



SLOVENSKI STANDARD
oSIST prEN 1598:2010
01-junij-2010

Varnost in zdravje pri varjenju in sorodnih postopkih - Prosojne zavese, trakovi in zasloni pri obločnih postopkih

Health and safety in welding and allied processes - Transparent welding curtains, strips and screens for arc welding processes

Arbeits- und Gesundheitsschutz beim Schweißen und bei verwandten Verfahren - Durchsichtige Schweißvorhänge, -streifen und -abschirmungen für Lichtbogenschweißprozesse

Hygiène et sécurité en soudage et techniques connexes - Rideaux, lanières et écrans transparents pour les procédés de soudage à l'arc

Ta slovenski standard je istoveten z: prEN 1598

ICS:

| | | |
|-----------|------------------------------|----------------------------|
| 13.340.99 | Druga varovalna oprema | Other protective equipment |
| 25.160.10 | Varilni postopki in varjenje | Welding processes |

oSIST prEN 1598:2010

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 1598

February 2010

ICS 13.340.99

Will supersede EN 1598:1997

English Version

Health and safety in welding and allied processes - Transparent welding curtains, strips and screens for arc welding processes

Hygiène et sécurité en soudage et techniques connexes - Rideaux, lanières et écrans transparents pour les procédés de soudage à l'arc

Arbeits- und Gesundheitsschutz beim Schweißen und bei verwandten Verfahren - Durchsichtige Schweißvorhänge, -streifen und -abschirmungen für Lichtbogenschweißprozesse

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 121.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

| | |
|----------------------------------|----|
| Foreword..... | 3 |
| 1 Scope | 4 |
| 2 Normative references | 4 |
| 3 Terms and definitions | 4 |
| 4 Requirements | 4 |
| 4.1 General..... | 4 |
| 4.2 Transmittance | 5 |
| 4.3 Reflectance..... | 6 |
| 4.4 UV-Stability..... | 6 |
| 4.5 Resistance to ignition | 7 |
| 4.6 Eyelet strength..... | 7 |
| 5 Marking | 8 |
| 6 Information for users..... | 8 |
| Bibliography | 11 |

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1598:2011

<https://standards.iteh.ai/catalog/standards/sist/b8cb3a17-fe32-4cbd-91a7-a5de1ffba6af/sist-en-1598-2011>

Foreword

This document (prEN 1598:2010) has been prepared by Technical Committee CEN/TC 121 “Welding”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1598:1997.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1598:2011

<https://standards.iteh.ai/catalog/standards/sist/b8cb3a17-fe32-4cbd-91a7-a5de1ffba6af/sist-en-1598-2011>

1 Scope

This standard specifies safety requirements for transparent welding curtains, strips and screens to be used for shielding of work places from their surroundings where arc welding processes are used. They are designed to protect people who are not involved in the welding process from hazardous radiant emissions from welding arcs and spatter. Welding curtains, strips and screens specified in this standard are not intended to replace welding filters. For intentional viewing of welding arcs from a distance of less than 2 m welders protection filters should be used which are specified in EN 169.

The present standard is not applicable for welding processes where laser radiation is used.

Darker curtains or screens should be used for mutual separation of adjacent work places for reasons of comfort.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 165, *Personal eye-protection — Vocabulary*

EN 167, *Personal eye-protection — Optical test methods*

EN 168, *Personal eye-protection — Non-optical test methods*

EN 169, *Personal eye-protection — Filters for welding and related techniques — Transmittance requirements and recommended application*

SIST EN 1598:2011

<https://standards.iteh.ai/catalog/standards/sist/b8cb3a17-fe32-4cbd-91a7-a5de1ffba6af/sist-en-1598-2011>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 165 and the following apply.

3.1 transparent
curtains, strips and screens are considered transparent if they admit visibility to the working place. This does not imply that they are glass clean

4 Requirements

4.1 General

For transparent welding curtains, strips and screens consisting of different materials all requirements for the whole material combination shall be met.

For optical test methods see EN 167.

