



Standard Practice for Classifying Visual Defects in Glass-Reinforced Plastic Laminate Parts¹

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This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This practice covers acceptance criteria for visual inspection of parts made from molded glass-reinforced plastic laminates.

1.2 This practice presents word descriptions of possible defects to serve as a guide for contracts, drawings, product specifications, and final inspection.

1.3 This practice also categorizes different inspection requirements for levels of product quality.

1.4 The allowable size and frequency of permitted defects within the acceptance level categories of this specification are general and not related to specific service requirements. A Level IV of allowable defects which defines allowable size, frequency, and permitted repair procedures should be established for specific service requirements as agreed upon between the purchaser and the supplier.

1.5 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no known ISO equivalent to this standard.

2. Acceptance Criteria

2.1 The method and frequency of sampling and the allowable defects may be previously agreed upon between the purchaser and the seller.

2.2 *Dimensions and Tolerances*—Parts shall be inspected for conformance with dimensions and tolerances specified on

the drawings. Any dimensions falling outside the specified limits shall be cause for rejection.

2.3 *Inserts*—All inserts, nuts, studs, and lugs shall not be damaged in any way, nor coated with laminate materials in such a way as to impair function or mechanical fit. Threads in molded-in inserts shall be clean, smooth, free of nicks, tears, or other damage. There shall be no laminate materials or flash on the threads. If necessary, threaded inserts may be retapped to clean them or remove flash. Threads containing locking features or coated for corrosion resistance shall not be retapped.

2.4 *Molded-In Threads or Cored Holes*—Molded-in threads or cored holes shall be free of visible defects such as chips, cracks, shorts, etc. Molded-in threads may be retapped or repaired unless otherwise specifically noted on the product drawings.

2.5 *Workmanship*—Workmanship shall be in accordance with good commercial practices as listed in [Table 1](#) for applicable acceptance levels.

2.6 *Critical Area*—Some portions of a part may be considered more critical than others. A critical area is here defined as an area in which the presence of imperfections is considered to be most detrimental. The areas of parts that are critical structurally, aerodynamically, or electrically shall be uniform and free of defects as listed in [Table 1](#), if so stated on the product drawing. Critical areas may be designated on the product drawing by one of the following methods:

2.6.1 Encircle critical areas, or

2.6.2 Cross-hatch areas to designate areas of various levels, or

2.6.3 Word description.

2.7 *Allowable Defects, Visual*—The defects in noncritical areas which by nature, content, or frequency do not affect serviceability of the part are designated as allowable defects. Allowable defects shall be fully described as to type, size, number, extent allowed, and spacing. The appropriate acceptance level ([Table 1](#)) for defects in these areas must be specified. Where Level IV is used the defects must be fully described on the product drawing. Defects greater than those listed in the product specifications, drawings, or contracts for the part shall be cause for rejection.

¹ This practice is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.18 on Reinforced Thermosetting Plastics.

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