SLOVENSKI STANDARD
oSIST prEN ISO 9013:2015

01-januar-2015

Toplotno rezanje - Razvrstitev toplotnih rezov - Geometrijska specifikacija izdelkov in tolerance kakovosti (ISO/DIS 9013:2014)

Thermal cutting - Classification of thermal cuts - Geometrical product specification and quality tolerances (ISO/DIS 9013:2014)

Thermisches Schneiden - Einteilung thermischer Schnitte - Geometrische Produktspezifikation und Qualität (ISO/DIS 9013:2014)

Coupage thermique - Classification des coupes thermiques - Spécification géométrique des produits et tolérances relatives à la qualité (ISO/DIS 9013:2014)

Ta slovenski standard je istoveten z: **prEN ISO 9013:2014**

ICS:

17.040.20	Lastnosti površin	Properties of surfaces
25.160.10	Varilni postopki in varjenje	Welding processes

oSIST prEN ISO 9013:2015 **en**

DRAFT INTERNATIONAL STANDARD

ISO/DIS 9013

ISO/TC **44**/SC **8**

Secretariat: **DIN**

Voting begins on:
2014-11-13

Voting terminates on:
2015-04-13

Thermal cutting — Classification of thermal cuts — Geometrical product specification and quality tolerances

Coupage thermique — Classification des coupes thermiques — Spécification géométrique des produits et tolérances relatives à la qualité

ICS: 25.160.10

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Reference number
ISO/DIS 9013:2014(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 9013 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 8, *Equipment for gas welding, cutting and allied processes*.

This third edition cancels and replaces the second edition (ISO 9013:2002), which has been technically revised.

Thermal cutting — Classification of thermal cuts — Geometrical product specification and quality tolerances

1 Scope

This International Standard applies to materials suitable for oxyfuel flame cutting, plasma cutting and laser cutting. It is applicable to flame cuts from 3 mm to 300 mm, plasma cuts from 0,5 mm to 150 mm and to laser cuts from 0,5 mm to 32 mm. This International Standard includes geometrical product specifications and quality tolerances.

The geometrical product specifications are applicable if reference to this International Standard is made in drawings or pertinent documents, e.g. delivery conditions.

If this International Standard is also to apply, by way of exception, to parts which are produced by different cutting processes, this has to be agreed upon separately.

Flatness defects are not addressed as such in this document. The references are the current standards for the materials used.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 1302:2002, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

ISO 2553, *Welding and allied processes — Symbolic representation on drawings — Welded joints*

ISO 3274, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Nominal characteristics of contact (stylus) instruments*

ISO 4287:1997, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

ISO 4288:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*

ISO 8015, *Geometrical product specifications (GPS) — Fundamentals — Concepts, principles and rules*

3 Terms and definitions

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

3.1 General

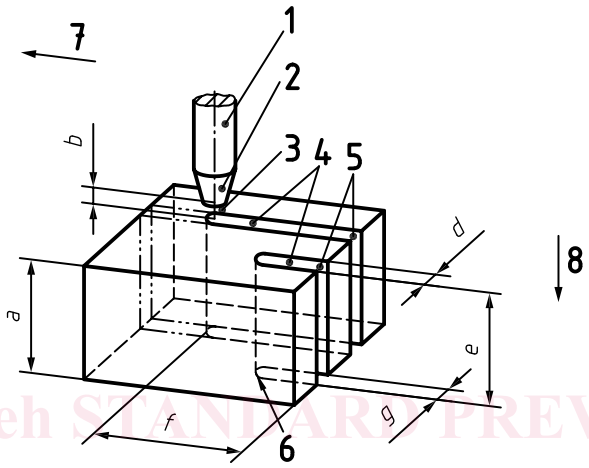
3.1.1
cutting
operation of cutting the work piece

3.1.2
cut
result of the cutting operation

3.2 Terms and definitions explained by figures

Note 1 to entry Figure 1 indicates the terms related to the cutting process of the work piece after the cutting process has started, Figure 2 indicates the terms for the finished work piece. Figure 3 shows a straight cut and Figure 4 a contour cut.

