SLOVENSKI STANDARD
SIST EN 12477:2002

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Varovalne rokavice za varilce

Protective gloves for welders

Schutzhandschuhe für Schweißer

Gants de protection pour soudeurs

Ta slovenski standard je istoveten z: **EN 12477:2001**

ICS:

13.340.40	Varovanje dlani in rok	Hand and arm protection
25.160.01	Varjenje, trdo in mehko spajkanje na splošno	Welding, brazing and soldering in general

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EUROPEAN STANDARD

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Gants de protection pour soudeurs

Schutzhandschuhe für Schweißer

This European Standard was approved by CEN on 13 January 2001.

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

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Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets", 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of an identical text or by endorsement, at the latest by April 2002, and conflicting national standards shall be withdrawn at the latest by April 2002.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

There are various manual welding processes, which are defined in ISO 857-1 : 1998 “Welding and allied processes - Vocabulary - Part 1: Metal welding processes".

The nature and the severity of the risks for welders' hands vary according to the various welding processes. The performance (protection and dexterity) required for protective gloves can therefore differ depending on their intended use.

1 Scope

This European Standard specifies requirements and test methods for protective gloves for use in manual metal welding, cutting and allied processes.

Protective gloves for welders protect the hands and the wrists during the process of welding and related tasks.

Protective gloves for welders protect against small splashes of molten metal, short contact exposure to limited flame, convective heat and contact heat and U.V. radiation from the arc. Besides, they protect against mechanical aggressions.

According to their performance, protective gloves for welders are classified into two types :

- type A : lower dexterity (with higher other performance),

- type B : higher dexterity (with lower other performance).

Protective gloves for special welding processes are outside the scope of this standard.

2 Normative references

This European standard incorporates, by dated or undated references, provisions from other publications. These normative references are quoted at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 348	Protective clothing - Test method : Determination of behaviour of materials on impact of small splashes of molten metal
EN 367	Protective clothing - Protection against heat and fire - Method of determining heat transmission on exposure to flame
EN 388 : 1994	Protective gloves against mechanical risks
EN 407 : 1994	Protective gloves against thermal risks (Heat and/or fire)
prEN 420 : 1998	General requirements for gloves
EN 702	Protective clothing - Protection against heat and flame – Test method : Determination of the contact heat transmission through protective clothing or its materials

3 Requirements

3.1 General requirements

Protective gloves for welders shall comply with all the general requirements of prEN 420 : 1998, except the lengths which are defined in 3.2.

3.2 Sizes

When measured according to 6.2.3 and 6.2.4 of prEN 420 : 1998 the sizes shall correspond to the requirements established in 5.1.2 of prEN 420 : 1998 but the minimum length shall be in accordance with Table 1.

Table 1

Hand size	6	7	8	9	10	11
Minimum length of glove (mm)	300	310	320	330	340	350

3.3 Specific requirements

Protective gloves for welders shall be tested and, according to the test results, be classified as type A and/or type B, according to Table 2.

Table 2

REQUIREMENTS	MINIMUM PERFORMANCE REQUIRED		
	EN number	**Type A**	**Type B**
Abrasion resistance	EN 388	2 (500 cycles)	1 (100 cycles)
Blade cut resistance	EN 388	1 (index 1,2)	1 (index 1,2)
Tear resistance	EN 388	2 (25 N)	1 (10 N)
Puncture resistance	EN 388	2 (60 N)	1 (20 N)
Burning behaviour	EN 407	3	2
Contact heat resistance	EN 407	1 (contact temperature 100°C)	1 (contact temperature 100°C)
Convective heat resistance	EN 407	2 (HTI ≥ 7)	–
Resistance to small splashes of molten metal	EN 407	3 (25 droplets)	2 (15 droplets)
Dexterity	prEN 420:1998	1 (smallest diameter 11 mm)	4 (smallest diameter 6,5 mm)

After each thermal test, all inner materials shall be inspected to ensure that no melting has occurred.

During the test for resistance to small splashes of molten metal, if drops adhere to the material, then the material shall not ignite.

4 Conditioning

Before testing, the test samples shall be conditioned as specified in the specific test method standard.

For protective gloves with a multilayer construction, the test shall be carried out on all layers simultaneously, even if these, after removal of the test samples, are no longer connected to one another.

If care instructions are provided, all the tests shall be performed on the gloves, before and after they have been subjected to the maximum recommended number of cleaning cycles.

The lowest performance level obtained from either before or after the maximum number of cleaning cycles shall be provided in the marking and in the instructions for use.

5 Test methods

If the glove areas to be submitted to the tests are made of different materials, all these materials shall be tested. The classification is based on the lowest performance level obtained.

5.1 Abrasion resistance

The material for welders' protective gloves shall be tested according to 6.1 of EN 388 : 1994 on the palm of the glove, and on the back if it is made of different materials.

5.2 Blade cut resistance

The material for welders' protective gloves shall be tested according to 6.2 of EN 388 : 1994 on the palm of the glove.

5.3 Tear resistance

The material for welders' protective gloves shall be tested according to 6.3 of EN 388 : 1994 on the palm of the glove.

5.4 Puncture resistance

The material for welders' protective gloves shall be tested according to 6.4 of EN 388 : 1994 on the palm of the glove.

5.5 Burning behaviour

The glove shall be tested according to 6.3 of EN 407 : 1994.

5.6 Contact heat resistance

The material for welders' protective gloves shall be tested according to EN 702, on the palm of the glove, with a contact temperature of 100 °C.

A sample with a diameter of 80 mm is taken from each palm area of three gloves.

All the individual values t_t shall comply with the minimum performance required in Table 2. The result shall be given as the arithmetic mean of the three values and rounded to the nearest whole second.

5.7 Convective heat resistance

The material for welders' protective gloves shall be tested according to EN 367, on the palm, on the back and on the cuff of the glove if they are made of different materials. For each material or each material assembly, three samples shall be tested. All the individual values shall comply with the minimum performance required in Table 2. The result shall be given as the arithmetic mean of the three values and rounded to the nearest whole second.

5.8 Resistance to small splashes of molten metal

The material for welders' protective gloves shall be tested according to EN 348, on the back and on the cuff of the glove, if these are made of different materials.

A sample of 120 mm x 20 mm is taken from each back of four gloves.

All the individual values shall comply with the minimum performance required in Table 2. The test result shall be given as the arithmetic mean of the four values and rounded to the nearest whole number of drops.

5.9 Dexterity

The glove shall be tested according to 6.3 of prEN 420:1998.