The preparation of the test samples All test specimens shall be conditioned at a temperature of (23 ± 5) °C and relative humidity of 65 ± 10 % for not less than 16 h.

4.2 Transmittance

The luminous transmittance r , based on the spectral distribution of illuminant A according to EN 165 shall be greater than 0,000 1 %; scattered light diffused within 1° to the direction of the incident radiation shall be included in the measurement.

The spectral transmittance in the wavelength range between 210 nm and 313 nm shall be less than 0,002 %, in the wavelength range between 313 nm and 400 nm less than 3 %.

In the wavelength range from 400 nm to 1 400 nm the hazard level G shall be less than 1.

The hazard level is defined by:

$$G = \frac{1}{1\,000\text{ nm}} \sum_{\lambda_i = 400\text{ nm}}^{1\,400\text{ nm}} G(\lambda_i) \cdot \tau(\lambda_i) \cdot \Delta\lambda$$

where

λ_i is the wavelength;

$\tau(\lambda_i)$ is the spectral transmittance of the wavelength λ_i ;

$\Delta\lambda$ is the wavelength step for the summation, and

$G(\lambda_i)$ is the spectral risk factor at the wavelength λ_i .

The values of the individual risk factors:

$$g(\lambda_i) = \frac{G(\lambda_i)}{1\,000}$$

are given for $\Delta\lambda = 10$ nm in table 1. If a larger step width is used (e.g. 20 nm) the intermediate values can be omitted. For other wavelengths the risk factors may be calculated from the formula

$$g(\lambda_i) = \begin{cases} 2,25 - 0,003\,75 \cdot \lambda & \text{for } \lambda < 600\text{ nm} \\ 0,001\,5 & \text{for } \lambda \geq 600\text{ nm} \end{cases}$$

In this formula the wavelength, λ_i , has to be inserted in nm.

Table 1 — Wavelength dependence of the risk factor

| Wavelength, λ_i , in nm | risk factor $g(\lambda_i)$ |
|---------------------------------|----------------------------|
| 400 | 0,750 0 |
| 410 | 0,712 5 |
| 420 | 0,675 0 |
| 430 | 0,637 5 |
| 440 | 0,600 0 |
| 450 | 0,562 5 |
| 460 | 0,525 0 |
| 470 | 0,487 5 |
| 480 | 0,450 0 |
| 490 | 0,412 5 |
| 500 | 0,375 0 |
| 510 | 0,337 5 |
| 520 | 0,300 0 |
| 530 | 0,262 5 |
| 540 | 0,225 0 |
| 550 | 0,187 5 |
| 560 | 0,150 0 |
| 570 | 0,112 5 |
| 580 | 0,075 0 |
| 590 | 0,037 5 |
| 600 to 1 400 | 0,001 5 |

4.3 Reflectance

When measured with an Ulbricht sphere the spectral reflectance between 230 nm and 400 nm shall be less than 10 %. The luminous reflectance shall be less than 10 % (based on the spectral distribution of standard illuminant A).

4.4 UV-Stability

The relative change of the luminous transmittance due to the test in EN 168 shall not be greater than ± 20 %. Exceedance are allowed unless the level of danger G of 1 according to 4.2 is not reached or exceeded.

4.5 Resistance to ignition

4.5.1 Testing is done at (23 ± 5) °C.

4.5.2 3 samples 190 mm long and 90 mm wide are cut from the curtain, strip or screen. The samples are put in the sample holder (see Figure 1). The lower end of the sample shall be 40 mm above the lower end of the sample holder.

4.5.3 A propane burner having a flame height of 20 mm when put in upright position (see Figure 2) is used. The burner has to burn for at least 1 min. Then it is turned by an angle of 45°.

4.5.4 The burner is directed at the bottom of the sample so that the tip of the flame hits the sample in the geometric center of the lower edge. The surrounding area shall be free from draughts when the test is carried out (see Figure 2).

