Commission Regulation (EU) No 1230/2012 of 12 December 2012 implementing Regulation (EC) No 661/2009 of the European Parliament and of the Council with regard to type-approval requirements for masses and dimensions of motor vehicles and their trailers and amending Directive 2007/46/EC of the European Parliament and of the Council (Text with EEA relevance)

ANNEX I

TECHNICAL REQUIREMENTS

[F1Appendix 4

Aerodynamic device and equipment crash test

1. Test conditions for aerodynamic devices and equipment

1.1. At the request of the manufacturer the test shall be conducted on one of the following:

1.1.1. on a vehicle of the type for which an aerodynamic device and equipment is intended;

1.1.2. on a part of the body of the vehicle type for which the aerodynamic device and equipment is intended; that part shall be representative of the vehicle type(s) in question;

1.1.3. on a rigid wall.

1.2. Where the test is conducted as referred to in points 1.1.2. and 1.1.3., the parts used to connect the aerodynamic devices and equipment to a part of the vehicle body or to a rigid wall shall be equivalent to those which are used to secure the aerodynamic devices and equipment when it is installed on the vehicle. Every device shall be accompanied by installation and operating instructions giving sufficient information for any competent person to install it correctly.

1.3. At the request of the manufacturer the test procedure described in point 1.5. may be conducted by numerical simulation in accordance with Annex XVI to Directive 2007/46/EC.

The mathematical model shall be validated only if it is comparable with the physical test conditions. To that effect, a physical test shall be conducted for the purposes of comparing the results obtained when using the mathematical model with the results of a physical test. Comparability of the test results shall be proven. A validation report shall be drafted by the manufacturer.

Any change made to the mathematical model or to the software likely to invalidate the validation report shall require a new validation in accordance with the previous paragraph.

1.4. Conditions for the conduct of tests or simulations.

1.4.1. The vehicle shall be at rest on a level, flat, rigid and smooth surface.

1.4.2. Any front wheels shall be in the straight ahead position.

1.4.3. The tyres shall be inflated to the pressure recommended by the vehicle manufacturer.

1.4.4. The vehicle shall be unladen.

1.4.5. The vehicle may, if necessary to achieve the test force required in point 1.5.1.2., be restrained by any method. This method shall be specified by the vehicle manufacturer.

1.4.6. Vehicles equipped with hydropneumatic, hydraulic or pneumatic suspension or a device for automatic levelling according to load shall be tested with the suspension or device in the normal running condition specified by the manufacturer.

1.5. Test procedure

1.5.1. The tests shall be carried out to assess that the aerodynamic device and equipment offer a specified level of deformation to forces applied parallel to the longitudinal axis of the vehicle as referred to in point 1.6.1. Alternatively, the device may also become folded or retracted under the influence of force. The fulfilment of the requirement referred to in point 1.6.2. shall be verified by means of suitable test mandrels for the purpose of

the crash test. The device used to distribute the test force over the stated flat surface shall be connected to the force actuator through a swivel joint. In cases of geometric incompatibilities an adapter may be used instead of a device with a flat surface.

1.5.1.1. A force shall be applied parallel to the longitudinal axis of the vehicle via a surface or adaptor not more than 250 mm in height and 200 mm wide with a radius of curvature of 5 ± 1 mm at the vertical edges. The surface shall not be rigidly fixed to the aerodynamic device and equipment and shall be articulated in all directions. When the test is carried out on a vehicle as referred to in point 1.1.1., the height of the lower edge of the surface or adaptor shall be specified by the manufacturer in an area between the lowest edge of the aerodynamic device and equipment and a point of the upper edge of the surface or adaptor that is no more than 2,0 m above the ground in vehicle-mounted condition (see figure 1). This point is to be specified on a laden vehicle with the technically permissible maximum laden mass.

Where the test is carried out on a part of the body of the vehicle type as referred to in point 1.1.2. or on a rigid wall as referred to in point 1.1.3., the height of the centre of the surface or adaptor shall be specified by the manufacturer in an area between the lowest edge of the aerodynamic device and equipment and the point that represents the height of no more than 2,0 m above the ground in vehicle-mounted condition on a laden vehicle with the technically permissible maximum laden mass (see figure 2).

