STATIC STIFFNESS OF 15° DROP CENTRE TRUCK STEEL WHEELS

E S 3.22

RIGIDITE' STATIQUE DES ROUES 15° IN ACIER POUR VEHICULES COMMERCIAUX
STATISCHE FELGENSTEIFIGKEIT VON STEILSCHULTER-NUTZFAHRZEUGRÄDERN AUS STAHL

1 - SCOPE AND FIELD OF APPLICATION

This specification defines the minimum requirements for static rim stiffness of disc wheels with one piece rim intended for road use on trucks, buses and trailers.

2 - WHEEL DEFINITIONS

The following standard is valid and has to be used for fully processed new wheels of an acceptable quality standard with respect to material specifications and dimensions. No wheel should be used for more than one test.

Nomenclature and designations are based on ISO 3911.

3 - STATIC RIM STIFFNESS TEST

3.1 Test principle

3.1.1 To test the pressure resistance of the rim during the inflation of the tyre.

3.1.2 To measure the pressure corresponding to the bursting of the tyre or the deformation of the rim flange causing a leak not allowing to increase tyre pressure

3.2 Equipment

The wheel is mounted on a fixation in a secure environment.

3.3 Wheel preparation

3.3.1 Flange curl is reduced to a minimum value on the rim drawing

3.3.2 A second valve hole for water inlet is machined. Alternatively the original valve hole can be used.

3.3.3 An additional valve hole for air outlet is machined on the opposite side of the water inlet valve hole.

3.4 Procedure

3.4.1 Tyre
Tyres selected for this wheel test shall be in agreement with rim dimension and the load rating of the wheel. The tyre is mounted on the wheel.

Main changes compared to the last issue:

3.4.2 Tyre filling
The tyre is filled with water through the water valve inlet, the air is evacuated through the air outlet valve When the tyre is filled completely, the air outlet valve is plugged.

3.4.3 Testing procedure
The tyre is inflated, the corresponding pressure is monitored with an appropriate device.
The test is continued until the Test Termination criteria, see 3.5 .

3.5 Test Termination Definition

3.5.1 Inability of the wheel / rim to sustain tyre pressure, by for example a deformation of the rim flange

3.5.2 Inability of tyre bead to sustain tyre pressure, by for example a tyre bear rupture.

3.6 Required Test Performance

3.6.1 No collapse of the rim below 18 bars.

This value is supposed to represent the following service conditions:
- 14 bars corresponding to a pressure that can be reached in maintenance workshops
- 4 bars added to take into account severe service conditions as:
  - maximum pressure on cold tyres
  - maximum tyre load
  - high tyre temperature due to down hill driving