SLOVENSKI STANDARD
SIST EN 148-1:2019

01-marec-2019

Nadomešča:
SIST EN 148-1:1999

Oprema za varovanje dihal - Navoji na maskah - 1. del: Standardna navojna povezava

Respiratory protective devices - Threads for facepieces - Part 1: Standard thread connection

Atemschutzgeräte - Gewinde für Atemanschlüsse - Teil 1: Rundgewindeanschluss

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Appareils de protection respiratoire - Filetages pour pièces faciales - Partie 1 : Connexion à filetage normalisé

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Ta slovenski standard je istoveten z: **EN 148-1:2018**

ICS:

13.340.30	Varovalne dihalne naprave	Respiratory protective devices

SIST EN 148-1:2019 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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SIST EN 148-1:2019

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 148-1

December 2018

ICS 13.340.30

Supersedes EN 148-1:1999

English Version

Respiratory protective devices - Threads for facepieces - Part 1: Standard thread connection

Appareils de protection respiratoire - Filetages pour pièces faciales - Partie 1 : Connexion à filetage normalisé

Atemschutzgeräte - Gewinde für Atemanschlüsse - Teil 1: Rundgewindeanschluss

This European Standard was approved by CEN on 17 September 2018.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 148-1:2018) has been prepared by Technical Committee CEN/TC 79 “Respiratory protective devices”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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

This document supersedes EN 148-1:1999.

The following main technical changes have been made compared to EN 148-1:1999:

a) ISO 17420-3 taken as basis for the revision of EN 148-1;

b) description and additional requirements for thread connector with sockets are added;

c) sealing surface adapted and a new drawing for socket sealing included;

d) pull force in 4.4.1 reduced to 50 N;

e) Annex ZA deleted.

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1 Scope

This document specifies standard threads for respiratory protective devices and the description of test devices necessary for the assessment of some of the requirements.

This document does not apply to diving equipment and to positive pressure demand breathing apparatus.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 48-4, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 4: Indentation hardness by durometer method (Shore hardness)*

ISO/DIS 815-1, *Rubber, vulcanized or thermoplastic — Determination of compression set — Part 1: At ambient or elevated temperatures*

ISO/DIS 16972, *Respiratory protective devices —Definitions of terms and pictograms*

3 Terms, definitions and symbols

3.1 Terms and definitions

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For the purposes of this document, the terms and definitions given in ISO/DIS 16972 and the following apply.

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ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1.1
thread connection
shape and dimensions of the standard connection between RPD components with a male thread connector and respiratory interfaces with a female thread connector

3.1.2
socket
inner component that can rotate independently of the outer male thread connector

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3.2 Symbols

For the purposes of this document, the following symbols apply (see Figure 1 to Figure 20).

d_1	major diameter of male thread
d_2	minor diameter of male thread
d_3	inner dimension for gauge
d_4	outer dimension for gauge
D_1	major diameter of female thread
D_2	minor diameter of female thread
h	pitch
t_1	thread height
r	radius
b	thickness of gauge (GO gauge or NO-GO gauge)
w	permissible surface degradation due to wear and tear for d_1 and d_2
H_a	thickness of ring A
H_b	thickness of ring B

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4 Requirements

4.1 Elements of thread connection

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The thread connection shall consist of the following three elements.

1) A male thread connector without sockets which forms the connecting element of a filter or a male thread connector with socket for connectors other than for filters.

2) A female thread connector which forms the connecting element of the respiratory interface.

3) A sealing element which is retained within the female thread connector.

4.2 Sealing element

The sealing element shall be retained in place, correctly centred, and it shall not be possible to dislodge it during normal use.

It shall be easy to check that the sealing element is in place (e.g. sealing element of a different colour from the female thread connector).

Testing shall be performed in accordance with 5.1.

4.3 Geometry of thread profile

4.3.1 General

The profile of the thread shall have a diameter of 40x1/7 as defined by the female and male threads profile geometry (Figure 1) and thread dimensions given in Table 1.

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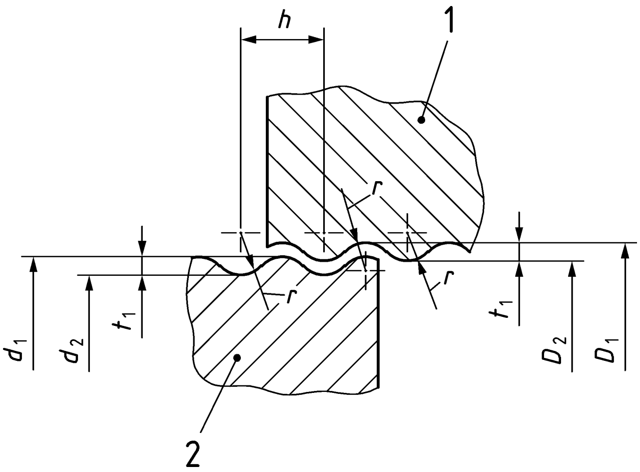

