SLOVENSKI STANDARD
SIST EN 15583-2:2012

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Oprema za zimska vzdrževalna dela - Snežni plugi - 2. del: Merila za preskušanje in njihove zahteve

Winter maintenance equipment - Snow ploughs - Part 2: Testing criteria and their requirements

Winterdienstausrüstung - Schneepflüge - Teil 2: Prüfkriterien und deren Anforderungen

Matériels de viabilité hivernale - Lames de déneigement - Partie 2: Critères d'essai et exigences

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Winter maintenance equipment - Snow ploughs - Part 2: Testing criteria and their requirements

Matériels de viabilité hivernale - Lames de déneigement - Partie 2: Critères d'essai et exigences

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 15583-2:2012) has been prepared by Technical Committee CEN/TC 337 “Winter maintenance and road service area maintenance equipment”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2012, and conflicting national standards shall be withdrawn at the latest by August 2012.

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1 Scope

This European standard is valid for snow ploughs designed to be fitted to winter maintenance vehicles on their front-mounting plates according to EN 15432 and also for side-mounted snow ploughs.

Requirements regarding the testing of override security systems and/or bump security systems of front-mounted or side-mounted snow ploughs for winter service are determined by this document. This document is meant to assess the demands made on snow ploughs operated in traffic.

The document is valid for:

— single-side snow ploughs;

— variable V-ploughs.

The following points are not standardized by this document:

— V-shaped snow ploughs;

— requirements for registration and approval;

— requirements made by carrier vehicle manufacturers;

— requirements on safety – these are dealt with in EN 13021.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10027-1, *Designation systems for steels — Part 1: Steel names*

EN 10027-2, *Designation systems for steels — Part 2: Numerical System*

EN 13021, *Winter service machines — Safety requirements*

EN 15144, *Winter maintenance equipment — Terminology — Terms for winter maintenance*

EN 15432, *Winter and road service area maintenance equipments — Front-mounted equipments — Interchangeability*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15144 and the following apply.

3.1
ice scraper
implement to remove ice from the traffic area by scraping and pushing aside

3.2
test bench
support on which the snow clearing blade shall be positioned

4 Requirements

4.1 General requirements

The snow plough shall be tested in static and dynamic way. The manufacturer has to ensure, that both tests are made in the same configuration as the snow plough is being used by the customer. Tests shall be made with new scraper blades.

4.2 Testing criteria – static

4.2.1 General

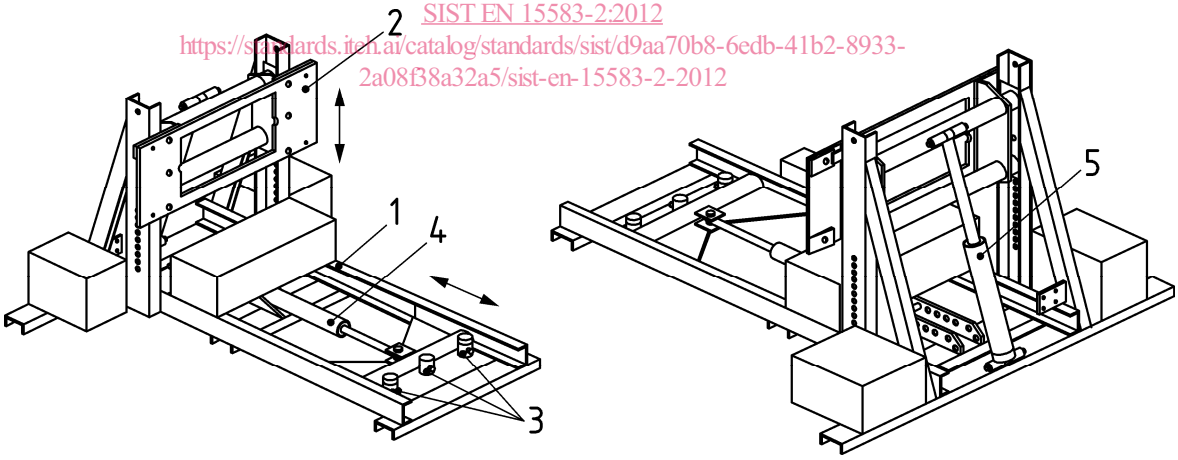
The static test will measure the resistance in daNm of the override system. The results shall be reported in the test protocol.

The static test of the override protection does not include V-ploughs and variable V-ploughs.

4.2.2 Description of the test bench

4.2.2.1 General

For the machinery of the test bench see Figure 1.



Key
1 base frame
2 attachment plate, adjustable in height, subject to F1 or F2 (see EN 15432)
3 mobile obstacle with possibility of assembly in different positions
4 plate movement cylinder
5 obstacle movement

Figure 1

4.2.2.2 Purpose

To determine the force when tackling the obstacle (Fa), see **phase 1** and the maximum force (Fmax) when getting over the obstacle **phase 2** and **phase 3** (see Figure 2a).