The exact location of the centre of the surface or adaptor in the area of application of forces shall be specified by the manufacturer. Where the aerodynamic device and equipment have different degrees of stiffness in the area of application of the forces (e.g. due to reinforcements, different materials or thicknesses, etc.), the location of the centre of the surface or adaptor shall be located in the area with the highest resistance against external forces in longitudinal direction of the vehicle.

Figure 1 Test point height

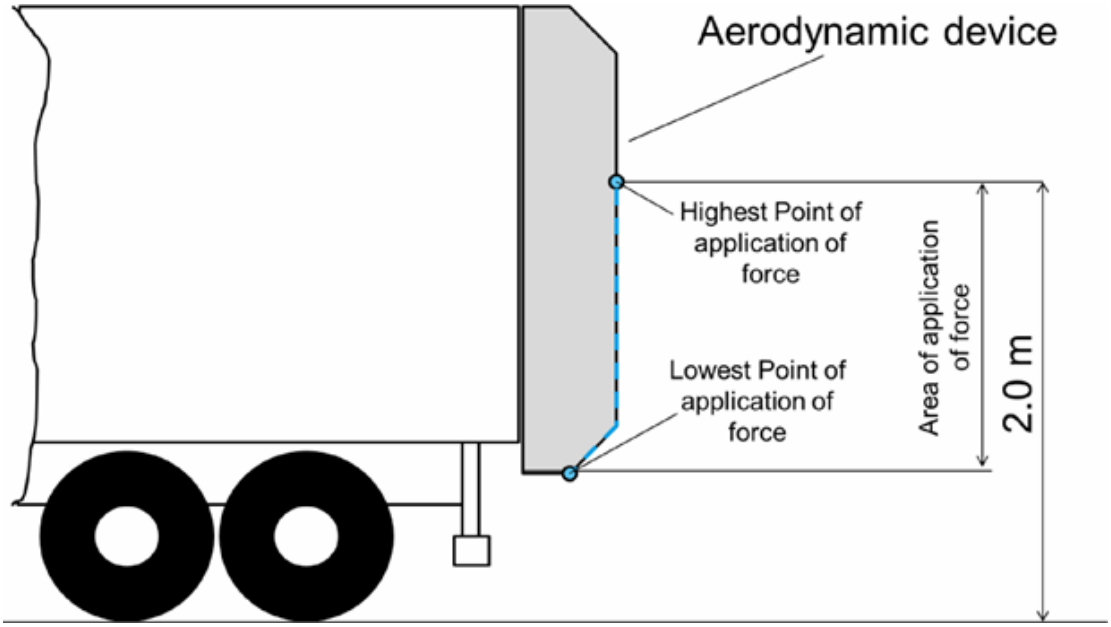
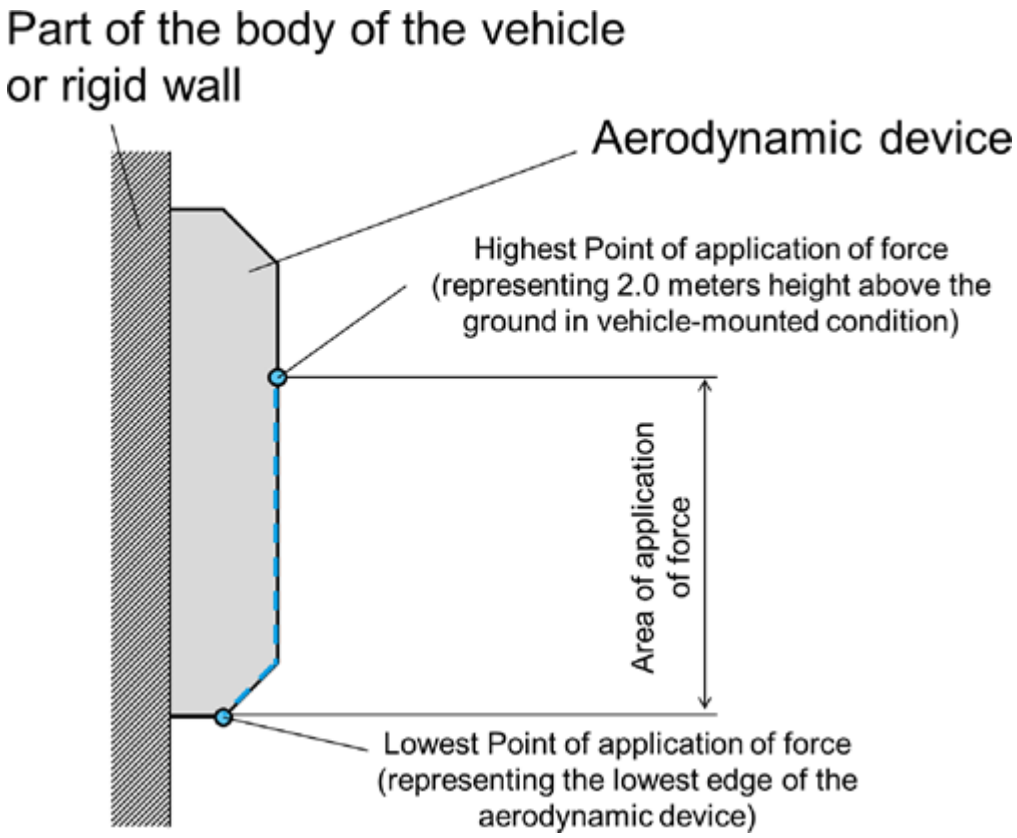
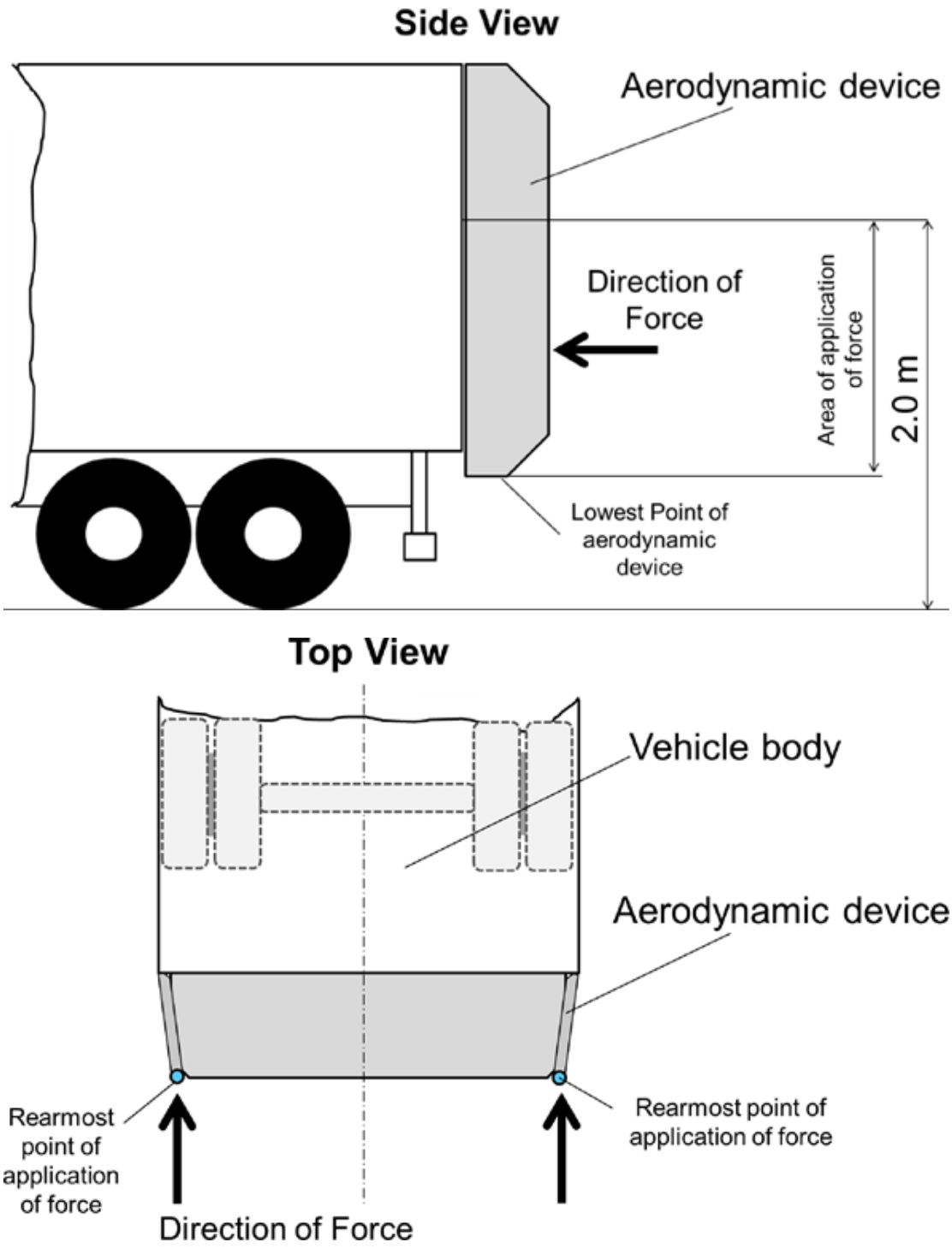


