Commission Regulation (EU) No 1299/2014 of 18 November 2014 on the technical specifications for interoperability relating to the ‘infrastructure’ subsystem of the rail system in the European Union (Text with EEA relevance)

ANNEX

7. IMPLEMENTATION OF THE INFRASTRUCTURE TSI

Member States shall develop a national plan for the implementation of this TSI, considering the coherence of the entire rail system of the European Union. This plan shall include all projects subject to renewal and upgrade of infrastructure subsystems, in line with the details mentioned in points 7.1 to 7.7 here below.

7.1. Application of this TSI to railway lines

Sections 4 to 6 and any specific provisions in points 7.2 to 7.6 here below apply in full to the lines within the geographical scope of this TSI, which will be placed in service as interoperable lines after this TSI enters into force.

7.2. Application of this TSI to new railway lines

(1) For the purpose of this TSI a ‘new line’ means a line that creates a route where none currently exists.

(2) The following situations, for example to increase speed or capacity, may be considered as an upgraded line rather than a new line:

(a) the realignment of part of an existing route,

(b) the creation of a bypass,

(c) the addition of one or more tracks on an existing route, regardless of the distance between the original tracks and the additional tracks.

7.3. Application of this TSI to existing railway lines

7.3.1. *Upgrading of a line*

(1) In accordance with Article 2(m) of Directive 2008/57/EC, ‘upgrading’ means any major modification work on a subsystem or part of a subsystem which improves the overall performance of the subsystem.

(2) The infrastructure subsystem of a line is considered to be upgraded in the context of this TSI when at least the performance parameters axle load or gauge, as defined in point 4.2.1, are changed in order to meet the requirements of another traffic code.

(3) For other TSI performance parameters, according to Article 20(1) of the Directive 2008/57/EC, Member States decide to what extent the TSI needs to be applied to the project.

(4) Where Article 20(2) of Directive 2008/57/EC applies because the upgrading is subject of an authorisation of placing into service, Member States shall decide which requirements of the TSI must be applied.

(5) Where article 20(2) of Directive 2008/57/EC does not apply because the upgrading is not subject of an authorisation of placing into service, compliance with this TSI is recommended. Where compliance is not possible to reach, the contracting entity shall inform the Member State of the reasons thereof.

(6) For a project including elements not being TSI compliant, the procedures for the assessment of conformity and EC verification to be applied should be agreed with the Member State.

7.3.2. *Renewal of a line*

(1) In accordance with Article 2(n) of Directive 2008/57/EC, 'renewal' means any major substitution work on a subsystem or part subsystem which does not change the overall performance of the subsystem.

(2) For this purpose major substitution should be interpreted as a project undertaken to systematically replace elements of a line or a section of a line. Renewal differs from a substitution in the framework of maintenance, referred to in point 7.3.3 below, since it gives the opportunity to achieve a TSI compliant route. A renewal is the same case as upgrading, but without a change in performance parameters.

(3) Where article 20(2) of Directive 2008/57/EC applies because the renewal is subject of an authorisation of placing into service, Member States shall decide which requirements of the TSI must be applied.

(4) Where article 20(2) of Directive 2008/57/EC does not apply because the renewal is not subject of an authorisation of placing into service, the conformity with this TSI is recommended. Where compliance is not possible to reach, the contracting entity informs the Member State of the reasons thereof.

(5) For a project including elements not being TSI compliant, the procedures for the assessment of conformity and EC verification to be applied should be agreed with the Member State.

7.3.3. *Substitution in the framework of maintenance*

(1) Where the parts of a subsystem on a line are maintained, the formal verification and authorisation for placing into service is not required in accordance with this TSI. However, maintenance replacements should be, as far as it is reasonably practicable, undertaken in accordance with the requirements of this TSI.

(2) The objective should be that maintenance replacements progressively contribute the development of an interoperable line.

(3) In order to bring progressively an important part of the infrastructure subsystem in a process towards interoperability, the following group of basic parameters should be adapted together:

(a) Line layout,

(b) Track parameters,

(c) Switches and crossings,

(d) Track resistance to applied loads,

(e) Structures resistance to traffic loads,

(f) Platforms.

(4) In such cases, it is noted that each of the above elements taken separetly cannot ensure compliance of the whole subsystem. The conformity of a subsystem can only be stated when all the elements are compliant with the TSI.

7.3.4. *Existing lines that are not subject to a renewal or upgrading project*

The demonstration of the level of compliance of existing lines with the basic parameters of the TSI is voluntary. The procedure for this demonstration shall be in accordance with Commission Recommendation 2014/881/EU of 18 November 2014[(1)].

7.4. **Application of this TSI to existing platforms**

In case of upgrade or renewal of the infrastructure subsystem, the following conditions related to platform height governed by point 4.2.9.2 of this TSI, shall apply:

(a) It shall be allowed to apply other nominal platform heights for consistency with a particular upgrade or renewal programme of a line or a section of a line.

(b) It shall be allowed to apply other nominal platform heights, if the work requires structural alterations to any load bearing element.

7.5. **Speed as an implementation criterion**

(1) It is permissible to bring a line into service as an interoperable line at a lower speed than its intended ultimate line speed. However, when it is the case the line should not be constructed in a way that inhibits future adoption of the intended ultimate line speed.

(2) For example the distance between track centres shall be suitable for the intended ultimate line speed but the cant will need to be appropriate to the speed at the time the line is brought into service.

(3) Requirements for assessment of conformity in this case are set out in section 6.3.

7.6. **Ascertain Compatibility of infrastructure and rolling stock after authorisation of rolling stock**

(1) Rolling stock complying with the rolling stock TSIs is not automatically compatible with all lines complying with this Infrastructure TSI. For example, a GC gauge vehicle is not compatible with a GB gauge tunnel. The process of ascertaining route compatibility to be followed shall be in accordance with Commission Recommendation on the authorisation for the placing in service of structural subsystems and vehicles under Directive 2008/57/EC[(2)].

(2) The design of the TSI categories of line as defined in section 4 is generally compatible with the operation of vehicles categorised in accordance with EN 15528:2008+A1:2012 at up to the maximum speed as shown in Appendix E. However there may be a risk of excessive dynamic effects including resonance in certain bridges which may further impact the compatibility of vehicles and infrastructure.

(3) Checks, based on specific operational scenarios agreed between the infrastructure manager and the railway undertaking, may be undertaken to demonstrate the compatibility of vehicles operating above the maximum speed shown in Appendix E.

(4) As stated in point 4.2.1 of this TSI, it is permissible to design new and upgraded lines such that they will also accommodate larger gauges, higher axle loads, greater speeds, greater usable length of platform and longer trains than those specified.

