracts and special purpose vehicles, for oil pollution insurance and reinsurance in relation to vessel $v$.

For the purposes of determining $S I_{(h u l l, v)}, S I_{(l i a b, v)}$ and $S I_{(p o l l u t i o n, v)}$, insurance and reinsurance undertakings shall only take into account reinsurance contracts and special purpose vehicles that would pay out in the event of insurance claims related to vessel $v$. Reinsurance contracts and special purpose vehicles where payout is dependent on insurance claims not related to vessel $v$ shall not be taken into account.

Where the deduction of amounts recoverable would lead to a capital requirement for the risk of a vessel collision that captures insufficiently the risk of a vessel collision that the insurance or reinsurance undertaking is exposed to, the insurance or reinsurance undertaking shall calculate $S I_{(h u l l, v)}, S I_{(l i a b, v)}$ or $S I_{(p o l l u t i o n, v)}$ without deduction of amounts recoverable.

The capital requirement for the risk of a platform explosion shall be equal to the loss in basic own funds of insurance and reinsurance undertakings that would result from an instantaneous loss of an amount equal to the following:

$$
L_{\text {platform }}=\max _{p}\left(S I_{p}\right)
$$

where:
(a) the maximum relates to all oil and gas offshore platforms insured by the insurance or reinsurance undertaking in respect of platform explosion in lines of business 6, 18 and 27 set out in Annex I;
(b) $\quad S I_{p}$ is the accumulated sum insured by the insurance or reinsurance undertaking, after deduction of the amounts that the insurance or reinsurance undertaking can recover from reinsurance contracts and special purpose vehicles, for the following insurance and reinsurance obligations in relation to platform $p$ :

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(i) obligations to compensate for property damage;
(ii) obligations to compensate for the expenses for the removal of wreckage;
(iii) obligations to compensate for loss of production income;
(iv) obligations to compensate for the expenses for capping of the well or making the well secure;
(v) liability insurance and reinsurance obligations.

For the purposes of determining $S I_{p}$, insurance and reinsurance undertakings shall only take into account reinsurance contracts and special purpose vehicles that would pay out in the event of insurance claims related to platform $p$. Reinsurance contracts and special purpose vehicles where payout is dependent on insurance claims that are not related to platform $p$ shall not be taken into account.

Where the deduction of amounts recoverable would lead to a capital requirement for the risk of a platform explosion that captures insufficiently the risk of a platform explosion that the insurance or reinsurance undertaking is exposed to, the insurance or reinsurance undertaking shall calculate $S I_{p}$ without the deduction of amounts recoverable.;

Article 131 is amended as follows:
(a) the introductory wording is replaced by the following:

The capital requirement for aviation risk shall be equal to the loss in basic own funds of insurance and reinsurance undertakings that would result from an instantaneous loss of an amount that is equal to the following:;
(b) point (b) is replaced by the following:
(b) $\quad S I_{a}$ is the sum insured by the insurance or reinsurance undertaking, after deduction of the amounts that the insurance or reinsurance undertaking can recover from reinsurance contracts and special purpose vehicles, for aviation hull insurance and reinsurance and aviation liability insurance and reinsurance in relation to aircraft $a$.

For the purposes of this Article, insurance and reinsurance undertakings shall only take into account reinsurance contracts and special purpose vehicles that would pay out in the event of insurance claims related to aircraft $a$. Reinsurance contracts and special purpose vehicles where payout is dependent on insurance claims that are not related to aircraft $a$ shall not be taken into account.

Where the deduction of amounts recoverable would lead to a capital requirement for aviation risk that captures insufficiently the aviation risk that the insurance or reinsurance undertaking is exposed to, the insurance or reinsurance undertaking shall, calculate $S I_{a}$ without the deduction of amounts recoverable.;
in Article 132, paragraphs 1 and 2 are replaced by the following:
The capital requirement for fire risk shall be equal to the loss in basic own funds of insurance and reinsurance undertakings that would result from an
instantaneous loss of an amount equal to the sum insured by the insurance or reinsurance undertaking with respect to the largest fire risk concentration.

The largest fire risk concentration of an insurance or reinsurance undertaking is the set of buildings with the largest sum insured, after deduction of the amounts that the insurance or reinsurance undertaking can recover from reinsurance contracts and special purpose vehicles, that meets all of the following conditions:
a the insurance or reinsurance undertaking has insurance or reinsurance obligations in lines of business 7 and 19 set out in Annex I, in relation to each building which cover damage due to fire or explosion, including as a result of terrorist attacks;
b all buildings are partly or fully located within a radius of 200 meters.
In determining the sum insured for a set of buildings, insurance and reinsurance undertakings shall only take into account reinsurance contracts and special purpose vehicles that would pay out in the event of insurance claims related to that set of buildings. Reinsurance contracts and special purpose vehicles where payout is dependent on insurance claims that are not related to that set of buildings shall not be taken into account.

Where the deduction of amounts recoverable would lead to a capital requirement for fire risk that captures insufficiently the fire risk that the insurance or reinsurance undertaking is exposed to, the insurance or reinsurance undertaking shall calculate the sum insured for a set of buildings without the deduction of amounts recoverable.;
in Article $147(3)$, point (d) is replaced by the following:
(d) $\quad F P_{(f u t u r e, s)}$ denotes the following amount with respect to contracts where the initial recognition date falls in the following 12 months:
(i) for all such contracts whose initial term is one year or less, the expected present value of premiums to be earned by the insurance or reinsurance undertaking in the segment $s$, but excluding the premiums to be earned during the 12 months after the initial recognition date;
(ii) for all such contracts whose initial term is more than one year, the amount equal to $30 \%$ of the expected present value of premiums to be earned by the insurance or reinsurance undertaking in the segment $s$ after the following 12 months.;
in Article 168, paragraph 6 is amended as follows:
(a) in point (c), the introductory wording is replaced by the following:
as regards closed-ended alternative investment funds which are established in the Union or, if they are not established in the Union, which are marketed in the Union in accordance with Article 35 or 40 of Directive 2011/61/EU and which, in either case, have no leverage in accordance with the commitment method set out in Article 8 of Commission Delegated Regulation (EU) No 231/2013 ${ }^{(6)}$ :;
(b) the following point (e) is added:
(e) qualifying unlisted equity portfolios as defined in Article 168a.;
the following Article 168a is inserted:

## Article 168a

## Qualifying unlisted equity portfolios

For the purposes of point (e) of Article 168(6), a qualifying unlisted equity portfolio is a set of equity investments that meets all of the following requirements:
a the set of investments consists solely of investments in the ordinary shares of companies;
b the ordinary shares of each of the companies concerned are not listed in any regulated market;
c each company has its head office in a country which is a member of the EEA;
d more than $50 \%$ of the annual revenue of each company is denominated in currencies of countries which are members of the EEA or the OECD;
e more than $50 \%$ of the staff employed by each company have their principal place of work in countries which are members of the EEA;
f each company fulfils at least one of the following conditions for each of the last three financial years ending prior to the date on which the Solvency Capital Requirement is being calculated:
(i) the annual turnover of the company exceeds EUR 10000 000;
(ii) the balance sheet total of the company exceeds EUR 10000 000;
(iii) the number of staff employed by the company exceeds 50 ;
$g$ the value of the investment in each company represents no more than $10 \%$ of the total value of the set of investments;
$h$ none of the companies is an insurance or reinsurance undertaking, a credit institution, an investment firm, a financial institution, an alternative investment fund manager, a UCITS management company, an institution for occupational retirement provision or a non-regulated undertaking carrying out financial activities;
i the beta of the set of investments does not exceed 0,796 .
For the purposes of paragraph 1(i), the beta of a set of investments is the average of the betas for each of the investments in that set of investments, weighted by the book values of those investments. The beta of an investment in a company shall be determined as follows:

$$
\beta=0,9478-0,0034 \times G M+0,0139 \times \frac{D \times \mathrm{N}}{C F O}-0,0015 \times R O C E
$$

where:
(a) $\quad \beta$ is the beta of the equity investment in the company;
(b) $\quad G M$ is the average gross margin for the company over the last five financial years ending prior to the date on which the Solvency Capital Requirement is being calculated;
(c) Debt is the total debt of the company at the end of the most recent financial year for which figures are available;
(d) $\quad C F O$ is the average net cash-flow for the company from operations over the last five financial years ending prior to the date on which the Solvency Capital Requirement is being calculated;

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(e) $\quad R O C E$ is the average return on common equity for the company over the last five financial years ending prior to the date on which the Solvency Capital Requirement is being calculated. Common equity shall be understood as capital and reserves as referred to in Annex III to Directive 2013/34/EU of the European Parliament and of the Council ${ }^{(7)}$ excluding preference shares and the related share premium account.;

The capital requirement for type 1 equities referred to in Article 168 of this Regulation shall be equal to the loss in the basic own funds that would result from the following instantaneous decreases:
a an instantaneous decrease equal to $22 \%$ in the value of type 1 equity investments in related undertakings within the meaning of Article 212(1) (b) and 212(2) of Directive 2009/138/EC where these investments are of a strategic nature;
b an instantaneous decrease equal to $22 \%$ in the value of type 1 equity investments that are treated as long-term equity investments in accordance with Article 171a;
c an instantaneous decrease equal to the sum of $39 \%$ and the symmetric adjustment as referred to in Article 172 of this Regulation, in the value of type 1 equities other than those referred to in points (a) and (b).

The capital requirement for type 2 equities referred to in Article 168 of this Regulation shall be equal to the loss in the basic own funds that would result from the following instantaneous decreases:
a an instantaneous decrease equal to $22 \%$ in the value of type 2 equity investments in related undertakings within the meaning of Article 212(1) (b) and 212(2) of Directive 2009/138/EC where these investments are of a strategic nature;
b an instantaneous decrease equal to $22 \%$ in the value of type 2 equity investments that are treated as long-term equity investments in accordance with Article 171a;
c an instantaneous decrease equal to the sum of $49 \%$ and the symmetric adjustment as referred to in Article 172 of this Regulation, in the value of type 2 equities other than those referred to in points (a) and (b).

The capital requirement for qualifying infrastructure equities referred to in Article 168 of this Regulation shall be equal to the loss in the basic own funds that would result from the following instantaneous decreases:
a an instantaneous decrease equal to $22 \%$ in the value of qualifying infrastructure equity investments in related undertakings within the meaning of point (b) of Article 212(1) and Article 212(2) of Directive 2009/138/EC, where those investments are of a strategic nature;
b an instantaneous decrease equal to $22 \%$ in the value of qualifying infrastructure equity investments that are treated as long-term equity investments in accordance with Article 171a;

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c an instantaneous decrease equal to the sum of $30 \%$ and $77 \%$ of the symmetric adjustment as referred to in Article 172 of this Regulation, in the value of qualifying infrastructure equity investments other than those referred to in points (a) and (b).

The capital requirement for qualifying infrastructure corporate equities referred to in Article 168 of this Regulation shall be equal to the loss in the basic own funds that would result from the following instantaneous decreases:
a an instantaneous decrease equal to $22 \%$ in the value of qualifying infrastructure corporate equity investments in related undertakings within the meaning of point (b) of Article 212(1) and Article 212(2) of Directive 2009/138/EC where those investments are of a strategic nature;
b an instantaneous decrease equal to $22 \%$ in the value of qualifying infrastructure corporate equity investments that are treated as long-term equity investments in accordance with Article 171a;
c an instantaneous decrease equal to the sum of $36 \%$ and $92 \%$ of the symmetric adjustment as referred to in Article 172 of this Regulation, in the value of qualifying infrastructure corporate equities other than those referred to in points (a) and (b).;
the following Article 171a is inserted:

## Article 171a

## Long-term equity investments

For the purpose of this Regulation, a sub-set of equity investments may be treated as long-term equity investments if the insurance or reinsurance undertaking demonstrates, to the satisfaction of the supervisory authority, that all of the following conditions are met:
a the sub-set of equity investments as well as the holding period of each equity investment within the sub-set are clearly identified;
b the sub-set of equity investment is included within a portfolio of assets which is assigned to cover the best estimate of a portfolio of insurance or reinsurance obligations corresponding to one or several clearly identified businesses, and the undertaking maintains that assignment over the lifetime of the obligations;
c the portfolio of insurance or reinsurance obligations, and the assigned portfolio of assets referred to in point (b) are identified, managed and organised separately from the other activities of the undertaking, and the assigned portfolio of assets cannot be used to cover losses arising from other activities of the undertaking;
d the technical provisions within the portfolio of insurance or reinsurance obligations referred to in point (b) only represent a part of the total technical provisions of the insurance or reinsurance undertaking;
e the average holding period of equity investments in the sub-set exceeds 5 years, or where the average holding period of the sub-set is lower than 5 years, the insurance or reinsurance undertaking does not sell any equity investments within the sub-set until the average holding period exceeds 5 years;
$f$ the sub-set of equity investments consists only of equities that are listed in the EEA or of unlisted equities of companies that have their head offices in countries that are members of the EEA;
g the solvency and liquidity position of the insurance or reinsurance undertaking, as well as its strategies, processes and reporting procedures with respect to asset-liability management, are such as to ensure, on an ongoing basis and under stressed conditions, that it is able to avoid forced sales of each equity investments within the sub-set for at least 10 years;
h the risk management, asset-liability management and investment policies of the insurance or reinsurance undertaking reflects the undertaking's intention to hold the sub-set of equity investments for a period that is compatible with the requirement of point (e) and its ability to meet the requirement of point (g).
Where equities are held within collective investment undertakings or within alternative investment funds referred to in points (a) to (d) of Article 168(6), the conditions set out in paragraph 1 of this Article may be assessed at the level of the funds and not of the underlying assets held within those funds. investments as long-term equity investments in accordance with paragraph 1 shall not revert back to an approach that does not include long-term equity investments. Where an insurance or reinsurance undertaking that treats a sub-set of equity investments as long-term equity investments is no longer able to comply with the conditions set out in paragraph 1, it shall immediately inform the supervisory authority and shall cease to apply Article $169(1)$ (b), (2)(b), (3)(b) and (4)(b) to any of its equity investments for a period of 36 months.;
in Article 176, the following paragraph 4 a is inserted:
Notwithstanding paragraph 4 , bonds and loans that are assigned to a credit quality step in accordance with paragraph 1 or 2 of Article 176a or paragraph 1 of Article 176 c shall be assigned a risk factor stress $_{i}$ depending on the credit quality step and the modified duration $d u r_{i}$ of the bond or loan $i$ assigned in accordance with the table set out in paragraph 3 of this Article.;
the following Articles 176a to 176c are inserted:

## Article 176a

## Internal assessment of credit quality steps of bonds and loans

 and for which debtors have not posted collateral that meets the criteria set out in Article 214 may be assigned to credit quality step 2 if all of the criteria set out in paragraphs 3 and 4 are met with respect to the bond or loan.A bond or loan for which a credit assessment by a nominated ECAI is not available and for which debtors have not posted collateral that meets the criteria set out in Article 214, other than a bond or loan assigned to credit quality step 2 under paragraph 1 , may be assigned to credit quality step 3 if all of the criteria set out in paragraphs 3 and 5 are met with respect to the bond or loan.

The criteria in this paragraph are as follows:
a) the insurance or reinsurance undertaking's own internal credit assessment of the bond or loan meets the requirements listed in Article 176b;
b) the bond or loan is issued by a company which does not belong to the same corporate group as the insurance or reinsurance undertaking;

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c) the bond or loan is not issued by a company which is an insurance or reinsurance undertaking, an infrastructure entity, a credit institution, an investment firm, a financial institution, an AIFM, a UCITS investment management company, an institution for occupational retirement provision or a non-regulated undertaking carrying out financial activities;
d) no claims on the issuing company of the bond or loan rank senior to the bond or loan, except for the following claims:
(i) statutory claims and claims from liquidity facility providers provided that those statutory claims and claims from liquidity facility providers are in aggregate not material relative to the overall senior debt of the issuing company;
(ii) claims from trustees;
(iii) claims from derivatives counterparties;
e) the bond or loan provides a fixed redemption payment on or before the date of maturity, in addition to regular fixed or floating rate interest payments;
f) the contractual terms and conditions of the bond or loan provide for the following:
(i) the borrower is obliged to provide audited financial data to the lender at least annually;
(ii) the borrower is obliged to notify the lender of any events that could materially affect the credit risk of the bond or loan;
(iii) the borrower is not entitled to change the terms and conditions of the bond or loan unilaterally, nor to make other changes to its business that would materially affect the credit risk of the bond or loan;
(iv) the issuer is prohibited from issuing new debt without the prior agreement of the insurance or reinsurance undertaking;
(v) what constitutes a default event is defined in a way that is specific to the issue and the issuer;
(vi) what is to happen on a change of control;
g) the bond or loan is issued by a company that meets all of the following criteria:
(i) the company is a limited liability company;
(ii) the company has its head office in a country which is a member of the EEA;
(iii) more than $50 \%$ of the annual revenue of the company is denominated in currencies of countries which are members of the EEA or the OECD;
(iv) the company has operated without any credit event over at least the last 10 years;
(v) at least one of the following conditions is fulfilled with respect to each of the last three financial years ending prior to the date on which the Solvency Capital Requirement is being calculated:

- the annual turnover of the company exceeds EUR 10000 000 ;
- the balance sheet total of the company exceeds EUR 10 000 000;
- the number of staff employed by the company exceeds 50 ;
(vi) the sum of the company's annual earnings before interest, tax, depreciation and amortisation ("EBITDA") over the last five financial years is larger than 0 ;
(vii) the total debt of the company at the end of the most recent financial year for which figures are available is no higher than 6,5 times the average of the company's annual free cash flows over the last five financial years;
(viii) the average of the company's EBITDA over the last five financial years is no lower than 6,5 times the company's interest expense for the most recent financial year for which figures are available;
(ix) the net debt of the company at the end of the most recent financial year for which figures are available is no higher than 1,5 times the company's total equity at the end of that financial year.

The yield on the bond or loan, and the yield on any bonds and loans with similar contractual terms and conditions issued by the same company in the previous three financial years, is no higher than the higher of the following values:
a) the average of the yields on the two indices determined in accordance with paragraph 6;
b) the sum of $0,5 \%$ and the yield on the index that meets the requirement in point (d) of that paragraph.

The yield on the bond or loan, and the yield on bonds and loans with similar contractual terms and conditions issued by the same company in the previous three financial years, is no higher than the higher of the following values:
a) the average of the yields on the two indices determined in accordance with paragraph 7;
b) the sum of $0,5 \%$ and the yield on the index that meets the requirement in point (b) of that paragraph.

For the purposes of paragraph 4, the insurance or reinsurance undertaking shall determine, for the bond or loan referred to in paragraph 1, the yield, as at the time of issuance of that bond or loan, on two indices that meet all of the following requirements:
a) both indices are broad indexes of traded bonds for which an external credit assessment is available;
b) the constituent traded bonds in the two indices are denominated in the same currency as the bond or loan;
c) the constituent traded bonds in the two indices have a similar maturity date as the bond or loan;
d) one of the two indices consists of traded bonds of credit quality step 2 ;
e) one of the two indices consists of traded bonds of credit quality step 4.

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a) both indices meet the requirements set out in points (a), (b) and (c) of paragraph 6;
b) one of the two indices consists of traded bonds of credit quality step 3 ;
c) one of the two indices consists of traded bonds of credit quality step 4.

For the purposes of paragraph 4 , where the bond or loan referred to in paragraph 1 has features, other than those related to credit risk or illiquidity, which materially differ from the features of the constituent traded bonds in the two indices determined in accordance with paragraph 6 , the insurance or reinsurance undertaking shall adjust the yield on the bond or loan to reflect those differences.

For the purposes of paragraph 5 , where the bond or loan referred to in paragraph 2 has features, other than those related to credit risk or illiquidity, which materially differ from the features of the constituent traded bonds in the two indices determined in accordance with paragraph 7 , the insurance or reinsurance undertaking shall adjust the yield on the bond or loan to reflect those differences.

## Article $176 b$

## Requirements for an undertaking's own internal credit assessment of bonds and loans

The requirements to be met for the purposes of point (a) of Article 176a(3) by an insurance or reinsurance undertaking's own internal credit assessment of a bond or loan shall be as follows:
(b) the bond or loan is allocated a credit quality step on the basis of the own internal credit assessment;
(c) the insurance or reinsurance undertaking is able to demonstrate to the supervisory authority's satisfaction that the own internal credit assessment, and the allocation of a credit quality step to the bond or loan on the basis of that assessment, are reliable and properly reflect the spread risk of the bond or loan contained in the sub-module specified in point (d) of the second subparagraph of Article 105(5) of Directive 2009/138/EC;
(d) the own internal credit assessment takes into account all factors which could have a material effect on the credit risk associated with the bond or loan, including the following factors:
(i) the competitive position of the issuer;
(ii) the quality of the issuer's management;
(iii) the financial policies of the issuer;
(iv) country risk;
(v) the effect of any covenants that are in place;
(vi) the issuer's financial performance history, including the number of years that it has been operating;
(vii) the issuer's size and the level of diversity in its activities;
(viii) the quantitative impact on the issuer's risk profile and financial ratios of its having issued the bond or loan;
(ix) the issuer's ownership structure;
(x) the complexity of the issuer's business model;
(e) the own internal credit assessment uses all relevant quantitative and qualitative information;
(f) the own internal credit assessment, the allocation of a credit quality step on the basis of that assessment and the information used to support the own internal credit assessment is documented;
(g) the own internal credit assessment takes into account the characteristics of comparable assets for which a credit assessment by a nominated ECAI is available;
(h) the own internal credit assessment takes into account trends in the issuer's financial performance;
(i) the own internal credit assessment is procedurally independent from the decision to underwrite;
(j) the insurance or reinsurance undertaking regularly reviews the own internal credit assessment.

## Article 176c

## Assessment of credit quality steps of bonds and loans based on an approved internal model

This Article shall apply in the following circumstances:
a) an insurance or reinsurance undertaking has concluded an agreement ("coinvestment agreement") to invest in bonds and loans jointly with another entity;
b) that other entity ("the co-investor") is one or other of the following:
(i) an institution as defined in point (3) of Article 4(1) of Regulation (EU) No 575/2013 which uses the Internal Ratings Based Approach referred to in Article 143(1) of that Regulation;
(ii) an insurance or reinsurance undertaking which uses an internal model in accordance with Article 100 of Directive 2009/138/EC;
c) pursuant to the co-investment agreement, the insurance or reinsurance undertaking and the co-investor invest jointly in bonds and loans for which a credit assessment by a nominated ECAI is not available and for which debtors have not posted collateral that meets the criteria set out in Article 214;
d) the co-investment agreement provides that the co-investor shares with the insurance or reinsurance undertaking the probabilities of default produced by

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its Internal Ratings Based Approach or, as applicable, the credit quality steps produced by its internal model for the bonds or loans referred to in point (c) for the purpose of using that information for the calculation of the Solvency Capital Requirement of the insurance or reinsurance undertaking.

If all of the criteria set out in paragraphs 3 to 6 are met, the bonds and loans referred to in point (c) of paragraph 1 shall be assigned to credit quality steps determined as follows:
a) in a case where the co-investor falls within point (i) of paragraph 1(b), credit quality steps shall be determined on the basis of the most recent probabilities of default that the Internal Ratings Based Approach has produced;
b) in a case where the co-investor falls within point (ii) of paragraph 1(b), credit quality steps shall be the credit quality steps produced by the internal model.
The criteria in this paragraph are as follows:
a) the issuer of each bond or loan does not belong to the same corporate group as the insurance or reinsurance undertaking;
b) the issuer is not an insurance or reinsurance undertaking, an infrastructure entity, a credit institution, an investment firm, a financial institution, an AIFM, a UCITS investment management company, an institution for occupational retirement provision or a non-regulated undertaking carrying out financial activities;
c) the issuer has its head office in a country which is a member of the EEA;
d) more than $50 \%$ of the issuer's annual revenue is denominated in currencies of countries which are members of the EEA or the OECD;
e) at least one of the following conditions is met for each of the last three financial years ending prior to the date on which the Solvency Capital Requirement is being calculated:

- the annual turnover of the issuer exceeds EUR 10000 000;
- the balance sheet total of the issuer exceeds EUR 10000 000;
- the number of staff employed by the issuer exceeds 50 .

The criteria in this paragraph are as follows:
a) the co-investment agreement defines the types of bonds and loans to be underwritten, and the applicable assessment criteria;
b) the co-investor provides the insurance or reinsurance undertaking with sufficient details of the underwriting process, including the criteria used, the organisational structure of the co-investor and the controls conducted by the co-investor;
c) the co-investor provides the insurance or reinsurance undertaking with data on all applications for bonds and loans to be underwritten;
d) the co-investor provides the insurance or reinsurance undertaking with details of all decisions to approve or reject applications for bonds and loans to be underwritten;
e) the co-investor retains an exposure of at least $20 \%$ of the nominal value of each bond and loan;
f) the underwriting process is the same as the underwriting process followed by the co-investor for its other investments in comparable bonds and loans;
g) the insurance or reinsurance undertaking invests in all bonds and loans of the types referred to in point (a) for which the co-investor decides to approve the bond or loan application;
h) the co-investor provides the insurance or reinsurance undertaking with information that allows the undertaking to understand the Internal Ratings Based Approach or, as applicable, internal model and its limitations, as well as its adequacy and appropriateness, in particular:
(i) a description of the Internal Ratings Based Approach or, as applicable, internal model, including the inputs and risk factors, the quantification of risk parameters and the underlying methods, and the general methodology applied;
(ii) a description of the scope of the use of the Internal Ratings Based Approach or, as applicable, internal model;
(iii) a description of the model validation process and of other processes which allow the model's performance to be monitored, the appropriateness of its specification to be reviewed over time, and the results of the Internal Ratings Based Approach or, as applicable, internal model to be tested against experience.

In a case where the co-investor falls within point (i) of paragraph 1(b):
a) the insurance or reinsurance undertaking clearly documents to which credit quality step the probability of default produced by the institution's Internal Ratings Based Approach corresponds;
b) the mapping of probabilities of default to credit quality steps carried out by the insurance or reinsurance undertaking ensures that, for the bond or loan in question, the resulting level of capital requirement for the spread risk submodule referred to in point (d) of the second subparagraph of Article 105(5) of Directive 2009/138/EC is appropriate;
c) the mapping is based on Table 1 in Annex I to Commission Implementing Regulation (EU) 2016/1799 ${ }^{(8)}$;
d) adjustments are made in a prudent manner to the probabilities of default before the mapping is carried out, taking into account the qualitative factors set out in Article 7 of Implementing Regulation (EU) 2016/1799;
e) an adjustment to the probabilities of default is made in either of the following situations:
(i) the time horizon covered by the Internal Ratings Based Approach deviates significantly from the 3-year time horizon set out in Article 4(2) of Implementing Regulation (EU) 2016/1799;
(ii) the definition of default used in the Internal Ratings Based Approach deviates significantly from the one set out in Article 4(4) of that Implementing Regulation. capital requirement for the spread risk sub-module referred to in point (d) of the second subparagraph of Article 105(5) of Directive 2009/138/EC is appropriate.;

Article 180 is amended as follows:
(a) in paragraph 2, the following subparagraph is added:

For the purposes of point (b) of the first subparagraph, exposures in the form of bonds and loans that are fully, unconditionally and irrevocably

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guaranteed by regional governments and local authorities listed in Article 1 of Commission Implementing Regulation (EU) 2015/2011 ${ }^{(9)}$, where the guarantee meets the requirements set out in Article 215 of this Regulation, shall be treated as exposures to the central government.;
(b) the following paragraphs 3 a and 3 b are inserted:

3a. Exposures in the form of bonds and loans to Member States' regional governments and local authorities not listed in Article 1 of Implementing Regulation (EU) 2015/2011 (*) shall be assigned a risk factor $\operatorname{stress}_{i}$ from the table in paragraph 3 corresponding to credit quality step 2.