4.5.5 After 15 s remove the burner and observe whether the flame self-extinguishes and the material ceases to glow within 5 s. Then carry out a visual inspection to see if the flame has reached the test mark 150 mm above the lower end of the sample (see Figure 2).

4.5.6 The curtain, strip or screen material is considered to be satisfactory if, for all 3 samples:

- the flame does not reach the test mark with the burner in position;
- the flame self-extinguishes after removal of the burner;
- the material does not continue to glow for more than 5 s after removal of the burner.

4.6 Eyelet strength

4.6.1 General

In case of the use of eyelets the described test specified a method for assessing the seam and eyelet strength of welding screens and curtains. Specimens of materials used for welding screens and curtains have a weight hung from them and any damage is noted.

4.6.2 Test apparatus

The following apparatus is required:

- a) Bench stand with an attached horizontal clamp to hold sheet material 100 mm wide evenly in its jaws and allowing the material to hang down freely. The stand shall have a hook made of metal of circular cross-section of 6 mm diameter on which sheet material can be hung by an eyelet and allowed to hang down freely. The stand shall allow to hang a sample at least 600 mm freely.
- b) Weight of 7 kg attached to a hook made of metal of circular cross-section of 6 mm diameter.
- c) Clamp as in Item a) but not attached to the stand, with a hole allowing to hang the weight from the clamp using the attached hook as in Item b).

4.6.3 Test specimen

- a) **Specimen 1:** The dimensions of the test specimen shall be 100 mm along the side containing the eyelet under test (if any) and parallel to the seam under test (if any). The other dimension is not critical and should be between 150 and 200 mm. If the sample has no eyelet the sample should be provided with a punched hole with a diameter of 10 mm (+/- 1 mm), to be fit 25 mm (+/-1 mm) from the sides.

prEN 1598:2010 (E)

- b) **Specimen 2:** The dimensions of the test specimen shall be between 200 and 350 mm along the side containing two eyelets under test (if any), eyelets should be 25 mm (+/- 1 mm) from the cutting edge, and parallel to the seam under test (if any). The other dimension is not critical and should be between 100 and 200 mm measured from the underside of the seam. If the sample has no eyelets the sample should be provided with two punched holes with a diameter of 10 mm (+/- 1 mm), to be fit 25 mm (+/- 1 mm) from three sides.
- c) **Specimen 3:** The dimension of the test specimen shall be 350 mm long and 100 mm wide, the sample should have no seams or eyelets.

4.6.4 Test procedure

The procedure shall be as follows:

- a) *Samples with one eyelet under test (specimen 1):* Hang specimen from the hook on the stand using the one eyelet. Attach the clamp at the lower end of the specimen. Hang the weight from the clamp using the attached hook, applying the weight gradually. Allow to hang for 1 min.
- b) *Samples with two eyelets under test (specimen 2):* Hang specimen from the hook on the stand using one eyelet. Hang the weight from the lower eyelet of the specimen using the attached hook, applying the weight gradually. Allow to hang for 1 min.
- c) *Samples with no eyelets under test (Specimen 3):* Clamp the specimen using the clamp on the stand. Attach the other clamp at the lower end of the specimen. Hang the weight from the clamp using the attached hook, applying the weight gradually. Allow to hang for 1 min.

4.6.5 Test report

Any tearing of a seam, tearing of an eyelet or removal of an eyelet shall be reported.

5 Marking

In order to be able to identify and use welding curtains, strips and screens as intended, they shall be permanently marked.

The marking shall be clearly visible with letters at least 10 mm high. The marking consists of the number of this standard, the certification mark (where applicable), the manufacturer's, distributor's or importer's name or trade mark, month and year of manufacturing.

6 Information for users

The manufacturer shall provide with each curtain, strip and screen at least the following information:

- a) Name and address of the manufacturer, distributor or importer;
- b) The number and year of publication of this standard;
- c) The model identification;
- d) Instructions for storage, use and maintenance, including a note that curtains, strips or screens with defects have to be replaced or repaired;
- e) Specific instructions for cleaning;