

ICS 21.060.10
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 5779.3-2000

**Fasteners. Surface discontinuities. Bolts, screws and studs for
special requirements
(English Translation)**

Issued on: September 26, 2000

Implemented on: February 1, 2001

Issued by: State Bureau of Quality Technical Supervision

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1 Scope

1.1

The limits, which are specified in this standard, apply to various types of surface defects of bolts, screws, studs with special requirements.

Applicable bolts, screws, studs:

The nominal diameter of the thread is equal to or greater than 5 mm;

Product grades A and B;

Nominal length $l \leq 10d$ (or longer according to special requirements);

Performance grade 12.9;

Performance grades 8.8, 9.8, 10.9, but shall be specified in the product standard OR in the agreement between the supplier and the buyer.

1.2

Even if the surface defects reach the allowable limits, which are specified in Chapter

3, the mechanical and working properties of the product shall still meet the minimum requirements of GB/T 3098.1. In addition, it shall meet the dimensional requirements of the corresponding product standards.

When the fatigue strength is required, the fatigue strength shall not be lower than that which can be achieved by bolts without defects, in the same batch of products.

Note:

1 The Figures in Chapter 3 are examples only. They apply accordingly to other types of bolts, screws, studs.

2 Some surface defects are exaggerated for clarity.

idt ISO 6157-3:1988

Replacing GB/T 5779.3-1986

2 Normative references

The following standards contain provisions which, through reference in this standard, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties using this standard should explore the possibility of using the latest edition of the following standards.

GB/T 90-1985 Acceptance inspection, marking and packaging of fasteners (eqv ISO 3269:1984)

GB/T 1033-1995 Surface roughness parameters and their values (neq ISO 468:1982)

GB/T 2828-1987 Sampling procedures and tables for lot-by-lot inspection by attributes (Apply to inspection of successive lots or batches)

GB/T 3098.1-2000 Mechanical properties of fasteners - Bolts, screws and studs (idt ISO 898-1:1999)

GB/T 15239-1994 Sampling procedures and tables for isolated lot inspection by attributes

3 Types, causes, appearance characteristics, limits of surface

defects

3.1 Cracks

A crack is a well-defined (crystalline) fracture, along or across a metal grain boundary, which may contain inclusions of foreign elements. Cracks are usually caused by excessive stress in the metal, during forging or other forming processes or heat treatment. Cracks may also exist in the raw material. When the workpiece is reheated, the cracks are usually discolored by peeling of the scale.

order.

4.2 Non-destructive inspection

A random sample is taken from the acceptance batch, to carry out visual or other non-destructive inspection, such as magnetic technique or eddy current, as specified in Table

A1 of Appendix A (Normative). If it is found that the defective samples do not exceed the allowable limit, the batch will be accepted (see also 4.4). If the number of defective samples

is found to exceed the allowable limit, these unqualified products will be regarded as a batch and continue to be inspected, according to the procedure of 4.3.

4.3 Destructive inspection

According to the procedure of clause 4.2, if a non-conforming product is found, then according to the provisions of Table A2 of Appendix A, the product with the most serious defect will be formed into a second sample; a section perpendicular to the defect will be taken, at the maximum depth passing through the defect, for inspection.

4.4 Judgment

If quenched cracks on any part OR folds on the interior corners OR folds below bearing surface beyond the "clover leaf" shape are found on non-circular shoulder fasteners, in the process of visual inspection, the batch of products will be rejected.

During destructive inspection, if forging cracks, bursts, seams and laps, voids, tool marks or damage are found beyond the specified allowable limits, the batch will be rejected.

0.08 x Head or flange diameter or

0.04 x Head or flange diameter

0.25 mm + 0.02 s (to spanner flat)

0.08 x Head or flange diameter or 0.04 x Head or flange diameter

0.25 x Socket depth

0.03 x Head diameter, maximum 0.13 mm

0.06 x Head diameter, maximum 1.6 mm

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