3b Exposures in the form of bonds and loans that are fully, unconditionally and irrevocably guaranteed by a Member State's regional government or local authority that are not listed in Article 1 of Implementing Regulation (EU) 2015/2011, where the guarantee meets the requirements set out in Article 215 of this Regulation, shall be assigned a risk factor stress $i$ from the table in paragraph 3 corresponding to credit quality step 2 .;

Article 182 is amended as follows:
(a) in paragraph 5, the last sentence is deleted;
(b) the following paragraphs 6 to 11 are added:
6. For the purposes of paragraph 4, exposures to an insurance or reinsurance undertaking for which a credit assessment by a nominated ECAI is not available and where the undertaking meets its Minimum Capital Requirement shall be assigned to a credit quality step depending on the undertaking's solvency ratio using the following mapping between solvency ratios and credit quality steps:

| Solvency <br> Ratio | $\mathbf{1 9 6} \%$ | $\mathbf{1 7 5} \%$ | $\mathbf{1 2 2} \%$ | $\mathbf{1 0 0} \%$ | $\mathbf{9 5} \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Credit <br> quality step | 1 | 2 | 3 | 3,82 | 5 |

Where the solvency ratio falls in between the solvency ratios set out in the table above, the credit quality step shall be linearly interpolated from the closest credit quality steps corresponding to the closest solvency ratios set out in the table above. Where the solvency ratio is lower than $95 \%$, the credit quality step shall be 5 . Where the solvency ratio is higher than $196 \%$, the credit quality step shall be 1 .

For the purposes of this paragraph, "solvency ratio" denotes the ratio of the eligible amount of own funds to cover the Solvency Capital Requirement and the Solvency Capital Requirement, using the latest available values.

7 For the purposes of paragraph 4, exposures to an insurance or reinsurance undertaking for which a credit assessment by a nominated ECAI is not available and where the undertaking does not meet its Minimum Capital Requirement shall be assigned to credit quality step 6.
$8 \quad$ Paragraphs 6 and 7 of this Article shall only apply as of the first date of public disclosure, by the undertaking corresponding to the exposure,
of the report on its solvency and financial condition referred to in Article 51 of Directive 2009/138/EC. Before that date, the exposures shall be assigned to credit quality step 3,82 .
$9 \quad$ For the purposes of paragraph 4, exposures to a third country insurance or reinsurance undertaking for which a credit assessment by a nominated ECAI is not available, situated in a country whose solvency regime is deemed equivalent to that laid down in Directive 2009/138/EC in accordance with Article 227 of that Directive, and which complies with the solvency requirements of that third country, shall be assigned to credit quality step 3,82 .

10 For the purposes of paragraph 4, exposures to credit institutions and financial institutions, within the meaning of points (1) and (26) of Article 4(1) of Regulation (EU) No 575/2013 which comply with the solvency requirements set out in Directive 2013/36/EU and Regulation (EU) No $575 / 2013$, for which a credit assessment by a nominated ECAI is not available, shall be assigned to credit quality step 3,82 .

11 Exposures other than those to which a credit quality step is assigned under paragraphs 5 to 10 shall, for the purpose of paragraph 4 , be assigned to credit quality step 5 .;
in Article 184, paragraph 3 is replaced by the following:
The exposure at default on a single name exposure $i$ shall be reduced by the amount of the exposure at default to counterparties belonging to that single name exposure and for which the risk factor for market risk concentration referred to in Articles 186 and 187 is $0 \%$.;
in Article 186, paragraphs 2 to 6 are deleted;
Article 187 is amended as follows:
(a) in paragraph 3, the following subparagraph is added:

For the purposes of point (b), exposures that are fully, unconditionally and irrevocably guaranteed by regional governments and local authorities listed in Article 1 of Implementing Regulation (EU) 2015/2011, where the guarantee meets the requirements set out in Article 215 of this Regulation, shall be treated as exposures to the central government.;
(b) the following paragraphs 4 a and 4 b are inserted:

4a. Exposures to Member States' regional governments and local authorities not listed in Article 1 of Implementing Regulation (EU) 2015/2011 shall be assigned a risk factor $g_{i}$ for market risk concentration corresponding to weighted average credit quality step 2 in accordance with paragraph 4.

4b Exposures that are fully, unconditionally and irrevocably guaranteed by a Member State's regional government or local authority that is not listed in Article 1 of Implementing Regulation (EU) 2015/2011, where the guarantee meets the requirements set out in Article 215 of this Regulation, shall be assigned a risk factor $g_{i}$ for market risk concentration corresponding to weighted average credit quality step 2 in accordance with paragraph 4.;

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Article 189 is amended as follows:
(a) paragraph 2 is amended as follows:
(i) point (a) is replaced by the following:
(a) Risk-mitigation contracts including reinsurance arrangements, special purpose vehicles and insurance securitisations;;
(ii) the following point (f) is added:
(f) derivatives other than credit derivatives covered in the spread risk sub-module.;
(b) in paragraph 6, the following point (e) is added:
(e) the credit risk on assets posted as collateral to a CCP or a clearing member that are bankruptcy remote.;

Article 192 is amended as follows:
(a) in paragraph 1 , the following subparagraph is added:

Where insurance and reinsurance undertakings have concluded contractual netting agreements covering several derivatives that represent credit exposure to the same counterparty, they may calculate the loss-given-default on those derivatives, as set out in paragraphs 3 to 3 c , on the basis of the combined economic effect of all of those derivatives that are covered by the same contractual netting agreement, provided that Articles 209 and 210 are complied with in relation to the netting.;
(b) paragraph 3 is replaced by the following:
3. The loss-given-default on a derivative falling within Article 192a(1) shall be equal to the following:
$L G D=\max \left(18 \% \cdot\left(\right.\right.$ Derivative $\left.+50 \% \cdot R M_{f i n}\right)-50 \% \cdot F^{\prime} \cdot$ Value; $0)$
where:
(a) Derivative denotes the value of the derivative determined in accordance with Article 75 of Directive 2009/138/EC;
(b) $\quad R M_{f i n}$ denotes the risk-mitigating effect on market risk of the derivative;
(c) Value denotes the value of the assets held as collateral determined in accordance with Article 75 of Directive 2009/138/EC;
(d) $\quad F^{\prime}$ denotes a factor to take into account the economic effect of the collateral arrangement in relation to the derivative in case of a credit event related to the counterparty.;
(c) the following paragraphs 3a to 3d are inserted:

3a. Notwithstanding paragraph 3, the loss-given-default on a derivative falling within Article 192a(2) shall be equal to the following:

$$
L G D=\max \left(16 \% \cdot\left(\text { Derivative }+50 \% \cdot R M_{f i n}\right)-50 \% \cdot F^{\prime \prime}\right.
$$

Value; 0)
where:
(a) Derivative denotes the value of the derivative in accordance with Article 75 of Directive 2009/138/EC;
(b) $\quad R M_{f i n}$ denotes the risk-mitigating effect on market risk of the derivative;
(c) Value denotes the value of the assets held as collateral in accordance with Article 75 of Directive 2009/138/EC;
(d) $\quad F^{\prime \prime}$ denotes a factor to take into account the economic effect of the collateral arrangement in relation to the derivative in case of a credit event related to the counterparty.

3b The loss-given-default on derivatives other than those referred to in paragraphs 3 and 3 a shall be equal to the following, provided that the derivative contract meets the requirements of Article 11 of Regulation (EU) 648/2012:
$L G D=\max \left(90 \% \cdot\left(\right.\right.$ Derivative $\left.+50 \% \cdot R M_{\text {fin }}\right)-50 \% \cdot F^{\prime \prime \prime}$. Value; 0)
where:
(a) Derivative denotes the value of the derivative determined in accordance with Article 75 of Directive 2009/138/EC;
(b) $\quad R M_{\text {fin }}$ denotes the risk-mitigating effect on market risk of the derivative;
(c) Value denotes the value of the assets held as collateral determined in accordance with Article 75 of Directive 2009/138/EC;
(d) $\quad F^{\prime \prime \prime}$ denotes a factor to take into account the economic effect of the collateral arrangement in relation to the derivative in case of a credit event related to the counterparty.

3c The loss-given-default on derivatives not covered by paragraphs 3, 3 a and 3 b shall be equal to the following:

$$
L G D=\max \left(90 \% \cdot\left(\text { Derivative }+R M_{f i n}\right)-F^{\prime \prime \prime} \cdot \text { Collateral; } 0\right)
$$

where:
(a) Derivative denotes the value of the derivative determined in accordance with Article 75 of Directive 2009/138/EC;
(b) $\quad R M_{f i n}$ denotes risk-mitigating effect on market risk of the derivative;
(c) Collateral denotes the risk-adjusted value of collateral in relation to the derivative;
(d) $\quad F^{\prime \prime \prime}$ denotes a factor to take into account the economic effect of the collateral arrangement in relation to the derivative in case of a credit event related to the counterparty.

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3d Where the loss-given-default on derivatives is to be calculated on the basis referred to in the second subparagraph of paragraph 1, the following rules shall apply for the purposes of paragraphs 3 to 3 c :
a the value of the derivative shall be the sum of the values of the derivatives covered by the contractual netting arrangement;
$b$ the risk-mitigating effect shall be determined at the level of the combination of derivatives covered by the contractual netting arrangement;
c the risk-adjusted value of collateral shall be determined at the level of the combination of derivatives covered by the contractual netting arrangement.;
(d) paragraph 4 is replaced by the following:
4. The loss-given-default on a mortgage loan shall be equal to the following:

$$
L G D=\max (\text { Loan }-(80 \% \times \text { Mortgage }+ \text { Guarantee }) ; 0)
$$

where:
a) Loan denotes the value of the mortgage loan determined in accordance with Article 75 of Directive 2009/138/EC;
b) Mortgage denotes the risk-adjusted value of the mortgage;
c) Guarantee denotes the amount that the guarantor would be required to pay to the insurance or reinsurance undertaking if the obligor of the mortgage loan were to default at a time when the value of the property held as mortgage were equal to $80 \%$ of the risk-adjusted value of the mortgage.

For the purposes of point (c), a guarantee shall be recognised only if it is provided by a counterparty mentioned in points (a) to (d) of the first subparagraph of Article 180(2) and it complies with the requirements set out in Articles 209, 210 and points (a) to (e) of Article 215.;
the following Article 192a is inserted:

Article 192a

## Exposure to clearing members

For the purposes of Article 192(3), a derivative falls within this paragraph if the following requirements are met:
a the derivative is a CCP-related transaction in which the insurance or reinsurance undertaking is the client;
b the positions and assets of the insurance or reinsurance undertaking related to that transaction are distinguished and segregated, at the level of both the clearing member and the CCP, from the positions and assets of both the clearing member and the other clients of that clearing member and as a result of that distinction and segregation those positions and assets are bankruptcy remote in the event of the default or insolvency of the clearing member or one or more of its other clients;
c the laws, regulations, rules and contractual arrangements applicable to or binding the insurance or reinsurance undertaking or the CCP facilitate the transfer of the client's positions relating to that transaction and of the corresponding collateral to another clearing member within the applicable margin period of risk in the event of default or insolvency of the original clearing member. In such circumstance, the client's positions and the collateral shall be transferred at market value, unless the client requests to close out the position at market value;
d the insurance or reinsurance undertaking has available an independent, written and reasoned legal opinion that concludes that, in the event of legal challenge, the relevant courts and administrative authorities would find that the client would bear no losses on account of the insolvency of the clearing member or of any the clients of that clearing member under any of the following laws:
(i) the laws of the jurisdiction of the insurance or reinsurance undertaking, its clearing member or the CCP;
(ii) the law governing the transaction;
(iii) the law governing the collateral;
(iv) the law governing any contract or agreement necessary to meet the requirement set out in point (b);
e the CCP is a qualifying central counterparty.
For the purposes of Article 192(3a), a derivative falls within this paragraph if the requirements set out in paragraph 1 are met, with the exception that the insurance or reinsurance undertaking is not required to be protected from losses in the event that the clearing member and another client of the clearing member jointly default.;

Article 196 is replaced by the following:

Article 196

## Risk-mitigating effect

The risk-mitigating effect on underwriting or market risks of a reinsurance arrangement, securitisation or derivative shall be the larger of zero and the difference between the following capital requirements:
(a) the hypothetical capital requirement for underwriting or market risk of the insurance or reinsurance undertaking, calculated in accordance with Sections 1 to 5 of this Chapter, that would apply if the reinsurance arrangement, securitisation or derivative did not exist;
(b) the capital requirement for underwriting or market risk of the insurance or reinsurance undertaking.;

Article 197 is amended as follows:
(a) in paragraph 1 , the first sentence is replaced by the following:

Where the criteria set out in Article 214 of this Regulation are met, the risk-adjusted value of collateral provided by way of security, as referred to in point (b) of Article 1(26), shall be equal to the difference between the

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value of the assets held as collateral, valued in accordance with Article 75 of Directive 2009/138/EC, and the adjustment for market risk, as referred to in paragraph 5 of this Article, provided that both of the following requirements are fulfilled:;
(b) paragraph 7 is replaced by the following:
7. Where, in case of insolvency of the counterparty, the determination of the insurance or reinsurance undertaking's proportional share of the counterparty's insolvency estate in excess of the collateral does not take into account that the undertaking receives the collateral, the factors $F, F^{\prime}, F^{\prime \prime}$ and $F^{\prime \prime \prime}$ referred to in Article 192(2) to (3c) shall all be $100 \%$. In all other cases these factors shall be $50 \%, 18 \% 16 \%$ and $90 \%$ respectively.;
in Article 199, the following paragraphs 12 and 13 are added:
Notwithstanding paragraphs 2 to 11, exposures referred to Article 192(3) shall be assigned a probability of default equal to $0,002 \%$.

Notwithstanding paragraphs 2 to 12, exposures referred to Article 192(3a) shall be assigned a probability of default equal to $0,001 \%$;;
in Article 201(2), point (a) is replaced by the following:
(a) the sum covers all possible combinations ( $j, k$ ) of probabilities of default on single name exposures in accordance with Article 199;;

Article 207 is amended as follows:
(a) paragraph 2 is replaced by the following:
2. For the purposes of paragraph 1, deferred taxes shall be valued in accordance with Article 15(1) and (2), without prejudice to paragraphs 2a, 2 b and 2c of this Article.;
(b) the following paragraphs 2 a to 2 d are inserted:

2a. Where the loss referred to in paragraph 1 would result in an increase in the amount of deferred tax assets, insurance and reinsurance undertakings shall not utilise that increase for the purposes of the adjustment referred to in that paragraph unless they are able to demonstrate to the satisfaction of the supervisory authority that it is probable that future taxable profit will be available against which that increase can be utilised, taking into account all of the following:
a any legal or regulatory requirements on the time limits relating to the carry-forward of unused tax losses or the carry-forward of unused tax credits;
b the magnitude of the loss referred to in paragraph 1 and its impact on the undertaking's current and future financial situation and on insurance product pricing, market profitability, insurance demand, reinsurance coverage and other macro-economic variables;
c the increased uncertainty in future profit following the loss referred to in paragraph 1 , as well as the increasing degree of uncertainty relating to future taxable profit following that loss, as the projection horizon becomes longer.

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2b
For the purposes of demonstrating that it is probable that future taxable profit will be available, insurance and reinsurance undertakings shall not apply assumptions that are more favourable than those used for the valuation and utilisation of deferred tax assets in accordance with Article 15.

2c For the purposes of demonstrating that it is probable that future taxable profit will be available, the assumptions applied by insurance and reinsurance undertakings shall meet the following conditions:
a new business sales in excess of those projected for the purposes of the insurance or reinsurance undertaking's business planning shall not be assumed;
b new business sales beyond the horizon of the insurance or reinsurance undertaking's business planning and beyond a maximum of five years shall not be assumed;
c the rates of return on the insurance or reinsurance undertaking's investments following the loss referred to in paragraph 1 shall be assumed to be equal to the implicit returns of the forward rates derived from the relevant risk-free interest rate term structure obtained after that loss, unless the insurance or reinsurance undertaking is able to provide credible evidence of likely returns in excess of those implicit returns;
d where, without prejudice to point (a), the insurance or reinsurance undertaking sets a projection horizon for profits from new business that is longer than the horizon of its business planning, a finite projection horizon shall be set and appropriate haircuts shall be applied to the profits from new business projected beyond the horizon of the undertaking's business planning. Such haircuts shall be assumed to increase the further into the future the profits are projected.

2d Insurance and reinsurance undertakings may assume the implementation of future management actions following the loss referred to in paragraph 1, provided that the provisions laid down in Article 23 are complied with.;
in Article 208, paragraph 2 is replaced by the following:
Where insurance or reinsurance undertakings transfer underwriting risks using finite reinsurance contracts, as defined in Article 210(3) of Directive 2009/138/ EC, that meet the requirements set out in Articles 209, 211 and 213 of this Regulation, those contracts shall be recognised in the scenario based calculations set out in Title I, Chapter V, Sections 2, 3 and 4 of this Regulation only to the extent underwriting risk is transferred to the counterparty of the contract. Notwithstanding the previous sentence, finite reinsurance, or similar arrangements where the effective risk transfer is comparable to that of finite reinsurance, shall not be taken into account for the purposes of determining the volume measures for premium and reserve risk in accordance with in Articles 116 and 147 of this Regulation, or for the purposes of calculating undertaking-specific parameters in accordance with Section 13 of this Chapter.;
in Article 209, paragraph 3 is replaced by the following:
Where contractual arrangements governing the risk-mitigation techniques will be in force for a period shorter than the next 12 months and the insurance or

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reinsurance undertaking intends to replace that risk-mitigation technique at the time of its expiry with a similar arrangement or where that risk-mitigation technique is subject to an adjustment to reflect changes in the exposure that it covers, the risk-mitigation technique shall be fully taken into account in the Basic Solvency Capital Requirement provided all of the following qualitative criteria are met:
a the insurance or reinsurance undertaking has a written policy on the replacement or adjustment of that risk-mitigation technique, covering situations including the situation where the insurance or reinsurance undertaking uses several contractual arrangements in combination to transfer risk as referred to in Article 210(5);
$b$ the replacement or adjustment of the risk-mitigation technique takes place more often than once per week only in cases where, without the replacement or adjustment, an event would have a material adverse impact on the solvency position of the insurance or reinsurance undertaking;
c the replacement or adjustment of the risk-mitigation technique is not conditional on any future event which is outside of the control of the insurance or reinsurance undertaking and where the replacement or adjustment of the risk-mitigation technique is conditional on any future event that is within the control of the insurance or reinsurance undertaking, the conditions for such replacement or adjustment are clearly documented in the written policy referred to in point (a);
d the replacement or adjustment of the risk-mitigation technique is realistically based on replacements and adjustments undertaken previously by the insurance or reinsurance undertaking and consistent with the undertaking's current business practice and business strategy;
e there is no material risk that the risk-mitigation technique cannot be replaced or adjusted due to an absence of liquidity in the market;
f the risk that the cost of replacing or adjusting the risk-mitigation technique increases during the following 12 months is reflected in the Solvency Capital Requirement;
$g$ the replacement or adjustment of the risk-mitigation technique would not be contrary to requirements that apply to future management actions set out in Article 23(5);
$h$ the initial contractual maturity is not shorter than one month in cases where the insurance or reinsurance undertaking transfers risks through the purchase or issuance of financial instruments;
i the initial contractual maturity is not shorter than three months where the insurance or reinsurance undertaking transfers underwriting risks using reinsurance contracts or special purpose vehicles.;
in Article 210, the following paragraph 5 is added:

Where an insurance or reinsurance undertaking combines several contractual arrangements to transfer risk, each of the contractual arrangements shall meet the requirements set out in paragraphs 1 and 4 and the contractual arrangements in combination shall meet the requirements set out in paragraphs 2 and 3.;

Article 211 is amended as follows:
(a) in paragraph 2 , point (c) is replaced by the following:
(c) a third country insurance or reinsurance undertaking that is not situated in a country whose solvency regime is deemed equivalent
or temporarily equivalent in accordance with Article 172 of Directive 2009/138/EC that has been assigned to credit quality step 3 or better in accordance with Section 2 of Chapter I of this Title.;
(b) paragraph 3 is replaced by the following:
3. Where a counterparty to a reinsurance contract is an insurance or reinsurance undertaking which ceases to comply with the Solvency Capital Requirement after the reinsurance contract has been entered into, the protection offered by the insurance risk-mitigation technique may be partially recognised for a period of no longer than six months after the counterparty ceases to comply with the Solvency Capital Requirement. In that case, the effect of the risk-mitigation technique shall be reduced by the percentage by which the Solvency Capital Requirement is breached. As soon as the counterparty has restored compliance with the Solvency Capital Requirement, the effect of the risk-mitigation technique shall no longer be reduced. Where the counterparty fails to restore compliance with the Solvency Capital Requirement within that period of six months, the effect of the risk-mitigation technique shall no longer be recognised. Where, before the end of the period of six months, the insurance or reinsurance undertaking becomes aware that it is unlikely that the counterparty will be able to restore compliance with the Solvency Capital Requirement within that period, the insurance or reinsurance undertaking shall no longer recognise the effect of the risk-mitigation technique in the Basic Solvency Capital Requirement.;
(c) the following paragraph 3 a is inserted:

3a. Notwithstanding paragraph 3, where a counterparty to a reinsurance contract is an insurance or reinsurance undertaking which ceases to comply with the Minimum Capital Requirement after the reinsurance contract has been entered into, the effect of the risk-mitigation technique shall no longer be recognised in the Basic Solvency Capital Requirement.;
in Article 212, paragraph 1 is replaced by the following:
Where insurance or reinsurance undertakings transfer risk, in order for the risk-mitigation technique to be taken into account in the Basic Solvency Capital Requirement, in other cases than in the cases referred to in Article 211(1), including transfers through the purchase or issuance of financial instruments, the qualitative criteria provided in paragraphs 2 to 5 shall be met, in addition to the qualitative criteria set out in Articles 209 and 210.;
in Article 213, paragraph 1 is replaced by the following:
In the event that the qualitative criteria in Article 211(1), or Article 212(4) or (5) are not met, insurance and reinsurance undertakings shall only take into account the risk-mitigation techniques when calculating the Basic Solvency Capital Requirement where one of the following criteria is met:
a the risk-mitigation technique meets the qualitative criteria set out in Articles 209, 210 and Article 212(2) and (3) and collateral arrangements exist that meet the criteria provided in Article 214;
b the risk-mitigation technique is accompanied by another risk-mitigation technique that, when viewed in combination with the first technique, meets the qualitative criteria set out in Articles 209 and 210 and Article 212(2) and (3),

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with the counterparties to that other technique meeting the criteria provided in Articles 211(1) and Article 212(4) and (5).;
Article 218 is amended as follows:
(a) the first subparagraph of paragraph 1 is amended as follows:
(i) point (iii) of point (a) is replaced by the following:
(iii) the adjustment factor for non-proportional reinsurance referred to in Article 117(3) of this Regulation, provided that there is a recognisable excess of loss reinsurance contract or a recognisable stop loss reinsurance contract for that segment as set out in paragraph 2 of this Article;;
(ii) point (iii) of point (c) is replaced by the following:
(iii) the adjustment factor for non-proportional reinsurance referred to in Article 148(3) of this Regulation, provided that there is a recognisable excess of loss reinsurance contract or a recognisable stop loss reinsurance contract for that segment as set out in paragraph 2 of this Article;;
(b) the first subparagraph of paragraph 2 is amended as follows:
(i) the introductory wording is replaced by the following:

An excess of loss reinsurance contract or a stop loss reinsurance contract for a segment shall be considered recognisable provided it meets the following conditions:;
(ii) point (a) is replaced by the following:
(a) where the contract is an excess of loss reinsurance contract, it provides for complete compensation up to a specified limit or without limit for losses of the ceding undertaking that relate either to single insurance claims, or to all insurance claims under the same policy during a specified time period, and that are larger than a specified retention;;
(iii) the following point (aa) is inserted:
(aa) where the contract is a stop loss reinsurance contract, it provides for complete compensation specified limit or without limit for aggregated losses of the ceding undertaking that relate to all insurance claims in the segment or homogeneous risk groups within the segment during a specified time period and that are larger than a specified retention;;
(c) the second subparagraph of paragraph 2 is replaced by the following:

For the purposes of this Article, "excess of loss reinsurance contract" shall also denote arrangements with special purpose vehicles that provide risk transfer which is equivalent to that of an excess of loss reinsurance contract, and "stop loss reinsurance contract" shall also
denote arrangements with special purpose vehicles that provide risk transfer which is equivalent to that of a stop loss reinsurance contract.;
(d)
paragraph 3 is replaced by the following:
3. Where an insurance or reinsurance undertaking has concluded several excess of loss reinsurance contracts, or several stop loss reinsurance contracts, that individually meet the requirement set out in point (d) of paragraph 2, and in combination meet the requirements set out in points (a), (b) and (c) of that paragraph, their combination shall be considered as one recognisable excess of loss reinsurance contract or, as applicable, one stop loss reinsurance contract.;
in Article 260(1), the following point (h) is added:
(h) Deferred taxes:
(i) actions related to the insurance or reinsurance undertaking's selection of
methods and assumptions to demonstrate the amount and recoverability of the loss-absorbing capacity of deferred taxes;
(ii) involvement of the relevant key functions in the selection and assessment of methods and assumptions to demonstrate the amount and recoverability of the loss-absorbing capacity of deferred taxes, how the outcome of that assessment is reported to the administrative, management or supervisory body, including the assessment of the underlying assumptions applied for the projection of future taxable profit for the purposes of Articles 15 and 207, and an explanation of any concerns about those assumptions, which shall be carried out in each case by either the actuarial function or the risk management function;
(iii) risks that the insurance or reinsurance undertaking is or could be exposed to, taking into account potential future changes in its risk profile due to its business strategy or the economic and financial environment, including operational risks and potential changes in its loss-absorbing capacity of deferred taxes. That assessment shall include the overall reliance of the solvency and financial condition on deferred taxes and its consistency with the risk management policy.;
in Article 220(1), point (c) is replaced by the following:
(c) where there is a recognisable excess of loss reinsurance contract, the nonproportional reinsurance method 1 , or, where there is a recognisable stop loss reinsurance contract, the non-proportional reinsurance method 2 for undertaking-specific parameters replacing the standard parameters referred to in Article 218(1)(a)(iii) and (c)(iii);;

Article 297 is amended as follows:
(a) in paragraph 1, the following point (i) is added:
(i) information regarding deferred taxes that shall contain as a minimum all of the following:
(i) a description of the calculated amount of deferred tax assets without assessing their probable utilisation, and the extent to which those deferred tax assets have been recognised;

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(ii) for deferred tax assets which have been recognised, a description of the assets likely to be utilised by reference to probable future taxable profit and by reference to the reversion of deferred tax liabilities relating to income taxes levied by the same taxation authority;
(iii) with regard to net deferred taxes assets calculated as the difference between the amount of deferred tax assets which has been recognised and the amount of deferred tax liabilities, all of the following information:

- confirmation that those net deferred tax assets are available as basic own-fund items classified as Tier 3 in accordance with Article 76(a)(iii);
- a description of the amount of those net deferred tax assets that are recognised as eligible own funds, applying the eligibility limits set out in Article 82;
- where the amount of deferred tax assets is material, a description of the underlying assumptions used for the projection of probable future taxable profit for the purposes of Article 15.;
(b) in paragraph 2, the following point (i) is added:
(i) information regarding the loss-absorbing capacity of deferred taxes that shall contain as a minimum all of the following:
(i) the amount with which the Solvency Capital Requirement has been adjusted for the loss-absorbing capacity of deferred taxes, and a description of the deferred tax liabilities, carry-back and probable future taxable profit used to demonstrate likely utilisation;
(ii) where the amount of deferred tax assets is material, a description of the underlying assumptions used for the projection of probable future taxable profit for the purposes of Article 207.;
(61) Article 311 is amended as follows:
(a) in paragraph 1, the following point (d) is added:
(d) information regarding deferred taxes that shall contain as a minimum all of the following:
(i) a description of the calculated amount of deferred tax assets without assessing their probable utilisation, and the extent to which those deferred tax assets have been recognised;
(ii) for the deferred tax assets which have been recognised, a description of the amounts being recognised as likely to be utilised by reference to probable future taxable profit and by reference to the reversion of deferred tax liabilities relating to income taxes levied by the same taxation authority;
(iii) a detailed description of the underlying assumptions used for the projection of probable future taxable profit for the purposes of Article 15;
(iv) an analysis of the sensitivity of the net deferred tax assets to changes in the underlying assumptions referred to in point (iii).;
(b) in paragraph 2 , the following point (d) is added:
(d) for the future profit projected for the purpose of the loss-absorbing capacity of deferred taxes in accordance with Article 207:
(i) a description, and the relevant amount of each of the components used to demonstrate a positive value of the increase in deferred tax assets;
(ii) a detailed description of the underlying assumptions used for the projection of probable future taxable profit for the purposes of Article 207;
(iii) an analysis of the sensitivity of the value of the adjustment to changes in the underlying assumptions referred to in point (ii).;
(62) in Article 326(4), point (d) is replaced by the following:
(d) the payments do not relate to expenses that are excluded from the aggregate maximum risk exposure as defined in point (44) of Article 1.;

Article 335(1) is amended as follows:
(a) point (e) is replaced by the following:
(e) the proportional share of the undertakings' own funds calculated in accordance with the relevant sectoral rules, as defined in Article 2(7) of Directive 2002/87/EC, in relation to holdings in related undertakings which are credit institutions, investment firms and financial institutions, alternative investment fund managers, UCITS management companies, and non-regulated undertakings carrying out financial activities, together with the proportional share of the undertakings' regulatory own funds, as referred to in Article 17 of Directive 2003/41/EC, in relation to holdings in related undertakings which are institutions for occupational retirement provision;
(b) point (f) is replaced by the following:
(f) in accordance with Article 13 of this Regulation, data of all related undertakings, including ancillary service undertakings, collective investment undertakings and investments packaged as funds, other than those referred to in points (a) to (e) of this paragraph.;
(64) Article 336 is amended as follows:
(a) point (a) is replaced by the following:
(a) a Solvency Capital Requirement calculated on the basis of consolidated data as referred to in points (a), (b) and (c) of Article 335(1), data of collective investment undertakings and investments packaged as funds which are subsidiaries of the parent undertaking, following the rules laid down in Title I, Chapter VI, Section 4 of Directive 2009/138/EC;

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(b) point (d) is replaced by the following:
(d) for undertakings referred to in Article 335(1)(f) of this Regulation, other than undertakings covered by point (e) of this paragraph, the amount determined in accordance with Article 13, Articles 168 to 171a, Articles 182 to 187 and Article 188 of this Regulation;;
(c) the following point (e) is added:
(e) for related collective investment undertakings or investments packaged as funds referred to in Article 335(1)(f) of this Regulation which are not subsidiaries of the participating insurance or reinsurance undertaking, and to which Article 84(1) of this Regulation is applied at solo level, the amount determined in accordance with Title I, Chapter V and Article 84(1) of this Regulation.;

Article 337 is replaced by the following:

Article 337

## Method 1: determination of the local currency for the purposes of the currency risk calculation

Where the consolidated group Solvency Capital Requirement is calculated, wholly or in part, on the basis of the standard formula, the local currency referred to in the first paragraph of Article 188 shall be the currency used for the preparation of the consolidated accounts.

