

**SURFACE DISCONTINUITIES OF BOLTS AND STUDS****1. SCOPE**

This standard defines limits for various types of surface discontinuities on bolts and studs with thread diameters from 5 up to and including 24 mm.

NOTE: The term "permissible discontinuity" only applies provided that all requirements of WA 950 are satisfied. The visual inspection requirements of Clause 3.2 are mandatory. All other requirements are for reference purposes unless otherwise specified on the Ford standard or utility part drawing.

REFERENCES.

- ISO 1 - Standard reference temperature for industrial length measurement.
- ISO 468 - Surface Roughness.
- ISO 1302 - Technical Drawings - Method of Indicating Surface Texture.
- ISO 4288 - Rules and Procedures for the measurement of surface roughness parameters using stylus instruments.
- ISO 6157-3 - Fasteners - Surface discontinuities - Part 3: Bolts, screws and studs for special requirements.
- QS-9000 - Quality System Standard
- WA 950 - Material Requirements and Mechanical Properties of Bolts, Studs, and Bolt & Washer Assemblies.

2. REQUIREMENTS

- 2.1** General requirements for surface discontinuities and laps on the thread are defined in **ISO 6157 - Part 3.**

3. INSPECTION AND EVALUATION PROCEDURE**3.1 GENERAL REQUIREMENTS**

Sampling shall be carried out in accordance with QS-9000 using the following procedures. Surface coatings shall be removed if identification of the surface discontinuities is impaired. The manufacturer may use any inspection procedures provided due care is taken to ensure that products conform to this standard.

3.2 NON-DESTRUCTIVE TESTING

A random sample must be taken from the lot in accordance with QS-9000 and must be subjected to a visual examination at 10X magnification. If defective parts are suspected but not confirmed, then further tests such as magnetic or eddy current techniques must be carried out for confirmation. If no defective product is found the lot shall be accepted. If defective products are found these shall form the lot size for the procedure shown in Clause 3.3 unless during the examination any product is found with quench cracks in any location, or folds at or below the bearing surface (except "clover leaf" folds in non-circular shoulder fasteners) in which case the lot shall be rejected. The referee method for the evaluation of surface roughness shall be in accordance with ISO 4288.



3.3 DESTRUCTIVE TESTING

If defective products are detected by the procedures given in Clause 3.2, then a secondary sample shall be taken from these defective products in accordance with QS-9000, consisting of the products exhibiting the most serious defects. These shall be sectioned at 90° through the discontinuity where the greatest depth is expected. If any product is found with seams, bursts, shear bursts, forging cracks, surface discontinuities on the thread, tool marks, voids or damages which exceed the specified limits, the lot shall be rejected.

4. SUMMARY OF REVISIONS

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Para 2.1 deleted reference to ISO 6157-1