Key

1 female thread

2 male thread

Figure 1 — Geometry of thread profile

Table 1 — Thread dimensions for the mechanical connection interface

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Dimensions in millimetres

Thread	**Male thread**			**Female thread**			**Pitch**	**No. of threads per 25,4 mm**	**Thread height**	**Radius**
	Major diameter		Minor diameter	Major diameter	Minor diameter					
	d_1		d_2	D_1	D_2					
	max.	min.	max.	min.	min.	max.	h	z	t_1	r
⌀ 40x1/7	40,00	39,70	38,40	40,16	38,56	38,86	3,629	7	0,65 to 0,8	1,225

Testing shall be performed in accordance with 5.1, 5.3, 5.4 and 5.5.

4.3.2 Circularity of threads

4.3.2.1 General

The circularity tolerance of the threads shall be 0,15 mm referred to the major radius of the male thread and 0,15 mm referred to the minor radius of the female thread.

4.3.2.2 Circularity of the male thread

When approached perpendicular to the axis of the thread in any angular orientation, the limit snap gauge with single-ended jaws shall not pass over the thread (see Figure 8).

Testing shall be performed in accordance with 5.2.1.

4.3.2.3 Circularity of the female thread

When approached parallel to the axis of the thread in any angular orientation, the sector NO-GO gauge shall not enter the thread (see Figure 9).

Testing shall be performed in accordance with 5.2.2.

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4.3.3 Male thread connector

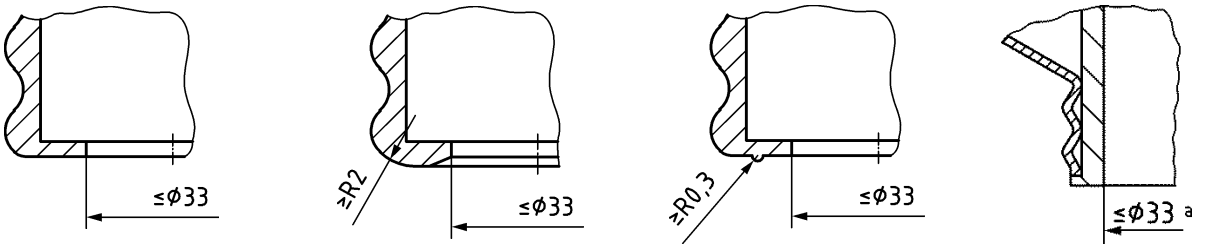
4.3.3.1 General

The material used for the male thread connector and its thickness is left to the manufacturer's choice.

4.3.3.2 Sealing surface

The shape of the sealing surface of the male thread connector shown in Figure 2 with the enlarged detail of Figures 2 a, 2 b, 2 c, 2 d that interfaces with the sealing element, is left to the manufacturer's choice. For example, it can be flat (see Figure 2 a), rounded with a radius ≥ 2 mm (see Figure 2 b), flat with a raised sealing ring (see Figure 2 c) or socket sealing (see Figure 2 d). If there is a raised sealing ring, it shall have a radius ≥ 0,3 mm.

Dimensions in millimetres



a) flat sealing surface **b) rounded sealing surface** **c) raised sealing surface** **d) socket sealing surface**

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a The outlet diameter in Figure 2 d is specified for the upper limit to allow a minimum area for the sealing. The lower limit is not specified because it is covered indirectly by other performance requirements, such as breathing resistance.

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Figure 2 — Sealing surface of the male thread connector

4.3.3.3 Dimensions

The axial dimensions of the male thread connector shall be measured starting from the most protruding part of the sealing surface (including raised sealing ring, if present).

The beginning of the thread, up to a maximum of 2 mm of length, is not considered as effective thread and it shall be left to the manufacturer's design choice. The initiation of the thread shall be smooth.

When the GO gauge is screwed by hand without excessive force onto the male thread connector, at least 2 mm of the connector shall extend from the surface of the gauge.

The effective length of thread shall be ≥ 14,5 mm (see Figure 3 and 4).

When gauged with the effective length ring gauge, the distance from the top of the gauge to the top of the thread shall be ≥ 8 mm (see Figure 20 and 21).

The internal diameter (minimum diameter of the sealing surface area) of the male thread connector shall be ≤ 33,0 mm (see Figure 2).

It shall not be possible to fit the NO-GO gauge onto the male thread connector.

Without excessive force, the NO-GO gauge shall bind after initial engagement.

Testing shall be performed in accordance with 5.1, 5.3 and 5.5.