Notwithstanding paragraph 1 , where a material amount of the consolidated technical provisions or the consolidated group own funds is denominated in a currency other than the one used for the preparation of the consolidated accounts, that currency may be considered as the local currency referred to in the first paragraph of Article 188.;

Annex II is replaced by the text in Annex I to this Regulation;
Annex III is amended in accordance with Annex II to this Regulation;
Annex V is replaced by the text in Annex III to this Regulation;
Annex VI amended in accordance with Annex IV to this Regulation;
Annex VII is amended in accordance with Annex V to this Regulation;
Annex VIII is replaced by the text in Annex VI to this Regulation;
Annex IX is amended in accordance with Annex VII to this Regulation;
Annex X is amended in accordance with Annex VIII to this Regulation;
Annex XIV is replaced by the text in Annex IX to this Regulation;
Annex XVI is amended in accordance with Annex X of this Regulation;
Annex XVII is amended in accordance with Annex XI to this Regulation;
(77) Annex XXI is amended in accordance with Annex XII to this Regulation;
(78) Annex XXII is amended in accordance with Annex XIII to this Regulation;
(79) Annex XXIII is amended in accordance with Annex XIV to this Regulation;
(80) Annex XXIV is amended in accordance with Annex XV to this Regulation;
(81) Annex XXV is amended in accordance with Annex XVI to this Regulation.

## Article 2

## Entry into force and application

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.
Points (50), (59) to (61), (66) and (74) of Article 1 shall apply from 1 January 2020.

This Regulation shall be binding in its entirety and directly applicable in all Member States.
Done at Brussels, 8 March 2019.

For the Commission<br>The President<br>Jean-Claude JUNCKER

## ANNEX I

ANNEX II

## SEGMENTATION OF NON-LIFE INSURANCE AND REINSURANCE OBLIGATIONS AND STANDARD DEVIATIONS FOR THE NON-LIFE PREMIUM AND RESERVE RISK SUB-MODULE

|  | Segment | Lines of business, as set out in Annex I, that the segment consists of | Standard deviation for gross premium risk of the segment | Standard deviation for reserve risk of the segment |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Motor vehicle liability insurance and proportional reinsurance | 4 and 16 | 10 \% | $9 \%$ |
| 2 | Other motor insurance and proportional reinsurance | 5 and 17 | 8 \% | 8 \% |
| 3 | Marine, aviation and transport insurance and proportional reinsurance | 6 and 18 | $15 \%$ | 11 \% |
| 4 | Fire and other damage to property insurance and proportional reinsurance | 7 and 19 | 8 \% | 10 \% |
| 5 | General liability insurance and proportional reinsurance | 8 and 20 | 14 \% | 11 \% |
| 6 | Credit and suretyship insurance and proportional reinsurance | 9 and 21 | 19 \% | 17,2 \% |
| 7 | Legal expenses insurance and proportional reinsurance | 10 and 22 | 8,3 \% | 5,5\% |

Status: This is the original version (as it was originally adopted).

| 8 | Assistance and <br> its proportional <br> reinsurance | 11 and 23 | $6,4 \%$ | $22 \%$ |
| :--- | :--- | :--- | :--- | :--- |
| 9 | Miscellaneous <br> financial loss <br> insurance and <br> proportional <br> reinsurance | 12 and 24 | $13 \%$ | $20 \%$ |
| 10 | Non- <br> proportional <br> casualty <br> reinsurance | 26 | $17 \%$ | $20 \%$ |
| 11 | Non- <br> proportional <br> marine, aviation <br> and transport <br> reinsurance | 27 | $17 \%$ | $20 \%$ |
| 12 | Non- <br> proportional <br> property <br> reinsurance | 28 | $17 \%$ | $20 \%$. |

## ANNEX II

Point 8 of Annex III is amended as follows:
(1) 'Puerto Rico' is deleted from the list of territories that region 16 (South-east United States of America) consists of;
(2) in the list of territories that region 16 (South-east United States of America) consists of, 'Georgia' is replaced by 'Georgia (US)'.

## ANNEX III

ANNEX PARAMETERS FOR THE WINDSTORM RISK SUB-MODULERegions and V windstorm risk factors

| Abbreviation of region <br> $\boldsymbol{r}$ | Region $\boldsymbol{r}$ | Windstorm risk factor <br> Q(windstorm, $\boldsymbol{r})$ |
| :--- | :--- | :--- |
| AT | Republic of Austria | $0,06 \%$ |
| BE | Kingdom of Belgium | $0,16 \%$ |
| CZ | Czech Republic | $0,04 \%$ |
| a $\quad$ Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion |  |  |


| CH | Swiss Confederation; Principality of Lichtenstein | 0,09 \% |
| :---: | :---: | :---: |
| DK | Kingdom of Denmark | 0,25 \% |
| FI | Republic of Finland | 0,04 \% |
| FR | French Republic ${ }^{a}$; <br> Principality of Monaco; <br> Principality of Andorra | 0,12 \% |
| DE | Federal Republic of Germany | 0,07 \% |
| HU | Republic of Hungary | 0,02 \% |
| IS | Republic of Iceland | 0,03 \% |
| IE | Ireland | 0,22 \% |
| LU | Grand Duchy of Luxembourg | 0,12 \% |
| NL | Kingdom of the Netherlands | 0,18 \% |
| NO | Kingdom of Norway | 0,08 \% |
| PL | Republic of Poland | 0,04 \% |
| SI | Republic of Slovenia | 0,04 \% |
| ES | Kingdom of Spain | 0,01 \% |
| SE | Kingdom of Sweden | 0,085 \% |
| UK | United Kingdom of Great Britain and Northern Ireland | 0,17\% |
| GU | Guadeloupe | 2,74 \% |
| MA | Martinique | 3,19 \% |
| SM | Collectivity of Saint Martin | 5,16 \% |
| RE | Réunion | 2,50 \% |
| a Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion |  |  |

WINDSTORM RISK CORRELATION COEFFICIENTS FOR REGIONS

| AT BE CHCZ DE DK ES FI FR UK HU IE IS LU NL NOPL SE SI |
| :--- |
| $\mathrm{AT}_{1,000,250,500,250,250,000,000,000,250,000,500,000,000,250,250,000,000,000,500,000,000,000,00}$ |
| $\mathrm{BE}_{0,251,000,250,250,500,250,000,000,500,500,000,250,000,750,750,000,250,000,000,000,000,000,00}$ |
| $\mathrm{CH}_{0}, 500,251,000,250,250,000,250,000,500,000,250,000,000,250,250,000,000,000,250,000,000,000,00$ |
| $\mathrm{CZ}_{0,250,250,251,000,250,000,000,000,250,000,250,000,000,250,250,000,250,000,250,000,000,000,00}$ |
| $\mathrm{DE}_{0,250,500,250,251,000,500,000,000,500,250,000,250,000,500,500,250,500,000,000,000,000,000,00}$ |

$\mathrm{DK}_{0}, 000,250,000,000,501,000,000,000,250,250,000,000,000,250,500,500,250,500,000,000,000,000,00$ ES $0,000,000,250,000,000,001,000,000,250,000,000,000,000,000,000,000,000,000,000,000,000,000,00$ FI $0,000,000,000,000,000,000,001,000,000,000,000,000,000,000,000,250,000,250,000,000,000,000,00$
$\mathrm{FR}_{0,250,500,500,250,500,250,250,001,000,250,000,000,000,500,500,000,000,000,000,000,000,000,00}$
$\mathrm{UK}_{0}, 000,500,000,000,250,250,000,000,251,000,000,500,000,250,500,250,000,000,000,000,000,000,00$ $\mathrm{HU}_{0}, 500,000,250,250,000,000,000,000,000,001,000,000,000,000,000,000,000,000,500,000,000,000,00$ IE $0,000,250,000,000,250,000,000,000,000,500,001,000,000,250,250,000,000,000,000,000,000,000,00$ IS $0,000,000,000,000,000,000,000,000,000,000,000,001,000,000,000,000,000,000,000,000,000,000,00$
$\mathrm{LU}_{0,250,750,250,250,500,250,000,000,500,250,000,250,001,000,500,250,250,000,000,000,000,000,00}$
NL $0,250,750,250,250,500,500,000,000,500,500,000,250,000,501,000,250,250,000,000,000,000,000,00$
NO0,000, $000,000,000,250,500,000,250,000,250,000,000,000,250,251,000,000,500,000,000,000,000,00$
PL $0,000,250,000,250,500,250,000,000,000,000,000,000,000,250,250,001,000,000,000,000,000,000,00$
SE $0,000,000,000,000,000,500,000,250,000,000,000,000,000,000,000,500,001,000,000,000,000,000,00$
SI $0,500,000,250,250,000,000,000,000,000,000,500,000,000,000,000,000,000,001,000,000,000,000,00$
$\mathrm{GU}_{0}, 000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,001,001,001,000,00$
MA0,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,001,001,001,000,00
$\mathrm{SM}_{0}, 000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,001,001,001,000,00$
RE $0,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,001,00$.

## ANNEX IV

In Annex VI, the section 'Regions and earthquake risk factors' is replaced by the following: Regions and earthquake risk factors

| Abbreviation of region $\boldsymbol{r}$ | Region $\boldsymbol{r}$ | Earthquake risk factor <br> $\boldsymbol{Q}_{\text {(earthquaker) }}$ |
| :--- | :--- | :--- |
| AT | Republic of Austria | $0,10 \%$ |
| BE | Kingdom of Belgium | $0,02 \%$ |
| BG | Republic of Bulgaria | $1,60 \%$ |
| CR | Republic of Croatia | $1,60 \%$ |
| CY | Republic of Cyprus | $2,12 \%$ |
| CZ | Czech Republic | $0,10 \%$ |
| CH | Swiss Confederation; <br> Principality of Lichtenstein | $0,25 \%$ |
| a Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion |  |  |


| FR | French Republic ${ }^{\text {a }}$ <br> Principality of Monaco; <br> Principality of Andorra | $0,06 \%$ |
| :--- | :--- | :--- |
| DE | Federal Republic of Germany | $0,10 \%$ |
| HE | Hellenic Republic | $1,75 \%$ |
| HU | Republic of Hungary | $0,20 \%$ |
| IT | Italian Republic; Republic <br> of San Marino; Vatican City <br> State | $0,77 \%$ |
| MT | Republic of Malta | $1,00 \%$ |
| PT | Portuguese Republic | $1,20 \%$ |
| RO | Romania | $1,70 \%$ |
| SK | Slovak Republic | $0,16 \%$ |
| SI | Republic of Slovenia | $1,00 \%$ |
| GU | Guadeloupe | $4,09 \%$ |
| MA | Martinique | $4,71 \%$ |
| SM | Collectivity of Saint Martin | $5,00 \%$. |
| a Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion |  |  |

## ANNEX V

In Annex VII, the section 'Regions and flood risk factors' is replaced by the following:
Regions and flood risk factors

| Abbreviation of region $\boldsymbol{r}$ | Region $\boldsymbol{r}$ | Flood risk factor $\boldsymbol{Q}_{(\text {flood,r) }}$ |
| :--- | :--- | :--- |
| AT | Republic of Austria | $0,13 \%$ |
| BE | Kingdom of Belgium | $0,10 \%$ |
| BG | Republic of Bulgaria | $0,15 \%$ |
| CZ | Czech Republic | $0,30 \%$ |
| CH | Swiss Confederation; <br> Principality of Lichtenstein | $0,30 \%$ |
| FR | French Republic ${ }^{\text {a }} ;$ <br> Principality of Monaco; <br> Principality of Andorra | $0,12 \%$ |
| DE | Federal Republic of Germany | $0,20 \%$ |
| HU | Republic of Hungary | $0,25 \%$ |
| a Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion |  |  |

[^0]| IT | Italian Republic; Republic <br> of San Marino; Vatican City <br> State | $0,15 \%$ |
| :--- | :--- | :--- |
| PL | Republic of Poland | $0,16 \%$ |
| RO | Romania | $0,30 \%$ |
| SK | Slovak Republic | $0,35 \%$ |
| SI | Republic of Slovenia | $0,30 \%$ |
| UK | United Kingdom of Great <br> Britain and Northern Ireland | $0,12 \%$. |

a Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion

## ANNEX VI

## ANNEX VIII

PARAMETERS FOR THE HAIL RISK SUB-MODULE

## Regions and hail risk factors

| Abbreviation of region $\boldsymbol{r}$ | Region $\boldsymbol{r}$ | Hail risk factor $\boldsymbol{Q}_{(\text {hail,r) }}$ |
| :--- | :--- | :--- |
| AT | Republic of Austria | $0,08 \%$ |
| BE | Kingdom of Belgium | $0,03 \%$ |
| CZ | Czech Republic | $0,045 \%$ |
| CH | Swiss Confederation; <br> Principality of Lichtenstein | $0,06 \%$ |
| FR | French Republic ${ }^{\text {a }}$ <br> Principality of Monaco; <br> Principality of Andorra | $0,01 \%$ |
| DE | Federal Republic of Germany | $0,02 \%$ |
| IT | Italian Republic; Republic <br> of San Marino; Vatican City <br> State | $0,05 \%$ |
| LU | Grand Duchy of Luxembourg | $0,03 \%$ |
| NL | Kingdom of the Netherlands | $0,02 \%$ |
| ES | Kingdom of Spain | $0,01 \%$ |
| SI | Republic of Slovenia | $0,08 \%$ |
| a Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion |  |  |

Hail risk correlation coefficients for regions

|  | AT | BE | CZ | FR | DE | IT | LU | NL | CH | SI | ES |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


| AT | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{B E}$ | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,25 | 0,00 | 0,00 | 0,00 |
| $\mathbf{C Z}$ | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| FR | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| DE | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| IT | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{L U}$ | 0,00 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,25 | 0,00 | 0,00 | 0,00 |
| $\mathbf{N L}$ | 0,00 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 1,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{C H}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 |
| SI | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 |
| ES | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | $1,00$. |

## ANNEX VII

Annex IX is amended as follows:
(1) the title is replaced by the following:

THE GEOGRAPHICAL DIVISION OF REGIONS SET OUT IN ANNEXES V-VIII INTO RISK ZONES;
(2) the first sentence is replaced by the following:

The risk zones of regions set out in annexes V-VIII as referred to in annexes XXIII shall be equal to the postal code areas or administrative units in the following tables.;
(3) point 1 in the section 'Mappings of risk zones for regions where the zonation is based on postal codes' is replaced by the following:

The mapping of risk zones for the regions AT, CZ, CH, DE, HE, IT, NL, NO, PL, PT, ES and SK shall be based on the first 2 digits of the postal code;;
(4) the section 'Mappings of risk zones for regions where the zonation is based on administrative units - part 2 ' is replaced by the following:
Mappings of risk zones for regions where the zonation is based on administrative units - part 2

The mapping of risk zones for the region SE shall be based on the numbers assigned to counties.

| Region/ <br> Risk Zone | CH | CY | IE | NO | SE |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 1 | 1 | CE | 01 | 1 |
| 2 | 2 | 2 | CK | 02 | 3 |
| 3 | 3 | 3 | CN | 03 | 4 |


| 4 | 4 | 4 | CW | 04 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 5 | 5 | 5 | DL | 05 | 6 |
| 6 | 6 | 6 | DN | 06 | 7 |
| 7 | 7 |  | GY | 07 | 8 |
| 8 | 8 |  | KE | 08 | 9 |
| 9 | 9 |  | KK | 09 | 10 |
| 10 | 10 |  | KY | 10 | 12 |
| 11 | 11 |  | LD | 11 | 13 |
| 12 | 12 |  | LH | 12 | 14 |
| 13 | 13 |  | LK | 14 | 17 |
| 14 | 14 |  | LM | 15 | 18 |
| 15 | 15 |  | LS | 16 | 19 |
| 16 | 16 |  | MH | 17 | 20 |
| 17 | 17 |  | MN | 18 | 21 |
| 18 | 18 |  | MO | 19 | 22 |
| 19 | 19 |  | OY | 20 | 23 |
| 20 | 20 |  | RN |  | 24 |
| 21 | 21 |  | SO |  | 25 |
| 22 | 22 |  | TY |  |  |
| 23 | 23 |  | WD |  |  |
| 24 | 24 |  | WH |  |  |
| 25 | 25 |  | WW |  |  |
| 26 | 26 |  | WX; |  |  |

(5) the following section is added:

Mapping of risk zones for the Republic of Finland
The mapping of risk zones for the region FI shall be based on the first 2 digits of the postal code.

| Risk <br> Zone | Postal Code Zone |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
| 2 | 20 | 21 | 23 | 24 | 25 |  |  |  |  |  |  |
| 3 | 26 | 27 | 28 | 29 | 32 | 38 |  |  |  |  |  |
| 4 | 11 | 12 | 13 | 14 | 30 | 31 |  |  |  |  |  |
| 5 | 33 | 34 | 35 | 36 | 37 | 39 |  |  |  |  |  |
| 6 | 15 | 16 | 17 | 18 | 19 |  |  |  |  |  |  |


| 7 | 45 | 46 | 47 | 48 | 49 |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 8 | 53 | 54 | 55 | 56 | 59 |  |  |  |  |  |  |
| 9 | 50 | 51 | 52 | 57 | 58 | 76 |  |  |  |  |  |
| 10 | 70 | 71 | 72 | 73 | 74 | 77 | 78 | 79 |  |  |  |
| 11 | 75 | 80 | 81 | 82 | 83 |  |  |  |  |  |  |
| 12 | 40 | 41 | 42 | 43 | 44 |  |  |  |  |  |  |
| 13 | 60 | 61 | 62 | 63 |  |  |  |  |  |  |  |
| 14 | 64 | 65 | 66 | 68 |  |  |  |  |  |  |  |
| 15 | 67 | 69 |  |  |  |  |  |  |  |  |  |
| 16 | 84 | 85 | 86 | 90 | 91 | 92 | 93 |  |  |  |  |
| 17 | 87 | 88 | 89 |  |  |  |  |  |  |  |  |
| 18 | 94 | 95 | 96 | 97 | 98 | 99 |  |  |  |  |  |
| 19 | 22. |  |  |  |  |  |  |  |  |  |  |

## ANNEX VIII

Annex X is amended as follows:
(1) the section 'Risk weights for windstorm risk' is replaced by the following:

Risk weights for windstorm risk

| ZoneAT <br> Region | BE | CH CZ | DE | DK ES | FI | FR | HU | IE | NL | NO PL | SE | SI | UK |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 0,6 | 0,9 | 1,4 | 1,2 | 0,9 | 1,1 | 2,3 | 0,8 | 1,0 | 0,5 | 1,4 | 0,9 | 1,4 | 0,6 | 0,2 | 0,9 | 0,9 |
| 2 | 0,7 | 1,0 | 1,1 | 1,0 | 0,8 | 1,6 | 0,8 | 1,2 | 2,0 | 2,0 | 1,1 | 1,0 | 0,7 | 0,6 | 0,3 | 0,9 | 1,1 |
| 3 | 0,9 | 0,9 | 1,5 | 1,0 | 0,8 | 0,9 | 0,6 | 3,6 | 1,7 | 0,6 | 1,5 | 1,0 | 0,5 | 0,6 | 0,3 | 1,4 | 0,7 |
| 4 | 1,5 | 0,9 | 1,3 | 1,0 | 1,2 | 2,0 | 0,6 | 1,1 | 0,8 | 1,7 | 1,3 | 1,1 | 0,8 | 0,6 | 0,8 | 1,4 | 1,5 |
| 5 | 1,6 | 1,0 | 1,5 | 1,2 | 1,3 | 1,3 | 1,5 | 1,4 | 1,5 | 1,6 | 1,5 | 1,5 | 1,2 | 0,6 | 0,5 | 0,9 | 1,1 |
| 6 | 1,4 | 1,0 | 0,7 | 1,2 | 1,1 | 1,4 | 1,1 | 0,8 | 0,6 | 1,8 | 0,7 | 1,2 | 0,8 | 0,6 | 0,7 | 1,4 | 0,9 |
| 7 | 1,5 | 1,2 | 1,5 | 1,2 | 1,0 | 1,4 | 0,2 | 0,3 | 0,7 | 2,2 | 1,5 | 1,6 | 1,0 | 0,8 | 0,8 | 1,4 | 1,5 |
| 8 | 1,1 | 1,6 | 1,1 | 1,0 | 1,1 | 1,6 | 1,3 | 0,5 | 1,7 | 1,5 | 1,1 | 1,9 | 0,9 | 0,7 | 2,2 | 0,7 | 0,9 |
| 9 | 1,4 | 1,1 | 1,1 | 1,2 | 0,5 | 0,9 | 2,3 | 0,8 | 1,2 | 2,2 | 1,1 | 1,4 | 1,0 | 0,6 | 1,6 | 0,9 | 1,9 |
| 10 | 1,1 |  | 1,6 | 1,2 | 0,7 | 0,6 | 1,5 | 1,2 | 1,7 | 2,1 | 1,6 | 1,4 | 1,5 | 0,9 | 3,5 | 0,9 | 0,7 |
| 11 | 1,1 |  | 1,8 | 1,4 | 0,7 | 1,8 | 1,5 | 0,8 | 0,9 | 1,5 | 1,8 | 0,9 | 2,8 | 1,0 | 5,2 | 0,7 | 1,3 |
| 12 | 1,1 |  | 0,9 | 1,5 | 1,0 |  | 1,1 | 1,0 | 1,2 | 1,4 | 0,9 | 1,4 | 2,6 | 0,9 | 2,4 |  | 1,2 |
| 13 | 1,2 |  | 1,1 | 1,5 | 1,1 |  | 0,8 | 2,9 | 0,8 | 1,3 | 1,1 | 1,7 | 3,6 | 0,8 | 0,6 |  | 1,6 |


| 14 | 1,1 | 2,0 | 1,3 | 1,3 | 1,1 | 3,7 | 3,3 | 1,4 | 2,0 | 1,3 | 2,9 | 1,0 | 0,4 | 1,5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 15 | 1,2 | 1,2 | 1,4 | 1,6 | 2,5 | 7,9 | 1,6 | 2,0 | 1,2 | 1,4 | 1,4 | 1,2 | 0,3 | 1,5 |
| 16 | 1,5 | 1,2 | 1,6 | 2,1 | 1,3 | 7,0 | 1,6 | 1,2 | 1,2 | 1,2 | 1,7 | 0,5 | 0,4 | 1,3 |
| 17 | 1,6 | 1,3 | 1,6 | 1,9 | 1,7 | 2,7 | 3,0 | 0,3 | 1,3 | 1,5 | 1,3 | 0,6 | 0,5 | 2,4 |
| 18 | 1,3 | 1,4 | 1,6 | 1,4 | 0,8 | 1,2 | 1,8 | 1,9 | 1,4 | 1,3 | 0,7 | 0,5 | 0,4 | 3,2 |
| 19 | 1,5 | 1,3 | 1,6 | 1,7 | 1,5 | 3,8 | 1,2 | 2,0 | 1,3 | 1,1 | 0,2 | 0,6 | 1,0 | 0,7 |
| 20 | 1,5 | 1,4 | 1,7 | 1,1 | 2,5 |  | 1,3 | 2,1 | 1,4 | 1,0 |  | 0,7 | 0,6 | 2,0 |
| 21 | 1,8 | 1,5 | 1,9 | 2,0 | 1,3 |  | 1,1 | 1,1 | 1,5 | 0,9 |  | 0,5 | 0,6 | 1,2 |
| 22 | 2,0 | 1,1 | 1,8 | 1,9 | 2,1 |  | 2,9 | 2,0 | 1,1 | 1,5 |  | 0,5 |  | 1,3 |
| 23 | 2,0 | 1,2 | 1,2 | 2,9 | 0,8 |  | 1,8 | 0,3 | 1,2 | 1,7 |  | 0,4 |  | 2,3 |
| 24 | 1,3 | 1,2 | 1,4 | 2,7 | 2,3 |  | 1,3 | 2,2 | 1,2 | 1,2 |  | 0,4 |  | 1,2 |
| 25 | 2,1 | 0,9 | 1,3 | 2,2 | 1,9 |  | 0,8 |  | 0,9 | 1,1 |  | 0,5 |  | 1,3 |
| 26 | 1,8 | 1,3 | 1,6 | 1,5 | 1,5 |  | 0,8 |  | 1,3 | 0,9 |  | 0,6 |  | 1,6 |
| 27 | 1,8 |  | 1,6 | 1,6 | 2,5 |  | 2,2 |  |  | 1,3 |  | 0,6 |  | 0,9 |
| 28 | 1,5 |  | 1,7 | 1,6 | 1,1 |  | 2,3 |  |  | 0,9 |  | 0,5 |  | 1,1 |
| 29 | 1,5 |  | 1,7 | 1,8 | 1,3 |  | 3,4 |  |  | 0,9 |  | 0,5 |  | 3,8 |
| 30 | 1,7 |  | 1,4 | 1,8 | 0,6 |  | 0,6 |  |  | 0,9 |  | 0,7 |  | 2,2 |
| 31 | 3,2 |  | 1,5 | 1,7 | 2,3 |  | 1,0 |  |  | 1,0 |  | 0,6 |  | 0,8 |
| 32 | 1,6 |  | 1,2 | 1,3 | 2,5 |  | 1,6 |  |  | 1,1 |  | 0,5 |  | 0,6 |
| 33 | 3,1 |  | 1,1 | 1,1 | 2,5 |  | 1,3 |  |  | 1,4 |  | 0,5 |  | 0,4 |
| 34 | 1,4 |  | 1,1 | 1,2 | 2,3 |  | 0,7 |  |  | 2,0 |  | 0,4 |  | 0,8 |
| 35 | 2,4 |  | 1,1 | 1,4 | 0,0 |  | 2,5 |  |  | 1,7 |  | 0,5 |  | 0,8 |
| 36 | 2,3 |  | 1,1 | 1,5 | 2,5 |  | 1,7 |  |  | 1,3 |  | 0,4 |  | 1,9 |
| 37 | 1,8 |  | 0,9 | 1,7 | 1,7 |  | 1,8 |  |  | 1,6 |  | 0,4 |  | 1,1 |
| 38 | 1,6 |  | 0,9 | 1,5 | 0,0 |  | 0,8 |  |  | 1,1 |  | 0,4 |  | 2,4 |
| 39 | 2,2 |  | 1,1 | 1,8 | 2,5 |  | 1,0 |  |  | 0,8 |  | 0,4 |  | 0,8 |
| 40 | 2,0 |  | 1,0 | 1,2 | 1,7 |  | 1,5 |  |  | 1,1 |  | 0,4 |  | 1,4 |
| 41 | 1,9 |  | 0,8 | 1,1 | 1,3 |  | 1,7 |  |  | 0,7 |  | 0,6 |  | 1,0 |
| 42 | 1,6 |  | 0,8 | 1,2 | 1,9 |  | 1,0 |  |  | 1,0 |  | 0,7 |  | 3,1 |
| 43 | 2,0 |  | 0,8 | 1,8 | 1,5 |  | 1,3 |  |  | 0,9 |  | 0,7 |  | 0,6 |
| 44 | 2,1 |  | 0,9 | 1,7 | 1,3 |  | 2,7 |  |  | 1,0 |  | 0,7 |  | 1,0 |
| 45 | 2,0 |  | 0,8 | 2,1 | 1,3 |  | 1,7 |  |  | 0,7 |  | 0,7 |  | 1,2 |
| 46 | 2,2 |  | 0,9 | 2,0 | 0,8 |  | 1,0 |  |  | 0,7 |  | 0,9 |  | 1,2 |
| 47 | 2,4 |  | 0,9 | 1,3 | 1,9 |  | 1,3 |  |  | 0,6 |  | 1,0 |  | 1,4 |




| 116 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 117 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0,9 |
| 118 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1,0 |
| 119 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1,1 |
| 120 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1,4 |
| 121 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0,8 |  |
| 122 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0,8 |
| 123 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2,0 |
| 124 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $1,5$. |  |