7.7. **Specific cases**

The following specific cases may be applied on particular networks. The specific cases are classified as:

(a) ‘P’ cases : permanent cases;

(b) 'T' cases : temporary cases, where it is recommended that the target system is reached by 2020 (an objective set out in Decision No 1692/96/EC of the European Parliament and Council[3]).

7.7.1. *Particular features on the Austrian network*

7.7.1.1. *Platform height (4.2.9.2)*
P cases

For other parts of the Union rail network as set out in Article 2(4) of this Regulation, for renewal and upgrading, the nominal platform height of 380 mm above the running surface shall be allowed.

7.7.2. *Particular features on the Belgian network*

7.7.2.1. *Platform offset (4.2.9.3)*
P cases

For platform heights of 550 mm an 760 mm, the conventional value b_{q0} of platform offset shall be calculated according to the following formulas:

$b_{q0} = 1650 + \frac{5000}{R}$	In curve with a radius 1 000 ≤ R ≤ ∞ (m)
$b_{q0} = 1650 + \frac{26470}{R} - 21{,}5$	In curve with a radius R < 1 000 (m)

7.7.3. *Particular features on the Bulgarian network*

7.7.3.1. *Platform height (4.2.9.2)*
P cases

For upgraded or renewed platforms, the nominal platform height of 300 mm and 1 100 mm above the running surface shall be allowed.

7.7.3.2. *Platform offset (4.2.9.3)*
P cases

Instead of points 4.2.9.3(1) and 4.2.9.3(2), the platform offset shall be:

(a) 1 650 mm for platforms with heights of 300 mm and

(b) 1 750 mm for platforms with height of 1 100 mm.

7.7.4. *Particular features on the Danish network*

7.7.4.1. *Platform height (4.2.9.2)*
P cases

For S-Tog services the nominal platform height of 920 mm above the running surface shall be allowed.

7.7.5. *Particular features on the Estonian network*

7.7.5.1. *Nominal track gauge (4.2.4.1)*
P cases

Instead of point 4.2.4.1(2), for the 1 520 mm track gauge system the nominal track gauge shall be either 1 520 mm or 1 524 mm.

7.7.5.2. *Resistance of new bridges to traffic loads (4.2.7.1)*
P cases

For the 1 520 mm track gauge system, for lines with an axle load of 30 t, it shall be allowed to design structures to support vertical loads in accordance with the load model set out in Appendix M to this TSI.

7.7.5.3. *The immediate action limit for switches and crossing (4.2.8.6)*
P cases

Instead of sub-point 4.2.8.6(3)(a), for the 1 520 mm track gauge system, the minimum value of bypass at the narrowest location between open switch rail and stock rail is 54 mm.

7.7.6. *Particular features on the Finnish network*

7.7.6.1. *TSI Categories of line (4.2.1)*
P cases

Instead of gauges specified in the columns 'Gauge' in Table 2 and Table 3 of point 4.2.1(6), for the nominal track gauge of 1 524 mm, it shall be allowed to use gauge FIN1.

7.7.6.2. *Structure gauge (4.2.3.1)*
P cases

(1) Instead of points 4.2.3.1(1) and 4.2.3.1(2), for the nominal track gauge of 1 524 mm, both the upper and lower part of the structure gauge shall be set on the basis of the gauge FIN1. Those gauges are defined in Annex D, section D4.4 of EN 15273-3:2013.

(2) Instead of point 4.2.3.1(3), for the nominal track gauge of 1 524 mm, calculations of the structure gauge shall be done using the static method in accordance with the requirements of sections 5, 6, 10 and Annex D Section D.4.4 of EN 15273-3:2013.

7.7.6.3. *Distance between track centres (4.2.3.2)*
P cases

(1) Instead of point 4.2.3.2(1), for the nominal track gauge of 1 524 mm, the distance between track centres shall be set on the basis of the gauge FIN1.

(2) Instead of point 4.2.3.2(2), for the nominal track gauge of 1 524 mm, the nominal horizontal distance between track centres for new lines shall be specified for the design and shall not be smaller than the values mentioned in Table 21; it considers margins for aerodynamic effects.

TABLE 21

Minimum nominal horizontal distance between track centres

Maximum allowed speed [km/h]	**Minimum nominal horizontal distance between track centres [m]**
$v \leq 120$	4,10
$120 < v \leq 160$	4,30
$160 < v \leq 200$	4,50
$200 < v \leq 250$	4,70
$v > 250$	5,00

(3) Instead of point 4.2.3.2(3), for the nominal track gauge of 1 524 mm, the distance between track centres shall at least satisfy the requirements for the limit installation distance between track centres, defined according Annex D, Section D4.4.5 of EN 15273-3:2013.

7.7.6.4. *Minimum radius of horizontal curve (4.2.3.4)*
P cases

Instead of point 4.2.3.4(3), for the nominal track gauge of 1 524 mm, reverse curves (other than reverse curves in marshalling yards where wagons are shunted individually) with radii in the range from 150 m up to 275 m for new lines shall be designed in accordance with Table 22 to prevent buffer locking.

TABLE 22

Limits for the length of a straight intermediate element between two long circular curves in the opposite directions [m][0]

Alignment chain[a]	**Limits for tracks for mixed traffic [m]**
R = 150 m — straight — *R* = 150 m	16,9
R = 160 m — straight — *R* = 160 m	15,0
R = 170 m — straight — *R* = 170 m	13,5
R = 180 m — straight — *R* = 180 m	12,2
R = 190 m — straight — *R* = 190 m	11,1
R = 200 m — straight — *R* = 200 m	10,00
R = 210 m — straight — *R* = 210 m	9,1
R = 220 m — straight — *R* = 220 m	8,2
R = 230 m — straight — *R* = 230 m	7,3
R = 240 m — straight — *R* = 240 m	6,4
R = 250 m — straight — *R* = 250 m	5,4
R = 260 m — straight — *R* = 260 m	4,1
R = 270 m — straight — *R* = 270 m	2,0
R = 275 m — straight — *R* = 275 m	0

a *Note:* For reverse curves with different radii the radius of the smaller curve shall be used when designing straight element between the curves.

7.7.6.5. *Nominal track gauge (4.2.4.1)*
P cases

Instead of point 4.2.4.1(1), the nominal track gauge shall be 1 524 mm.

7.7.6.6. *Cant (4.2.4.2)*
P cases

(1) Instead of point 4.2.4.2(1), for the nominal track gauge of 1 524 mm, the design cant shall not exceed 180 mm for ballasted or non-ballasted track.

(2) Instead of point 4.2.4.2(3), for the nominal track gauge of 1 524 mm, new lines with mixed or freight traffic on curves with a radius less than 320 m and a cant transition steeper than 1 mm/m, the cant shall be restricted to the limit given by the following formula

$D \leq (R - 50) \times 0,7$

where D is the cant in mm and R is the radius in m.