Dimensions in millimetres

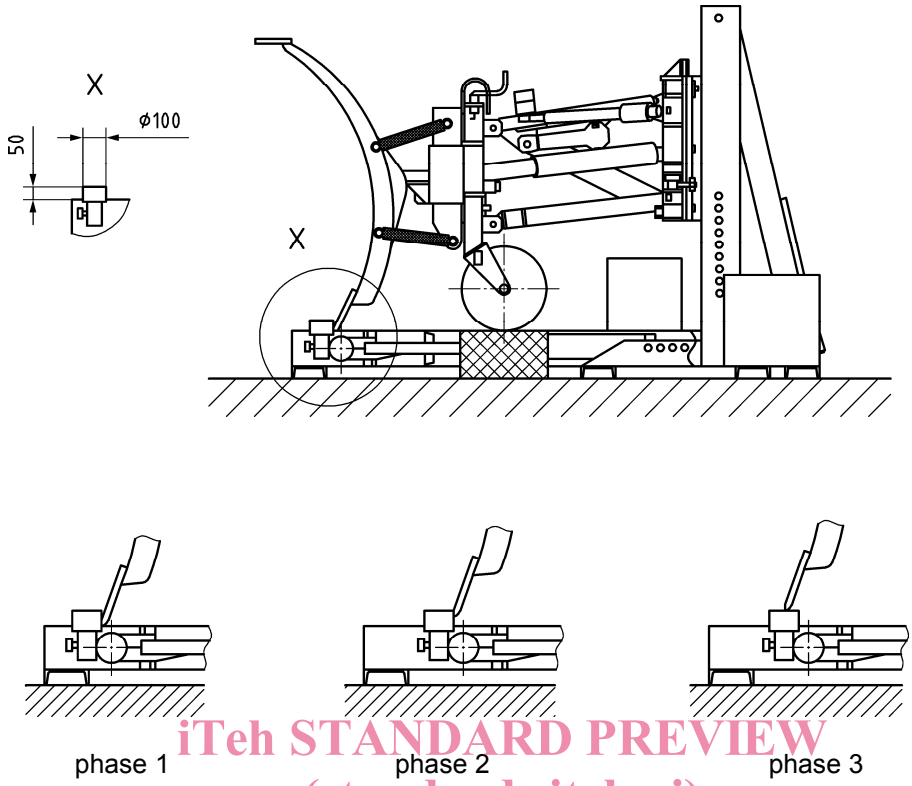


Figure 2a

The impact of force shall happen in the middle of the plough share (see figure 2b).

Dimensions in millimetres

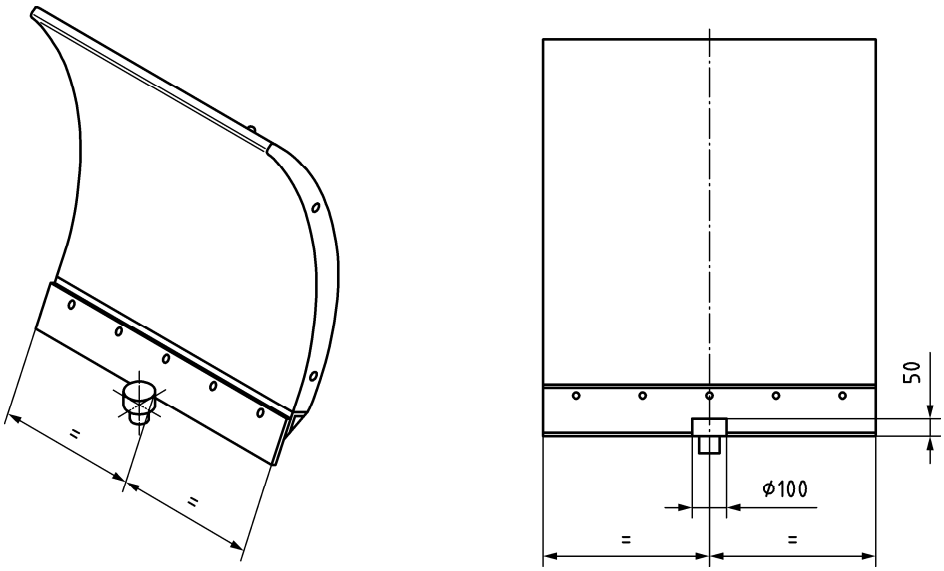


Figure 2b

The force values are obtained as follows:

$$F_{max} = A \cdot P_{max} \quad (1)$$

$$F_a = A \cdot P_a \quad (2)$$

where:

P_a pressure measured in bar inside the cylinder in phase 1

P_{max} pressure measured in bar inside the cylinder when getting over the obstacle

F_a resistant force in phase 1

F_{max} maximum resistant force when getting over the obstacle

A effective plunger square footage of the cylinder

4.2.2.3 Test conditions

a) dimensions of the obstacle Ø=100 mm H=50 mm;

b) height of plate, see EN 15432;

c) obstacle movement speed < 0,05 m/s;

d) working angle α = 0°;

e) attachment angle β = angle declared by manufacturer. If the attachment angle β is variable, the maximum pressure value obtained shall be taken.

f) the test shall be repeated on the single element or, in the case of blade with just one element, on the single blade. If the elements are the same, the test shall be carried out for just one element;

g) the force shall act in the centre of the blade (tolerance ± 50 mm);

h) the scraper blade shall be in steel;

i) obstacle material: steel S 355 (see EN 10027-1 and EN 10027-2);

j) the blade shall be in the floating position during the test.

4.3 Testing criteria – dynamic

4.3.1 General

The dynamic test for override protection is valid for mounted and side mounted single side snow ploughs and for ice scrapers.

The dynamic test of the override protection does not include V-ploughs and variable V-ploughs.

security: according to EN 13021

speed: see Table 1