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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Commercial road vehicles — Fifth wheel coupling pins — Strength tests

Véhicules routiers utilitaires — Pivot d'attelage — Essais de résistance

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8716 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

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Commercial road vehicles — Fifth wheel coupling pins — Strength tests

1 Scope

This International Standard lays down test conditions and strength requirements to be met by 50 and 90 fifth wheel coupling pins.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 337 : 1981, *Road vehicles — 50 semi-trailer fifth wheel coupling pin — Basic and mounting/interchangeability dimensions*.

ISO 1176 : —¹⁾, *Road vehicles — Masses — Vocabulary and codes*.

ISO 4086 : 1982, *Road vehicles — 90 semi-trailer fifth wheel coupling pin — Basic and mounting/interchangeability dimensions*.

3 General test requirements

3.1 The test shall be carried out with fifth wheel coupling pins with functional dimensions as given in ISO 337 or ISO 4086.

3.2 The strength tests described in this International Standard are dynamic tests which shall be performed on a test bed.

3.3 The fixing arrangements for the coupling pin on the test bed shall be those intended for its attachment to the semi-trailer, in accordance with the coupling pin manufacturer's fitting instructions.

3.4 Fifth wheel coupling pins shall be tested separately, i.e. not together with fifth wheels, with a locking device as specified in 5.1.

4 Determination of F_h rating

The horizontal load F_h shall be taken as a basis for the assumed loads given below. This is a comparative value determined by calculation for the longitudinal forces occurring between the towing vehicle and semi-trailer.

The F_h -value, expressed in kilonewtons, shall be calculated with the equation:

$$F_h = g_n \frac{0,6 \cdot m_1 \cdot m_2}{m_1 + m_2 - m_3}$$

where

m_1 is the maximum design total mass of the towing vehicle, including m_3 , which is to tow the semi-trailer;

m_2 is the maximum design mass of the semi-trailer which is to be drawn with the fifth wheel coupling pin, in tonnes;

m_3 is the maximum design vertical load borne by the towing vehicle of the semi-trailer, in tonnes;

g_n is the acceleration due to gravity:

$$g_n = 9,806\ 65 \text{ m/s}^2.$$

The terminology used for the different masses shall be taken with the meanings given in the corresponding definitions in the revision of ISO 1176 : 1974.

5 Test conditions

5.1 Application of test load

5.1.1 The horizontal test load $F_{h,t}$ simulating practical loads under driving conditions shall be applied.

5.1.2 The horizontal test load $F_{h,t}$ shall be an alternating force applied in the location and direction as shown in figure 1. $F_{h,t}$ shall be applied by means of a special slack-free device (similar to a fifth wheel locking device).

1) Second edition to be published (revision of ISO 1176 : 1974).

$F_{h,t}$ shall alternate between $+ 0,6 F_h$ and $- 0,6 F_h$.

5.2 Loading cycle

The dynamic test shall be carried out sinusoidally and the number of cycles shall be 2×10^6 .

5.3 Frequency

The selected frequency shall not exceed 30 Hz and shall not coincide with the natural frequency of the system.

6 Strength criteria

The dynamic test in clause 5 shall not cause permanent deformation, breaks or cracks.

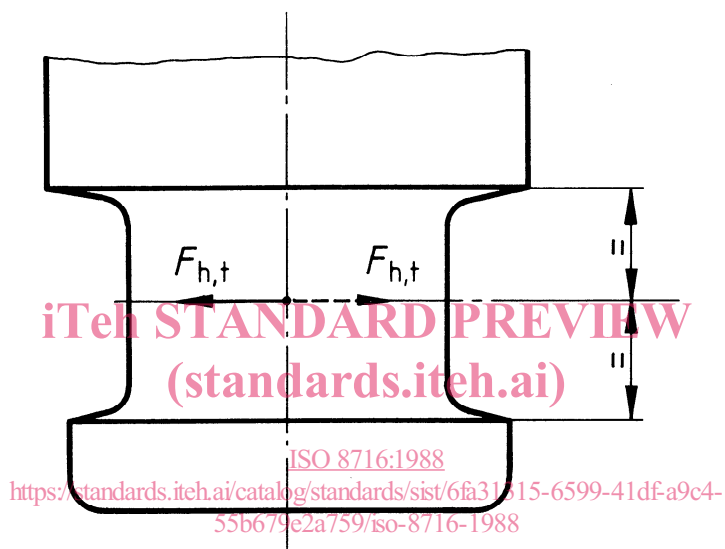


Figure 1 — Application of horizontal test load, $F_{h,t}$