

Welding and allied processes — Classification of geometric imperfections in metallic materials —

Part 2: Welding with pressure

The European Standard EN ISO 6520-2:2001 has the status of a British Standard

ICS 25.160.01

National foreword

This British Standard is the official English language version of EN ISO 6520-2:2001. It is identical with ISO 6520-2:2001.

The UK participation in its preparation was entrusted to Technical Committee WEE/1, Definitions and symbols for welding, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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This British Standard, having been prepared under the direction of the Engineering Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 15 January 2002

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Welding and allied processes - Classification of geometric imperfections in metallic materials - Part 2: Welding with pressure (ISO 6520-2:2001)

Soudage et techniques connexes - Classification des défauts géométriques dans les soudures des matières métalliques - Partie 2: Soudage avec pression (ISO 6520-2:2001)

Schweißen und verwandte Prozesse - Einteilung von geometrischen Unregelmäßigkeiten an Metallen - Teil 2: Preßschweißungen (ISO 6520-2:2001)

This European Standard was approved by CEN on 13 April 2000.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

The text of EN ISO 6520-2:2001 has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DS, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

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 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

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.

EN ISO 6520-2:2001 (E)

1 Scope

This European Standard collects and classifies the possible imperfections in welds made with pressure. A uniform designation is specified. Only the type, shape and dimensions of the different imperfections caused by welding with pressure are included. Metallurgical deviations are not taken into account. Imperfections produced other than by the welding operation, for example additional stresses, loads or environmental factors are not covered by this standard.

Information concerning the consequences of the mentioned imperfections and the use of particular structures is not given because this depends on the specific requirements of the joint.

2 Normative references

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to 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.

EN ISO 6520-1 Welding and allied processes - Classification of geometric imperfections in metallic materials - Part 1: Fusion welding (ISO 6520-1:1998)

3 Classification

The imperfections are classified into the following six groups:

- P1 - Cracks
- P2 - Cavities
- P3 - Solid inclusions
- P4 - Lack of fusion
- P5 - Imperfect shape
- P6 - Any other imperfections not included in groups P1 to P5

The letter 'P' stands for welding with pressure.

As regards Table 1 it has to be noted that:

- a) column 1 gives a three figure reference number for each principal imperfection and a four or five figure number for each sub term;
- b) column 2 gives the designation or name of each imperfection in English, French and German;
- c) columns 3 to 5 give the explanations in English, French and German where necessary;

d) column 6 provides, where necessary, illustrations for supplementary explanations.

The numbering system shall follow that used in accordance with EN ISO 6520-1.

Table A.1 gives guidance on the welding processes where the imperfections listed in this part of EN ISO 6250 may occur.