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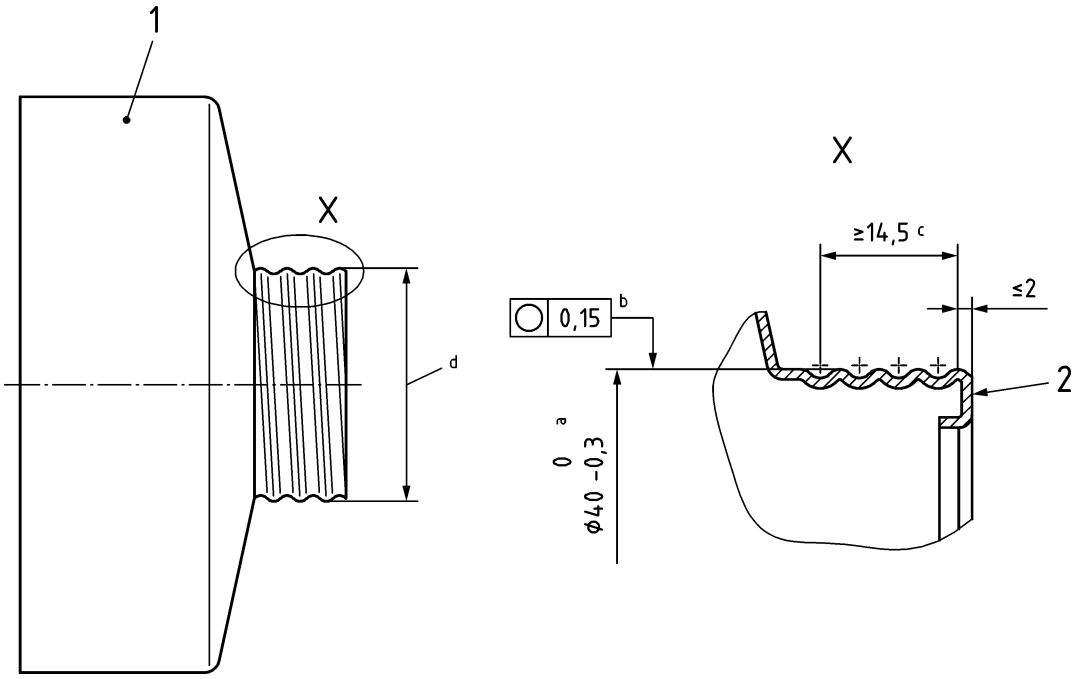
Dimensions in millimetres



Key

1 filter
2 sealing surface
a major diameter
b reference to radius
c effective thread
d thread ⌀40 mm x 1/7”

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Figure 3 — Male thread connector without socket for filters

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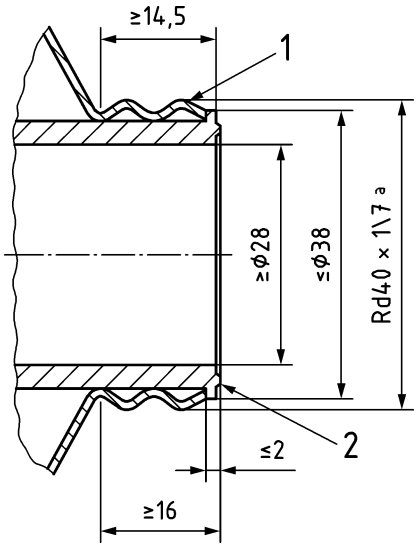
Dimensions in millimetres



Key

1 thread up to edge

2 sealing surface section left to the choice of the manufacturer

a specification see 4.3

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Figure 4 — Male thread connector with socket for filters

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4.3.4 Female thread connector

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4.3.4.1 General

The material used for the female thread connector and its thickness is left to the manufacturer's choice.

4.3.4.2 Dimensions

The axial dimensions of the female thread connector shall be measured starting from the sealing surface of the sealing element.

The available length of the thread of the female thread connector shall be (13,0 ± 0,5) mm extended to the edge of the connector (see Figure 5).

When the GO side of the gauge, with ring A in place, is screwed by hand without excessive force into the female thread connector (with the sealing element correctly in place), ring A shall block.

When the GO side of the gauge, with ring B in place, is screwed by hand without excessive force into the female thread connector (with the sealing element correctly in place), ring B shall remain loose.

The internal diameter of the female thread connector (minimum diameter of the sealing area) shall be ≤ 30 mm (see Figure 5).

It shall not be possible to fit the NO-GO side of the gauge into the female thread connector without excessive force. It shall bind after initial engagement.

If the central hole of the connector on the respiratory interface has a rim for retention and centring of the sealing element, it shall end at least 1 mm below the surface of the sealing element interfacing the filter.