7.7.6.7. *Maximum unguided length of fixed obtuse crossings (4.2.5.3)*
P cases

In paragraph (1) of Appendix J, for the nominal track gauge of 1 524 mm:

(a) Instead of subparagraph (J.1)(b), the minimum radius through obtuse crossing shall be 200 m; for radius between 200-220 m small radius shall be compensated with track gauge widening

(b) Instead of subparagraph (J.1)(c), the minimum check rail height shall be 39 mm

7.7.6.8. *The immediate action limit of track gauge as an isolated defect (4.2.8.4)*
P cases

Instead of point 4.2.8.4(1), for the nominal track gauge of 1 524 mm, the immediate action limits of track gauge as an isolated defect are set out in Table 23.

TABLE 23

Immediate action limits of track gauge for the nominal track gauge of 1 524 mm

Speed [km/h]	**Dimensions [mm]**	
	Minimum track gauge	**Maximum track gauge**
$v \leq 60$	1 515	1 554
$60 < v \leq 120$	1 516	1 552
$120 < v \leq 160$	1 517	1 547
$160 < v \leq 200$	1 518	1 543
$200 < v \leq 250$	1 519	1 539
$v > 250$	1 520	1 539

7.7.6.9. *The immediate action limit of cant (4.2.8.5)*
P cases

Instead of point 4.2.8.5(1), for the nominal track gauge of 1 524 mm, the maximum cant allowed in service is 190 mm.

7.7.6.10. *The immediate action limits for switches and crossings (4.2.8.6)*
P cases

Instead of point 4.2.8.6(1), for the nominal track gauge of 1 524 mm, the technical characteristics of switches and crossings shall comply with the following in-service values:

(a) Maximum value of free wheel passage in switches: 1 469 mm.

This value can be increased if the Infrastructure Manager demonstrates that the actuation and locking system of the switch is able to resist the lateral impact forces of a wheel set.

(b) Minimum value of fixed nose protection for common crossings: 1 476 mm.

This value is measured 14 mm below the running surface, and on the theoretical reference line, at an appropriate distance back from the actual point (RP) of the nose as indicated in Figure 2.

For crossings with point retraction, this value can be reduced. In this case the Infrastructure Manager shall demonstrate that the point retraction is sufficient to guarantee that the wheel will not hit the nose at the actual point (RP).

(c) Maximum value of free wheel passage at crossing nose: 1 440 mm.

(d) Maximum value of free wheel passage at check rail/wing rail entry: 1 469 mm.

(e) Minimum flangeway width: 42 mm.

(f) Minimum flangeway depth: 40 mm.

(g) Maximum excess height of check rail: 55 mm.

7.7.6.11. *Platform offset (4.2.9.3)*
P cases

Instead of point 4.2.9.3(1), for the nominal track gauge of 1 524 mm, the distance between the track centre and the platform edge, parallel to the running plane, shall be set on the basis of the installation limit gauge and is defined in chapter 13 of EN 15273-3:2013. The instllation limit gauge shall be set on the basis of the gauge FIN1. The minimum distance of b_q, calculated as in chapter 13 of EN15273-3:2013 is herafter refered to as b_{qlim}.

7.7.6.12. *Train external cleaning facilities (4.2.12.3)*
P cases

Instead of point 4.2.12.3(1), for the nominal track gauge of 1 524 mm, where a washing plant is provided it shall be able to clean the outer sides of single or double-deck trains between a height of:

(a) 330 to 4 367 mm for a single-deck train,

(b) 330 to 5 300 mm for double-deck trains.

7.7.6.13. *Assessment of structure gauge (6.2.4.1)*
P cases

Instead of point 6.2.4.1(1), for the nominal track gauge of 1 524 mm, assessment of structure gauge as a design review shall be done against characteristic cross sections using the results of calculations made by the Infrastructure Manager or the contracting entity on the basis of sections 5, 6, 10 and Annex D, Section D.4.4 of EN 15273-3:2013.

7.7.7. *Particular features on the French network*

7.7.7.1. *Platform height (4.2.9.2)*
P cases

For the rail network of Ile-de-France the nominal platform height of 920 mm above the running surface shall be allowed.

7.7.8. *Particular features on the German network*

7.7.8.1. *Platform height (4.2.9.3)*
P cases

For S-Bahn services the nominal platform height of 960 mm above the running surface shall be allowed.

7.7.9. *Particular features on the Hellenic network*

7.7.9.1. *Platform height (4.2.9.2)*
P cases

The nominal platform height shall be allowed to be 300 mm above the running surface.

7.7.10. *Particular features on the Italian network*

7.7.10.1. *Platform offset (4.2.9.3)*
P cases

Instead of point 4.2.9.3(1), for the platforms with the height of 550 mm, the distance b_{qlim} [mm] between the the track centre and the platform edge, parallel to the running plane, shall be calculated from the formula:

(a) on straight track and inside the curves:

$b_{qlim} = 1\ 650 + 3\ 750/R + (g - 1\ 435)/2 + 11{,}5$

(b) outside the curves:

$b_{qlim} = 1\ 650 + 3\ 750/R + (g - 1\ 435)/2 + 11{,}5 + 220 * \tan\delta$

where R is the radius of the track, in metres, g is the track gauge, δ is the angle of the cant with the horizontal line.

7.7.10.2. *Equivalent conicity (4.2.4.5)*
P cases

(1) Instead of point 4.2.4.5.(3) design values of track gauge, rail head profile and rail inclination for plain line shall be selected to ensure that the equivalent conicity limits set out in Table 24 are not exceeded.

TABLE 24

Equivalent conicity design limit values

	Wheel profile	
Speed range [km/h]	**S1002, GV1/40**	**EPS**
$v \leq 60$	Assessment not required	
$60 < v \leq 200$	0,25	0,30
$200 < v \leq 280$	0,20	N.A.
$v > 280$	0,10	N.A.

(2) Instead of point 4.2.4.5. (4) the following wheelsets shall be modelled passing over the designed track conditions (simulated by calculation according to EN 15302:2008+A1:2010):

(a) S 1002 as defined in Annex C of EN 13715:2006+A1:2010 with SR1.

(b) S 1002 as defined in Annex C of EN 13715:2006+A1:2010 with SR2.

(c) GV 1/40 as defined in Annex B of EN 13715:2006+A1:2010 with SR1.

(d) GV 1/40 as defined in Annex B of EN 13715:2006+A1:2010 with SR2.

(e) EPS as defined in Annex D of EN 13715:2006+A1:2010 with SR1.

For SR1 and SR2 the following values apply:

(f) For the 1 435 mm track gauge system SR1 = 1 420 mm and SR2 = 1 426 mm.