EN ISO 6520-2:2001 (E)**Table 1 – Classification**

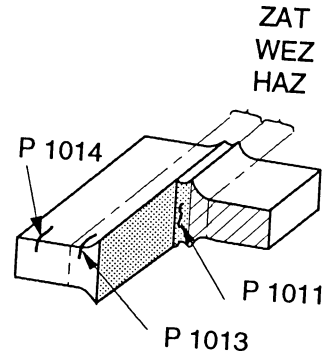
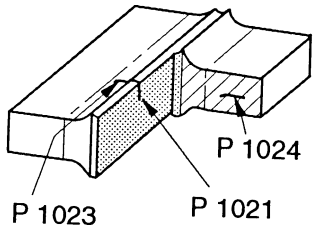
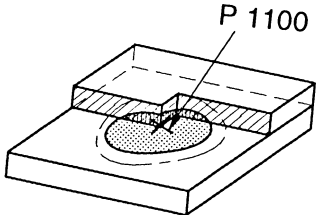
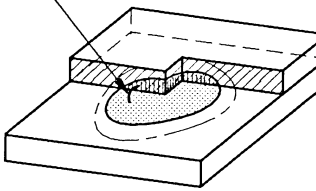
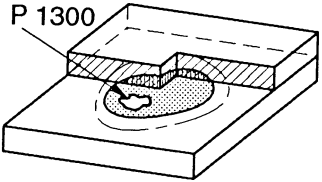
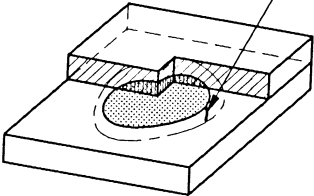
Reference Référence Nummer	Designation Désignation Benennung	Explanation English	Commentaires Français	Erklärung Deutsch	Illustrations Illustrations Darstellung
1	2	3	4	5	6
Group No.1 Cracks; Groupe n° 1 Fissures; Gruppe 1 Risse					
P 100	Crack Fissure Riß	A discontinuity produced by a local rupture which can arise from the effect of cooling or stresses.	Discontinuité pouvant se produire en cours de refroidissement ou sous l'effet de contraintes.	Örtliche Werkstofftrennung, die durch Vorgänge beim Abkühlen oder durch Spannungen entstehen kann.	
P 1001	Micro-crack Microfissure Mikroriß	A crack usually only visible under a microscope.	Fissure généralement visible seulement au microscope.	Ein Riß, der üblicherweise nur unter einem Mikroskop sichtbar ist.	
P 101	Longitudinal crack Fissure longitudinale Längsriß	A crack substantially parallel to the axis of the weld. It may can be situated:	Fissure sensiblement parallèle à l'axe de la soudure. Elle peut se situer :	Riß in Richtung der Schweißnaht verlaufend. Er kann liegen:	
P 1011		in the weld,	dans la soudure,	in der Schweißnaht,	
P 1013		in the heat affected zone (HAZ),	dans la zone thermiquement affectée (ZAT),	in der Wärmeeinflußzone (WEZ),	
P 1014		in the unaffected parent metal.	dans le métal de base.	im unbeeinflussten Grundwerkstoff.	

**Table 1 – Classification
(continued)**

Reference Référence Nummer	Designation Désignation Benennung	Explanation English	Commentaires Français	Erklärung Deutsch	Illustrations Illustrations Darstellung
1	2	3	4	5	6
P 102 P 1021 P 1023 P 1024	Transverse crack Fissure transversale Querriß	A crack substantially transverse to the axis of the weld. It may be situated: in the weld, in the HAZ, in the unaffected parent metal.	Fissure sensiblement perpendiculaire à l'axe de la soudure. Elle peut se situer : dans la soudure, dans la ZAT, dans le métal de base.	Riß, quer zur Schweißnaht verlaufend. Er kann liegen: in der Schweißnaht, in der WEZ, im unbeeinflussten Grundwerkstoff.	
P 1100	Star-crack Fissure rayonnante (au centre du noyau) Riß in Linsenmitte	Multiple cracks radiating from a common central point and usually contained within the nugget.	Fissures multiples issues d'un même point, généralement situées dans les limites du noyau.	Riß, vielfach sternförmig von einer Stelle ausgehend.	
P 1200	Crack at the edge of the nugget Fissure au bord du noyau Riß am Linsenrand	Crack, often in the shape of a comma, which can extend into the HAZ.	Fissure, souvent en forme de virgule, se prolongeant jusque dans la ZAT.	Riß, vielfach kommaförmig, u.U. bis in die WEZ verlaufend.	

EN ISO 6520-2:2001 (E)

Table 1 – Classification
(continued)

Reference Référence Nummer	Designation Désignation Benennung	Explanation English	Commentaires Français	Erklärung Deutsch	Illustrations Illustrations Darstellung
1	2	3	4	5	6
P 1300	Crack in the joining plane Fissure dans le plan de joint Riß in der Verbindungsebene	Cracks usually directed to the edge of the nugget.	Fissure généralement orientée vers le bord du noyau.	Riß, üblicherweise zum Linsenrand gerichtet.	
P 1400	Crack in the heat affected zone (HAZ) Fissure dans la zone thermiquement affectée (ZAT) Riß in der Wärme-einflußzone (WEZ)	<i>see column 2</i>	<i>voir colonne 2</i>	<i>siehe Spalte 2</i>	
P 1500	Crack in the (un-affected) parent metal Fissure dans le métal de base Riß im unbe-einflußten Grundwerkstoff	<i>see column 2</i>	<i>voir colonne 2</i>	<i>siehe Spalte 2</i>	