(2) the section 'Risk weights for earthquake risk' is replaced by the following:

Risk weights for earthquake risk

| ZoneAT <br> Region | BE | BG | CZ | CH $\mathbf{C R}$ | CY | DE | FR | HE | HU | IT | PT | RO | SI | SK |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 3,5 | 0,8 | 1,5 | 0,1 | 1,1 | 0,8 | 0,6 | 0,1 | 1,4 | 2,2 | 2,6 | 4,3 | 1,7 | 0,0 | 1,4 | 1,8 |
| 2 | 3,1 | 0,4 | 0,3 | 0,1 | 1,3 | 1,3 | 1,9 | 0,2 | 0,1 | 1,8 | 0,4 | 2,0 | 2,3 | 0,1 | 0,8 | 0,8 |
| 3 | 3,2 | 1,7 | 0,5 | 0,1 | 1,8 | 0,1 | 1,3 | 0,2 | 0,3 | 2,5 | 0,0 | 6,8 | 1,9 | 0,8 | 0,7 | 1,3 |
| 4 | 4,0 | 1,8 | 0,3 | 0,1 | 3,1 | 0,7 | 2,0 | 1,1 | 3,1 | 2,7 | 0,8 | 6,0 | 1,2 | 2,0 | 1,4 | 0,6 |
| 5 | 0,9 | 1,1 | 0,6 | 0,1 | 3,8 | 1,0 | 0,4 | 0,7 | 1,0 | 2,0 | 1,6 | 3,2 | 1,4 | 0,0 | 0,7 | 0,6 |
| 6 | 1,6 | 2,4 | 0,4 | 0,1 | 1,4 | 0,5 | 0,2 | 1,5 | 4,1 | 2,1 | 1,0 | 5,0 | 3,6 | 0,0 | 0,4 | 0,6 |
| 7 | 2,4 | 3,3 | 0,1 | 0,1 | 1,5 | 0,3 |  | 2,7 | 1,1 | 1,8 | 0,6 | 4,7 | 2,4 | 0,0 | 0,2 | 0,6 |
| 8 | 3,4 | 0,7 | 0,7 | 0,1 | 1,0 | 0,8 |  | 0,6 | 0,1 | 2,2 | 1,0 | 0,0 | 2,1 | 0,9 | 0,2 | 1,1 |
| 9 | 3,2 | 0,5 | 0,1 | 0,1 | 2,1 | 0,4 |  | 0,1 | 4,9 | 2,1 | 0,6 | 0,0 | 3,4 | 0,2 | 1,7 | 1,0 |
| 10 | 3,8 |  | 0,3 | 0,1 | 1,2 | 0,2 |  | 0,1 | 0,1 | 2,9 | 0,0 | 0,0 | 2,0 | 4,0 | 1,3 | 3,2 |
| 11 | 3,6 |  | 0,1 | 0,1 | 1,7 | 0,3 |  | 0,1 | 2,9 | 3,5 | 0,4 | 1,9 | 1,6 | 0,1 | 1,0 | 2,9 |
| 12 | 3,8 |  | 0,1 | 0,1 | 1,5 | 0,3 |  | 0,2 | 0,1 | 3,2 | 0,0 | 1,8 | 1,5 | 2,2 |  | 3,2 |
| 13 | 2,5 |  | 0,2 | 0,1 | 0,7 | 0,6 |  | 0,2 | 2,7 | 3,1 | 0,5 | 1,4 | 0,6 | 0,0 |  | 3,2 |
| 14 | 1,9 |  | 0,1 | 0,1 | 2,5 | 0,3 |  | 0,2 | 0,2 | 3,2 | 1,7 | 1,3 | 1,3 | 0,0 |  | 2,6 |
| 15 | 1,2 |  | 0,5 | 0,1 | 2,3 | 1,8 |  | 0,1 | 0,2 | 2,6 | 0,1 | 0,8 | 0,6 | 1,5 |  | 1,6 |
| 16 | 0,6 |  | 0,6 | 0,1 | 0,6 | 0,3 |  | 0,1 | 0,6 | 2,6 | 0,0 | 1,6 | 0,8 | 1,3 |  | 2,2 |
| 17 | 0,2 |  | 0,5 | 0,1 | 1,7 | 0,6 |  | 0,2 | 0,7 | 3,8 | 0,0 | 1,2 | 2,0 | 0,2 |  | 1,9 |
| 18 | 1,7 |  | 0,7 | 0,1 | 1,7 | 0,6 |  | 0,1 | 0,1 | 3,1 | 1,8 | 1,8 | 1,6 | 1,3 |  | 1,1 |
| 19 | 0,2 |  | 0,5 | 0,6 | 1,4 | 0,8 |  | 0,2 | 0,1 | 7,2 | 0,7 | 3,2 | 2,6 | 0,9 |  | 1,8 |
| 20 | 0,1 |  | 0,3 | 0,6 | 0,5 | 0,3 |  | 0,1 | 0,2 | 2,8 | 0,0 | 4,0 | 1,8 | 0,3 |  | 1,9 |
| 21 | 0,4 |  | 0,4 | 2,5 | 0,9 | 1,3 |  | 0,1 | 0,3 | 4,8 | 0,2 | 1,5 | 0,4 | 0,0 |  | 0,6 |


| 22 | 0,0 | 0,2 | 1,5 | 2,1 | 0,1 | 0,2 | 6,8 | 0,0 | 0,8 | 0,6 | 0,0 | 2,2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 23 | 0,0 | 0,1 | 0,1 | 1,4 | 0,1 | 0,2 | 2,7 | 0,0 | 1,4 | 0,3 | 2,0 | 0,2 |
| 24 | 0,0 | 0,1 | 0,1 | 2,6 | 0,1 | 0,1 | 2,6 | 0,1 | 1,8 | 0,2 | 0,3 | 1,6 |
| 25 | 0,0 | 0,1 | 0,1 | 0,8 | 0,1 | 2,0 | 1,6 |  | 4,3 | 0,1 | 0,1 |  |
| 26 | 0,0 | 0,2 | 0,1 | 1,3 | 0,2 | 2,5 | 3,1 |  | 4,5 | 0,1 | 0,3 |  |
| 27 | 0,0 | 0,1 | 0,1 |  | 0,2 | 0,1 | 3,4 |  | 3,1 | 0,1 | 0,0 |  |
| 28 | 0,0 | 0,0 | 1,1 |  | 0,1 | 0,1 | 3,3 |  | 1,9 | 0,1 | 0,5 |  |
| 29 | 0,0 |  | 0,9 |  | 0,1 | 0,2 | 3,6 |  | 1,1 | 0,3 | 0,4 |  |
| 30 | 0,0 |  | 0,1 |  | 0,1 | 1,4 | 1,9 |  | 3,2 | 0,3 | 2,1 |  |
| 31 | 0,0 |  | 0,1 |  | 0,1 | 1,4 | 3,1 |  | 3,0 | 0,3 | 0,0 |  |
| 32 | 0,1 |  | 0,7 |  | 0,2 | 2,6 | 2,0 |  | 8,0 | 0,2 | 0,2 |  |
| 33 | 0,0 |  | 1,3 |  | 0,4 | 0,1 | 4,8 |  | 5,3 | 0,2 | 0,1 |  |
| 34 | 0,4 |  | 0,1 |  | 0,9 | 0,6 | 1,7 |  | 4,3 | 0,2 | 0,0 |  |
| 35 | 0,1 |  | 1,5 |  | 0,2 | 0,2 | 1,9 |  | 3,4 | 0,1 | 0,4 |  |
| 36 | 0,1 |  | 1,5 |  | 0,1 | 0,5 | 2,2 |  | 3,0 | 0,2 | 0,2 |  |
| 37 | 0,2 |  | 0,1 |  | 0,3 | 0,5 | 1,8 |  | 6,5 | 0,2 | 0,1 |  |
| 38 | 0,4 |  | 0,1 |  | 1,9 | 3,0 | 4,1 |  | 5,0 | 0,1 | 1,0 |  |
| 39 | 0,5 |  | 0,1 |  | 6,4 | 0,8 | 1,9 |  | 2,5 | 0,3 | 0,6 |  |
| 40 | 0,5 |  | 0,1 |  | 0,2 | 5,5 | 0,5 |  | 1,2 | 0,2 | 5,2 |  |
| 41 | 1,0 |  | 0,1 |  | 0,1 | 0,2 | 1,1 |  | 5,9 | 0,1 | 2,5 |  |
| 42 | 2,4 |  | 0,1 |  | 0,2 | 0,3 | 1,3 |  | 6,1 | 0,2 |  |  |
| 43 | 1,8 |  | 0,1 |  | 0,3 | 0,2 | 1,0 |  | 6,0 | 0,1 |  |  |
| 44 | 1,7 |  | 0,1 |  | 1,6 | 0,5 | 0,6 |  | 5,1 | 0,1 |  |  |
| 45 | 1,1 |  | 0,1 |  | 0,1 | 0,1 | 0,5 |  | 5,5 | 0,1 |  |  |
| 46 | 1,8 |  | 0,1 |  | 0,1 | 0,1 | 0,6 |  | 2,3 | 0,3 |  |  |
| 47 | 1,0 |  | 0,1 |  | 5,8 | 0,1 | 0,6 |  | 3,6 | 0,1 |  |  |
| 48 | 2,0 |  | 7,6 |  | 2,1 | 0,2 | 0,6 |  | 6,4 | 0,1 |  |  |
| 49 | 1,4 |  | 8,8 |  | 8,1 | 0,5 | 0,5 |  | 6,4 | 0,1 |  |  |
| 50 | 1,8 |  | 10,5 |  | 3,4 | 0,4 | 0,6 |  | 5,5 | 0,8 |  |  |
| 51 | 1,2 |  | 11,0 |  | 0,2 | 0,1 | 0,4 |  | 6,3 | 0,4 |  |  |
| 52 | 3,1 |  | 10,5 |  | 1,9 | 0,1 | 1,0 |  | 4,2 | 0,5 |  |  |
| 53 | 1,7 |  | 11,3 |  | 2,0 | 0,2 | 0,7 |  | 3,2 | 0,1 |  |  |
| 54 | 3,4 |  | 9,5 |  | 0,2 | 0,1 | 1,1 |  | 5,9 | 0,5 |  |  |
| 55 | 1,4 |  | 0,1 |  | 0,1 | 0,1 | 0,9 |  | 5,1 | 1,3 |  |  |



| 90 |  |  |  |  |  |  |  | 0,1 | 4,1 |  |  | 7,7 |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 91 |  |  |  |  |  |  |  | 0,4 | 0,1 |  |  | 6,3 |  |  |  |  |
| 92 |  |  |  |  |  |  |  | 0,2 | 0,2 |  |  | 10,1 |  |  |  |  |
| 93 |  |  |  |  |  |  |  | 0,1 | 0,1 |  |  |  |  |  |  |  |
| 94 |  |  |  |  |  |  |  | 0,3 | 0,2 |  |  |  |  |  |  |  |
| 95 |  |  |  |  |  |  |  | 0,3 | $0,1$. |  |  |  |  |  |  |  |

(3) the section 'Risk weights for flood risk' is replaced by the following:

Risk weights for flood risk

| Zone/AT <br> Region | BE | BG | $\mathbf{C H}$ | $\mathbf{C Z}$ | $\mathbf{D E}$ | FR | $\mathbf{I T}$ | $\mathbf{H U}$ | PL | RO | $\mathbf{S I}$ | SK | UK |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 0,1 | 0,3 | 1,3 | 2,0 | 0,6 | 1,5 | 1,9 | 8,0 | 0,6 | 0,4 | 1,3 | 1,3 | 1,5 | 1,3 |
| 2 | 0,1 | 1,0 | 2,8 | 1,8 | 1,6 | 0,8 | 1,1 | 2,4 | 4,2 | 0,1 | 2,0 | 1,2 | 1,0 | 0,5 |
| 3 | 0,5 | 0,5 | 0,0 | 1,8 | 0,5 | 0,5 | 1,1 | 1,2 | 4,9 | 0,1 | 1,3 | 0,8 | 0,8 | 1,5 |
| 4 | 0,0 | 3,5 | 2,6 | 1,8 | 0,4 | 1,5 | 0,5 | 0,8 | 0,5 | 1,7 | 2,6 | 2,7 | 3,8 | 7,8 |
| 5 | 0,9 | 3,8 | 0,2 | 1,8 | 0,9 | 2,5 | 0,3 | 1,6 | 0,3 | 0,8 | 2,0 | 0,6 | 0,2 | 10,5 |
| 6 | 4,0 | 0,5 | 0,1 | 3,3 | 1,5 | 1,3 | 0,2 | 2,0 | 0,1 | 0,7 | 0,7 | 1,1 | 0,3 | 5,8 |
| 7 | 0,4 | 0,5 | 0,1 | 1,3 | 1,4 | 0,5 | 0,7 | 4,8 | 0,3 | 2,4 | 0,7 | 1,8 | 1,5 | 1,3 |
| 8 | 0,2 | 1,0 | 0,5 | 1,3 | 1,6 | 0,3 | 1,3 | 0,0 | 1,0 | 1,0 | 11,9 | 1,5 | 1,5 | 3,3 |
| 9 | 0,5 | 2,8 | 0,3 | 4,2 | 1,7 | 1,0 | 0,6 | 0,0 | 1,2 | 0,8 | 0,7 | 0,9 | 1,5 | 1,3 |
| 10 | 1,0 |  | 0,8 | 3,0 | 0,5 | 1,3 | 1,3 | 0,0 | 3,4 | 2,5 | 0,7 | 0,1 | 0,0 | 2,3 |
| 11 | 0,2 |  | 0,1 | 3,0 | 1,1 | 1,8 | 1,4 | 4,8 | 0,8 | 1,0 | 2,0 | 1,7 | 0,0 | 6,0 |
| 12 | 0,3 |  | 0,7 | 3,0 | 1,6 | 2,0 | 0,4 | 0,0 | 0,1 | 2,0 | 3,3 |  | 0,0 | 0,0 |
| 13 | 0,3 |  | 0,4 | 1,5 | 1,6 | 0,8 | 6,1 | 2,4 | 0,2 | 2,6 | 2,0 |  | 0,5 | 4,3 |
| 14 | 0,5 |  | 0,2 | 3,8 | 1,5 | 0,8 | 1,1 | 0,4 | 1,4 | 2,2 | 2,0 |  | 0,0 | 2,8 |
| 15 | 0,9 |  | 0,2 | 4,5 | 2,7 | 0,3 | 0,3 | 2,0 | 3,2 | 1,2 | 1,3 |  | 0,2 | 7,0 |
| 16 | 0,4 |  | 0,0 | 1,3 | 2,5 | 0,3 | 1,1 | 2,4 | 2,3 | 0,0 | 2,0 |  | 2,1 | 2,0 |
| 17 | 1,4 |  | 0,1 | 2,8 | 4,5 | 1,3 | 2,2 | 0,0 | 0,4 | 1,8 | 3,3 |  | 1,1 | 1,5 |
| 18 | 2,6 |  | 2,5 | 1,8 | 1,1 | 2,3 | 1,3 | 0,8 | 0,6 | 1,3 | 4,0 |  | 1,3 | 1,5 |
| 19 | 3,6 |  | 0,8 | 2,5 | 1,8 | 4,5 | 0,4 | 0,8 | 4,9 | 1,4 | 3,3 |  | 0,9 | 2,0 |
| 20 | 2,2 |  | 0,9 | 2,0 | 2,3 | 2,0 | 0,0 | 0,0 | 4,8 | 1,8 | 0,7 |  | 0,3 | 2,8 |
| 21 | 0,5 |  | 7,5 | 2,0 | 1,7 | 0,8 | 1,6 | 3,2 | 3,1 | 0,0 | 0,7 |  | 2,8 | 3,0 |
| 22 | 1,6 |  | 4,2 | 5,0 | 1,5 | 0,3 | 0,3 | 0,0 | 2,8 | 1,3 | 3,3 |  | 2,7 | 2,5 |
| 23 | 1,0 |  | 0,8 | 1,5 | 1,6 | 0,5 | 0,3 | 1,6 | 0,3 | 0,7 | 4,6 |  | 0,1 | 3,3 |
| 24 | 3,6 |  | 0,8 | 3,3 | 2,1 | 2,0 | 1,0 | 1,6 | 4,0 | 1,4 | 2,0 |  | 0,0 | 1,3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| 25 | 1,8 | 7,5 | 1,5 | 2,0 | 2,3 | 0,7 | 3,2 | 3,1 | 3,3 | 4,0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 26 | 0,8 | 5,8 | 1,8 | 2,2 | 2,5 | 1,1 | 1,6 | 0,2 | 2,0 | 5,5 |
| 27 | 2,0 | 3,3 |  | 3,1 | 4,3 | 1,2 | 3,2 | 0,8 | 1,3 | 8,5 |
| 28 | 2,4 | 2,5 |  | 1,1 | 2,8 | 0,5 | 3,2 | 3,6 | 2,0 | 3,0 |
| 29 | 0,7 | 3,3 |  | 2,9 | 2,3 | 0,3 | 0,0 | 5,9 | 4,0 | 1,3 |
| 30 | 4,4 |  |  | 1,7 | 0,8 | 3,0 | 0,8 | 0,8 | 0,7 | 1,3 |
| 31 | 2,0 |  |  | 1,3 | 0,3 | 1,6 | 4,8 | 0,6 | 3,3 | 2,0 |
| 32 | 3,3 |  |  | 1,1 | 1,8 | 1,3 | 4,8 | 0,1 | 2,6 | 2,5 |
| 33 | 0,9 |  |  | 2,0 | 1,0 | 2,8 | 1,6 | 5,9 | 1,3 | 0,3 |
| 34 | 4,6 |  |  | 2,2 | 0,3 | 1,7 | 2,4 | 9,8 | 1,3 | 3,5 |
| 35 | 1,5 |  |  | 1,4 | 3,0 | 0,7 | 0,0 | 7,3 | 4,6 | 3,0 |
| 36 | 0,3 |  |  | 1,8 | 2,3 | 0,7 | 2,4 | 0,5 | 2,0 | 2,8 |
| 37 | 0,4 |  |  | 2,6 | 2,5 | 2,0 | 1,2 | 2,2 | 7,9 | 2,8 |
| 38 | 4,4 |  |  | 2,6 | 3,3 | 1,4 | 6,4 | 7,3 | 2,0 | 3,3 |
| 39 | 1,2 |  |  | 0,8 | 1,0 | 1,7 | 2,4 | 10,6 | 1,3 | 3,5 |
| 40 | 0,4 |  |  | 1,0 | 0,8 | 1,7 | 1,2 | 5,4 | 2,6 | 1,8 |
| 41 | 0,2 |  |  | 3,9 | 0,3 | 1,4 | 6,4 | 0,0 | 1,3 | 2,5 |
| 42 | 0,3 |  |  | 4,2 | 0,3 | 0,7 | 1,2 | 0,7 |  | 0,0 |
| 43 | 0,1 |  |  | 1,2 | 2,0 | 0,4 | 0,8 | 1,7 |  | 3,0 |
| 44 | 0,2 |  |  | 1,5 | 3,8 | 1,9 | 0,8 | 3,1 |  | 7,5 |
| 45 | 0,6 |  |  | 0,8 | 3,5 | 1,7 | 1,6 | 0,3 |  | 2,8 |
| 46 | 0,1 |  |  | 1,1 | 2,0 | 0,8 | 4,8 | 2,8 |  | 1,0 |
| 47 | 0,1 |  |  | 0,7 | 4,5 | 2,3 | 3,2 | 1,1 |  | 19,5 |
| 48 | 1,5 |  |  | 3,6 | 2,5 | 0,2 | 0,4 | 5,6 |  | 0,5 |
| 49 | 0,1 |  |  | 2,1 | 0,3 | 2,5 | 1,6 | 2,2 |  | 3,0 |
| 50 | 2,4 |  |  | 1,9 | 3,3 | 0,9 | 3,6 | 3,0 |  | 5,8 |
| 51 | 2,8 |  |  | 1,0 | 2,0 | 1,1 | 0,8 | 1,1 |  | 3,3 |
| 52 | 0,4 |  |  | 2,2 | 4,3 | 0,6 | 3,2 | 2,1 |  | 0,0 |
| 53 | 0,3 |  |  | 1,2 | 6,0 | 0,4 | 0,4 | 0,3 |  | 2,0 |
| 54 | 0,0 |  |  | 2,8 | 0,3 | 1,0 | 0,0 | 0,1 |  | 2,5 |
| 55 | 0,1 |  |  | 3,5 | 1,0 | 1,2 | 0,8 | 0,2 |  | 0,0 |
| 56 | 0,1 |  |  | 1,9 | 0,8 | 0,7 | 4,8 | 4,9 |  | 4,0 |
| 57 | 0,1 |  |  | 4,8 | 1,5 | 1,0 | 0,0 | 4,9 |  | 3,8 |
| 58 | 0,3 |  |  | 3,3 | 0,3 | 1,3 | 0,0 | 2,3 |  | 1,0 |



Status: This is the original version (as it was originally adopted)

(4) the section 'Risk weights for hail risk' is replaced by the following:

## Risk weights for hail risk

|  | AT | BE | CH | CZ | ES | DE | FR | IT | NL | SI |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 3,1 | 2,8 | 2,8 | 4,1 | 7,5 | 0,5 | 12,6 | 3,7 | 4,0 | 3,7 |
| 2 | 3,4 | 2,7 | 1,6 | 4,7 | 1,7 | 0,0 | 1,9 | 3,7 | 5,8 | 2,7 |
| 3 | 1,8 | 2,0 | 0,3 | 5,1 | 6,7 | 0,0 | 5,7 | 3,7 | 5,3 | 2,1 |
| 4 | 23,6 | 3,1 | 2,1 | 5,7 | 0,0 | 0,8 | 8,7 | 0,0 | 1,4 | 3,6 |
| 5 | 0,2 | 2,0 | 6,7 | 4,6 | 1,7 | 0,4 | 5,4 | 0,0 | 6,6 | 2,8 |
| 6 | 1,9 | 3,9 | 4,0 | 4,5 | 3,3 | 2,7 | 3,9 | 0,8 | 0,1 | 2,1 |
| 7 | 8,3 | 2,0 | 0,1 | 5,1 | 16,7 | 0,4 | 12,3 | 0,8 | 0,3 | 3,5 |
| 8 | 0,3 | 2,8 | 0,2 | 5,2 | 2,5 | 0,8 | 2,7 | 0,0 | 2,9 | 3,0 |
| 9 | 1,4 | 2,4 | 1,5 | 5,0 | 1,7 | 0,2 | 27,6 | 0,0 | 9,6 | 3,6 |
| 10 | 0,8 |  | 0,3 | 3,8 | 0,0 | 0,1 | 1,7 | 0,0 | 0,1 | 3,1 |
| 11 | 3,1 |  | 6,1 | 2,7 | 7,5 | 0,9 | 6,8 | 10,8 | 6,1 | 2,6 |
| 12 | 2,8 |  | 3,0 | 3,2 | 0,0 | 0,1 | 8,7 | 10,8 | 2,8 |  |
| 13 | 1,0 |  | 0,1 | 3,0 | 0,0 | 0,0 | 2,8 | 10,8 | 2,0 |  |
| 14 | 17,4 |  | 2,7 | 2,7 | 6,7 | 0,1 | 0,3 | 10,8 | 0,6 |  |
| 15 | 0,2 |  | 4,4 | 4,1 | 1,7 | 0,0 | 3,7 | 10,8 | 0,2 |  |
| 16 | 0,9 |  | 0,3 | 4,5 | 10,0 | 0,0 | 8,5 | 10,8 | 2,0 |  |
| 17 | 1,7 |  | 1,4 | 4,3 | 5,0 | 0,2 | 0,6 | 10,8 | 0,1 |  |
| 18 | 1,4 |  | 1,9 | 4,9 | 2,5 | 0,0 | 7,2 | 10,8 | 0,1 |  |
| 19 | 0,3 |  | 5,9 | 3,0 | 10,0 | 0,1 | 12,4 | 10,8 | 3,4 |  |
| 20 | 0,3 |  | 0,5 | 2,8 | 0,0 | 0,0 | 2,5 | 10,8 | 1,5 |  |
| 21 | 0,4 |  | 1,3 | 3,4 | 3,3 | 0,0 | 8,1 | 7,5 | 5,6 |  |
| 22 | 1,1 |  | 1,3 | 4,2 | 3,3 | 0,0 | 0,1 | 7,5 | 0,5 |  |
| 23 | 0,2 |  | 1,4 | 2,7 | 3,3 | 0,0 | 10,2 | 7,5 | 0,5 |  |
| 24 | 5,3 |  | 1,2 | 2,3 | 6,7 | 5,5 | 2,0 | 7,5 | 4,2 |  |
| 25 | 15,9 |  | 1,3 | 2,6 | 5,0 | 0,5 | 8,3 | 7,5 | 1,4 |  |
| 26 | 5,8 |  | 4,9 | 3,2 | 3,3 | 0,1 | 25,3 | 7,5 | 11,6 |  |
| 27 | 1,6 |  |  | 2,9 | 8,4 | 0,1 | 1,0 | 7,5 | 12,0 |  |
| 28 | 3,8 |  |  | 3,2 | 0,0 | 3,3 | 4,7 | 7,5 | 1,3 |  |
| 29 | 5,4 |  |  | 4,6 | 5,0 | 1,7 | 0,0 | 10,8 | 4,3 |  |
| 30 | 7,9 |  |  | 3,4 | 6,7 | 3,1 | 3,6 | 7,5 | 2,6 |  |
| 31 | 16,5 |  |  | 3,9 | 3,3 | 17,4 | 14,0 | 3,3 | 0,4 |  |
| 32 | 5,6 |  |  | 2,8 | 6,7 | 1,8 | 7,7 | 3,3 | 13,4 |  |



| 67 | 1,2 |  |  |  |  | 15,3 | 4,6 | 0,8 | 0,3 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 68 | 0,4 |  |  |  |  | 11,7 | 12,1 | 0,0 | 3,2 |  |
| 69 | 10,7 |  |  |  |  | 7,7 | 17,1 | 0,0 | 1,5 |  |
| 70 | 1,3 |  |  |  |  | 1,7 | 13,6 | 0,0 | 1,6 |  |
| 71 | 4,5 |  |  |  |  | 6,4 | 12,1 | 0,0 | 2,9 |  |
| 72 | 15,0 |  |  |  |  | 5,6 | 0,7 | 0,0 | 7,1 |  |
| 73 | 0,3 |  |  |  |  | 5,0 | 15,3 | 0,0 | 4,1 |  |
| 74 | 1,2 |  |  |  |  | 7,8 | 9,5 | 0,0 | 1,6 |  |
| 75 | 1,3 |  |  |  |  | 8,0 | 6,2 | 0,0 | 1,4 |  |
| 76 | 0,2 |  |  |  |  | 55,9 | 0,7 | 0,0 | 0,1 |  |
| 77 | 4,2 |  |  |  |  | 41,6 | 1,9 | 0,0 | 0,4 |  |
| 78 |  |  |  |  |  | 7,9 | 1,7 | 0,0 | 0,3 |  |
| 79 |  |  |  |  |  | 10,7 | 1,1 | 0,0 | 0,0 |  |
| 80 |  |  |  |  |  | 8,7 | 4,6 | 0,8 | 5,1 |  |
| 81 |  |  |  |  |  | 7,8 | 3,7 | 0,0 | 0,7 |  |
| 82 |  |  |  |  |  | 15,8 | 20,4 | 0,0 | 0,3 |  |
| 83 |  |  |  |  |  | 5,2 | 0,6 | 0,0 | 1,0 |  |
| 84 |  |  |  |  |  | 3,2 | 0,6 | 0,0 | 1,1 |  |
| 85 |  |  |  |  |  | 12,4 | 1,3 | 0,0 | 5,1 |  |
| 86 |  |  |  |  |  | 9,1 | 1,3 | 0,0 | 2,5 |  |
| 87 |  |  |  |  |  | 4,2 | 1,7 | 0,0 | 1,8 |  |
| 88 |  |  |  |  |  | 8,5 | 3,2 | 0,0 | 0,3 |  |
| 89 |  |  |  |  |  | 3,9 | 3,3 | 0,0 | 4,4 |  |
| 90 |  |  |  |  |  | 6,4 | 6,0 | 0,0 | 3,0 |  |
| 91 |  |  |  |  |  | 2,7 | 2,3 | 0,0 |  |  |
| 92 |  |  |  |  |  | 3,0 | 1,0 | 0,0 |  |  |
| 93 |  |  |  |  |  | 2,5 | 4,0 |  |  |  |
| 94 |  |  |  |  |  | 2,5 | 0,7 |  |  |  |
| 95 |  |  |  |  |  | 1,4 | $2,3$. |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