7.7.10.3. *Equivalent conicity in service (4.2.11.2)*
P cases

Instead of point 4.2.11.2.(2) the infrastructure manager shall measure the track gauge and the railhead profiles at the site in question at a distance of approximate 10 m. The mean equivalent conicity over 100 m shall be calculated by modelling with the wheelsets (a) – (e) mentioned in paragraph 7.7.10.2 (2) of this TSI in order to check for compliance, for the purpose of the joint investigation, with the limit equivalent conicity for the track specified in Table 14.

7.7.11. *Particular features on the Latvian network*

7.7.11.1. *Resistance of new bridges to traffic loads — vertical loads (4.2.7.1.1)*
P cases

(1) For sub-point 4.2.7.1.1(1)(a), for the 1 520 mm track gauge system, load model 71 shall be applied with a distributed load q_{vk} of 100 kN/m.

(2) Instead of point 4.2.7.1.1(3), for the 1 520 mm track gauge system, the value of factor alpha (α) shall in all cases be equal to 1,46.

7.7.12. *Particular features on the Polish network*

7.7.12.1. *TSI Categories of line (4.2.1)*
P cases

In point 4.2.1(7), Table 2 line P3, instead of gauge DE3, on upgraded or renewed railway lines in Poland gauge G2 is allowed.

7.7.12.2. *Distance between track centres (4.2.3.2)*
P cases

Instead of point 4.2.3.2(4), for 1 520 mm track gauge, for station tracks for direct reloading of goods from wagon to wagon the nominal horizontal minimum distance of 3,60 m shall be allowed.

7.7.12.3. *Minimum radius of horizontal curve (4.2.3.4)*
P cases

Instead of point 4.2.3.4(3), for the 1 520 mm track gauge, on tracks other than main tracks, reverse curves with radii in the range from 150 m up to 250 m shall be designed with a section of straight track of at least 10 m between the curves.

7.7.12.4. *Minimum radius of vertical curve (4.2.3.5)*
P cases

Instead of point 4.2.3.5(3), for the 1 520 mm track gauge, the radius of vertical curves (except the marshalling yards) shall be at least 2 000 m both on a crest and in a hollow.

7.7.12.5. *Cant deficiency (4.2.4.3)*
P cases

Instead of point 4.2.4.3(3), for all types of rolling stock of the 1 520 mm track gauge the cant deficiency shall not exceed 130 mm.

7.7.12.6. *Abrupt change of cant deficiency (4.2.4.4)*
P cases

Instead of point 4.2.4.4(3), for 1 520 mm track gauge, requirements of points 4.2.4.4(1) and 4.2.4.4(2) shall be applied.

7.7.12.7. *The immediate action limit for track twist (4.2.8.3)*
P cases

Instead of point 4.2.8.3(4) and 4.2.8.3(5), for 1 520 mm track gauge points from 4.2.8.3(1) to 4.2.8.3(3) shall be applied.

7.7.12.8. *The immediate action limit of track gauge as an isolated defect (4.2.8.4)*
P cases

Instead of requirements of Table 13 in point 4.2.8.4(2) the limit values for 1 520 mm track gauge in Poland are given in following table:

TABLE 25

Immediate action limits of track gauge for 1 520 mm track gauge in Poland

Speed [km/h]	**Dimensions [mm]**	
	Minimum track gauge	**Maximum track gauge**
$v < 50$	1 511	1 548
$50 \leq v \leq 140$	1 512	1 548
$v > 140$	1 512	1 536

7.7.12.9. *The immediate action limits for switches and crossings (4.2.8.6)*
P cases

(1) Instead of sub-point 4.2.8.6(1)(d), for certain types of switches of R = 190 m and crossings with slants of 1:9 and 1:4,444 the maximum value of free wheel passage at check rail/wing rail entry of 1 385 mm shall be allowed.

(2) Instead of point 4.2.8.6(3), for the 1 520 mm track gauge the technical characteristics of switches and crossings shall comply with the following in-service values:

(a) Maximum value of free wheel passage in switches: 1 460 mm.

This value can be increased if the Infrastructure Manager demonstrates that the actuation and locking system of the switch is able to resist the lateral impact forces of a wheelset.

(b) Minimum value of fixed nose protection for common crossings: 1 472 mm.

This value is measured 14 mm below the running surface, and on the theoretical reference line, at an appropriate distance back from the actual point (RP) of the nose as indicated in Figure 2.

For crossings with point retraction, this value can be reduced. In this case the Infrastructure Manager shall demonstrate that the point retraction is sufficient to guarantee that the wheel will not hit the nose at the actual point (RP).

(c) Maximum value of free wheel passage at crossing nose: 1 436 mm.

(d) Minimum flangeway width: 38 mm.

(e) Minimum flangeway depth: 40 mm.

(f) Maximum excess height of check rail: 55 mm.

7.7.12.10 *Platform height (4.2.9.2)*
P cases

(1) For platforms used for urban or suburban railway services the nominal platform height of 960 mm above running surface shall be allowed.

(2) For upgraded or renewed lines with maximum speed of no more than 160 km/h the nominal platform height from 220 mm to 380 mm above running surface shall be allowed.

7.7.12.11 *Equivalent conicity in service (4.2.11.2)*
T cases

Until introduction of equipment for measurement of elements required for calculation of equivalent conicity in service, it is allowed in Poland not to assess this parameter.

7.7.12.12 *Track sleepers (5.3.3)*
P cases

The requirement of point 5.3.3(2) shall be applied for speeds above 250 km/h.

7.7.13. *Particular features on the Portuguese network*

7.7.13.1. *Structure gauge (4.2.3.1)*
P cases

(1) Instead of point 4.2.3.1(1), for the nominal track gauge of 1 668 mm, the upper part of the structure gauge shall be set on the basis of the gauges set out in Table 26 and Table 27, which are defined in Annex D Section D.4.3 of EN 15273-3:2013.

TABLE 26

Portuguese gauges for passenger traffic

Traffic code	Gauge
P1	PTc
P2	PTb+
P3	PTc

P4	PTb+
P5	PTb
P6	PTb

TABLE 27

Portuguese gauges for freight traffic

Traffic code	Gauge
F1	PTc
F2	PTb+
F3	PTb
F4	PTb

(2) Instead of point 4.2.3.1(2), for the nominal track gauge of 1 668 mm the lower part of the structure gauge shall be in accordance with Annex D Section D.4.3.4 of EN 15273-3:2013.

(3) Instead of point 4.2.3.1(3), for the nominal track gauge of 1 668 mm, calculations of the structure gauge shall be done using the kinematic method in accordance with the requirements of Annex D Section D.4.3. of EN 15273-3:2013.