3.2.1
terms while cutting

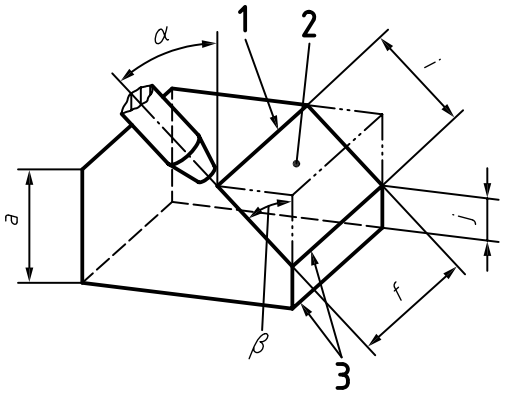


Key

1	torch/cutting head	*a*	work piece thickness
2	nozzle	*b*	nozzle distance
3	beam/flame/arc		
4	kerf	*d*	top kerf width
5	start of cut	*e*	cut thickness
6	end of cut	*f*	length of cut
7	advance direction	*g*	bottom kerf width
8	cutting direction		

Figure 1 — Terms related to the cutting process of the work piece

3.2.2
terms on the cut work piece

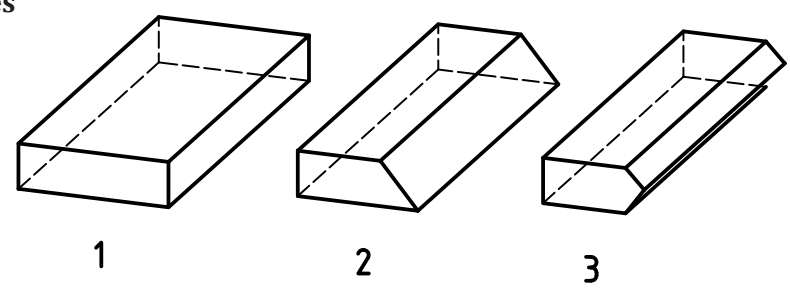


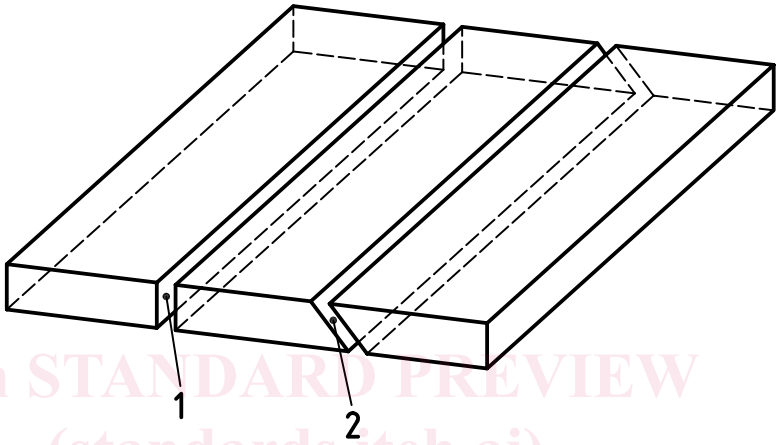
Key

1	upper edge of cut	*a*	work piece thickness
2	cut surface	*i*	cut thickness
3	lower edge of cut	*j*	depth of root face
		f	length of cut
		α	torch set angle
		β	cut angle

Figure 2 — Terms on the finished work piece

3.2.3
cut types

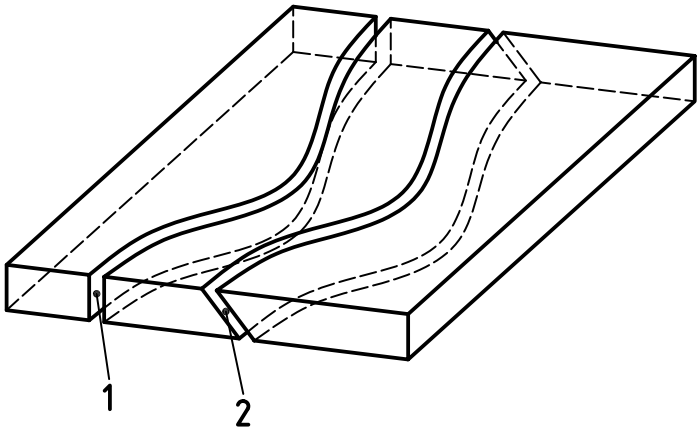




Key

1 vertical cut
2 bevel cut
3 bevel cut (double)