## ANNEX IX

ANNEX XIV
SEGMENTATION OF NSLT HEALTH INSURANCE AND REINSURANCE OBLIGATIONS AND STANDARD DEVIATIONS FOR THE NSLT HEALTH PREMIUM AND RESERVE RISK SUB-MODULE

|  | Segment | Lines of <br> business, as <br> set out in <br> Annex I, that <br> the segment <br> consists of | Standard <br> deviation <br> for gross <br> premium risk <br> of the segment | Standard <br> deviation for <br> reserve risk of <br> the segment |
| :--- | :--- | :--- | :--- | :--- |
| 1 | Medical expense <br> insurance and <br> proportional <br> reinsurance | 1 and 13 | $5 \%$ | $5,7 \%$ |
| 2 | Income <br> protection <br> insurance and <br> proportional <br> reinsurance | 2 and 14 | $8,5 \%$ | $14 \%$ |
| 3 | Workers' <br> compensation <br> insurance and <br> proportional <br> reinsurance | 3 and 15 | $9,6 \%$ | $11 \%$ |
| 4 | Non- <br> proportional <br> health <br> reinsurance | 25 | $17 \%$ | $17 \%$. |

ANNEX X
In Annex XVI, the table 'DEFINITION OF EVENTS AND RISK FACTORS FOR THE MASS ACCIDENT RISK SUB-MODULE AND ACCIDENT CONCENTRATION RISK SUB-MODULE' is replaced by the following:

## 'DEFINITION OF EVENTS AND RISK FACTORS FOR THE MASS ACCIDENT RISK SUB-MODULE AND ACCIDENT CONCENTRATION RISK SUB-MODULE

| Event type e | $\mathbf{x}_{e}$ - Ratio of persons which will be <br> affected by event type e as the result of <br> the accident |
| :--- | :--- |
| Death caused by an accident | $10 \%$ |
| Permanent disability caused by an accident | $3,5 \%$ |


| Disability that lasts 12 months caused by an <br> accident | $16,5 \%$ |
| :--- | :--- |
| Medical treatment caused by an accident | $30 \%$ |

## ANNEX XI

Annex XVII is amended as follows:
(1) the title of part F is replaced by the following: F1.Non-proportional reinsurance method 1;
(2) the following part F. 2 is added:

## F2. Non-proportional reinsurance method 2

Input data and method-specific data requirements
(1) The data for estimating the undertaking-specific adjustment factor for nonproportional reinsurance shall consist of the aggregated annual losses of insurance and reinsurance claims that were reported to the insurance or reinsurance undertaking in segment $s$ during the last financial years.
(2) The following method-specific data requirements shall apply:
(a) the data are representative for the premium risk that the insurance or reinsurance undertaking is exposed to during the following 12 months;
(b) the data do not indicate a higher premium risk than reflected in the standard deviation for premium risk used to calculate the Solvency Capital Requirement;
(c) the aggregated annual losses are estimated in the year the insurance and reinsurance claims were reported;
(d) data are available for at least five reporting years;
(e) where the recognisable stop loss reinsurance contract applies to gross claims, the aggregated annual losses are gross;
(f) where the recognisable stop loss reinsurance contract applies to claims after deduction of the recoverables from certain other reinsurance contracts and special purpose vehicles, the amounts receivable from those certain other reinsurance contracts and special purpose vehicles are deducted from the aggregated annual losses;
(g) the aggregated annual losses shall not include expenses incurred in servicing the insurance and reinsurance obligations;
(h) the data are consistent with the assumption that aggregated annual losses follow a lognormal distribution, including in the tail of the distribution.
Method specification
(1) For the purpose of paragraphs 4-7, the following notation shall apply:
(a) $\quad n$ denotes the number of financial years for which aggregated annual losses data is available;
(b) $\quad Y_{i}$ denotes the aggregated losses in financial year $i$;
(c) $\quad \mu$ and $\omega$ denote the first and second moment, respectively, of the aggregated annual losses distribution, being equal to the following amounts:

$$
\begin{aligned}
& \mu=\frac{1}{n} \sum_{i=1}^{n} Y_{i} \\
& \text { and } \\
& \omega=\frac{1}{n} \sum_{i=1}^{n} Y_{2}^{i}
\end{aligned}
$$

(d) $\quad b_{1}$ denotes the amount of the retention of the recognisable stop loss reinsurance contract referred to in Article 218(2);
(e) where the recognisable stop loss reinsurance contract referred to in Article 218(2) provides compensation only up to a specified limit, $\mathrm{b}_{2}$ denotes the amount of that limit.
(2) The undertaking-specific specific adjustment factor for non-proportional reinsurance shall be equal to the following:

$$
N P_{U S P}=c \cdot N P^{\prime}+(1-c) \cdot N P
$$

where:
(a) $\quad c$ denotes the credibility factor set out in section G ;
(b) $\quad N P^{\prime}$ denotes the estimated adjustment factor for non-proportional reinsurance set out in paragraph 5;
(c) $\quad N P$ denotes the adjustment factor for non-proportional reinsurance set out in Article 117(2).
(3) The estimated adjustment factor for non-proportional reinsurance shall be equal to the following:

where the parameters $\mu_{1}, \mu_{2}, \omega_{1}$ and $\omega_{2}$ are set out in paragraph 6 .
(4) The parameters $\mu_{1}, \mu_{2}, \omega_{1}$ and $\omega_{2}$ shall be equal to the following:

$$
\begin{aligned}
& \mu_{1}=\mu \times N\left(\frac{\ln \left(b_{1}-\theta\right)}{\eta}-\eta\right)+b_{1} \times N\left(-\frac{\ln \left(b_{1}\right)-\theta}{\eta}\right) \\
& \mu_{2}=\mu \times N\left(\frac{\ln \left(b_{2}-\theta\right)}{\eta}-\eta\right)+b_{2} \times N\left(-\frac{\operatorname{lo}\left(b_{2}\right)-\theta}{\eta}\right) \\
& \omega_{1}=\omega \times N\left(\frac{\ln \left(b_{1}-\theta\right)}{\eta}-2 \times \eta\right)+b_{2}^{1} \times N\left(-\frac{\ln \left(\theta_{1}\right)-\theta}{\eta}\right)
\end{aligned}
$$

$$
\omega_{2}=\omega \times N\left(\frac{\ln \left(b_{2}-\theta\right)}{\eta}-2 \times \eta\right)+b_{2}^{2} \times N\left(-\frac{\ln \left(b_{2}\right)-\theta}{\eta}\right)
$$

where:
(a) $\quad N$ denotes the cumulative probability function of the normal distribution;
(b) In denotes the natural logarithm;
(c) the parameters $\theta$ and $\eta$ are equal to the following:

$$
\begin{aligned}
& \theta=2 \ln \mu-\frac{1}{2} \ln \omega \\
& \eta=\sqrt{\ln \omega-2 \ln \mu}
\end{aligned}
$$

(5) Notwithstanding paragraph 5, where non-proportional reinsurance covers homogeneous risk-groups within a segment, the estimated adjustment factor for non-proportional reinsurance shall be equal to the following:

$$
N P T=\frac{\sum_{\star} v_{(\operatorname{mem}, \lambda)} \times N P_{(\lambda)}}{\sum_{\mathrm{A}} v_{(\operatorname{sem})}}
$$

where:
(a) $\quad V_{(p r e m, h)}$ denotes the volume measure for premium risk of the homogeneous risk group $h$ determined in accordance with paragraph 3 of Article 116;
(b) $\quad N P^{\prime}{ }_{(h)}$ denotes the estimated adjustment factor for non-proportional reinsurance of homogeneous risk group $h$ determined in accordance with paragraph 5.

## ANNEX XII

Part B of Annex XXI is amended as follows:
(1) the following point (19) is added:
(19) The number of applications submitted to the supervisory authority, in accordance with paragraph 10 of Article 71, to waive the application of the principal loss-absorbency mechanism referred to in point (e) of paragraph 1 of that Article, and how many were successful.;
(2) the last sentence of part B is replaced by the following:

The information set out in paragraphs 2 to 19 shall be provided in relation to the last calendar year.

## ANNEX XIII

Annex XXII is amended as follows:
(1) the following section 'Correlation coefficients for windstorm risk in the Republic of Finland' is inserted after the section 'Correlation coefficients for windstorm risk in the Kingdom of Spain':

## Correlation coefficients for windstorm risk in the Republic of Finland

| $\mathbf{j i}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ | $\mathbf{1 2}$ | $\mathbf{1 3}$ | $\mathbf{1 4}$ | $\mathbf{1 5}$ | $\mathbf{1 6}$ | $\mathbf{1 7}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1}$ | $1,000,250,250,500,500,500,500,250,250,500,000,500,250,250,000,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{2}$ | $0,251,000,500,500,500,250,250,000,250,250,000,500,250,000,250,000,250,250,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3}$ | $0,250,501,000,250,500,250,000,000,000,250,000,250,250,000,000,000,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{4}$ | $0,500,500,251,000,750,750,750,500,500,500,500,750,250,000,250,000,500,500,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5}$ | $0,500,500,500,751,000,500,500,500,500,750,501,000,500,250,250,250,500,500,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{6}$ | $0,500,250,250,750,501,001,000,750,750,750,500,750,250,250,250,000,500,500,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{7}$ | $0,500,250,000,750,501,001,001,000,750,500,750,750,250,250,000,000,500,250,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{8}$ | $0,250,000,000,500,500,751,001,000,750,750,750,750,250,000,000,000,500,250,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{9}$ | $0,250,250,000,500,500,750,750,751,000,750,750,750,250,250,250,250,750,500,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 0}$ | $0,500,250,250,500,750,750,500,750,751,000,751,000,500,250,500,250,750,500,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 1}$ | $0,000,000,000,500,500,500,750,750,750,751,000,750,250,000,250,250,750,250,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 2}$ | $0,500,500,250,751,000,750,750,750,751,000,751,000,500,250,500,250,750,500,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 3}$ | $0,250,250,250,250,500,250,250,250,250,500,250,501,000,500,250,250,500,500,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 4}$ | $0,250,000,000,000,250,250,250,000,250,250,000,250,501,000,250,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 5}$ | $0,000,250,000,250,250,250,000,000,250,500,250,500,250,251,000,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 6}$ | $0,250,000,000,000,250,000,000,000,250,250,250,250,250,250,251,000,250,500,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 7}$ | $0,250,250,250,500,500,500,500,500,750,750,750,750,500,250,250,251,000,500,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 8}$ | $0,250,250,250,500,500,500,250,250,500,500,250,500,500,250,250,500,501,000,25$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{1 9}$ | $0,000,250,000,250,000,250,250,250,250,250,250,250,000,000,000,000,250,251,00$. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

the following section 'Correlation coefficients for windstorm risk in the Republic of Hungary' is inserted after the section 'Correlation coefficients for windstorm risk in the United Kingdom of Great Britain and Northern Ireland':

## Correlation coefficients for windstorm risk in the Republic of Hungary



(3) the section 'Correlation coefficients for windstorm risk in the Kingdom of Sweden' is replaced by the following:
Correlation coefficients for windstorm risk in the Kingdom of Sweden

| ji | 1 | 2 | 23 |  | 5 | 56 | , | 8 | 10 | 1 | 31415 | 1 |  | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| J |  | 50 | 500,750, | ,750,5 | 500,500 | ,500,2 | ,50 | 50, 500, | 250 | 250,250,5 | 500,750,5 | 500,750,5 |  | 0,250,250,00 |
| 2 |  | 0,501,00 | ,000,50 | ,500,5 | ,500,500, | 0,500,2 |  | ,250,5 | 250,2 | 250,250,5 | 500,750,5 | 500,750, |  | 50,250,25 |
| 3 |  |  | O1,00 | ,000,7 | ,750,500 | 0,500, |  | ,500,500 |  | 50,500,7 | 750,750,7 |  |  | 50,25 |
| 4 |  | 50 | 500,75 | ,751,0 | ,000,750 | 0,750 |  | 500.50 | ,250 | 0,750, | 0,750,5 | 500,750 |  |  |
| 5 |  | 0,500,50 | $50,51 a$ | $0.500,7$ | 751 | ,000,5005 |  |  |  | 0.50 | 0,750, | 0 |  | ,00 |
| 6 |  | 50,2 | ,250,500 | ,500,2 | ,250,50 | 0,501 |  | ,50,250,250 | 25 | ,50,500,2 | 250,500,2 | , 5 |  | $0,00$ |
| 7 |  |  | 50,50 | ,500,50 | ,500,500, | ,50, |  | ,000,50,500, | , | 250,250,5 | 500,750,2 | 250,750, |  |  |
| 8 |  | 50 | 50,500, | ,500,500 | ,500,50 | 50 |  | ,501,000 |  | 50,250,50 | 500,750,5 | 50.5 |  | 5,00 |
| 9 |  |  | 50,250, | 2 | , | ,500,250 |  | ,50,251,00 |  | ,250,5 | 500,500,2 | 250,500 |  | $\omega, 00$ |
| $10$ |  |  |  |  |  | ,250 |  | 250 | 00 | 500,500,2 | 50, 5 | 0,250 |  | ¢, 00 |
| $11$ |  |  |  | ,250,50 | ,500,5 | , |  |  | 50,501,00 | ,000,500 | 250,500 | 250,250, |  | $0,00$ |
|  |  |  | 230,50 | ,500,7 | ,750,500 | 0,500,500, |  | ,250,230 | 250,500,50 | 501,000,5 | 500,750,2 | 20, |  | $0,00$ |
|  |  | ,500,500 | 500,750, | 750,50 | 50,50,750, | ,750,250 |  | ,50,50,500, | 500,250,2 | 250,501,00 | 001,000,5 | 501,000, |  | ,500,250,25 |
|  |  | 750,750, |  |  | 0,750,750, | 0,750,500 |  | 750,750,50 | ,250,50 | 500,751,00 | 001,000,7 | 751,000 |  | 00,750,500,25 |
|  |  | ,500,50 | 500,750 | ,750,50 | ,50,500 | ,500, |  |  |  | 250,250,500, | 500,751,0 | 000,750,5 |  | 50,50,250,25 |


|  | 0,750, | 50,750,7 | $50,750,50$ | $00,750,50,500,250,25$ | 50,501, | 1,000, | 0, 751 | 51,000, |  | $500,750$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0,500,50 | 500,500,50 | 00,500,200, | 50,250,250,250,000,000 | 00,250,7 | 50,750, | 50,500 | $00,751,0$ |  | 0,500, |  |
|  | 0,250,2 | 250,250,2 | 50,250,000 | 000,250,250,000,000,00 | ,00,000,2 | 50,500, | 0,250 | 50,500,5 |  | ,50 | 50,25 |
|  | 0,250,2 | 50,500,5 | 00,500,20, | 250,250,250,250,000,00, | 00,250,5 | (00,750, | 50,500 | 00,750,5 |  | 501,000,2 | 0,25 |
|  | 0,250,2 | 250,250,2 | 50,250,000, | 000,250,250,000,000,00 | 00,000,2 | 50,500, | 0,250 | 50,500,2 |  | 250,251,0 | 0,25 |
|  | 0,000,2 | 250,250,0 | 00,000,00 | 000,000,000,000,000,00 | 00,000,2 | 50,250, | 50,250 | 50,250,2 |  | 250,250,2 | 251,00 |

(4) the following section 'Correlation coefficients for windstorm risk in the Republic of Slovenia' is inserted after the section 'Correlation coefficients for windstorm risk in the Kingdom of Sweden':
Correlation coefficients for windstorm risk in the Republic of Slovenia

| $\mathbf{j i}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1}$ | 1,00 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 |
| $\mathbf{2}$ | 0,75 | 1,00 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 |
| $\mathbf{3}$ | 0,75 | 0,75 | 1,00 | 1,00 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 |
| $\mathbf{4}$ | 0,75 | 0,75 | 1,00 | 1,00 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 |
| $\mathbf{5}$ | 0,75 | 0,75 | 0,75 | 0,75 | 1,00 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 |
| $\mathbf{6}$ | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 1,00 | 1,00 | 0,75 | 0,75 | 0,75 | 0,75 |
| $\mathbf{7}$ | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 1,00 | 1,00 | 0,75 | 0,75 | 0,75 | 0,75 |
| $\mathbf{8}$ | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 1,00 | 0,75 | 0,75 | 0,75 |
| $\mathbf{9}$ | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 1,00 | 0,75 | 0,75 |
| $\mathbf{1 0}$ | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 1,00 | 0,75 |
| $\mathbf{1 1}$ | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | 0,75 | $1,00$. |

## ANNEX XIV

Annex XXIII is amended as follows:
(1) the section 'Correlation coefficients for earthquake risk in the Hellenic Republic' is replaced by the following:
Correlation coefficients for earthquake risk in the Hellenic Republic



$140,2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
$\mathbf{1 5} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 00,2 \theta, 2 \theta, 0 \mathbf{0}, 00,00$

$170,2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 00,2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0 0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 00,00,25$
$\mathbf{1 8} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
$190,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,2 \theta, 00,2 \theta, 2 \theta, 0 \mathbf{0}, 00,25$
$200,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 25$
$210,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 25$
$220,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
$230,2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 00,2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
$240,2 \theta, 2 \theta, 2 \theta, 00,2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$



| $\mathbf{2 2}$ | $0,000,000,250,000,250,250,250,000,000,000,000,000,000,0000,000,000,0000,000,000,00$ |
| :---: | :--- | :--- |
| $\mathbf{2 3}$ | $0,000,000,250,250,250,000,250,000,000,000,000,000,000,000,000,000,000,000,250,00$ |
| $\mathbf{2 4}$ | $0,250,250,250,250,250,250,250,250,250,000,000,000,000,000,000,000,250,250,000,00$ |
| $\mathbf{2 5}$ | $0,000,250,250,250,250,250,250,250,250,000,000,000,000,000,000,000,250,250,250,00$ |



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| $\mathbf{j i}$ | $\mathbf{5 1}$ | $\mathbf{5 2}$ | $\mathbf{5 3}$ | $\mathbf{5 4}$ | $\mathbf{5 5}$ | $\mathbf{5 6}$ | $\mathbf{5 7}$ | $\mathbf{5 8}$ | $\mathbf{5 9}$ | $\mathbf{6 0}$ | $\mathbf{6 1}$ | $\mathbf{6 2}$ | $\mathbf{6 3}$ | $\mathbf{6 4}$ | $\mathbf{6 5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 6}$ | $\mathbf{6 7}$ | $\mathbf{6 8}$ | $\mathbf{6 9}$ | $\mathbf{7 0}$ |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{2 6}$ | $0,0000,000,250,250,250,250,250,000,000,000,000,000,000,000,000,000,000,000,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{2 7}$ | $0,250,250,250,250,250,250,250,250,250,000,000,000,000,000,000,000,250,250,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{2 8}$ | $0,000,250,250,250,250,250,250,000,000,000,000,000,000,000,000,000,000,000,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{2 9}$ | $0,000,000,250,000,250,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3 0}$ | $0,250,250,250,250,250,250,250,250,250,000,000,000,000,000,000,000,250,250,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3 1}$ | $0,000,000,250,000,250,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3 2}$ | $0,250,250,250,250,250,250,250,250,250,000,000,000,000,000,000,000,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3 3}$ | $0,000,250,250,250,250,250,250,000,000,000,000,000,000,000,000,000,000,000,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3 4}$ | $0,250,250,000,000,250,250,250,000,250,000,000,000,000,000,250,000,000,250,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3 5}$ | $0,250,250,250,250,250,250,250,250,250,000,000,000,000,000,000,000,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  | ,2 | 50,250 | 50,250 | 50,250 |  |  | , |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3 |  | ,250,250,250, | 50,250 | 50,250 | 50,250 |  |  | 50,250,000 | 00,000 |  | 00,000,0 |  | ,000,250, |  |  |  |
| 3 |  | 0,250,250,250, | 50,250 | 50,250 | 50, | 250 |  | 250,000 | 00,000 |  | 00,000,0 |  | ,000,000 | 00,250, |  |  |
| 3 |  | ,000,000,250, | 50,250, | 50,250, | 50,2 |  |  | 000,000 | 00,000 |  | 00,000,0 |  | 000,000 | 00,000 |  |  |
| 40 |  | 0,500,250,250, | 50,250 | 50,500 | 00 |  |  | ,250,000 | $00,00$ |  | 00,000,0 |  | 250 |  |  |  |
|  |  | 0,500,250,250, | 50,250 | 50,250 | 50,250 | 50,250 |  | 250,000 | 00,000 |  | 00,000, |  | 000 |  |  |  |
| 42 |  | 0,500,250,250, | 50,250 | 50,500 | 00,250 | 50,2 2 | 50,2 | 50,250,000 | 00,000 |  | 00,000,0 |  | 250, |  |  | ,00 |
| 4 |  | 0,500,250,250, | 50 | 50,250, | 50 | 50,250, |  | 250,000 | $50,00$ |  | 0,000 |  | 250 |  |  |  |
| $44$ |  | 0,750,500,750 | 50,500 | 00,500 | 00,500 | 00,500 |  | ,250, | 250 |  | , |  | ,250,250, |  |  |  |
| 4 |  | 0,750,500,750 | 50,500 | 00,500 | 00,500 | 00,500 |  | 250,000 | 00,000 |  | 50,000,2 |  | 00, 250,250 |  |  | ,00 |
| 46 |  | , 7 | 50,500 | 00,500 | 00,500 | , |  |  |  |  | , |  | ,250,2 |  |  | 0,00 |
| 4 |  | 0,500,500,750 | 50,500 | 00,500 | 00,500 | $00,25$ |  | 0,250,2 |  |  | 50,250, |  | ,000,250, |  |  | 5,00 |
| 48 |  | 0,750,500,500 | 00,250 | 50,500 | 00,500 | 00,500 |  | 0,250,000 |  |  | 00,000,2 |  | ,250,250 |  |  | 50,00 |
| 49 |  | 0,500,500,500 | 00,500 | 00,500 | 00,500 | 00,500 |  | 50,250,000 | 00,000 |  | 00,000,2 |  | 00,250, |  |  | 0,00 |
| 50 |  | 0,500,500,500 | 00,500 | 00,500 | 00,500 | 00,500 | 00, | 50,250,000 | 00,000 | 00,2 | 50,250,2 | 50,00 | 000,250,250 |  |  | 50,00 |


$510,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,00$
$520,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 25$
53 $0,2 \theta, 2 \theta, 2 \theta, 2 \theta, 00,0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
$\mathbf{5 4} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 25$
$\mathbf{5 5} 0,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 25$
$\mathbf{5 6} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,2 \theta, 2 \theta, 00,2 \theta, 00,00,00,2 \theta, 00,2 \theta, 00,2 \theta, 25$
$570,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 25$
$\mathbf{5 8} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 25$
$590,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 25$
$\mathbf{6 0} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{6 1} 0,2 \mathrm{D}, 0 \mathbf{0}, 2 \mathrm{Q}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{6 2} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$630,0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 0 \mathbf{0}, 2 \mathrm{Q}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$\mathbf{6 4} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,20,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{6 5 0} 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 5 \mathbf{0}, 2 \theta, 2 \theta, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{6 6} 0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{6 7} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,20,25$
$\mathbf{6 8} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 20,20,0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,20,25$

```
\(\mathbf{6 9} 0,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 25\)
\(700,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00\)
```

> ji 26272829303132333435363738394041424344454647484950
> $510,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 5 \mathbf{0}, 5 \mathbf{0}, 5 \mathbf{0}, 7 \theta, 7 \theta, 7 \theta, 5 \mathbf{0}, 7 \theta, 50,50$
> 520,00,2日,2日, 00, 2ब, $0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 50,50,50,50,50,50,50$
> $530,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 20,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 7 \theta, 7 \theta, 7 \theta, 7 \theta, 50,50,50$
> 540,2日, 2 $\theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 5 \mathbf{0}, 50,50,50,2 \theta, 5 \mathbf{0}, 50$
> 550, $2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 50,2 \theta, 50,2 \theta, 50,50,50,50,50,50,50$
> $\mathbf{5 6} 0,2 \theta, 2 \theta, 2 \theta, 00,2 \theta, 20,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 50,50,50,50,50,50,50$
> $\mathbf{5 7} 0,2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 50,50,50,2 \theta, 50,50,50$
> $\mathbf{5 8} 0,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
> 59 $0,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
> $\mathbf{6 0} 0,00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,00,00,20,00,20,20,00,00,00$
> $610,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,20,0 \mathbf{0}, 20,2 \theta, 00,00,00$
> $\mathbf{6 2} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 00,00,25$
> $630,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 00,00,25$
> $\mathbf{6 4} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
> $\mathbf{6 5 0 , 0 0 , 0 0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,20,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \varphi \mathbf{0}, 2 \theta, 00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
> $\mathbf{6 6} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 25$
> $\mathbf{6 7} 0,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta,, \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
> $\mathbf{6 8 0} 0,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
> $\mathbf{6 9} 0,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$
> $700,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$

| $\mathbf{j i}$ | $\mathbf{5 1}$ | $\mathbf{5 2}$ | $\mathbf{5 3}$ | $\mathbf{5 4}$ | $\mathbf{5 5}$ | $\mathbf{5 6}$ | $\mathbf{5 7}$ | $\mathbf{5 8}$ | $\mathbf{5 9}$ | $\mathbf{6 0}$ | $\mathbf{6 1}$ | $\mathbf{6 2}$ | $\mathbf{6 3}$ | $\mathbf{6 4}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 5}$ | $\mathbf{6 6}$ | $\mathbf{6 7}$ | $\mathbf{6 8}$ | $\mathbf{6 9}$ | $\mathbf{7 0}$ |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 1}$ | $1,000,500,500,500,500,500,500,250,500,000,000,000,000,000,250,250,250,250,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 2}$ | $0,501,000,500,500,500,750,500,250,500,000,000,000,000,000,000,250,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 3}$ | $0,500,501,000,500,500,500,500,250,250,250,250,250,250,250,000,250,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 4}$ | $0,500,500,501,000,750,750,750,250,500,000,000,000,000,000,000,250,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 5}$ | $0,500,500,500,751,000,750,750,500,500,000,000,250,000,250,000,250,250,500,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 6}$ | $0,500,750,500,750,751,000,750,500,500,000,000,000,000,250,000,250,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 7}$ | $0,500,500,500,750,750,751,000,500,750,000,000,000,000,250,000,250,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 8}$ | $0,250,250,250,250,500,500,501,000,500,000,000,000,000,000,000,250,250,250,250,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathbf{5 9}$ | $0,500,500,250,500,500,500,750,501,000,000,000,000,000,000,250,250,2500,250,000,00$ |  |  |  |  |  |  |  |  |  |  |  |  |  |


| $\mathbf{6 0}$ | $0,000,000,250,000,000,000,000,000,001,000,500,250,250,250,250,000,000,000,250,00$ |
| :---: | :--- | :--- | :--- | :--- |
| $\mathbf{6 1}$ | $0,000,000,250,000,000,000,000,000,000,501,000,250,250,250,250,000,000,000,250,00$ |
| $\mathbf{6 2}$ | $0,000,000,250,000,250,000,000,000,000,250,251,000,000,250,250,000,000,000,250,00$ |
| $\mathbf{6 3}$ | $0,000,000,250,000,000,000,000,000,000,250,250,001,000,250,250,000,000,000,250,00$ |
| $\mathbf{6 4}$ | $0,000,000,250,000,250,250,250,000,000,250,250,250,251,000,250,000,000,000,250,00$ |
| $\mathbf{6 5}$ | $0,250,000,000,000,000,000,000,000,250,250,250,250,250,251,000,000,000,000,000,00$ |
| $\mathbf{6 6}$ | $0,250,250,250,250,250,250,250,250,250,000,000,000,000,000,001,000,250,250,000,00$ |
| $\mathbf{6 7}$ | $0,250,250,250,250,250,250,250,250,250,000,000,000,000,000,000,251,000,250,250,00$ |
| $\mathbf{6 8}$ | $0,250,250,250,250,550,250,250,250,250,050,000,000,000,000,000,250,251,000,250,00$ |
| $\mathbf{6 9}$ | $0,000,250,250,250,250,250,250,250,000,250,250,250,250,250,000,000,250,251,000,00$ |
| $\mathbf{7 0}$ | $0,000,000,000,050,000,000,050,000,000,000,000,000,000,000,000,000,000,000,001,00 ;$ |