7.7.13.2. *Distance between track centres (4.2.3.2)*
P cases

Instead of point 4.2.3.2(1), for the nominal track gauge of 1 668 mm, the distance between track centres shall be set on the basis of the reference contours PTb, PTb+ or PTc, which are defined in Annex D Section D.4.3 of EN 15273-3:2013.

7.7.13.3. *The immediate action limit of track gauge as an isolated defect (4.2.8.4)*
P cases

Instead of point 4.2.8.4(1), for the nominal track gauge of 1 668 mm, the immediate action limits of track gauge as an isolated defect are set out in Table 28.

TABLE 28

Immediate action limits of Portuguese track gauge

Speed [km/h]	Dimensions [mm]	
	Minimum track gauge	Maximum track gauge
$v \leq 120$	1 657	1 703
$120 < v \leq 160$	1 658	1 703
$160 < v \leq 230$	1 661	1 696
$v > 230$	1 663	1 696

7.7.13.4. *The immediate action limit for switches and crossings (4.2.8.6)*
P cases

Instead of point 4.2.8.6(1), for the nominal track gauge of 1 668 mm, the technical characteristics of switches and crossings shall comply with the following in-service values:

(a) Maximum value of free wheel passage in switches: 1 618 mm.

This value can be increased if the Infrastructure Manager demonstrates that the actuation and locking system of the switch is able to resist the lateral impact forces of a wheelset.

(b) Minimum value of fixed nose protection for common crossings: 1 625 mm.

This value is measured 14 mm below the running surface, and on the theoretical reference line, at an appropriate distance back from the actual point (RP) of the nose as indicated in Figure 2.

For crossings with point retraction, this value can be reduced. In this case the Infrastructure Manager shall demonstrate that the point retraction is sufficient to guarantee that the wheel will not hit the nose at the actual point (RP).

(c) Maximum value of free wheel passage at crossing nose: 1 590 mm.

(d) Maximum value of free wheel passage at check rail/wing rail entry: 1 618 mm.

(e) Minimum flangeway width: 38 mm.

(f) Minimum flangeway depth: 40 mm.

(g) Maximum excess height of check rail: 70 mm.

7.7.13.5. *Platform height (4.2.9.2)*
P cases

For the nominal track gauge of 1 668 mm, for upgraded or renewed platforms the nominal platform height of 685 and 900 mm above the running surface for radii of more than 300 m shall be allowed.

7.7.13.6. *Platform offset (4.2.9.3)*
P cases

(1) Instead of point 4.2.9.3(1), for the nominal track gauge of 1 668 mm, the distance between the track centre and the platform edge parallel to the running plane (b_q), as defined in chapter 13 of EN 15273-3:2013, shall be set on the basis of the installation limit gauge (b_{qlim}). The installation limit gauge shall be calculated on the basis of the gauge PTb+ defined in Annex D, Section D 4.3 of EN 15273-3:2013.

(2) For a three-rail track, the installation limit gauge shall be the outside envelope resultant from the overlaying of the installation gauge centred on the track gauge 1 668 mm, and the installation gauge set in 4.2.9.3(1) centred on the track gauge 1 435 mm.

7.7.13.7. *Assessment of structure gauge (6.2.4.1)*
P cases

Instead of point 6.2.4.1(1), for the nominal track gauge of 1 668 mm, assessment of structure gauge as a design review shall be done against characteristic cross sections using the results of calculations made by the Infrastructure Manager or the contracting entity on the basis of chapters 5, 7, 10 and section D.4.3 of EN 15273-3:2013.

7.7.13.8. *Assessment of maximum pressure variations in tunnels (6.2.4.12)*
P cases

Instead of point 6.2.4.12(3), for the nominal track gauge of 1 668 mm, the reference cross section area (constant along a train) to be considered is to be, independently to each motor or trailer vehicle:

(a) 12 m^2 for vehicles designed for PTc reference kinematic profile,

(b) 11 m^2 for vehicles designed for PTb and PTb+ reference kinematic profile.

The vehicle gauge to be considered shall be set on the basis of the gauge selected according to point 7.7.13.1.

7.7.14. *Particular features on the Ireland network*

7.7.14.1. *Structure gauge (4.2.3.1)*
P cases

Instead of point 4.2.3.1(5), for the nominal track gauge of 1 600 mm, it shall be allowed to apply the uniform structure gauge IRL2 as set out in Appendix O to this TSI.

7.7.14.2. *Distance between track centres (4.2.3.2)*
P cases

Instead of point 4.2.3.2(6), for the 1 600 mm track gauge, the distance between track centres shall be set on the basis of the gauges selected according to point 7.7.14.1. The nominal horizontal distance between track centres shall be specified for the design and shall not be less than 3,47 m for gauge IRL2; it considers margins for aerodynamic effects.

7.7.14.3. *Assessment of structure gauge (6.2.4.1)*
P cases

Instead of point 6.2.4.1(5), for the 1 600 mm track gauge, assessment of structure gauge as a design review is to be made against characteristic cross sections using the structure gauge 'IRL2' as defined in Appendix O to this TSI.

7.7.15. *Particular features on the Spanish network*

7.7.15.1. *Structure gauge (4.2.3.1)*
P cases

(1) Instead of point 4.2.3.1(1), for the nominal track gauge of 1 668 mm, the upper part of the structure gauge for new lines shall be set on the basis of the gauges set out in Table 29 and Table 30 which are defined in Annex D, Section D.4.11 of EN 15273-3:2013.

TABLE 29

Gauges for passenger traffic on the Spanish network

Traffic code	Gauge of upper parts
P1	GEC16
P2	GEB16
P3	GEC16
P4	GEB16
P5	GEB16
P6	GHE16

TABLE 30

Gauges for freight traffic on the Spanish network

Traffic code	Gauge of upper parts
F1	GEC16
F2	GEB16
F3	GEB16
F4	GHE16

For renewed or upgraded lines the upper part of the structure gauge shall be set on the basis of the gauge GHE16 which is defined in Annex D, Section D.4.11 of EN 15273-3:2013.

(2) Instead of point 4.2.3.1(2), for the nominal track gauge of 1 668 mm the lower part of the structure gauge shall be GEI2 as set out in Appendix P to this TSI. Where tracks are equipped with rail brakes, structure gauge GEI1 shall be applied for the lower part of the gauge, as set out in Appendix P to this TSI.

(3) Instead of point 4.2.3.1(3), for the nominal track gauge of 1 668 mm calculations of the structure gauge shall be done using the kinematic method in accordance with the requirements of Annex D, Section D.4.11 of EN 15273-3:2013 for the upper parts and Appendix P to this TSI for the lower parts.