Figure 3 — Straight cut



Key

1 vertical cut
2 bevel cut

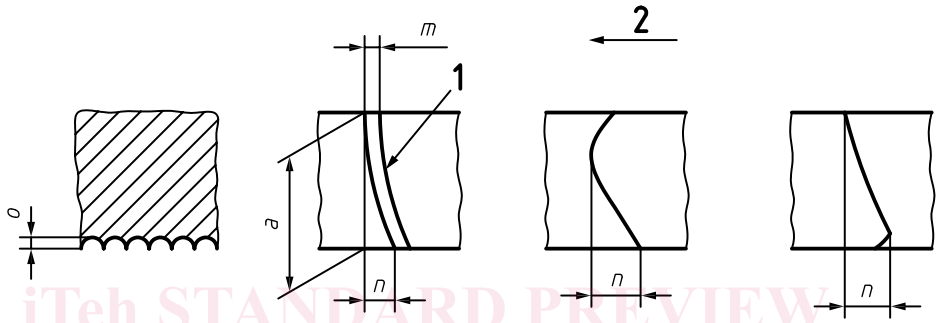
Figure 4 — Contour cut

3.3
cutting speed
length of cut completed per unit time

3.4
kerf width
width of the cut produced during a cutting process at the upper edge of cut or with existing melting of top edge immediately below, as caused by the cutting jet

3.5
drag
n
projected distance between the two edges of a drag line in the direction of cutting

Note 1 to entry: See Figure 5.



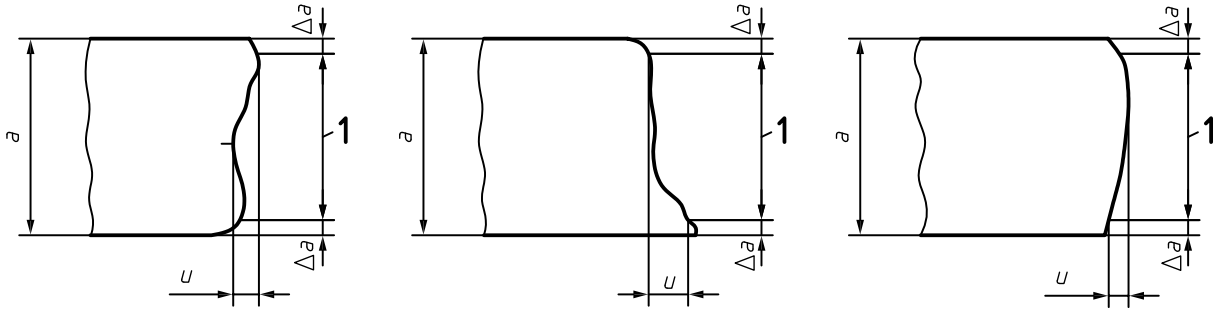
Key

1	drag line	*m*	pitch of drag line
2	advance direction	*n*	drag
a	work piece thickness (reference line)	*o*	groove depth

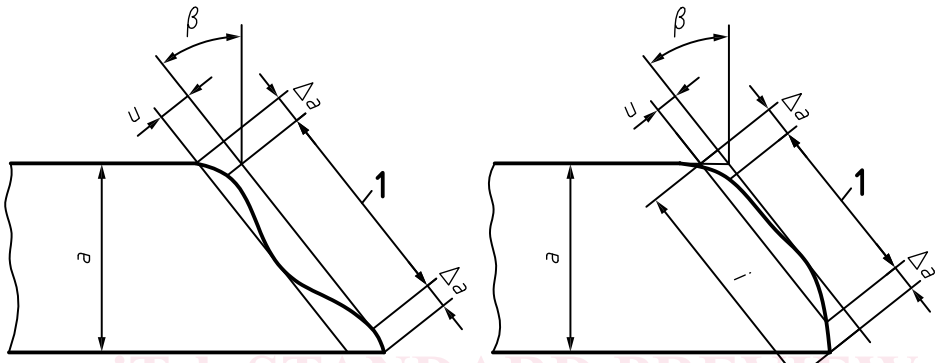
Figure 5 — Drag line

3.6
perpendicularity or angularity tolerance
u
distance between two parallel straight lines (tangents) between which the cut surface profile is inscribed, and within the set angle (e.g. 90° in the case of vertical cuts)

Note 1 to entry: The perpendicularity or angularity tolerance includes not only the perpendicularity but also the flatness deviations. Figure 6 illustrates the areas in the cut surface to take into consideration to measure the perpendicularity or inclination tolerance u, depending on the cutting process used.



a) Vertical cut



b) Bevel cut

Key

a	work piece thickness
Δ*a*	thickness reduction
i	cut thickness
u	perpendicularity or angularity tolerance
β	cut angle
1	area for determination of perpendicularity or angularity tolerance

Figure 6 — Perpendicularity or angularity tolerances

3.7
profile element height
Zt
sum of the height of the peak and depth of the valley of a profile element

[SOURCE: ISO 4287:2009, definition 3.2.12]

3.8
mean height of the profile
*Rz*5
arithmetic mean of the single profile elements of five bordering single measured distances

Note 1 to entry: See Figure 7.

Note 2 to entry: The index 5 in *Rz*5 was added to distinguish the arithmetic mean and the maximum height of profile of the five single profile elements.