(2) the section 'Correlation coefficients for earthquake risk in the Republic of Romania' is replaced by the following:
Correlation coefficients for earthquake risk in the Republic of Romania

| $\begin{aligned} & \mathbf{j} \\ & \mathbf{i} \end{aligned}$ |  | $\begin{array}{l\|l\|l\|} \hline 01 & 03 & 04 \end{array}$ |  |  |  |  |  | $1012$ |  |  | $1718$ |  | $2021$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 01 |  | ,000,500,250 | 50,000 | 00,751 | 51,000 | 00,7 | 50,2 | ,500,000 | 00,5 |  | ,000,750 |  | ,250,5 | 500, |  | 50 |
| 0 |  | ,501,000,000 | 00, 000 | 00,250 | 50,750 | 50,0 | 00,000 | 00,000,000 | 00,2 | 50,000 | 00,750,250, | 50, | 0 |  |  |  |
|  |  | 0,250 | 750 | 50,000 | 00,250 | 50, |  | ,500,500 | 00,0 |  | 50,500,250 |  |  |  |  |  |
|  |  | ,000,000,751 | 51,000 | O0,000 | 00,25 |  |  | ,500,750 | 50,0 |  | 250,00 | O1, | 00,750,5010 | 501,000 |  |  |
|  |  | 0,750,2 |  | 01,0 | 00,750 |  | 50,000 | 000,000 | 00,2 | 50,0 | ,750,250 | 50 | ,000, |  |  |  |
| 07 |  | ,000,750 |  | 50,751 | 1,000 | 7 |  | , | , | 50,25 | , |  | ,250,500 |  |  |  |
|  |  | ,750,000,751 | 51,000 | 00,250 | 50,751 | 51,0 |  | 750,500 | O0, |  | 500,500 |  | 0,750,7 |  |  |  |
|  |  | ,250,000,750 | 50,750 | 50,000 | 00,250 | 50,7 | 51,0 | 501,000 | 00,0 |  | 500,500 |  | 000 |  |  | ,25 |
| 10 |  | 0,500,000,500 | 00,500 | 00,000 | 00,500 | 00,7 |  | 01,000,250 | 50,0 |  | 500,250 |  | ,500, |  | S00, | , 25 |
| 12 |  | , 000,000 | 50 | 50,000 | 0,000 | 0 | 01,0 | ,251,000 | 00,0 | 00,2 | 250,250, |  | 50,750,500,7 |  |  |  |
|  |  | 0,500,250,000 | 00,000 | 00,250 | 50,750 | 50,0 | 00,000 | 00,000,00 | $01,0$ |  | 500, |  | 00 | $000,00$ |  | ,00 |
|  |  | ,250,000,250, | 50,250 | 50,000 | 00,250 | 50,5 | 00,500 | 250,250, | 50 |  | 500,750 |  | ,500, |  |  | ,25 |
| 17 |  | 1,000,750,5 | 00,250 | 50,751 | 51,000 | 00,5 | 500,500, | 500,250, | 50,5 |  | ,000,750, |  | ,250, |  | 50,5 | 0,50 |
|  |  | 0,750,250,2 | ,000 | 00,250 | 50,750 | 50 |  | ,250,250 | 50,2 |  | 50,751,000 |  | ,250,5 | 000 |  | 0,50 |
|  |  | ,250,000 |  | 00,000 |  |  |  | 500,750 | 50,0 |  | 50,500,2 | 51 | 0,750,5 | 500, |  | 0,25 |
| 20 |  | ,250,000, |  | 50,000 |  |  |  | 500,750 | $50,0$ | 00,500 | 00,250,250 |  | 000, | 0, | 0,7 | ,50 |
| 21 |  | ,500,000, | , | 00,250 | 50,500 | 00,7 |  | 0,500,500 | $500,$ | 00,2 | 0,500,500, |  | 0,751 |  |  | 0,75 |
|  |  | ,250,000,501 | 01,000 |  |  |  |  | 00,500,750 |  |  | 0,250,250, |  | 0,750,5 |  |  |  |
| 23 |  | 0,500,000,750 |  | 00,0 |  |  | 50,750 | 50,500,750 | 50,0 | 00,7 | 50,500,750 |  | 500,750,7 | 750, |  | 0,50 |

$240,500,250,500,250,250,500,750,250,250,250,000,250,500,500,250,500,750,250,501,00$
$250,750,500,500,500,500,750,750,500,750,500,250,500,750,750,750,500,750,500,750,75$


[^2]| $\mathbf{1 2}$ | $0,500,000,750,500,000,000,250,750,501,000,000,000,000,500,750,000,500,750,500,750,75$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 3}$ | $0,250,500,000,000,250,250,500,000,000,000,500,000,250,000,0$ | $00,000,000,000,000,000,00$ |
| $\mathbf{1 4}$ | $0,500,000,750,250,250,250,250,250,500,500,250,000,250,250,500,000,250,250,250,250,75$ |  |
| $\mathbf{1 7}$ | $0,751,000,500,500,750,751,000,500,500,001,000,500,750,500,500,500,500,500,500,250,00$ |  |
| $\mathbf{1 8}$ | $0,750,500,500,250,500,500,750,250,500,250,500,2550,500,500,500,250,500,250,250,000,50$ |  |
| $\mathbf{1 9}$ | $0,750,000,500,750,250,250,250,750,500,750,250,000,250,500,500,000,500,750,501,000,75$ |  |
| $\mathbf{2 0}$ | $0,500,000,500,750,250,250,250,751,001,000,000,000,250,751,000,000,750,750,750,751,00$ |  |
| $\mathbf{2 1}$ | $0,750,250,500,750,250,500,500,751,000,500,250,000,250,750,750,000,500,750,750,500,75$ |  |
| $\mathbf{2 2}$ | $0,500,000,500,750,250,250,250,750,750,750,000,000,250,500,750,000,501,000,501,000,75$ |  |
| $\mathbf{2 3}$ | $0,750,250,750,750,250,250,500,750,750,750,250,000,250,751,000,000,500,750,500,501,00$ |  |
| $\mathbf{2 4}$ | $0,750,250,250,500,250,750,500,500,750,250,250,000,500,7500,500,000,500,500,500,250,25$ |  |
| $\mathbf{2 5}$ | $1,000,750,500,750,500,500,750,750,750,500,750,250,500,750,750,000,500,750,750,500,50$ |  |


| $\mathbf{j i}$ | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

$260,751,000,000,000,750,250,750,000,500,001,000,250,500,750,250,000,500,000,000,000,00$
$270,500,001,000,500,250,250,500,500,500,750,250,000,250,250,500,000,500,500,250,251,00$
$280,750,000,501,000,250,250,501,001,000,750,250,000,251,000,750,000,751,000,750,750,75$
$290,500,750,250,251,000,500,750,250,250,000,750,500,500,250,250,250,250,250,250,000,00$
$300,500,250,250,250,501,000,500,250,500,000,500,250,500,500,250,000,250,250,250,000,25$
$310,750,750,500,500,750,501,000,500,500,000,750,500,750,500,500,250,500,500,500,250,00$
$320,750,000,501,000,250,250,501,000,750,750,250,000,251,000,750,000,751,000,750,750,75$
$330,750,500,501,000,250,500,500,751,000,500,250,000,250,751,000,000,500,750,750,500,75$
$340,500,000,750,750,000,000,000,750,501,000,000,000,000,500,750,000,500,750,500,750,75$
$350,751,000,250,250,750,500,750,250,250,001,000,500,500,500,250,000,500,250,250,000,00$
$360,250,250,000,000,500,250,500,000,000,000,501,000,250,000,000,000,000,000,000,000,00$
$370,500,500,250,250,500,500,750,250,250,000,500,251,000,250,250,250,250,250,500,000,00$
$380,750,750,251,000,250,500,501,000,750,500,500,000,251,000,750,000,500,750,750,500,75$
$390,750,250,500,750,250,250,500,751,000,750,250,000,250,751,000,000,500,750,750,500,75$
$400,000,000,000,000,250,000,250,000,000,000,000,000,250,000,001,000,000,000,000,000,00$
$410,500,500,500,750,250,250,500,750,500,500,500,000,250,500,500,001,000,750,500,500,50$
$420,750,000,501,000,250,250,501,000,750,750,250,000,250,750,750,000,751,000,501,000,75$
$430,750,000,250,750,250,250,500,750,750,500,250,000,500,750,750,000,500,501,000,500,50$
$440,500,000,250,750,000,000,250,750,500,750,000,000,000,500,500,000,501,000,501,000,50$
$450,500,001,000,750,000,250,000,750,750,750,000,000,000,750,750,000,500,750,500,501,00$;
(3) the section 'Correlation coefficients for earthquake risk in the Slovak Republic' is replaced by the following:
Correlation coefficients for earthquake risk in the Slovak Republic


## ANNEX XV

Annex XXIV is amended as follows:
(1) the section 'Correlation coefficients for flood risk in the Republic of Hungary' is replaced by the following:
Correlation coefficients for flood risk in the Republic of Hungary

(2) the section 'Correlation coefficients for flood risk in the United Kingdom of Great Britain and Northern Ireland' is replaced by the following:
Correlation coefficients for flood risk in the United Kingdom of Great Britain and Northern Ireland

$\mathbf{B B} \mathbf{0}, \mathbf{0}, 00,00,00,00,00,00,70,00,00,00,00,00,00,00,00,00,00,00,00,20,25,00,00$
$\mathbf{B D}, 00,00,70,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,20,00,00,00$
BH, $00,2 \oplus, 20,2 \oplus, 00,00,00,00,00,2 \oplus, 00,00,00,20,00,00,00,00,00,00,00,00,00,25$
$\mathbf{B L} 0,00,00,50,00,70,00,00,00,00,00,00,00,00,20,00,20,00,00,00,00,20,25,00,00$
BN, $00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{B R}, 00,50,00,00,00,00,20,00,00,00,00,00,00,20,00,00,20,29,00,00,00,00,70,50$

$\mathbf{B} \prod_{0}, 0,00,00,00,00,0 \boldsymbol{0}, 0 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{C A}, 00,00,50,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,20,00,00,00$
$\mathbf{C B}, 00,2 \boldsymbol{0}, 2 \boldsymbol{0}, 00,00,00,2 \boldsymbol{0}, 2 \boldsymbol{0}, 00,2 \boldsymbol{0}, 00,00,00,00,00,00,2 \boldsymbol{0}, 2 \pm, 00,00,00,00,00,00$
$\mathbf{C F}_{0}, 00,00,50,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,25,00,00$
$\mathbf{C H}, 00,0 \mathbf{0}, 7 \mathbf{0}, 00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,20,25,00,00$


CR $, 50,50,00,00,00,29,00,00,00,00,00,00,29,00,00,00,00,00,00,00,79,00,79,00$



$\mathbf{D} \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,7 \boldsymbol{0}, 00,00,00,00,00,00,00,00,70,00,00,00,00,00$
DD0, $20,50,00,00,00,00,20,00,00,50,00,00,00,00,00,00,00,25,00,00,00,00,00,00$
DE0, $00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,50,50,00,00$
ji ABALB BABBBDBHBLBNBRBS BTCACBCFCHCMCOCRCTCVCWDADD
DG $, 00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00$
DH, $00,00,50,00,00,00,90,00,00,00,00,00,00,00,00,00,00,00,90,40,2 \boldsymbol{0}, 00,00,00$



$\mathbf{D} 50,00,00,50,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,70,00,00,00,00,00$
E $0,00,20,70,00,00,00,00,00,00,50,00,00,00,20,00,00,50,20,70,00,20,00,20,00$
$\mathbf{E C}, 00,00,00,00,00,00,20,00,00,00,20,00,00,00,00,00,20,29,00,00,00,00,2 \cdot, 50$

EN, $00,20,00,00,00,00,00,00,00,00,00,00,00,20,00,00,20,00,00,00,00,00,00,00$



FY0, $00,00,00,00,00,20,20,20,20,20,00,00,00,50,00,20,20,00,00,20,50,00,00,00$
G $0,00,00,00,00,00,00, \varphi 0,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00$
GI0, $00,00,00,20,00,00,20,20,00,00,20,00,00,20,00,20,00,00,00,00,50,20,00,00$
$\mathbf{G W}, 00,20,70,00,00,00,20,40,00,00,00,00,00,20,00,20,00,00,70,40,20,00,00,00$
$\mathbf{G} 10,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{H} \boldsymbol{\theta}, 00,20,00,00,00,00,20,20,20,2 \pm, 00,00,00,20,00,20,20,25,00,20,00,00,00,25$
$\mathbf{H I D}, \varphi 0,25,00,20,50,20,00,20,00,00,20,00,00,00,20,20,00,00,70, \varphi 0,70,20,00,00$
$\mathbf{H} 9,00,20,20,00,00,20,20,00,00,50,00,00,00,20,20,00,20,25,00,00,00,250,00,50$
$\mathbf{H P} 0,00,50,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{H R}, \varphi 0,00,70,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,20,00,00,00$
$\mathbf{H S O}, 00,00,00,00,00,00,00,40,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{H} 4,00,00,20,00,00,00,20,20,20,20,00,00,00,20,00,20,20,25,00,20,20,00,00,00$
$\mathbf{H} \mathbf{0}, 00,00,00,00,00,20,20,50,20,20,00,00,00,50,00,20,20,25,00,20,50,20,00,00$


Mb, $, 0,00,00,00,00,00,90, \phi 0,00,00,00,00,00,90,00,00,00,00,70,00,00,00,00,00$
$\mathbf{N} 0,00,50,00,20,00,20,50,50,20,50,00,00,20,70,00,50,70,50,00,50,50,25,20,00$
$\mathbf{N} \mathbf{0}, 00,00,70,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00$


ji ABALB BABBBDBHBLBNBRBS BTCACBCFCHCMCOCRCTCVCWDADD
$\mathbf{N P} 0,00,00,00,20,00,00,00,00,00,00,00,00,00,00,50,20,00,00,50,00,50,20,00,00$
$\mathbf{N R}, 00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00$

OI $0,00,00,50,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,50,00,20,00,00,00$
$\mathbf{O X}, 00,00,00,28,00,00,20,20,00,00,20,00,00,20,00,20,00,00,00,20,70,00,00,00$
P40,00,00, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
PE0, $00,50,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,70,00,20,00,00,00$
P由, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,70,00,00,00,00,00$
P $10,00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,2 \theta, 00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,25$
$\mathbf{P O}, 00,00,70,00,00,00,20,20,70,20,00,00,00,20,00,20,20,00,00,20,50,00,00,00$
PR0, $00,00,50,00,50,00,00,50,00,00,00,00,00,00,00,00,00,00,00,00,2 \boldsymbol{0}, 00,00,00$


RM, $00,24,00,00,00,2 \Delta, 20,20,20,50,00,00,00,50,00,20,20,24,00,20,50,00,2 \pi, 25$
S $0,00,00,00,00,20,50,90,00,00,00,20,00,00,00,00,00,00,00,00,00,20,50,00,00$
$\mathbf{S} 40,0 \boldsymbol{0}, 00,7 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,20,00,00,00$

$\mathbf{S C 0} 0,0,50,00,00,00,00,20,00,00,2 \pi, 00,00,00,70,00,00,20,24,00,00,00,00,00,25$
$\mathbf{S k} 0,00,00,00,00,20,00,90,20,00,00,00,00,00,00,00,00,00,00,50,00,20,50,00,00$

SM, $00,50,00,00,00,00,00,00,00,50,2 \Delta, 00,00,20,00,00,00,00,70,00,00,00,2 \Delta, 00$

$\mathbf{S O}, 00,2 \boldsymbol{0}, 2 \boldsymbol{0}, 00,00,00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$

ji ABALB BABBBDBHBLBNBRBS BTCACBCFCHCMCOCRCTCVCWDADD SR0,20, $70,00,00,00,00,20,00,00,50,00,00,00,20,20,00,20,29,00,00,00,00,00,75$


$\mathbf{S W}, 00,00,00,00,00,00,00,00,00,50,00,00,00,20,00,00,00,00,00,00,50,00,20,00$
$\mathbf{S Y} \mathbf{Y}_{0}, 00,00,50,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,70,00,20,00,00,00$
TA0, $00,00,00,00,00,00,50,20,20,20,00,00,00,50,00,20,20,25,00,20,20,00,20,00$
$\mathbf{T D}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,50,00,00,00,00,00$
TF0, $00,2 \Delta, 20,20,00,00,00,00,00,2 \theta, 00,00,00,00,00,00,00,00,50,00,00,20,00,25$
TN $, 00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,50,50,00,00,00,00$
$\mathbf{T} \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,70,00,00,00,00,00$
TR $, 00,20,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,70,00,00,00,00,25$
$\mathbf{T} \$ 0,90,00,7 \boldsymbol{0}, 00,00,00,90,00,00,00,00,00,00,00,00,00,00,00,20,20,2 \boldsymbol{0}, 00,00,00$
TW, $00,50,00,2 \theta, 2 \Delta, 2 \Delta, 2 \Delta, 2 \theta, 00,00,2 \Delta, 00,00,2 \Delta, 00,2 \Delta, 00,00,00,20,70,00,00,00$
$\mathbf{U B}, 20,70,20,00,00,00,50,20,20,50,00,00,00,20,00,00,20,50,00,00,20,250,20,50$
$\mathbf{W}_{0,00,20,70,00,00,00,20,20,00,20,00,00,00,20,00,00,00,00,00,00,20,00,00,00}$
$\mathbf{W}, 00,00,00,00,50,00,00,70,00,00,00,00,00,00,00,00,00,00,00,40,20,2 \pi, 00,00$
WG, $50,00,00,00,00,00,50,00,29,00,20,00,00,20,00,00,20,79,00,00,00,20,50,00$
WD, $00,70,00,00,00,00,00,00,00,20,00,00,00,00,00,00,20,20,20,00,00,00,00,50$
WF, $00,00,00,00,20,20,00,20,00,00,00,00,00,00,00,00,00,00,20,00,50,2 \pi, 00,00$
W0, $00,00,00,00,00,20,29,00,20,20,00,00,00,50,00,50,20,29,00,20,50,20,2 \pi, 00$
WR, $00,00,00,20,00,00,00,00,00,00,20,00,00,20,00,20,00,00,00,00,20,00,00,00$
W $\$ 8,20,00,50,00,00,29,00,00,79,00,00,00,29,00,20,79,00,00,00,79,00,75,50,75$
$\mathbf{W} \boldsymbol{\omega}, 40,00,2 ., 00,00,00,40, \varphi 0,00,00,00,00,00,00,00,00,00,00,50, \varphi 0,20,00,00,00$
$\mathbf{Y 0 , 0 0 , 0 0 , 7 0 , 0 0 , 2 0 , 2 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 7 0 , 0 0 , 2 0 , 0 0 , 0 0 , 0 0}$

ji DEDGDHDLDNDTDYE ECEHENEXFKFYG GLGUGYHAHDHGHPHRHS $\mathbf{A B}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$

В ${ }^{\mathbf{B}} 1,00,00,50,50,70,20,50,70,00,50,00,70,00,00,00,00,70,00,00,00,20,90,70,00$
$\mathbf{B} \boldsymbol{0}, \boldsymbol{0}, 0 \boldsymbol{0}, 00,00,00,2 \boldsymbol{0}, 90,00,00,00,00,00,00,00,00,20,00,00,00,20,00,00,00,00$
$\mathbf{B B} 0,20,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,50,00,00,00,00$ $\mathbf{B D}, 00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,20,20,00,00,00$ $\mathbf{B H}, 00,00,00,00,00,70,40,00,20,00,00,00,00,2 \pi, 00,20,20,00,20,40,20,00,00,00$

$\mathbf{B} \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,00$

 $\mathbf{B} \mathbf{T}_{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{C A}, 00,20,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{C B}, 00,00,00,00,20,00,00,20,00,00,20,00,00,50,00,20,20,00,20,00,20,00,00,00$
$\mathbf{C F}_{0}, 00,00,00,20,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,20,20,00,20,00$

CD, $00,00,00,00,00,00,00,50,25,00,2.20,00,0,20,00,00,00,00,2.2,00,2 \Delta, 00,00,00$
$\mathbf{C O}, 00,0 \mathbf{0}, 00,00,00,00,00,20,2 \mathbf{0}, 00,00,00,00,00,00,00,00,00,2 \boldsymbol{0}, 00,20,00,00,00$
CR $, 29,00,00,00,00,50,70,79,00,29,00,79,00,00,00,00,70,00,00,79,00,00,00,00$

$\mathbf{C W}, 50,00,20,20,50,00,00,20,00,20,20,20,00,50,20,50,20,00,00,70,00,00,20,00$
CW, $\mathbf{5 0}, 00,00,00,2 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,00,00,00,00,00,20,00,00,00,20,20,00,00,00$

DD0, $0,00,00,00,00,20,00,00,50,00,00,00,00,00,00,00,00,00,20,00,50,00,00,00$
DE $, 00,00,00,00,50,00,20,00,00,00,00,00,00,00,00,00,00,00,00,50,00,00,00,00$
ji DEDGDHDLDNDTDYE ECEHENEXFKFYG GLGUGYHAHDHGHPHRHS

$\mathbf{D H}, 00,00,00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$

D $\boldsymbol{0}, 50,0 \boldsymbol{0}, 00,00,00,00,90,00,00,00,00,00,00,20,00,20,00,00,20,20,20,00,00,00$
 D $\mathbf{0}, 2 \boldsymbol{0}, 0 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,2.200$

E $0,00,00,00,00,00,00,00,00,00,00,50,00,00,20,00,00,2 ., 00,2 ., 00,00,00,00,00$




FK $, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,50,00,00,00,00,00,00,00,00,00$




$\mathbf{G} \mathbf{0}, 0 \mathbf{0}, \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$

$\mathbf{H D O}, 50,00,00,20,20,00, \varphi 0,40,00,00,00,20,00,20,20,20,20,00,, 00,00,20,00,20,00$
$\mathbf{H C 0}, 00,00,00,20,20,00,00,00,50,00,00,00,00,20,00,20,00,00,20,25,00,25,00,00$
$\mathbf{H P}, 00,00,00,00,00,00,00,40,20,00,00,00,00,00,00,00,20,00,00,00,21,00,00,00$
$\mathbf{H R}, 00,00,00,00,00,00,20,40,00,00,00,00,00,00,00,20,00,00,00,20,00,00,00,00$
$\mathbf{H S O}, 00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{H} 0,00,00,00,20,20,00,00,00,00,00,20,20,00,50,00,50,20,00,50,20,20,00,00,00$
$\mathbf{H 0}, \varphi 0,00,00,20,20,00,00,20,00,00,20,20,00,50,00,50,20,00,50,00,50,00,00,00$
ji $\mathbf{j}$ DEDGDHDLDNDTDYE ECEHENEXFKFYG GLGUGYHAHDHGHPHRHS
IG0,00, $00,00,00,20,00,00,70,50,00,20,00,00,50,00,20,20,00,50,00,50,20,00,00$
IM5, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
IP $0,00,00,00,20,00,00,00,20,00,00,00,00,00,20,00,20,20,00,20,20,00,00,00,00$
IV $0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00$
$\mathbf{J E} 0, \varphi 0,00,00,00,00,00, \varphi 0,40,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{K} \boldsymbol{\theta}, 00,00,00,00,00,00,00,00,00,00,00,00,00,20,20,20,00,00,20,20,00,00,00,00$
K70, $00,00,00,20,20,00, \varphi 0,20,50,00,20,20,40,50,00,50,70,90,50,20,00,20,00,00$
$\mathbf{K W , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , ~} 0,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
K $10,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,20,00,00,00$
$\mathbf{L} 0,00,00,00,00,00,00,00,00,00,00,00,00,00,50,00,00,00,00,00,20,00,00,00,00$
L. $0,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,20,00,00,00,00$

LD, $00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,20,00,00,20,00,00,00,70,00$
LE0,20, $00,00,20,20,00,40,20,00,00,00,20,00,50,20,20,20,00,00,50,00,00,20,00$
LL $0,00,00,00,00,00,00, \varphi 0,00,00,00,00,00,00,20,00,20,00,00,00,20,00,00,00,00$
LV0, $0,00,00,00,20,20,00,00,70,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00$
L\$0,00, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,20,00,00,00$
LL5, $00,00,00,00,00,00,00,00,50,00,00,00,00,00,00,00,00,00,00,00,20,20,00,00$
$\mathbf{M ~}_{0,00,00,00,00,00, ~}^{00}, \varphi 0, \varphi 0,00,00,00,00,00, \varphi 0,00,00,00,00,00,00,00,00,00,00$
M6, $0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
MK, $00,00,00,00,00,00,00,00,20,00,00,00,00,20,00,20,20,00,00,20,00,20,00,00$
M10, $0,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{N} 0,00,20,00,50,50,00, \varphi 0,40,00,00,70,50,40,70,00,70,50,00,70,50,20,20,20,00$
NF0, $00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{N O}=70,00,00,00,20,00,50,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00$
N $10,00,00,00,20,20,00,00,20,25,00,25,20,00,50,00,50,20,00,50,20,20,250,00,00$
ji DEDGDHDLDNDTDYE ECEHENEXFKFYG GLGUGYHAHDHIGHPHRHS
$\mathbf{N P}, 00,00,00,20,20,00,20,00,00,00,00,20,00,20,00,50,20,00,00,20,00,00,7 \infty, 00$
$\mathbf{N R} \boldsymbol{2}, \mathbf{0}, \mathbf{0 0}, \mathbf{0 0}, 00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,20,00,00,00,00,00$
$\mathbf{N W}, 00,00,00,20,00,00,00,25,00,00,20,00,00,50,00,20,20,00,70,00,20,00,00,00$









RH, $00,00,00,20,20,00,90,20,50,00,20,20,00,50,00,50,50,00,50,20,00,00,00,00$

S $0,20,00,00,00,50,00,00,00,00,00,00,00,00,20,00,00,00,00,00,50,20,00,00,00$


$\mathbf{S C 0}, 40,00,00,00,00,00,40,20,2 \boldsymbol{0}, 00,50,00,00,2 \boldsymbol{0}, 00,2 \boldsymbol{0}, 00,00,50,40,2 \boldsymbol{0}, 00,00,00$
$\mathbf{S k}, 2 \boldsymbol{0}, 0 \mathbf{0}, 00,00,2 \boldsymbol{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,00,50,2 \boldsymbol{0}, 00,00,00$