7.7.15.2. *Distance between track centres (4.2.3.2)*
P cases

Instead of point 4.2.3.2(1), for the nominal track gauge of 1 668 mm, the distance between track centres shall be set on the basis of gauges of upper parts GHE16, GEB16 or GEC16, which are defined in Annex D, Section D.4.11 of EN 15273-3:2013.

7.7.15.3. *Design track twist due to rail traffic actions (4.2.7.1.6)*
P cases

Instead of point 4.2.7.1.6, for the nominal track gauge of 1 668 mm, the maximum total design track twist due to rail traffic actions shall not exceed 8mm/3m.

7.7.15.4. *The immediate action limit of track gauge as an isolated defect (4.2.8.4)*
P cases

Instead of point 4.2.8.4(1), for the nominal track gauge of 1 668 mm, the immediate action limits of track gauge as an isolated defect are set out in Table 31.

TABLE 31

Immediate action limits of 1 668 mm track gauge

Speed [km/h]	Dimensions [mm]	
	Minimum track gauge	Maximum track gauge
$v \leq 80$	1 659	1 698
$80 < v \leq 120$	1 659	1 691
$120 < v \leq 160$	1 660	1 688

160 < v ≤ 200	1 661	1 686
200 < v ≤ 240	1 663	1 684
240 < v ≤ 280	1 663	1 682
280 < v ≤ 320	1 664	1 680
320 < v ≤ 350	1 665	1 679

7.7.15.5. *The immediate action limits for switches and crossings (4.2.8.6)*
P cases

Instead of point 4.2.8.6(1), for the nominal track gauge of 1 668 mm, the technical characteristics of switches and crossings shall comply with the following in-service values:

(a) Maximum value of free wheel passage in switches: 1 618 mm.

This value can be increased if the Infrastructure Manager demonstrates that the actuation and locking system of the switch is able to resist the lateral impact forces of a wheelset.

(b) Minimum value of fixed nose protection for common crossings: 1 626 mm.

This value is measured 14 mm below the running surface, and on the theoretical reference line, at an appropriate distance back from the actual point (RP) of the nose as indicated in Figure 2.

For crossings with point retraction, this value can be reduced. In this case the Infrastructure Manager shall demonstrate that the point retraction is sufficient to guarantee that the wheel will not hit the nose at the actual point (RP).

(c) Maximum value of free wheel passage at crossing nose: 1 590 mm.

(d) Maximum value of free wheel passage at check rail/wing rail entry: 1 620 mm.

(e) Minimum flangeway width: 38 mm.

(f) Minimum flangeway depth: 40 mm.

(g) Maximum height of check rail: 70 mm.

7.7.15.6. *Platform height (4.2.9.2)*
P cases

The nominal platform height dedicated for:

(a) commuter or regional traffic or

(b) commuter and long-distance traffic

(c) regional traffic and long-distance traffic

stopping in normal service, shall be allowed to be 680 mm for radii of 300 m and more above the running surface.

7.7.15.7. *Platform offset (4.2.9.3)*
P cases

(1) Instead of point 4.2.9.3(1), for the nominal track gauge of 1 668 mm, the distance between the track centre and the platform edge, parallel to the running plane (b_q), as defined in chapter 13 of EN 15273-3:2013, shall be set on the basis of the installation limit gauge (b_{qlim}). The installation limit gauge shall be calculated on the basis of the gauges of upper parts GHE16 or GEC16 defined in Annex D, Section D.4.11 of EN 15273-3:2013.

(2) For a three-rail track, the installation limit gauge shall be the outside envelope resultant from the overlaying of the installation limit gauge centred on the track gauge 1 668 mm, and the installation limit gauge set in 4.2.9.3(1) centred on the track gauge 1 435 mm.

7.7.15.8. *Assessment of structure gauge (6.2.4.1)*
P cases

Instead of point 6.2.4.1(1), for the nominal track gauge of 1 668 mm, assessment of structure gauge as a design review shall be done against characteristic cross sections using the results of calculations made by the Infrastructure Manager or the contracting entity on the basis of chapters 5, 7, 10 and Annex D, Section D.4.11 of EN 15273-3:2013 for the upper parts and Appendix P to this TSI for the lower parts.

7.7.15.9. *Assessment of maximum pressure variations in tunnels (6.2.4.12)*
P cases

Instead of point 6.2.4.12(3), for the nominal track gauge of 1 668 mm, the reference cross section area to be considered is to be, independently to each motor or trailer vehicle:

(a) 12 m^2 for vehicles designed for GEC16 reference kinematic profile,

(b) 11 m^2 for vehicles designed for GEB16, and GHE16 reference kinematic profile.

The vehicle gauge to be considered shall be set on the basis of the gauge selected according to point 7.7.15.1.

7.7.16. *Particular features on the Swedish network*

7.7.16.1. *General*
P cases

On infrastructure with direct connection to the Finnish network and for infrastructure in harbours, the particular features of the Finnish network as specified in point 7.7.6 of this TSI may be applied on tracks, which are dedicated for 1 524 mm nominal track gauge vehicles.

7.7.16.2. *Platform offset (4.2.9.3)*
P cases

As set out in point 4.2.9.3(1), the distance between the track centre and the platform edge parallel to the running plane (b_q), as defined in chapter 13 of EN 15273-3:2013, shall be calculated with the following values for allowed additional overthrow (S_{kin}):

(a) on the inside of the curve: $S_{kin} = 40,5/R$,

(b) on the outside of the curve: $S_{kin} = 31,5/R$.

7.7.17. *Particular features on the UK network for Great Britain*

7.7.17.1. *TSI categories of line (4.2.1)*
P cases

(1) Where line speeds are stated in kilometres per hour [km/h] as a category or performance parameter in this TSI, it shall be allowed to translate the speed to equivalent miles per hour [mph] as in Appendix G, for the United Kingdom national network in Great Britain.

(2) Instead of the column 'Gauge' in Table 2 and Table 3 of point 4.2.1(7), for the gauge of all lines except new, dedicated high speed lines of traffic code P1, it shall be allowed to use national technical rules as set out in Appendix Q.

7.7.17.2. *Structure gauge (4.2.3.1)*
P cases

Instead of point 4.2.3.1, for national gauges selected according to point 7.7.17.1(2), the structure gauge shall be set according to Appendix Q.

7.7.17.3. *Distance between track centres (4.2.3.2)*
P cases

(1) Instead of point 4.2.3.2, the nominal distance between track centres shall be 3 400 mm on straight track and curved track with a radius of 400 m or greater.

(2) Where topographical constraints prevent a nominal distance of 3 400 mm between track centres being achieved, it is permissible to reduce the distance between track centres provided special measures are put in place to ensure a safe passing clearance between trains.

(3) Reduction in the distance between track centres shall be in accordance with the national technical rule set out in Appendix Q.

