



SLOVENSKI STANDARD

SIST EN 26157-3:1996

01-april-1996

Vezni elementi - Površinske napake - 3. del: Vijaki za posebne zahteve

Fasteners - Surface discontinuities - Part 3: Bolts, screws and studs for special requirements (ISO 6157-3:1988)

Verbindungselemente - Oberflächenfehler - Teil 3: Schrauben für besondere Anforderungen (ISO 6157-3:1988)

Eléments de fixation - Défauts de surface - Partie 3: Boulons, vis et goujons pour applications particulières (ISO 6157-3:1988)

iTeh STANDARD PREVIEW

(standards.itteh.ai)

SIST EN 26157-3:1996

Ta slovenski standard je istoveten z: EN 26157-3:1991

<https://standards.itteh.ai/catalog/standards/sist/5eb08a2b-7e17-4123-8752-27253cb428e8/sist-en-26157-3-1996>

ICS:

21.060.10 Sorniki, vijaki, stebelni vijaki Bolts, screws, studs

SIST EN 26157-3:1996

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 26157-3:1996

<https://standards.iteh.ai/catalog/standards/sist/5eb08a2b-7e17-4123-8752-27233cb428e8/sist-en-26157-3-1996>

EUROPEAN STANDARD

EN 26157-3:1991

NORME EUROPEENNE

EUROPAISCHE NORM

October 1991

UDC 621.882.2:620.191

Descriptors : Fasteners, bolts, screws, studs, surface defects

English version

Fasteners - Surface discontinuities - Part 3:
Bolts, screws and studs for special requirements
(ISO 6157-3:1988)

Eléments de fixation - Défauts de surface - Partie 3: Boulons, vis et goujons pour applications particulières (ISO 6157-3:1988)	Verbindungselemente - Oberflächenfehler - Teil 3: Schrauben für besondere Anforderungen (ISO 6157-3:1988)
---	---

This European Standard was approved by CEN on 1991-10-10 and is identical to the ISO standard as referred to.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

(c) CEN 1991 Copyright reserved to all CEN members

Ref. No. EN 26157-3:1991 E

Page 2
EN 26157-3:1991

FOREWORD

In 1990, ISO 6157-3:1988 was submitted to the CEN P.Q.-procedure.

Following the positive result of the P.Q., CEN/BT agreed to submit ISO 6157-3:1988 with the following modifications to Formal Vote.

In the French version, replace :

- "boulon" by "vis",
- "boulon, vis" by "vis".

In accordance with the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 26157-3:1996

<https://standards.iteh.ai/catalog/standards/sist/5eb08a2b-7e17-4123-8752-27233cb428e8/sist-en-26157-3-1996>

Endorsement notice

The text of the International Standard ISO 6157-3:1988 was approved by CEN as a European Standard with agreed common modifications as given above.

INTERNATIONAL STANDARD

ISO
6157-3First edition
1988-08-01

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ORGANISATION INTERNATIONALE DE NORMALISATION
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Fasteners — Surface discontinuities —**Part 3:****Bolts, screws and studs for special requirements**

iteh STANDARD PREVIEW
(standards.iteh.ai)

*Éléments de fixation — Défauts de surface —**Partie 3: Boulons, vis et goujons pour applications particulières*

<https://standards.iteh.ai/catalog/standards/sist/5eb08a2b-7e17-4123-8752-27233cb428e8/sist-en-26157-3-1996>

ISO 6157-3 : 1988 (E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6157-3 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

[https://standards.iteh.ai/catalog/standards/sist/5eb08a2b-7e17-4123-8752-](https://standards.iteh.ai/catalog/standards/sist/5eb08a2b-7e17-4123-8752-27233cb428e8/sist-en-26157-3-1996)

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Fasteners — Surface discontinuities —

Part 3:

Bolts, screws and studs for special requirements

iTeh STANDARD PREVIEW (standards.iteh.ai)

1 Scope and field of application

SIST EN 26157-3:1996 The individual figures show the surface discontinuities exaggerated in some cases for clarity.

1.1 This part of ISO 6157 establishes limits for various types of surface discontinuities on bolts, screws and studs for special requirements.

It applies to bolts, screws and studs with

- nominal thread diameters 5 mm and larger;
- product grades A and B;
- nominal lengths $l < 10d$ (or longer if specified);
- property class 12.9;
- property classes 8.8, 9.8 and 10.9 when specified in product standards or agreed between supplier and purchaser.

1.2 Where the permissible limits for surface discontinuities indicated in clause 3 occur, the minimum values for the mechanical and functional properties specified in ISO 898-1 should still be met.

When fatigue strength requirements are specified, the fatigue strength should not be lower than that obtained on bolts without defects taken from the same lot.

NOTES

1 The figures in clause 3 are examples only. They apply correspondingly also to other types of bolts, screws and studs.

2 References

- ISO 468, *Surface roughness — Parameters, their values and general rules for specifying requirements.*
- ISO 898-1, *Mechanical properties of fasteners — Part 1: Bolts, screws and studs.*
- ISO 2859, *Sampling procedures and tables for inspection by attributes.*
- ISO 3269, *Fasteners — Acceptance inspection.*

3 Types, causes, appearance and limits of surface discontinuities

3.1 Cracks

A crack is a clean (crystalline) fracture passing through or across the grain boundaries and may possibly follow inclusions of foreign elements. Cracks are normally caused by overstressing the metal during forging or other forming operations, or during heat treatment. Where parts are subjected to significant reheating, cracks usually are discoloured by scale.

