SLOVENSKI PREDSTANDARD

oSIST prEN 15068:2005

januar 2005

Naprave za plamensko varjenje - Laboratorijsko merjenje emisije hrupa pri gorilnikih za varjenje, rezanje, segrevanje ter trdo in mehko spajkanje – Merilna metoda

(istoveten prEN 15068:2004)

Gas welding equipment - Laboratory measurement of noise emitted by blowpipes for welding, cutting, heating, brazing and soldering - Measurement method

ICS 17.140.20; 25.160.30

Referenčna številka
oSIST prEN 15068:2005(en)

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 15068

October 2004

ICS

English version

Gas welding equipment - Laboratory measurement of noise emitted by blowpipes for welding, cutting, heating, brazing and soldering - Measurement method

Matériel de soudage aux gaz - Mesurage en laboratoire du bruit émis par les chalumeaux destinés au soudage, brasage, coupage et chauffage - Méthode de mesurage

Gasschweißgeräte - Labormessungen für von Brennern für Schweißen, Schneiden, Wärmen, Hartlöten und Weichlöten erzeugten Geräusche - Messmethode

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 Management Centre has the same status as the official versions.

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

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: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword

This document (prEN 15068:2004) 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.

Introduction

Improvement of working conditions is a permanent concern in industry. Noise is a main part of it.

It is not possible to measure noise emitted by blowpipes in any working conditions. Noise can change according to working position, type of piece to be made, etc.

Testing conditions described in this document are standardized reference conditions, essential for comparisons between blowpipes.

This document applies to give noise values while the blowpipe is working. Employer has to make an integration of the noise which the worker is submitted to during his working time.

This document proposes indications allowing, according to the type of work, a calculation approach of noise received by a person (see annex A).

1 Scope

This document specifies a laboratory measurement method of noise emitted by blowpipes used for welding, cutting and allied processes.

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 562, *Gas welding equipment — Pressure gauges used in welding, cutting and allied processes*

EN 731, *Gas welding equipment — Air-aspirated hand blowpipes — Specifications and tests*

EN 874, *Gas welding equipment — Oxygen/fuel gas blowpipes (cutting machine type) of cylindrical barrel — Type of construction, general specifications, test methods*

EN 1326, *Gas welding equipment — Small kits for gas brazing and welding*

EN 60651, *Sound level meters*

EN 61260, *Electroacoustics — Octave-band and fractional-octave-band filters*

EN ISO 5172, *Manual blowpipes for welding, cutting and heating — Specifications and tests*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
weighted level of acoustic pressure A, in decibels
level of acoustic pressure weighted according to *A* weighting specified in EN 60651

4 Blowpipes classification

4.1 General

Blowpipes are classified according to their use and gases used. They are classified in one of the four following standards:

— EN ISO 5172;

— EN 731;

— EN 874;

— EN 1326.

4.2 Welding blowpipes

Welding blowpipes are oxy-fuel.

4.3 Brazing, soldering or braze welding blowpipes

Brazing, soldering or braze welding blowpipes are from two categories:

— oxy-fuel;

— air-aspirated.

4.4 Cutting blowpipes

These blowpipes are all from oxy-fuel type.

4.5 Heating blowpipes

Heating blowpipes are from two categories:

— oxy-fuel;

— air-aspirated.

5 Measurement conditions

5.1 General

Whatever the type of the blowpipe is, measurement conditions are the same.

To measure the maximum emitted noise, the blowpipe under test is set in such a way that flame axis be horizontal, at least 1,5 m above the ground level and at least 1m from the ceiling. Noise is measured for each type of nozzle which can be fitted on the blowpipe under nominal gas supply conditions indicated by the manufacturer. Sensor of sound level meter is placed at 1 m from the nozzle tip (see 5.5, Figure 1). By calculation, noise level can then be estimated for different distances.

5.2 Measurement location

Measurement is performed in a room large enough for the nozzle, the noise of which has to be measured, to be situated at least at 5 m from the walls, ground and ceiling excepted.

Measurement can also be performed in open air if measure is not disturbed by outside noises and, particularly, by wind noise.

5.3 Correction due to background noise

Measurements of background noises shall be performed in order to guarantee that measurements of noise emitted by blowpipes are not influenced by interferences. Background noise level shall be lower than noise level emitted by the blowpipe and background together by more than 6 dB (and, preferably, by more than 15 dB).

If difference of level is within 6 dB and 15 dB, calculate corrections of noise level emitted by blowpipe is made from equation:

$$L = 10\lg(10^{L_{sb}/10} - 10^{L_b/10})\text{dB}$$

where

L is the corrected noise level emitted by the blowpipe, in decibels;

L_{sb} is the noise level emitted by the blowpipe and background together, in decibels;

L_b is the background noise level.

If difference of level is greater than 15 dB, no correction is made.

5.4 Test devices

5.4.1 Sound level meters and filters

Sound level meters in accordance with at least class 1 requirements of EN 60651 shall be used, characteristic of temporal weighting "A" being used.

Another measurement device can be used, including for example a level recording device, providing that its global electroacoustical response meets at least the relevant clauses of EN 60651 class 1 requirements.

Octave-band filters, if they are used, shall meet the requirements of EN 61260.

5.4.2 Pressure gauges and flowmeters

Pressure and flow measurements shall be performed at inlet of blowpipe to be tested.

Pressure gauges shall meet the requirements of EN 562. Flowmeters shall have an accuracy of ± 10 % regarding the indicated value of flow.

5.5 Measurement points for maximum emitted noise

Measurements are performed in the same horizontal plane as the blowpipe flame. Measurement locations are situated at 1 m from the nozzle tip. Six measurements are performed at locations defined by letters a to f in Figure 1.

NOTE Maximum noise emitted by a blowpipe is situated just in front of the nozzle surface plane. Beyond an angle depending on the nozzle, noise decreases again.

$L_{measured}$ a to $L_{measured}$ f are the values of measured noise, eventually corrected according to 5.3 formula in case of background noise.

Dimensions in millimetres

View from the top

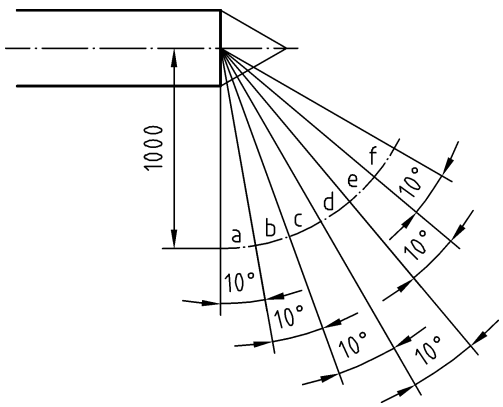

Figure 1 — Positions of the sensor of sound level meter

6 Procedure

Specified measurements conditions shall be applied to a blowpipe for each of its nozzles, if they are interchangeable. After the blowpipe is fitted in its test device, each nozzle is fitted one after another one, and measurement is performed according to conditions specified in 5.5.

7 Expression of results

For each blowpipe/nozzle couple, maximal value, within the six performed measures, corrected if necessary (see 5.3), is retained: L_{couple}.

8 Test report

Test report shall include at least the following indications:

a) date of test;

b) name and address of body which performed measurements;

c) measurements conditions (location, device reference, possible corrections, ...)

d) sufficient identification of equipment [blowpipe, nozzle(s)] which has been tested;

e) for each nozzle:

- nominal supply conditions of blowpipe;
- maximal noise level (L_{couple}).

f) reference to this standard.