7.7.17.3.bis *Equivalent conicity (4.2.4.5)*
P cases

(1) Instead of point 4.2.4.5.(3) design values of track gauge, rail head profile and rail inclination for plain line shall be selected to ensure that the equivalent conicity limits set out in Table 32 are not exceeded

TABLE 32

Equivalent conicity design limit values

	Wheel profile	
Speed range [km/h]	**S1002, GV1/40**	**EPS**
$v \leq 60$	Assessment not required	
$60 < v \leq 200$	0,25	0,30
$200 < v \leq 280$	0,20	0,20
$v > 280$	0,10	0,15

(2) Instead of point 4.2.4.5. (4) the following wheelsets shall be modelled passing over the designed track conditions (simulated by calculation according to EN 15302:2008+A1:2010):

(a) S 1002 as defined in Annex C of EN 13715:2006+A1:2010 with SR1.

(b) S 1002 as defined in Annex C of EN 13715:2006+A1:2010 with SR2.

(c) GV 1/40 as defined in Annex B of EN 13715:2006+A1:2010 with SR1.

(d) GV 1/40 as defined in Annex B of EN 13715:2006+A1:2010 with SR2.

(e) EPS as defined in Annex D of EN 13715:2006+A1:2010 with SR1.

For SR1 and SR2 the following values apply:

(f) For the 1 435 mm track gauge system SR1 = 1 420 mm and SR2 = 1 426 mm.

7.7.17.4. *Maximum unguided length of fixed obtuse crossings (4.2.5.3)*
P cases

Instead of point 4.2.5.3, the design value of the maximum unguided length of fixed obtuse crossing shall be in accordance with the national technical rule set out in Appendix Q.

7.7.17.5. *The immediate action limits for switches and crossings (4.2.8.6)*
P cases

Instead of point 4.2.8.6(1)(b), for the 'CEN56 Vertical' design of switches and crossings, a minimum value of fixed nose protection for common crossings of 1 388 mm is allowed (measured 14 mm below the running surface, and on the theoretical reference line, at an appropriate distance back from the actual (RP) of the nose as indicated in Figure 2).

7.7.17.6. *Platform height (4.2.9.2)*
P cases

Instead of point 4.2.9.2, for platform height, national technical rules as set out in Appendix Q shall be allowed.

7.7.17.7. *Platform offset (4.2.9.3)*
P cases

Instead of point 4.2.9.3, for platform offset, national technical rules as set out in Appendix Q shall be allowed.

7.7.17.8. *Equivalent conicity in service (4.2.11.2)*
P cases

Instead of point 4.2.11.2.(2) the infrastructure manager shall measure the track gauge and the railhead profiles at the site in question at a distance of approximate 10 m. The mean equivalent conicity over 100 m shall be calculated by modelling with the wheelsets (a) — (e) mentioned in paragraph 7.7.17.3(2) of this TSI in order to check for compliance, for the purpose of the joint investigation, with the limit equivalent conicity for the track specified in Table 14.

7.7.17.9. *Assessment of structure gauge (6.2.4.1)*
P cases

Instead of point 6.2.4.1, it shall be allowed to assess structure gauge in accordance with the national technical rules as set out in Appendix Q.

7.7.17.10 *Assessment of distance between track centres (6.2.4.2)*
P cases

Instead of point 6.2.4.2, it shall be allowed to assess distance between track centres in accordance with the national technical rules as set out in Appendix Q.

7.7.17.11 *Assessment of platform offset (6.2.4.11)*
P cases

Instead of point 6.2.4.11, it shall be allowed to assess platform offset in accordance with the national technical rules as set out in Appendix Q.

7.7.18. *Particular features on the UK network for Northern Ireland*

7.7.18.1. *Structure gauge (4.2.3.1)*
P cases

Instead of point 4.2.3.1(5), for the nominal track gauge of 1 600 mm, it shall be allowed to apply the uniform structure gauge IRL3 as set out in Appendix O to this TSI.

7.7.18.2. *Distance between track centres (4.2.3.2)*
P cases

Instead of point 4.2.3.2(6), for the 1 600 mm track gauge, the distance between track centres shall be set on the basis of the gauges selected according to point 7.7.17.1. The nominal horizontal distance between track centres shall be specified for the design and shall consider margins for aerodynamic effects. The minimum allowed value for the uniform structure gauge IRL3 is an open point.

7.7.18.3. *Assessment of structure gauge (6.2.4.1)*
P cases

Instead of point 6.2.4.1(5), for the 1 600 mm track gauge, assessment of structure gauge as a design review is to be made against characteristic cross sections using the structure gauge 'IRL3' as defined in Appendix O to this TSI.

7.7.19. *Particular features on the Slovak network*

7.7.19.1. *TSI categories of line (4.2.1)*
P cases

For the Traffic Code F1520 as defined in Table 3 of point 4.2.1(7), for the 1 520 mm track gauge system, it shall be allowed to use axle load 24,5 t and train length in the range from 650 m up to 1 050 m.

7.7.19.2. *Minimum radius of horizontal curve (4.2.3.4)*
P cases

(1) Instead of point 4.2.3.4(2), reverse curves (other than reverse curves in marshalling yards where wagons are shunted individually) with radii in the range from 150 m up to 300 m for new lines shall be designed in accordance with Table 33 and Table 34 to prevent buffer locking.

(2) Instead of paragraph 4.2.3.4(3), for the 1 520 mm track gauge system, for main tracks, reverse curves with radii in the range from 150 m up to 250 m shall be designed with a section of straight track of at least 15 m between the curves.

(3) Instead of point 4.2.3.4(3), for the 1 520 mm track gauge system, for tracks other than main tracks, reverse curves with radii in the range from 150 m up to 250 m shall be designed in accordance with Table 33 and Table 34.