SM $, 00,00,00,00,00,00,00,50,50,00,00,00,00,00,00,00,20,00,20,00,00,00,00,00$

$\mathbf{S O}, 00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,20,00,20,00,00,00,00,00$

ji DEDGDHDLDNDTDYE ECEHENEXFKFYG GLGUGYHAHDHGHPHRHS
$\mathbf{S R} 0,00,00,70,50,00,20,00,00,70,00,00,00,00,20,00,20,00,00,20,00,70,20,00,00$
$\mathbf{S} \$ 0,00,00,00,00,00,00,40,00,20,00,00,00,00,20,00,00,00,00,20,00,20,00,00,00$
$\mathbf{S T}_{0,2 \boldsymbol{0}, 00,00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,00,00,2 \boldsymbol{0}, 00,2 \boldsymbol{0}, 00,00,2 \boldsymbol{0}, 00,2 \boldsymbol{0}, 00,00,00}$
$\mathbf{S W}, 00,00,00,00,00,00,00,20,70,00,00,00,00,20,00,20,50,00,20,20,00,00,00,00$
$\mathbf{S Y} \mathbf{Y O}_{0}, 00,00,00,00,00,00,50,00,00,00,00,00,00,20,00,20,00,00,20,00,00,00,20,00$
TA0, $00,20,00,20,20,20,40,00,20,00,20,50,00,50,00,50,20,00,50,20,20,00,00,00$
TD0, $00,50,00,00,00,00,90,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$

$\mathbf{T N}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{T} \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,20,00,20,00,00,00,00,00,00,00,00,00,00$
$\mathbf{T R}, 00,00,00,00,00,00,00,00,50,00,00,00,00,00,00,00,00,00,90,90,20,00,00,00$
TS0,00,00,20, 50, 00, 00, $00,00,00,00,00,00,00,00,00,00,00,00,00,20,20,00,00,00$

$\mathbf{U B},(00,20,00,00,20,20,40,20,70,00,20,00,20,50,00,20,50,00,70,40,70,50,00,00$

$\mathbf{W}, 0 \boldsymbol{0}, 0 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00$
$\mathbf{W} \boldsymbol{6}, 40,00,00,00,00,00,90,00,50,00,20,00,20,20,00,20,20,00,50,00,40,75,00,00$
$\mathbf{W D}, 00,00,00,00,00,20,00,00,00,00,20,00,00,00,00,00,20,00,20,00,20,70,00,00$
$\mathbf{W} 5,20,00,00,20,50,00,00,00,00,00,00,00,00,00,00,20,00,00,00,70,50,00,00,00$
W0, $00,20,00,20,20,00,90,20,00,00,20,20,00,70,00,50,20,00,50,50,20,00,00,00$
WR, $00,00,00,00,00,00,50,00,00,00,00,00,00,20,00,70,20,00,20,00,00,00,20,00$
W $\$ 8,20,70,90,70,70,20,70,50,20,20,70,50,79,90,00,00,50,00,00,73,40,50,00,00$
WW, $00,00,00,00,00,00,70,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00$

$\mathbf{Z E} \mathbf{0}, 0 \mathbf{0}, \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$

| ji | HUHXIG IMIP IY JE KAKTKKKYL | LALDLELLLNLSLUM MEMKMLN |
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$\mathbf{A I 0}, 00,0 \mathbf{0}, 5 \mathbf{0}, 00,00,00,00,00,20,00,00,00,00,00,00,00,50,00,70,00,00,25,00,50$
B $0,29,00,00,00,50,00,90,79,00,00,00,00,70,29,00,00,00,50,20,20,50,00,00,00$
$\mathbf{B} 40,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,25$
$\mathbf{B B}, 00,00,00,00,00,00,00,00,00,00,00,50,00,00,2 \boldsymbol{0}, 00,00,00,00,50,00,00,00,00$
$\mathbf{B D}, \varphi \mathbf{0}, 2 \boldsymbol{0}, 00,00,00,00,90,00,00,00,00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,90,00,00,00,25$
$\mathbf{B H}, 20,20,20,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,50$


$\mathbf{B R}, 20,2 \boldsymbol{0}, 50,00,00,00,00,00,25,00,00,00,00,00,00,00,20,00,20,00,00,00,00,50$
$\mathbf{B} \$ 0,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$


$\mathbf{C B}, 20,50,50,00,20,00,00,00,20,00,00,00,00,20,00,00,00,00,20,00,00,2 \pi, 00,75$
$\mathbf{C F} 0,00,00,00,00,00,00,00,90,00,00,00,00,00,20,00,00,00,00,90,90,00,00,00,00$

CH, $20,20,00,00,20,00,00,20,20,00,00,00,00,40,20,20,00,00,00,00,00,20,00,50$
CM, 20, $20,50,00,20,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,75$
C0, $20,20,50,00,50,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,50$
CR $, 00,00,00,00,00,00, \varphi 0, \varphi 0,00,00,00,20,00,00,70,50,70,00,70,00,50,750,71,00$
CT0,20,20, $00,00,20,00,00,00,20,00,00,00,00,00,20,00,00,00,00,00,20,00,00,50$
$\mathbf{C V} 0,20,50,00,00,20,00,40,20,50,00,00,50,20,00,70,20,00,00,00,40,20,50,00,50$
CW, $00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,20,00,00,00,25$
$\mathbf{D} \boldsymbol{0}, 00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
DD, $00,00,50,00,00,00,00,00,00,00,20,00,00,00,00,00,20,00,20,00,00,00,00,00$
DF0, $0,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00$


#  <br> $\mathbf{H D}, 50,00,50,00,20,00,90,20,50,00,00,00,00,2 \pm, 20,20,00,00,00,00,00,2 \pm, 00,75$ 

HUHXIG IMIP IY JE KAKTKWKYL LALDLELLLNLSLUM MEMKMLN
$\mathbf{I G} 0,20,50,00,00,20,20,00,00,20,00,20,00,00,20,00,00,20,00,20,00,00,00,00,75$
IM, $0 \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
IP $0,50,2 \Delta, 2.20,00,00,00,00,20,20,00,00,00,00,20,2.20,00,00,00,00,00,00,20,00,75$
I $\mathbf{0}, 00,00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{J E} 0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$ $\mathbf{K} \boldsymbol{\theta}, 20,20,00,00,20,00,00,00,20,00,00,00,00,00,20,00,00,00,00,00,00,00,22,50$
$\mathbf{K T 0}, 20,50,20,00,20,00,00,24,00,00,00,00,00,20,20,00,00,00,00,00,00,25,00,75$
$\mathbf{K W}, \varphi \mathbf{0}, 0 \boldsymbol{0}, 00,00,00,0 \mathbf{0}, 90,00,00,00,00,00,00,00,00,00,00,00,90,90,00,00,00,00$
K $0,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$

$\mathbf{L} 40,00,00,00,00,00,00,00,00,00,00,00,29,00,00,20,00,00,00,00,00,00,00,00,00$
LDD , 20, 20, 20, $00,20,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,50$
LE0,20, $2 \boldsymbol{0}, 00,00,20,00,00,20,20,00,00,20,20,00,00,20,00,00,00,00,00,2 \pi, 00,50$
$\mathbf{L L} 0,00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,24,00,00,00,00,00,00,00,00,25$
$\mathbf{L} \mathbf{W}, 2 \boldsymbol{0}, 00,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00$
$\mathbf{L} \mathbf{\$ 0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{L L}, 00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,50,00,25$
$\mathbf{M}_{0,0,00,00,00,00,00,00,00,00,00,00,2 \boldsymbol{0}, 0 \boldsymbol{0}, 0 \boldsymbol{0}, 00,00,00,00,00,00,00,00,00,00}$
M6, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
MK, 20, 20, 00, 00, 20, $0 \mathbf{0}, 00,00,20,00,00,00,00,00,20,00,00,00,50,00,90,00,00,50$
Mb, $0,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{N} 0,70,70,70,00,78,00,00,50,70,00,00,20,00,50,50,20,00,00,20,00,20,50,00,00$
$\mathbf{N} \mathbf{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{N} \boldsymbol{0},(0,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,2 ., 00,00,00,00,00,00,00$
N $0,50,50,50,00,50,00,90,20,50,00,00,00,00,20,20,20,00,00,20,00,00,50,00,75$
HUHXIG IMIP IY JE KAKTKWKYL LALDLELLLNLSLUM MEMKMLN
$\mathbf{N P}, 00,20,00,00,00,00,00,20,25,00,00,00,00,70,20,00,00,00,00,00,00,20,00,25$

$\mathbf{N W}, 50,50,50,00,20,00,00,00,50,00,00,00,00,20,00,00,00,00,00,00,00,20,00,75$
$\mathbf{O I} 0,20,20,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,20,00,00,00,25$
$\mathbf{O X}, 20,20,00,00,20,00,40,20,50,00,00,00,40,20,50,20,00,00,00,00,00,50,00,50$
PA $0,20,00,20,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
PE0,20,20,00, 00, 20, $00,00,00,20,00,00,00,00,00,20,00,00,00,50,00,00,50,00,50$
PH, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
PL0, $0,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
$\mathbf{P O}, 50,50,20,00,20,00,00,20,50,00,00,00,00,20,20,00,00,00,00,00,20,250,00,75$
PR0,20,20,00,00,00,00, $00,00,00,00,00,50,00,00,00,00,00,00,00,50,00,00,00,25$
$\mathbf{R} 0,20,20,20,00,20,00,00,20,50,00,00,00,00,00,20,00,00,00,20,00,00,50,00,75$
RH, $50,50,20,00,50,00,00,20,70,00,00,00,00,20,50,20,00,00,00,00,20,20,00,75$
$\mathbf{R M}, 70,50,50,00,20,20,00,20,50,00,20,20,00,20,50,20,20,00,20,00,20,200,00,75$
$\mathbf{S} 0,00,00,00,00,00,00,00,00,00,00,00,20,00,00,20,20,00,20,00,00,00,00,00,00$
S $40,00,00,00,00,00,00,00, \varphi 0,00,00,00,00,00,50,00,00,00,00,00,00,00,00,00,00$
SE0, $70,70,50,00,50,00,00,50,70,00,00,20,20,50,70,20,00,00,00,00,20,50,00,00$
$\mathbf{S C 0}, 20,20,50,00,20,00,00,40,20,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00$
$\mathbf{S K} 0,00,20,00,00,00,00,00,00,00,00,00,00,00,40,20,00,00,00,00,20,00,00,00,25$
SL $0,25,20,20,00,20,00, \varphi 0,40,50,00,00,00,00,00,00,00,00,00,20,40,00,250,00,50$
SMO, $0,00,20,00,00,00,00,00,50,00,00,00,00,00,00,00,00,00,00,00,00,20,00,50$
SN0,50,50,50,00,50,00, $00,20,50,00,00,00,00,50,50,20,00,00,00,00,20,50,00,00$
$\mathbf{S O O}, 20,20,00,00,00,00,40,40,20,00,00,00,40,00,00,00,00,00,00,00,00,00,00,25$
$\mathbf{S P} 0,20,20,50,00,00,00,00,40,20,00,00,00,00, \varphi 0,00,00,20,00,00,00,00,00,00,50$
ji HUHXIG IMIP IY JE KAKTKWKYL LALDLELLLNLS LUM MEMKMLN
SR0,20,20,50, $00,00,20,00,40,00,00,20,00,00,20,00,00,50,00,20,00,00,00,20,25$
S\$0,20,20,50,00,00,00,00,00,00,00,00,00,00, $00,00,00,00,00,00,00,20,00,00,50$
$\mathbf{S T}_{0}, 20,20,20,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
SW, 20, 20, 00, 00, 20, 00, 00, $00,20,00,00,00,00,00,20,00,00,00,00,00,00,00,00,75$
$\mathbf{S Y} Y_{0,20,20,00,00,00,00,00,00,20,00,00,00,00,20,00,25,00,00,00,00,00,00,00,25}$
TA0,50,50,50,00,20,00, $00,20,20,00,00,00,00,50,00,00,00,00,00,00,00,20,00,75$
TD0, $0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
TF0, $0,00,20,00,00,00, \varphi 0,00,00,00,00,00,00,00,00,00,20,00,20,00,00,00,00,00$
TV5, $0,00,00,00,00, \varphi 0, \varphi 0,40,00,00,00,00,00, \varphi 0,00,00,00,00, \varphi 0, \varphi 0,20,00,00,25$
TQ , 20, 20, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$
TR $0,0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,20,00,00,00,00,00$
T\$0, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,25,00,00,00,00,00,00,00,00,25$
TW, $50,20,20,00,20,00,00,25,00,00,00,20,20,00,50,20,00,00,00,00,00,25,00,75$

$\mathbf{W}_{0,2 \boldsymbol{0}, 2 \boldsymbol{0}, 2 \boldsymbol{0}, 00,2 \boldsymbol{0}, 0 \boldsymbol{0}, 00,00,50,00,00,00,00,20,2 \boldsymbol{0}, 00,00,00,00,00,00,00,00,50}$
W $0,0,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,50,00,00,00,00$
WG, $00,25,00,00,00,50,00,00,70,00,50,00,00,20,00,00,00,00,00,00,00,25,24,00$
$\mathbf{W 0}, 00,00,2 \boldsymbol{0}, 00,00,00,00,00,20,00,00,00,00,00,00,00,50,00,70,00,00,20,00,50$
W6, $0,50,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,20,00,00,00,00,00,25$
W0, $70,70,50,00,50,00,00,20,50,00,00,50,00,50,50,20,00,00,90,70,00,25,00,00$
WR,20,2 $2,2 \boldsymbol{0}, 00,00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,00,2 \boldsymbol{0}, 00,00,00,00,00,00,2 \pm, 00,50$
WS, $00,00,00,00,00,50,00,70,70,00,70,20,00,00,70,50,20,00,20,00,20,50,50,00$
$\mathbf{W} \mathbf{W}, 0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$\mathbf{Y 0 , 2 0 , 2 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 2 0 , 0 0 , 0 0 , 0 0 , 0 0 , 0 0 , 2 5}$


$\mathbf{C W}, \phi \mathbf{0}, 2 \boldsymbol{\theta}, 2 \boldsymbol{\theta}, 2 \boldsymbol{2}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0},\langle\mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, \$ \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$
DA $, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00$
DID $, 00,00,00,00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,2 \theta, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,00,00,2 \theta, 0 \mathbf{0}, 00,00,00$
DFF, $0 \mathbf{0}, 7 \mathrm{\theta}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 00,00$

ji NENGNNNPNRNVOLOXPA PEPHPLPOPRRGRHRME SASE SGSKSLSMSN
IG0, $\mathbf{0 0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 00,2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 50$


IP $0, \phi \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 2 \Delta, 2 \theta, \phi \mathbf{0}, 2 \theta, \phi \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta,\langle\mathbf{0}, 2 \theta, 5 \mathbf{0}, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, \phi \mathbf{0}, 2 \Delta, 0 \mathbf{0}, 50$
IY $0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
JE $0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
K $\oplus, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
$\mathbf{K T}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 7 \theta, 5 \mathbf{0}, 00,00,7 \theta, 2 \theta, 0 \mathbf{0}, 50,50,50$
$\mathbf{K} \mathbf{W}, 0 \mathbf{0}, 00,00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$\mathbf{K} \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{L} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$
$\mathbf{L} \Delta \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
LD $, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 7 \theta, 00,2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 50,5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,50$
LE0, $00,2 \theta, 2 \theta, 2 \theta, 00,00,2 \theta, 50,0 \mathbf{0}, 2 \theta, 00,00,2 \theta, 0 \mathbf{0}, 2 \theta, 5 \mathbf{0}, 50,2 \theta, 00,7 \theta, 0 \mathbf{0}, 2 \theta, 00,00,50$
$\mathbf{L L} 0,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$

$\mathbf{L S} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$

$\mathbf{M}_{0,00,00,00,00,00,00,20,00,00,00,00,00,00,50,00,00,00,00,00,00,00,2 \theta, 00,00,00}$
M $0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
MK, $0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 50$
$\mathbf{M D}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
N $0,0 \mathbf{0}, 0 \mathbf{0}, 7 \theta, 2 \theta, 2 \theta, 7 \theta, 2 \theta, 5 \mathbf{0}, 2 \theta, 5 \mathbf{0}, 2 \theta, 2 \theta, 7 \theta, 2 \theta, 7 \theta, 7 \theta, 70,0 \mathbf{0}, 00,00,00,2 \theta, 50,50,00$
$\mathbf{N E}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0},\langle\mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$
NGT, $00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,00,00,00$
$\mathbf{N} \geqslant, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 2 \theta, 5 \mathbf{0}, 2 \theta, 50,0 \mathbf{0}, 70,00,0 \mathbf{0}, 50,2 \theta, 50,5 \mathbf{0}, 50,00,00,7 \theta, 2 \theta, 0 \mathbf{0}, 50,00,75$
ji NENGNNNPNRNYOLOXPA PEPHPLPOPRRGRHRMS SASE SGSKSLSMSN
$\mathbf{N P}^{\mathbf{1}}, \varphi \mathbf{0}, 0 \mathbf{0}, 2 \mathrm{I}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 50,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$
$\mathbf{N R}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$
NW, $00,00,50,00,00,00,00,2 \theta, 00,20,00,00,50,00,2 \theta, 50,50,00,00,50,20,00,20,50,50$
$\mathbf{O I} 0,0 \mathbf{0}, 0 \mathbf{0}, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 00,25$
$\mathbf{O} \boldsymbol{\theta}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 7 \theta, 5 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 7 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 00,75$
$\mathbf{P} \neq 0,00,0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
PE $0,0 \mathbf{0}, 0 \mathbf{0}, 7 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 25$
$\mathbf{P} H, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{P L} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
$\mathbf{P O}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, 00,5 \mathbf{0}, 00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,2 \theta, 2 \theta, 5 \mathbf{0}, 5 \mathbf{0}, 00,00,7 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 50$

PR $0, \phi \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{2}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \mathbf{2 5}, \phi \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{2}, 0 \mathbf{0}, \phi \mathbf{0}, 2 \boldsymbol{0}, 0 \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$
R(6, $0 \mathbf{0}, 00,5 \mathbf{0}, 2 \theta, 00,2 \theta, 0 \mathbf{0}, 7 \theta, 0 \mathbf{0}, 2 \theta, 00,00,2 \theta, 00,0 \mathbf{0}, 2 \theta, 2 \theta, 00,00,50,2 \theta, 0 \mathbf{0}, 7 \theta, 00,50$
RED, $00,00,50,2 \theta, 00,50,2 \theta, 50,00,2 \theta, 00,2 \theta, 50,00,25,00,50,00,00,7 \theta, 2 \theta, 00,2 \theta, 50,50$
RY, $00,00,50,2 \theta, 2 \theta, 50,2 \theta, 2 \theta, 2 \theta, 2 \theta, 00,2 \theta, 50,2 \theta, 2 \theta, 50,00,00,00,7 \theta, 50,00,2 \theta, 00,50$
S $0,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0},\langle\mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{S} A 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \mathbf{2}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{S E}_{0}, 2 \theta, 0 \mathbf{0}, 7 \theta, 2 \theta, 2 \theta, 50,2 \theta, 7 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 7 \theta, 2 \theta, 5 \mathbf{0}, 7 \theta, 7 \theta, 2 \theta, 00,0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 50,75$
$\mathbf{S C 0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 25$
$\mathbf{S K}, 0 \mathbf{0}, 2 \boldsymbol{\theta}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{\theta}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,5 \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,25$
SL $0,0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,00,2 \theta, \varphi \mathbf{0}, 7 \theta, 2 \theta, 2 \theta, 00,00,2 \theta, 2 \theta, 00,00,00,50$
$\mathbf{S M}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 20,0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 00,00,00,5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$\mathbf{S N}, 0 \mathbf{0}, 0 \mathbf{0}, 7 \theta, 2 \theta, 2 \theta, 50,2 \theta, 7 \theta, 0 \mathbf{0}, 2 \theta, 00,2 \theta, 50,2 \theta, 50,50,50,00,00,7 \theta, 2 \theta, 2 \theta, 50,00,00$
$\mathbf{S O}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
$\mathbf{S P} 0,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,50$
ji NENGNNNPNRNYOLOXPAPEPHPLPOPRRGRHRMS SASE SGSKSLSMSN
SR0, $\mathbf{5 0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 00,00,2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 25$
$\mathbf{S} \mathbf{S O}_{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$
$\mathbf{S T}_{0,00}, 2 \theta, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
SW, $00,00,2 \theta, 00,00,50,00,2 \theta, 0 \mathbf{0}, 00,00,00,2 \theta, 00,0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, 00,00,50,0 \mathbf{0}, 00,00,7 \theta, 25$
$\mathbf{S Y} \mathbf{0}, 00,2 \theta, 2 \theta, 2 \theta, 00,00,00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,25$
TA0, $00,00,50,00,2 \theta, 50,00,2 \theta, 2 \theta, 00,00,2 \theta, 50,2 \theta, 2 \theta, 50,50,00,00,7 \theta, 2 \theta, 00,2 \theta,, 00,50$
TD $, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
$\mathbf{T F}_{0}, \varphi \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0},\langle\mathbf{0},\langle\mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0},\langle\mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
TV, $0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{T} 0,0 \mathbf{0}, 0 \mathbf{0}, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$
TR $, 00,0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
T $\$ 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \varphi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
TW, $0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 2 \theta, 00,50,0 \mathbf{0}, 50,0 \mathbf{0}, 2 \theta, 00,00,2 \theta, 0 \mathbf{0}, 70,5 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 7 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 70,2 \theta, 50$
UB), $00,00,50,00,2 \theta, 7 \theta, 00,00,2 \theta, 2 \theta, 00,2 \theta, 50,2 \theta, 2 \theta, 50,7 \theta, 00,00,50,50,00,50,2 \theta, 50$
$\mathbf{W}_{0,00}, 0 \mathbf{0}, 2 \theta, 00,00,50,00,2 \theta, 0 \mathbf{0}, 00,00,00,2 \theta, 0 \mathbf{0}, 2 \theta, 50,2 \theta, 00,00,50,2 \theta, 0 \mathbf{0}, 2 \theta, 50,25$

WG, $\mathbf{0 0}, 00,50,00,25,00,00,2 \theta, 2 \theta, 00,00,70,50,0 \mathbf{0}, 2 \theta, 75,00,00,00,00,50,00,50,00,50$
WD, $0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 5 \mathbf{0}, 00$
$\mathbf{W F}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,00,2 \theta, 20,0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \Delta, 70,0 \mathbf{0}, 20,0 \mathbf{0}, 5 \mathbf{0}, 00,00,25$

W0, $0 \mathbf{0}, 0 \mathbf{0}, 7 \theta, 2 \theta, 2 \theta, 5 \mathbf{0}, 2 \theta, 5 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 5 \mathbf{0}, 7 \theta, 2 \theta, 5 \mathbf{0}, 5 \mathbf{0}, 00,0 \mathbf{0}, 7 \theta, 2 \theta, 2 \theta, 2 \theta, 00,75$
WR, $00,2 \theta, 2 \theta, 2 \theta, 00,2 \theta, 00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 00,2 \theta, 2 \theta, 2 \theta, 00,00,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,50$
W8, $00,25,00,2 \theta, 75,00,50,7 \theta, 70,50,50,50,00,7 \theta, 75,00,00,2 \theta, 00,00,00,2 \theta, 70,00,00$
WV, $00,2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$
Y $0,0 \mathbf{0}, 0 \mathbf{0}, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00,5 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,00,25$
$\mathbf{Z E}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
ji SOSPSRSSSTSUSFTATDTFTNIQTRTSTWEBW WAWGVDVFIWRVSW WGE AB $, 00,00,26,00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,50,00,00,00,00,26,00,00,00$ Al $\sigma, 2 \sigma, 2 \sigma, 7 \sigma, 00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,50,7 \sigma, 2 \sigma, 00,00,7 \sigma, 00,00,00,00,00,00,00$
В ${ }^{2}, 2 \sigma, 00,00,00,25,00,50,00,00,26,26,00,00,75,00,26,75,00,00,00,00,00,00,50,2 \sigma, 7 \sigma, 00$
B $\neq, 00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,00,00,00$
BB $, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,50,00,00,25,00,00,00,00,26,00$
BD $, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,00,00,00,2 \sigma, 2 \sigma, 00,2 \sigma, 00,2 \sigma, 00$
BH,26,50,26,26,26,00,00,50,00,00,00,00,00,00,26,50,26,00,50,00,00,26,00,00,00, 00, 00
B ${ }^{0}, 00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 2 \sigma, 2 \sigma, 7 \sigma, 00,00,25,00,00,00,00,00,00$
BN, $00,00,00,00,00,00,00,26,00,00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,2 \sigma, 00,7 \sigma, 00,00,00$
BR, $00,2 \sigma, 50,2 \sigma, 2 \sigma, 50,00,2 \sigma, 20,2 \sigma, 00,00,2 \sigma, 00,00,50,2 \sigma, 00,00,2 \sigma, 00,2 \sigma, 00,00,00,00,00$
BS $, 00,26,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,00,2 \sigma, 00,00,00,2 \sigma, 00,00,00,00$
BT, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
C $\quad 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,00$
CB, $00,2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 00,50,00,00,00,00,00,00,2 \sigma, 2 \sigma, 2 \sigma, 00,2 \sigma, 00,00,50,25,00,00,00,00$
Cl0, $00,00,2 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,00$
Cl, $00,00,00,00,2 \sigma, 00,2 \sigma, 2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,50,2 \sigma, 7 \sigma, 00,00,00$
CW, $00,00,2 \sigma, 2 \sigma, 00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 2 \sigma, 00,2 \sigma, 00,00,00,00,00$
CQ, $00,2 \sigma, 2 \sigma, 2 \sigma, 00,00,00,2 \sigma, 00,00,00,00,00,00,00,50,00,00,7 \sigma, 2 \sigma, 00,2 \sigma, 00,00,00,00,00$
CR, $00,00,00,00,00,00,75,00,50,50,50,7 \sigma, 7 \sigma, 25,00,00,00,00,00,2 \sigma, 25,00,00,00,50,7 \sigma, 00$
CZ, $00,00,00,00,00,00,00,2 \sigma, 00,00,50,00,00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,7 \sigma, 00,00,00$
Cु,00,00,00,00,00,50,26,26,00,00,00,00,00,26,2б,26,26,26, $00,00,50,50,25,00,2 \sigma, 2 \sigma, 00$
CШ, $00,00,00,00,2 \sigma, 00,00,00,00,2 \sigma, 00,00,00,00,00,2 \sigma, 00,2 \sigma, 2 \sigma, 00,2 \sigma, 2 \sigma, 00,7 \sigma, 00,00,00$
D $\uparrow, 00,00,00,2 \sigma, 00,2 \sigma, 00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,00,50,00,00,2 \sigma, 00,50,00,00,00$
DID, 00,2ひ, 7ब, 26, 26, $00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,50,00,00,00,50,00,00,00,7 \sigma, 00,00,00$
DF0,00, $00,00,00,2 \sigma, 00,00,00,00,26,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,00$

DG, $00,00,00,00,00,00,00,26,50,00,00,00,00,00,00,26,00,00,00,00,00,26,00,76,00,00,00$
DW, $00,00,7 \sigma, 00,00,00,00,00,00,00,00,00,00,26,00,00,00,00,00,00,00,00,00,00,00,00,00$
DI $0,00,00,50,00,00,00,00,26,00,00,00,00,00,50,26,00,00,00,00,00,2 \sigma, 26,00,76,00,26,00$
DN, $00,00,00,00,00,00,00,26,00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,50,2 \sigma, 00,7 \sigma, 00,2 \sigma, 00$
D7, $00,2 \sigma, 2 \sigma, 00,00,00,00,26,00,2 \sigma, 00,00,00,00,00,2 \sigma, 00,00,00,2 \sigma, 00,00,00,2 \sigma, 00,00,00$
DV, $00,00,00,00,2 \sigma, 00,50,00,00,7 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,50,7 \sigma, 7 \sigma, 00,00$
E $0,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,00,2 \sigma, 2 \sigma, 26,00,00,00,00,26,00,50,00,00,00$
EG, $00,2 \sigma, 7 \sigma, 2 \sigma, 00,7 \sigma, 00,26,00,50,00,00,50,00,26,75,00,00,50,00,00,00,00,2 \sigma, 00,00,00$
EЊ, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,00$
EN, $00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 2 \sigma, 00,2 \sigma, 2 \sigma, 00,2 \sigma, 00,7 \sigma, 00,00,00$
EX, $00,00,00,00,00,00,00,50,00,00,00,20,00,00,2 \sigma, 00,00,00,00,00,00,26,00,50,00,00,00$
FK, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,00,00,7 \sigma, 00,00,00$

