INTERNATIONAL STANDARD

ISO 1726-3

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Road vehicles — Mechanical couplings between tractors and semi-trailers —

Part 3: Requirements for semi-trailer contact area to fifth wheel

Véhicules routiers — Liaisons mécaniques entre tracteurs et semi-remorques —

Partie 3: Exigences pour plateaux à friction de semi-remorques

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 1726-3 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 15, *Interchangeability of components of commercial vehicles and buses*.

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ISO 1726 consists of the following parts, under the general title *Road vehicles — Mechanical couplings between tractors and semi-trailers*:

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— *Part 1: Interchangeability between tractors and semi-trailers for general cargo*

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— *Part 2: Interchangeability between low-coupling tractors and high-volume semi-trailers*

— *Part 3: Requirements for semi-trailer contact area to fifth wheel*

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Introduction

The dimensional interchangeability of truck and trailer is specified in various standards and regulations. In order to be able to design the details and resistance of the coupling devices, the area for the introduction of forces and torques between fifth wheel and kingpin and trailer also needs to be well defined.

Since many fifth wheel coupling plates are designed with certain wear resistance and limited flexibility, stiffness needs to be taken into account when designing the mating area of the trailer, which generally is made of steel.

The fact that damage can occur in this area, including broken coupling plates, emphasizes the necessity of this part of ISO 1726.

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Road vehicles — Mechanical couplings between tractors and semi-trailers —

Part 3: Requirements for semi-trailer contact area to fifth wheel

1 Scope

This part of ISO 1726 specifies the test conditions of a static test to be performed on the semi-trailer contact area to the fifth wheel. It ensures the ability of the semi-trailer to couple the greatest possible variety of tractor vehicles equipped with a fifth wheel coupling in accordance with ISO 3842.

2 Terms and definitions

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For the purposes of this document, the following terms and definitions apply.

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2.1
contact area to the fifth wheel
circular zone surrounding and centred on the kingpin and having a diameter of 965 mm

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2.2
test force
F_V
maximum vertical static load the semi-trailer manufacturer allows to be transmitted to a fifth wheel

3 Requirements

During the static test described in 4.2, the elastic deformation, S, shall not exceed 5 mm vertical deflection at any point of the contact area to the fifth wheel during the application of the test force (see Figure 1).

After unloading/discharging, the total unevenness shall not exceed 2 mm at any point within this zone (see Figure 4).

4 Test methods

4.1 General

The verification of the minimum requirements specified in this part of ISO 1726 can be performed by static tests (see 4.2) or adequate calculation, if the deformation is only elastic (see 4.3).

In the case of a static test, the test forces, $F_V/2$, shall be positioned at dimensions X (see Figure 1), and may be either applied in one point or uniformly distributed in accordance with the semi-trailer manufacturer's recommendation.

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4.2 Test with static vertical force

4.2.1 Test arrangement

The test shall be performed on a whole semi-trailer or on a representative vehicle section. In any case, the fixing arrangements shall be representative and in accordance with the kingpin manufacturer's fitting instructions.

4.2.2 Preliminary verification

Neither protrusions nor sharp edges are allowed in the contact area to the fifth wheel. Holes with sharp edges and holes exceeding a maximum diameter of 50 mm are not allowed.

4.2.3 Test procedure

The test semi-trailer or the representative vehicle section shall be laden with the maximum admissible static load as declared by the vehicle manufacturer. Examples of load application are given in Figures 1 and 2.

The section shall be supported by a ring having an internal diameter of 220 mm and external diameter in the range of 280 mm to 300 mm, as shown in Figure 3.

4.3 Alternative method

In case of calculation, a preliminary verification shall be performed in accordance with 4.2.2 in order to ensure that the maximum existing unevenness of the contact area, semi-trailer unladen, is 2 mm at any point of the contact area to the fifth wheel (see Figure 4).

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The calculation method or the mathematical model shall be validated in comparison with the actual test procedure. Comparability of the results of the calculation (or the model) with results of conventional test procedures shall be proven.

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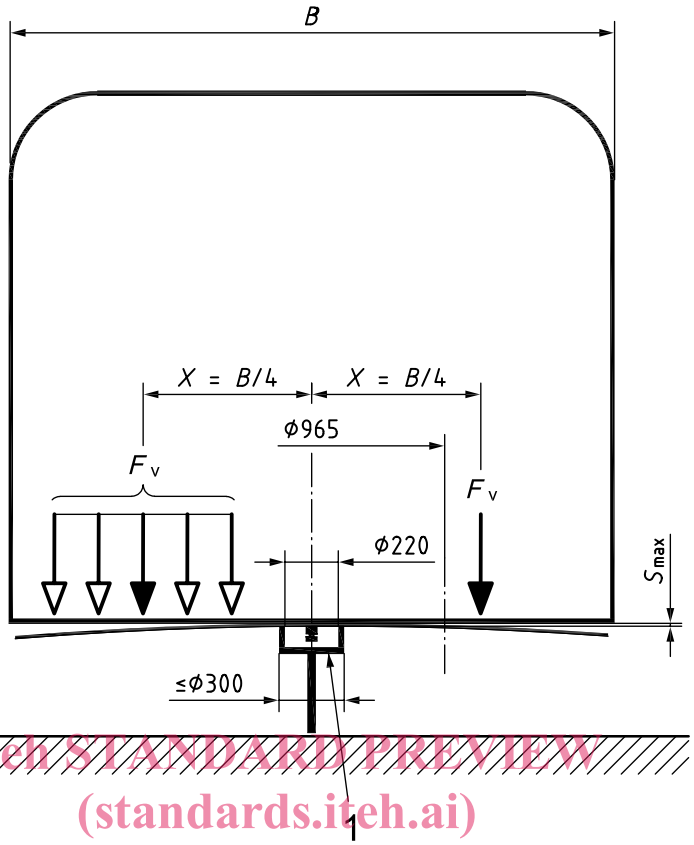
Dimensions in millimetres