Figure 2 Example of test setup



1.5.1.2. A horizontal force of maximum 4 000 N ± 400 N shall be applied consecutively to two points situated symmetrically about the centre line of the vehicle or the centre line of the device on the rearmost outer edge of the aerodynamic device and equipment in completely unfolded or in-use position (see figure 3). The order in which the forces are applied may be specified by the manufacturer.

Figure 3 Force application



1.6. Requirements

1.6.1. The aerodynamic device and equipment shall be so fitted that, during the application of the test forces as specified in point 1.5.1.2., the device and equipment deforms, retracts or folds resulting in projection length of ≤ 200 mm measured in horizontal longitudinal direction at the points of application of the forces. The resulting projection length shall be recorded.

1.6.2. The aerodynamic device and equipment shall not endanger the occupants of other vehicles in a rear-end collision and shall not affect the operation of the rear underrun protection device.**]**

Changes to legislation:
There are outstanding changes not yet made to Commission Regulation (EU) No 1230/2012. Any changes that have already been made to the legislation appear in the content and are referenced with annotations.
View outstanding changes

Changes and effects yet to be applied to the whole legislation item and associated provisions

- Signature words omitted by S.I. 2022/1273 reg. 71(10)
- Annex 5 Pt. B s. 1 words substituted by S.I. 2022/1273 reg. 72(4)(c)(iii)
- Annex 5 Pt. B s. 2 words substituted by S.I. 2022/1273 reg. 72(4)(c)(iv)
- Annex 5 Pt. D s. 1 words substituted by S.I. 2022/1273 reg. 72(4)(e)(iii)
- Annex 1 Appendix 2 point 2.1 words substituted by S.I. 2022/1273 reg. 72(2)(e)(i)
- Annex 1 Appendix 2 point 2.2 words substituted by S.I. 2022/1273 reg. 72(2)(e)(ii)(aa)
- Annex 1 Appendix 2 point 2.2(c) words substituted by S.I. 2022/1273 reg. 72(2)(e)(ii)(bb)
- Annex 1 Appendix 4 point 1.3 words substituted by S.I. 2022/1273 reg. 72(2)(f)
- Art. 2(1) words substituted by S.I. 2022/1273 reg. 71(3)(b)
- Art. 2(2) words substituted by S.I. 2022/1273 reg. 71(3)(c)
- Art. 2(11) words substituted by S.I. 2022/1273 reg. 71(3)(d)
- Art. 2(40) words substituted by S.I. 2022/1273 reg. 71(3)(e)
- Art. 6(1)(1a) substituted for Art. 6(1) by S.I. 2022/1273 reg. 71(8)(a)