$\mathbf{G}_{0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00}$
Gb, $00,2 \sigma, 2 \sigma, 00,2 \sigma, 2 \sigma, 2 \sigma, 50,00,50,00,00,00,00,2 \sigma, 2 \sigma, 2 \sigma, 00,2 \sigma, 00,2 \sigma, 50,75,00,2 \sigma, 00,00$
GG,2ש,2ש,00,00,00,50,00,26,00,00,00,00,00,00, $2 \sigma, 50,2 \sigma, 00,2 \sigma, 2 \sigma, 00,2 \sigma, 2 \sigma, 50,00,00,00$
GV, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
Н $\boldsymbol{*}, 2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 50,00,00,00,00,00,00,7 \sigma, 7 \sigma, 50,00,50,2 \sigma, 00,50,25,00,00,00,00$
HD, $00,00,00,00,00,2 \sigma, 00,2 \sigma, 00,00,00,00,00,2 \sigma, 2 \sigma, 00,00,2 \sigma, 00,00,7 \sigma, 50,00,7 \sigma, 00,2 \sigma, 00$
HG, $00,50,7 \sigma, 2 \sigma, 2 \sigma, 00,00,2 \sigma, 00,2 \sigma, 00,00,2 \sigma, 2 \sigma, 00,7 \sigma, 00,00,00,2 \sigma, 50,2 \sigma, 00,00,00,7 \sigma, 00$
HB, $00,00,2 \sigma, 00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 50,00,00,7 \sigma, 7 \sigma, 00,00,00,50,00,00,00$
HR, $00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,00,00,00$
H $\$, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,25$


ji SOSPSRSSSTSUSFTATDTFTNIQTRTSTWEBW WAWOVDVFWWRVSW WCZ
IG0, $00,50,50,50,26,00,00,50,00,2 \sigma, 00,00,00,00,26,7 \sigma, 26,00,00,26,00,50,25,00,00,00,00$
IM, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
IP $0,00,00,00,00,00,2 \sigma, 00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 26,26,00,00,00,00,50,00,00,00,00,00$
IV $0,00,00,26,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,50,00,00,00,00,50,00,00,00$
$\mathrm{JE}_{0}, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
K $0,00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,7 \sigma, 00,00,00$
KT, $2 \sigma, 2 \sigma, 00,00,2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 20,00,00,00,00,00,00,7 \sigma, 50,00,7 \sigma, 2 \sigma, 00,50,2 \sigma, 7 \sigma, 00,00,00$
KW, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$

Kచ, $00,00,2 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,50,00,00,00,00,76,00,00,00$
$\mathbf{L}_{0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,20,00,00,00,50,00,20,00,00,00}$
LA, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,00,00,00,00,00,00,00,00,00,00,00$
LD, $00,00,2 \sigma, 00,00,00,2 \sigma, 50,00,00,00,00,00,00,00,2 \sigma, 2 \sigma, 00,2 \sigma, 00,00,50,00,00,00,00,00$
LE $, 00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 50,00,2 \sigma, 00,00,00,2 \sigma, 50,2 \sigma, 7 \sigma, 00,00,00$
LI $0,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,50,00,00,00$
LN, $00,2 \sigma, 50,00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,50,00,00,00,50,00,00,00,2 \sigma, 00,00,00$
LS $, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,26,00$
LШठ, $00,00,26,00,00,00,00,00,00,2 \sigma, 00,00,26,00,00,26,00,00,00,7 \sigma, 00,00,00,26,00,00,00$
$\mathbf{M}_{0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,50,00,00,00,7 \sigma, 00,00,00,00,00}$
ME, $00,00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,00$
MK, $00,00,00,00,00,00,00,26,00,00,00,00,00,00,2 \sigma, 00,00,00,26,26,00,26,26,50,00,00,00$
M $6,00,00,2 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,00,00,50,00,00,00$
$\mathbf{N}_{0,2 \sigma, 50,2 \sigma, 50,2 \sigma, 7 \sigma, 2 \sigma, 7 \sigma, 2 \sigma, 00,2 \sigma, 2 \sigma, 00,2 \sigma, 7 \sigma, 7 \sigma, 50,00,20,50,25,20,50,00,00,2 \sigma, 00}$
N $6,00,00,50,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
NG, $00,00,00,00,2 \sigma, 00,2 \sigma, 00,00,2 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,26,26,2 \sigma, 00,00$
NV,26,26,26,26,26,26,26,50,00,00,00,26, 00, 00, 50, 50, 26, 00, 50, 26, 00, 76, 25, 00, 00, 26, 00
ji SOSPSRSSSTSUSFTATDTFTNIQTRTSTWEBW WAWOVDVFIWRVSNWYZ
NB0,00, $00,00,00,00,00,2 \sigma, 00,00,26,00,00,00,00,26,00,00,00,00,00,2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 00,00$
NB, $00,00,26,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,00,26,00,00,26,00,7 \sigma, 00,00,00$
NW,00,2ब,26,26,26,50,00,50,00,00,00,00,00,00,50,70,50,00, 00,26,00,50,25,00,00, 00,00
Ob, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,2 \sigma, 26,00,50,00,00,00$
OX, $00,2 \sigma, 00,00,00,2 \sigma, 2 \sigma, 2 \sigma, 00,00,00,00,00,00,50,00,2 \sigma, 00,2 \sigma, 00,2 \sigma, 50,26,7 \sigma, 00,00,00$
PA $9,00,00,00,00,00,00,00,26,00,00,00,00,00,00,00,2 \sigma, 00,00,26,00,00,26,00,76,00,00,00$
PFo, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 26,00,00,00,50,00,2 \sigma, 00,50,00,00,00$
PЊ, $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,20,00,50,00,00,00$
PI $1,00,00,2 \sigma, 00,00,00,00,2 \sigma, 00,00,00,2 \sigma, 2 \sigma, 00,00,2 \sigma, 00,00,7 \sigma, 00,00,00,00,50,00,00,00$
PQ,26,26,26,26,26,26,00,50,00,00,00,00,00,00,26,50,26,00,50,00,00,50,25,00,00, 00,00
PR $, 00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,00,2 \sigma, 00,2 \sigma, 00,00,00,7 \sigma, 00,7 \sigma, 00,00,00$
RG, $2 \sigma, 2 \sigma, 00,00,00,00,2 \sigma, 2 \sigma, 00,2 \sigma, 00,00,00,00,7 \sigma, 2 \sigma, 2 \sigma, 00,2 \sigma, 2 \sigma, 00,2 \sigma, 2 \sigma, 7 \sigma, 00,00,00$

RM, $26,50,50,50,26,2 \theta, 26,50,00,2 \theta, 20,00,00,00,20,70,2 \theta, 00,00,2 \theta, 20,50,25,00,00,00,00$
S $0,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 2 \sigma, 00,00,2 \sigma, 00,00,7 \sigma, 00,00,2 \sigma, 00,50,00$
SA $9,00,00,00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,00,00,00,00,00,00,00,00,00,00$

SF0，26，26，26，26，26，50，26， $7 \sigma, 2 \sigma, 00,26,26,00,26,7 \sigma, 50,50,00,00,00,2 \sigma, 76,25,00,00,2 \sigma, 00$
Sढढ， $00,2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 00,00,2 \sigma, 00,00,00,00,00,00,00,50,2 \sigma, 00,50,2 \sigma, 00,2 \sigma, 00,00,00,00,00$
SK7， $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,50,2 \sigma, 00,2 \sigma, 00,20,00$
SL $0,00,2 \sigma, 2 \sigma, 00,00,00,00,2 \sigma, 00,00,00,00,00,00,7 \sigma, 50,2 \sigma, 00,50,50,00,2 \sigma, 00,7 \sigma, 00,00,00$
SM， $00,00,2 \sigma, 00,00,7 \sigma, 00,00,00,00,00,00,00,00,2 \sigma, 26,50,00,00,50,00,00,00,00,00,00,00$

SQ ，00，00，00，00，00，00，00，26，00，00，00，00，00，00，00，26，00，00，26，26，00，26，00，70，00，00，00
SP0， $00,00,50,2 \sigma, 2 \sigma, 00,00,50,00,2 \sigma, 00,00,00,00,2 \sigma, 50,2 \sigma, 00,00,2 \sigma, 00,2 \sigma, 00,00,00,00,00$
ji SOSPSRSSSTSUSYTATDTFTNIQTRTSTWUBW WAVGVDVFWRVSWYCZ
SR $\mathbf{\theta}, 00,50,00,2 \sigma, 2 \sigma, 00,00,2 \sigma, 00,50,00,00,26,7 \sigma, 00,70,00,00,00,50,00,2 \sigma, 00,00,00,2 \sigma, 00$
$\mathbf{S S} 0,00,2 \sigma, 25,00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,00,00,00,50,00,00,7 \sigma, 00,00,2 \sigma, 00,00,00,00,00$
$\mathbf{S T}_{\mathbf{0}}, 00,26,26,00,00,00,2 \sigma, 2 \sigma, 00,50,00,00,00,00,00,50,00,00,50,00,00,26,25,00,26,00,00$
SW， $00,00,00,00,00,00,00,26,00,00,00,00,00,00,2 \sigma, 50,7 \sigma, 00,00,26,00,2 \sigma, 00,50,00,00,00$
$\mathbf{S} \mathbf{V}, 00,00,00,00,2 \sigma, 00,00,2 \sigma, 00,7 \sigma, 00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 50,7 \sigma, 50,00,00$
TA $, 26,50,2 \sigma, 2 \sigma, 2 \sigma, 2 \sigma, 25,20,00,00,00,2 \sigma, 00,00,2 \sigma, 50,2 \sigma, 00,50,00,00,7 \sigma, 25,00,00,26,00$
TD $, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,2 \sigma, 00,00,00$
TF0，00，2б，50，00，50，00， $7 \sigma, 00,00,00,00,00,2 \sigma, 00,00,50,00,00,00,2 \sigma, 00,00,75,00,7 \sigma, 00,00$
TN， $00,00,00,26,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,26,00,00,00$
TQ， $00,00,00,00,00,00,00,26,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,50,00,00,00$
TR， $00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,2 \sigma, 00,00,00,2 \sigma, 00,00,00,00,00,00,00$
TS $, 00,00,7 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,20,00$
TW， $0,2 \sigma, 00,00,00,2 \sigma, 00,2 \sigma, 00,00,00,00,00,00,00,00,50,00,26,50,2 \sigma, 50,26,7 \sigma, 00,00,00$
UB0，2ש，50，7ब，50，50，50，00，50，00，50，00，00，26，00，00，00，50，00， $00,7 \sigma, 00,50,25,00,00,00,00$
$\mathbf{W}_{0,00,2 \sigma, 00,00,00,7 \sigma, 00,26,00,00,00,00,00,00,50,50,00,00,00,2 \sigma, 00,2 \sigma, 2 \sigma, 7 \sigma, 00,00,00}$
WA， $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,70,00,00,00,00,00$
$W Q, 25,00,00,7 \sigma, 50,00,00,50,00,00,00,00,00,00,25,00,00,00,00,00,00,20,25,00,00,00,00$
W円，2ब，2ש，50， $00,00,2 \sigma, 00,00,00,2 \sigma, 00,00,2 \sigma, 00,50,7 \sigma, 2 \sigma, 00,00,00,00,00,00,00,00,00,00$
Wت， $00,00,00,00,00,00,00,00,00,00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,2 \sigma, 00,2 \sigma, 00,50,00$

WR， $00,00,00,00,2 \sigma, 00,50,2 \sigma, 00,7 \sigma, 00,00,00,00,26,26,26,00,2 \sigma, 00,00,25,00,00,50,00,00$
W§， $75,00,00,00,00,50,75,00,25,00,2 \sigma, 50,00,2 \sigma, 75,00,76,00,00,00,25,00,00,00,76,50,00$
W $, 00,00,00,00,2 \sigma, 00,50,00,00,7 \sigma, 00,00,00,00,00,00,00,00,00,00,00,00,50,75,00,00,00$
YQ， $00,00,26,00,00,00,00,2 \sigma, 00,00,00,00,00,2 \sigma, 00,00,00,00,00,00,50,26,00,50,00,00,00$
Zもも， $00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$.

## ANNEX XVI

Annex XXV is amended as follows:
(1) the following section 'Correlation coefficients for hail risk in the Czech Republic' is inserted after the section 'Correlation coefficients for hail risk in the Kingdom of Belgium':
Correlation coefficients for hail risk in the Czech Republic

ji 26272829303132333435363738394041424344454647484950
$10,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$

| 2 | 0， $0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{0}, 0 \mathbf{0}, 0$ |  | ，00，00，2 | 20，00， | 0，00，00 | 0，00，2 | ，00，00 | 0，00，0 | 0，00，00， |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3 | $2 \theta, 2 \theta, 2 \theta, 00,2 \theta, 00,$ |  | ，20，00，2 | 20，00， | 0，00，00 | 0，00， | ，20，0 | ，，00，0 | 0，00 |
| 4 | ，2日，2日，2日，00，2日，00，2 |  | ，00 | ，00， | ，00 | 0，00， | ，20，0 | ，00 | 25 |
| 5 | ，，00，00，00，00，00，00， |  | 0，00 | ，00， | 0，00 | 0，00， | ，00， | 0，00， | 0，00，00，00 |
| 6 | $, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0$ |  | ，00，00，0 | ，0， | 0，0 | 0，00， | ，00， | 0，00，0 | 0，00，00，00 |
| 7 | $0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0$ | 00，00，00，0 | ，00，00 | 0 | ， 0 | 0 ， | 0，00，00， | ， 00 | 0，00，00，00 |
| 8 | ，20，20，20，2 | 20，00，20 | ， 0 | ， | ， 00 | 00 | ，20，2 | 0，00 | 0，00，00，25 |
|  | $0,00,00,00,00,00,00$, |  | 0，00，0 | 0，00， | ，00 | 0，00， | ，00， | 0，00，0 | 0，00，00，00 |
|  | $0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0$ | 00，00，00 | ，00，0 | 0，00， | ， 0 | 00，0 | ，00，00 | 0，00，0 | 0，00，00，00 |
|  | $\begin{aligned} & 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \\ & 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \end{aligned}$ | 00，00，00 | ， 0 | ， | ，00，00 | 0 O， | ，00，0 | ，00 | ， |
|  |  | $0,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$ | ，00，00，0 | 0，00， | 0， 00,00 | 0，00，0 | 0，00，0 | 0，00，0 | 0， |
|  | $30,40,20,20,2$ | 20，00，00， | ，00，00，0 | 0，00， | 0，00，00 | 0，00， | ，00，0 | 0，00，0 | 0，00，00，00 |
| $140$ | ，0，00，00，00 <br> $0,00,00,00$ | 00，00，00 | ，00 | 00 | ， 0 | 0，0 | ，00，0 | 0，00，0 | ， |
|  |  | 00，20，20 | 2，26 | 0， 00 | 0，00，00 | 0，00， | ，00，0 | 0，00， | ，00 |
|  | 160，00，00，00，0 | 00，00，00 | ，00，00，0 | 000 | 0，00，00 | 0,0 | 00 | 0，00，0 | 0000 |
|  | $170,0 \mathbf{0}, 0 \mathbf{0},$ | 00，00 | ，00 | 0，00， | 0，00，00 | 0， 0 0，0 | ，00，0 | 0，00，0 | 0，00，00，00 |
|  | $180,00,00,$ | 00，00，00 | 0，00，0 | 0，00， | 0，00，00 | 0，00， | 0，00，0 | 0， 0 | ，0，000，000 |
|  | 190,00,00, | 00，00 | 0，00，0 | 0，00， | 0，00，00 | 0，00， | 0，00，0 | 0，00 | 0，00，00，00 |
|  | $200,00,00,00,0$ | 00，00，00 | 0，00，0 | 0，00， | 0，00，00 | 0，00， | ，00，0 | 0，00，0 | ， |
|  | $\frac{10,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00}{20,0 \mathbf{0}, 0 \mathbf{0}, 20,2 f}$ | 00，00，00 | ，00，00，0 | 0，00， | 0，00，00 | 0，00， | 0，00，0 | 0，00，0 | 0，00，00，00 |
|  |  | $0 \mathbf{0}, 0 \mathbf{0}, 2 \Delta, 20,0 \mathbf{0}, 0 \mathbf{0},$ | ，00，00，0 | 0，00，0 | ，00，00，00 | 0，00，00， | ，00，00，0 | ，00，00，0 | 0，00，00，00 |
| $\begin{aligned} & 230, \\ & 240, \end{aligned}$ | $0 \mathbf{0}, 0 \mathbf{0}, 00,00$ | $, 00,00,0 \mathbf{0}, \phi$ | ，00，00，0 | 00 | $\mathbf{0}, 0 \mathbf{0}, 00$ | 0，00，0 | $\mathbf{0 , 0 0 , 0}$ | 0，00， | ， |
|  | $240,00,00,00,$ | 00，00 | 0 | 0，00， | 0，00，00 | 0，00，0 | $0,00,0$ | 0，00，0 | ， |
| $250,00,00,00,00$ |  | 00,0 | 00 | 0,0 | 0 | 0 | 00 | 0 |  |
| ji | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 |
|  | 0，00 | 0，00 | 0，00 | ，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 |
|  | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，25 | 0，00 | 0，00 |
| 2 | 0，00 | 0，00 | 0，25 | 0，00 | 0，00 | 0，25 | 0，25 | 0，00 | 0，00 |
| 4 | 0，00 | 0，00 | 0，00 | ，00 | 0，00 |  | 0，2 | 0，00 | 0，00 |
|  | 0，00 | 0，00 | 0，00 | ，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 |
| 5 | 0，00 | 0，00 | 0，00 | ，00 | 0，00 | 0，00 | 0，00 | 0，00 | ，00 |
|  | 0，00 | 0，00 | 0，00 | ，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 |
| 8 | 0，00 | 0，00 | 0，00 | ，00 | 0，00 | 0，00 | 0，25 | 0，00 | 0，0 |
| 9 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 | 0，00 |


| $\mathbf{1 0}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 1}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{1 2}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{1 3}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{1 4}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{1 5}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{1 6}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,00 | 0,00 |
| $\mathbf{1 7}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{1 8}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{1 9}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 0}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 1}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 2}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 3}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 4}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 5}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |


$4 \mathbf{3}_{0, ~}^{0} \mathbf{0}, 0 \mathbf{0}, 2 \boldsymbol{2}, 2 \boldsymbol{2}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, 2 \boldsymbol{2}, \phi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$
$440,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$\mathbf{4 5} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{4 6} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$470,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$480,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,00,00,0 \mathbf{0}, 00,00,00$
$490,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$\mathbf{5 0} 0,0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 00,0 \mathbf{0}, \varphi \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
ji 26272829303132333435363738394041424344454647484950
$261,0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$
$270,25,0 \mathbf{0}, 28,28,00,20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0 0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$280,2 \mathrm{a}, 2 \mathbf{5}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$290,0 \mathbf{0}, 2 \theta, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{3 0} 0,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$310,2 \theta, 2 \mathrm{~A}, 0 \mathbf{0}, 0 \mathbf{0}, 25,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$
$320,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \Delta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$330,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,2 \theta, 0 \mathbf{0}, 25,0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{3 4} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 20,25,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{3 5} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,20,20,00,0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{3 6} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 50,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$370,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 00,0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 2 \mathrm{Q}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{3 8} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$390,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 2 \mathrm{Q}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00$
$400,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,2 \theta, 2 \theta, 25,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 2 \theta, 2 \theta, 00,00,00$
$410,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 70,5 \mathbf{0}, 50,5 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \Delta, 00,00$
$420,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 7 \boldsymbol{1}, 0 \mathbf{0}, 70,5 \mathbf{0}, 50,20,0 \mathbf{0}, 2 \theta, 00,00$
$\mathbf{4 3} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 7 \mathbf{5}, 0 \mathbf{0}, 7 \theta, 7 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 00$
$440,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 5 \mathbf{0}, 7 \mathbf{5}, 0 \mathbf{0}, 5 \mathbf{0}, 20,20,00,00,00$
$\mathbf{4 5} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 5 \mathbf{0}, 5 \mathbf{0}, 7 \theta, 50,0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta,, 00,00$ $\mathbf{4 6} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25,0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 00$
${ }^{47} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 25,0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{4 8} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 00$
$490,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \mathrm{Q}, 0 \mathbf{0}, 2 \mathbf{5}, 00,00$
$\mathbf{5 0} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$

| $\mathbf{j i}$ | $\mathbf{5 1}$ | $\mathbf{5 2}$ | $\mathbf{5 3}$ | $\mathbf{5 4}$ | $\mathbf{5 5}$ | $\mathbf{5 6}$ | $\mathbf{5 7}$ | $\mathbf{5 8}$ | $\mathbf{5 9}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 6}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 7}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 8}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2 9}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 0}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 1}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 2}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 3}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 4}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 5}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 6}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3 7}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,00 |
| $\mathbf{3 8}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,00 |
| $\mathbf{3 9}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 0}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 1}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,00 | 0,00 |
| $\mathbf{4 2}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 3}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,00 | 0,00 |
| $\mathbf{4 4}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 5}$ | 0,25 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 6}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 7}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 8}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,25 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4 9}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{5 0}$ | 0,50 | 0,75 | 0,25 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
|  |  |  |  |  |  |  |  |  |  |
| $\mathbf{3 4}$ |  |  |  |  |  |  |  |  |  |


$510,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{5 2} 0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00$
$530,00,0 \mathbf{0}, 2 \Delta, 00,00,0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$540,00,00,00,00,00,0 \mathbf{0}, 00,00,0 \mathbf{0}, 00,00,0 \mathbf{0}, 00,00,0 \mathbf{0}, 00,00,00,00,00,00,00,00,00,00$
$\mathbf{5 5} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{5 6} 0,0 \mathbf{0}, 0 \mathbf{0}, 28,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{5}^{7} 0, \phi \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, 2 \theta, \phi \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, 2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, \phi \mathbf{0}, 0 \mathbf{0}, 00$
$580,00,00,0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$590,00,0 \mathbf{0}, 00,00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
jif 26272829303132333435363738394041424344454647484950
$510,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,50$
$\mathbf{5 2} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 75$
$\mathbf{5 3} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 25$
$\mathbf{5 4} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,25$
$550,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 2 \Delta, 00,00$
$5 \mathbf{5 0}_{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 0 \mathbf{0}, 00,00,00,00,0 \mathbf{0}, 00,00,00,00,00,0 \mathbf{0}, 00,00,20,00,00$
$570,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 00,0 \mathbf{0}, 00,00,00,0 \mathbf{0}, 00,00,2 \Delta, 00,20,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,00$
$\mathbf{5 8} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 20,2 \theta, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$
$\mathbf{5 9} 0,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00,0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 0 \mathbf{0}, 00,00$

| $\mathbf{j i}$ | $\mathbf{5 1}$ | $\mathbf{5 2}$ | $\mathbf{5 3}$ | $\mathbf{5 4}$ | $\mathbf{5 5}$ | $\mathbf{5 6}$ | $\mathbf{5 7}$ | $\mathbf{5 8}$ | $\mathbf{5 9}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{5 1}$ | 1,00 | 0,50 | 0,25 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{5 2}$ | 0,50 | 1,00 | 0,25 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{5 3}$ | 0,25 | 0,25 | 1,00 | 0,25 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{5 4}$ | 0,25 | 0,25 | 0,25 | 1,00 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{5 5}$ | 0,00 | 0,00 | 0,25 | 0,25 | 1,00 | 0,25 | 0,25 | 0,25 | 0,00 |
| $\mathbf{5 6}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 1,00 | 0,25 | 0,00 | 0,00 |
| $\mathbf{5 7}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,25 | 1,00 | 0,25 | 0,25 |
| $\mathbf{5 8}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,00 | 0,25 | 1,00 | 0,25 |
| $\mathbf{5 9}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 0,25 | $1,00$. |

(2) the following section 'Correlation coefficients for hail risk in the Republic of Slovenia' is inserted after the section 'Correlation coefficients for hail risk in the he Swiss Confederation':
Correlation coefficients for hail risk in the Republic of Slovenia

| $\mathbf{j i}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1}$ | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{2}$ | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{3}$ | 0,00 | 0,00 | 1,00 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{4}$ | 0,00 | 0,00 | 0,25 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{5}$ | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{6}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,25 | 0,00 | 0,00 | 0,00 | 0,00 |


| $\mathbf{7}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,25 | 1,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{8}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 | 0,00 |
| $\mathbf{9}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 | 0,00 |
| $\mathbf{1 0}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,00 | 0,00 |
| $\mathbf{1 1}$ | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | $1,00$. |

(1) OJ L 335, 17.12.2009, p. 1.
(2) $\operatorname{COM}(2018) 439$ final.
(3) Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (OJ L 12, 17.1.2015, p. 1).
(4) Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (OJ L 201, 27.7.2012, p. 1).';
(5) Commission Implementing Regulation (EU) No 2015/2450 of 2 December 2015 laying down implementing technical standards with regard to the templates for the submission of information to the supervisory authorities according to Directive 2009/138/EC of the European Parliament and of the Council (OJ L 347/1, 2.12.2015, p. 1214).';
(6) Commission Delegated Regulation (EU) No $231 / 2013$ of 19 December 2012 supplementing Directive $2011 / 61 / E \mathrm{E}$ of the European Parliament and of the Council with regard to exemptions, general operating conditions, depositaries, leverage, transparency and supervision (OJ L 83, 22.3.2013, p. 1).';
(7) Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC (OJ L 182, 29.6.2013, p. 19).';
(8) Commission Implementing Regulation (EU) 2016/1799 of 7 October 2016 laying down implementing technical standards with regard to the mapping of credit assessments of external credit assessment institutions for credit risk in accordance with Articles 136(1) and 136(3) of Regulation (EU) No 575/2013 of the European Parliament and of the Council (OJ L 275, 12.10.2016, p. 3)';
(9) Commission Implementing Regulation (EU) 2015/2011 of 11 November 2015 laying down implementing technical standards with regard to the lists of regional governments and local authorities, exposures to whom are to be treated as exposures to the central government in accordance with Directive 2009/138/EC of the European Parliament and of the Council (OJ L 295, 12.11.2015, p. 3).';


[^0]:    a Except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion

[^1]:    ji 26272829303132333435363738394041424344454647484950
    $261,0 \mathbf{0}, 2 \theta, 5 \mathbf{0}, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 0 \mathbf{0}, 2 \theta, 00,0 \mathbf{0}, 0 \mathbf{0}, 2 \theta, 2 \theta, 00,00,00,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 25$ $270,25,0 \mathbf{0}, 2 \theta, 2 \theta, 50,2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \Delta, 2 \theta, 2 \theta, 40,2 \theta, 2 \theta, 2 \Delta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 2 \theta, 50$

[^2]:     $010,750,000,250,250,750,501,000,250,500,001,000,500,750,750,500,250,500,250,500,000,00$ $030,500,500,000,000,500,250,500,000,000,000,500,250,250,000,000,250,000,000,000,000,00$ $040,500,000,500,750,250,250,500,750,750,750,250,000,500,750,750,000,500,750,750,500,75$ $050,500,000,251,000,000,250,251,000,750,750,000,000,250,750,750,000,501,000,501,000,75$ $060,500,750,000,000,500,250,500,000,000,000,750,250,250,250,000,000,000,000,000,000,00$ $070,751,000,500,501,000,751,000,500,500,001,000,500,750,750,500,500,750,500,500,000,00$
    $080,750,750,501,000,250,500,501,001,000,750,500,000,501,001,000,000,751,000,750,750,50$
    $090,500,000,750,750,250,250,250,750,750,750,250,000,250,750,750,000,750,750,500,751,00$
    $100,750,000,500,500,250,250,500,500,500,500,250,250,500,500,500,000,500,500,500,500,25$