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Key

1 supporting ring for test

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B semi-trailer width

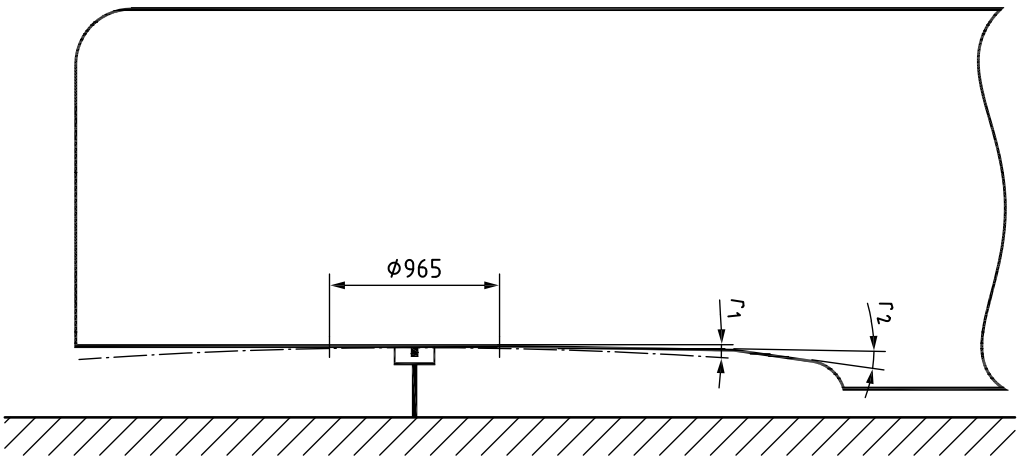
F_v test force

X dimension

S_{max} maximum elastic deformation

Figure 1 — Examples of application of vertical load, front view

Dimensions in millimetres



Key

$r_1 = 1°$

$r_2 = 7°$

Figure 2 — Example of application of vertical load, side view

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Dimensions in millimetres

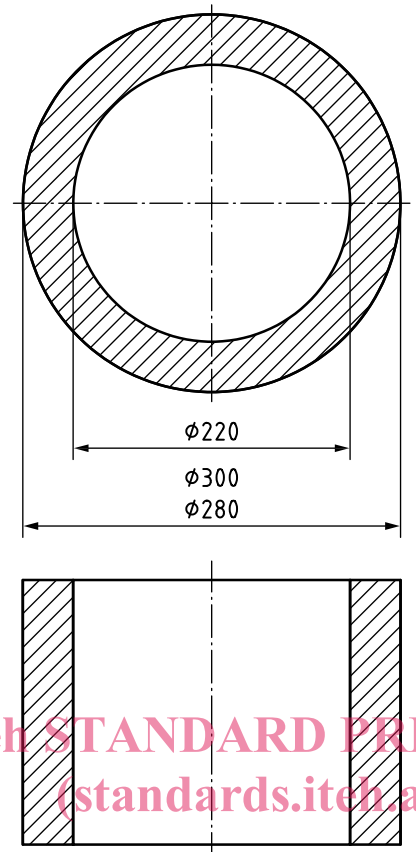

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Figure 3 — Static test supporting ring

Dimensions in millimetres

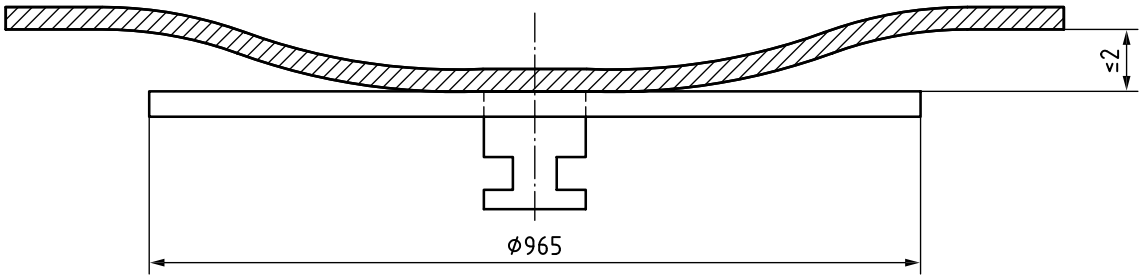

Figure 4 — Examples for the method to measure the total unevenness (unladen case)

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