TABLE 33

Limits for length of a straight intermediate element between two long circular curves in the opposite directions (m)

R_1/ R_2	150	160	170	180	190	200	220	230	250	280	300
150	11,0	10,7	10,4	10,0	9,8	9,5	9,0	8,7	8,1	7,6	6,7
160	10,7	10,4	10,0	9,8	9,5	9,0	8,6	8,1	7,6	6,7	6,4
170	10,4	10,0	9,8	9,5	9,0	8,5	8,1	7,6	6,7	6,4	6,0
180	10,0	9,8	9,5	9,0	8,5	8,0	7,5	6,6	6,4	6,0	5,5
190	9,8	9,5	9,0	8,5	8,0	7,5	6,5	6,3	6,0	5,4	4,5
200	9,5	9,0	8,5	8,0	7,5	6,5	6,2	6,0	5,3	4,0	3,0
220	9,0	8,6	8,1	7,5	6,5	6,2	6,0	5,3	4,0	3,0	0,0
230	8,7	8,1	7,6	6,6	6,3	6,0	5,3	4,0	3,0	0,0	
250	8,1	7,6	6,7	6,4	6,0	5,3	4,0	3,0	0,0		
280	7,6	6,7	6,4	6,0	5,4	4,0	3,0	0,0			
300	6,7	6,4	6,0	5,5	4,5	3,0	0,0				
325	6,4	6,0	5,7	5,0	4,0	0,0					
350	6,3	5,8	5,2	4,0	3,0	0,0					
400	6,0	5,2	4,0	3,0	0,0						
450	5,5	4,5	3,0	0,0							
500	5,0	3,0	0,0								
600	3,0	0,0									
700	0,0										

TABLE 34

Limits for length of a straight intermediate element between two long circular curves in the opposite directions (m); for passenger trains with speeds up to 40 km/h for other tracks than main tracks

R_1/ R_2	150	160	170	180	190	200	220	230	250
150	11,0	10,7	10,4	10,0	9,8	9,5	9,0	8,7	8,1
160	10,7	10,4	10,0	9,8	9,5	9,0	8,6	8,1	7,6
170	10,4	10,0	9,8	9,5	9,0	8,5	8,1	7,6	6,7
180	10,0	9,8	9,5	9,0	8,5	8,0	7,5	6,6	6,4
190	9,8	9,5	9,0	8,5	8,0	7,5	6,5	6,3	6,0
200	9,5	9,0	8,5	8,0	7,5	6,7	6,2	6,0	5,3
220	9,0	8,6	8,1	7,5	6,5	6,2	6,0	5,3	4,0
230	8,7	8,1	7,6	6,6	6,3	6,0	5,3	4,0	4,0
250	8,1	7,6	6,7	6,4	6,0	5,3	4,0	4,0	4,0

280	7,6	6,7	6,4	6,0	5,4	4,0	4,0	4,0	4,0
300	6,7	6,4	6,0	5,5	4,5	4,0	4,0	4,0	4,0
325	6,4	6,0	5,7	5,0	4,0	4,0	4,0	4,0	4,0
350	6,3	5,8	5,2	4,0	4,0	4,0	4,0	4,0	4,0
400	6,0	5,2	4,0	4,0	4,0	4,0	4,0	4,0	4,0
450	5,5	4,5	4,0	4,0	4,0	4,0	4,0	4,0	4,0
500	5,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
600	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

7.7.19.3. *Minimum radius of vertical curve (4.2.3.5)*
P cases

(1) Instead of point 4.2.3.5(1), only for side track with maximum speed up to 10 km/h, the radius of vertical curves (except for humps in marshalling yards) shall be at least 500 m in both in a crest and in a hollow.

(2) Instead of point 4.2.3.5(3), for 1 520 mm track gauge system, the radius of vertical curves (except the marshalling yards) shall be at least 2 000 m both on a crest and in a hollow, in cramped conditions (e.g. insufficient space) at least 1 000 m both on a crest and in hollow.

(3) For side track with maximum speed up to 10 km/h, it shall be allowed to use the radius of vertical curves at least 500 m both on a crest and in a hollow.

(4) Instead of point 4.2.3.5(4), for the 1 520 mm track gauge system for humps in marshalling yards the radius of vertical curves shall be at least 300 m on a crest and 250 m in a hollow.

7.7.19.4. *Cant deficiency (4.2.4.3)*
P cases

Instead of point 4.2.4.3(3), for all types of rolling stock of the 1 520 mm track gauge system the cant deficiency shall not exceed 137 mm. For passenger traffic, this limit is valid for speeds up to 230 km/h. For mixed traffic, this limit is valid for speed up to 160 km/h.

7.7.19.5. *The immediate action limit for track twist (4.2.8.3)*
P cases

Instead of point 4.2.8.3(4) and 4.2.8.3(5), for the 1 520 mm track gauge system, points from 4.2.8.3(1) to 4.2.8.3(3) shall be applied.

7.7.19.6. *The immediate action limit of track gauge as an isolated defect (4.2.8.4)*
P cases

Instead of point 4.2.8.4(2), for 1 520 mm track gauge system, the immediate action limits of track gauge as an isolated defects are set out in Table 35.

TABLE 35

Immediate action limits of track gauge for 1 520 mm track gauge system in Slovak republic

Speed [km/h]	**Dimensions [mm]**	
	Minimum track gauge	**Maximum track gauge**

v ≤ 80	1 511	1 555
80 < v ≤ 120	1 512	1 550
120 < v ≤ 160	1 513	1 545
160 < v ≤ 230	1 514	1 540

7.7.19.7. *The immediate action limit for cant (4.2.8.5)*
P cases

Instead of point 4.2.8.5(3), for the 1 520 mm track gauge system, the maximum cant allowed in service is 170 mm.

7.7.19.8. *The immediate action limits for switches and crossings (4.2.8.6)*
P cases

Instead of point 4.2.8.6(3), for the 1 520 mm track gauge system, the technical characteristics of switches and crossings shall comply with the following in-service values:

(a) Minimum value of bypass at the narrowest location between open switch rail and stock rail is 60 mm.

(b) Minimum value of fixed nose protection for common crossings is 1 472 mm. This value is measured 14 mm below the running surface, and on the theoretical reference line, at an appropriate distance back from the actual point (RP) of the nose as indicated in Figure 2. For crossings with point retraction, this value can be reduced. In this case the Infrastructure Manager shall demonstrate that the point retraction is sufficient to guarantee that the wheel will not hit the nose at the actual point (RP).

(c) Maximum value of free wheel passage at crossing nose is 1 436 mm

(d) Minimum flangeway width is 40 mm

(e) Minimum flangeway depth is 40 mm

(f) Maximum excess height of check rail is 54 mm

7.7.19.9. *Platform height (4.2.9.2)*
P cases

For renewed lines with maximum speed of no more than 120 km/h the nominal platform height shall be allowed from 200 mm to 300 mm above the running surface.

7.7.19.10*Equivalent conicity in service (4.2.11.2)*
T cases

Until introduction of equipment for measurement of elements required for calculation of equivalent conicity in service, it is allowed in Slovak republic not to assess this parameter.

7.7.19.11*Track sleepers (5.3.3)*
P cases

The requirement of point 5.3.3(2) shall be applied for speeds above 250 km/h.

(**1**) Commission Recommendation 2014/881/EU of 18 November 2014 on the procedure for demonstrating the level of compliance of existing railway lines with the basic parameters of the technical specifications for interoperability (See page 520 of this Official Journal).

(**2**) Not yet published in the Official Journal.

(**3**) Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network (OJ L 228, 9.9.1996, p. 1), as amended by Decision No 884/2004/EC (OJ L 167, 30.4.2004, p. 1).