ISO 6157-3 : 1988 (E)

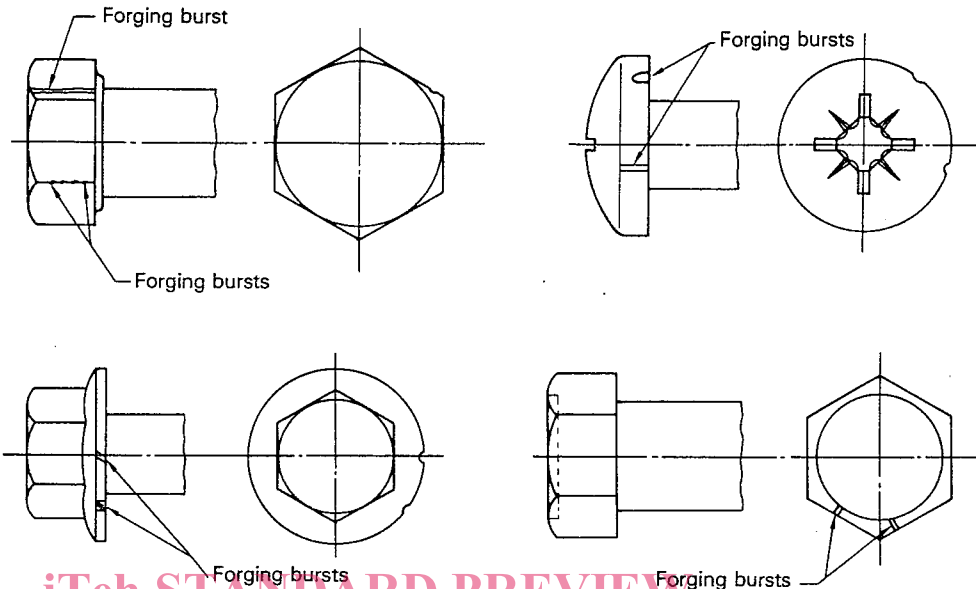
3.1.1 Quench cracks

Cause	Quench cracks may occur during hardening due to excessively high thermal and transformation stresses. Quench cracks usually follow an irregular and erratic course on the surface of the fastener.
Appearance	<p>Quench crack circumferential and adjacent to fillet.</p> <p>Quench crack at corner of head</p> <p>Quench crack across washer face and to depth of washer face thickness</p> <p>Transverse quench crack</p> <p>Longitudinal quench crack</p> <p>Quench crack at root</p> <p>Quench crack, section at crest of thread missing</p> <p>Quench crack across top of head. Usually an extension of crack in shank or side of head</p> <p>Quench crack extending radially into fillet</p> <p>iTeh STANDARD PREVIEW (standards.iteh.ai)</p> <p>SIST EN 26157-3:1996 https://standards.iteh.ai/catalog/standards/sist/5eb08a2b-7e17-4123-8752-27233cb428e8/sist/en-26157-3-1996</p> <p>Quench crack, at root</p> <p>Quench crack</p>
Limits	Quench cracks of any depth, any length, or in any location are not permitted.

3.1.2 Forging cracks

Cause	Forging cracks may occur during the cut-off or forging operations and are located on the top of the head of screws and bolts.
Appearance	<p>Forging crack on top of head</p>
Limits	<p>Length, l, of forging cracks: $l < d^1$</p> <p>Depth or width, b, of forging cracks: $b < 0,04d$</p> <p>NOTE — The limits for forging cracks do not apply to socket head screws (see 3.1.5).</p> <p>1) d = nominal thread diameter</p>

3.1.3 Forging bursts

Cause	Forging bursts may occur for example during forging on the flats or corners of the heads of bolts and screws, at the periphery of flanged or circular head products or on the raised periphery of indented head bolts and screws.
Appearance	 <p>The diagrams show four examples of forging bursts on bolt heads. The first two show hexagonal heads with bursts on the flats and corners. The third shows a circular head with bursts on the periphery. The fourth shows an indented head with bursts on the raised periphery. Labels 'Forging burst' and 'Forging bursts' are used to identify the defects.</p>
Limits	<p>Hexagon head screws</p> <p>No forging burst in the flats of hexagon bolts and screws shall extend into the crown circle on the top of the head surface (chamfer circle) or into the underhead bearing surface. Forging bursts occurring at the intersection of two wrenching flats shall not reduce the width across corners below the specified minimum.</p> <p>Forging bursts in the raised periphery of indented head bolts and screws shall not exceed a width of $0,06d^{1)}$ or have a depth extending below the indented portion.</p> <p>Circular head screws</p> <p>Flanges of bolts and screws and peripheries of circular head screws may have forging bursts, but they shall not exceed the following limits:</p> <p>Width of forging bursts:</p> <p>$0,08d_c^{2)}$ (with only one forging burst);</p> <p>$0,04d_c$ (with two or more forging bursts, one of which may extend to $0,08d_c$).</p> <p>Depth of forging bursts:</p> <p>$0,04d^{1)}$</p> <p>1) d = nominal thread diameter 2) d_c = head or flange diameter</p>