

DHF Impact and Actions Recommendation – ISO 2002-001:2026

Gap Assessment: ISO 2002-001:2026 versus ISO 2002-001:2005

Document Type: Design History File (DHF) Impact Analysis

Standard Reference: ISO 2002-001:2026 – Aerospace series – Metallic materials – Test methods – Part 001: Tensile testing at ambient temperature

Date: June 28, 2026

Revision: 01

1. Executive Summary

ISO 2002-001:2026 retains most of the technical framework of the 2005 edition, but introduces editorial refinements and a few substantive changes affecting strain-rate references, proof stress determination, and documentation clarity. The attached comparison concludes that the main actions are not broad equipment redesigns, but targeted updates to verification protocols, method references, proof-stress procedures, and test reporting records.

Key Impact Areas for DHF:

- Strain-rate control and protocol references moving from fixed values to table-based references.
- Proof stress determination records and validation of automated calculation workflows.
- Cross-reference and clause mapping updates in specimen, area, and reporting documentation.
- Test report structure enhancements, including tester qualification/signature and plotting clarity.
- Continued maintenance of existing calibration, alignment, extensometer, gripping, and specimen-preparation controls without major technical redesign.

This document translates the ISO 2002-001:2026 versus 2005 gap assessment into a DHF-style impact and actions recommendation, using the same implementation format reflected in the attached DHF template document. [cite:2]

2. Key Changes Summary

2.1 Overall testing system requirements remain stable

Confidentiality: Intended solely for use of recipient organization.
Unauthorized distribution Is prohibited

Change: The 2026 edition keeps the core testing machine requirements substantially unchanged, including annual verification to Class 1 standards, annual alignment checks, ASTM E1012 reference, and use of computer-controlled systems for automatic data capture. The gap assessment identifies this as an editorial-only area with no technical change requiring revalidation.

DHF Impact:

- Existing equipment qualification, calibration, and alignment controls remain valid if already compliant to the prior edition requirements.
- DHF records should be updated only to reflect the new edition reference and clause numbering where applicable.
- No design or process change is needed for the test machine system itself unless local procedures still reference obsolete document titles only.

Recommended Actions:

Action	Timeline	Owner	Priority
Update controlled standards list and equipment qualification references to ISO 2002-001:2026	2 weeks	Quality/Metrology	Medium
Confirm annual verification and alignment SOPs cite the current edition and retained ASTM E1012 reference	2 weeks	Metrology	Medium
Maintain current calibration and alignment program without technical revalidation	Ongoing	Lab Operations	Low

2.2 Extensometer accuracy and verification documentation

Change: Extensometer requirements remain technically unchanged in 2026, including annual verification to EN ISO 9513, Class 0.5 accuracy for Young’s modulus, and Class 1 for proof stress. The gap assessment characterizes the changes as formatting and numbering updates only.

DHF Impact:

- Existing extensometer qualification remains technically adequate if current certification matches the retained requirements.
- DHF and lab records should still be refreshed to show explicit linkage to the 2026 clause structure.
- Training and verification forms may need minor editorial revision for terminology consistency.

Recommended Actions:

Confidentiality: Intended solely for use of recipient organization.
Unauthorized distribution Is prohibited

Action	Timeline	Owner	Priority
Update extensometer verification templates to cite ISO 2002-001:2026 clause references	2 weeks	Metrology/Quality	Medium
Confirm Class 0.5 and Class 1 certification evidence is current and traceable in DHF	3 weeks	Quality	Medium
Refresh work instructions and forms for terminology consistency	3 weeks	Lab Documentation	Low

2.3 Specimen gripping, preparation, and product-type references

Change: Requirements for grips, specimen preparation, and most geometry controls remain technically unchanged, but some references are editorially updated, such as the product-type cross-reference changing from Table 2 to Table 1 and clarified formatting for cross-sectional area sections. The gap assessment states there is no parameter-level impact on specimen selection or preparation.

DHF Impact:

- No revalidation is needed for gripping methods, machining, polishing, or specimen handling if current practice already conforms to the legacy method.
- DHF traceability matrices, specimen preparation work instructions, and report templates should be updated to current cross-references and notation.
- Annex-based specimen selection logic should be reviewed for citation accuracy, even where technical content is unchanged.

Recommended Actions:

Action	Timeline	Owner	Priority
Revise specimen preparation SOPs and templates to current table and clause cross-references	3 weeks	Test Engineering	Medium
Update DHF traceability matrix for product-type to annex mapping	3 weeks	Quality/Engineering	Medium
Retain current grip and specimen-preparation validation without re-test	Ongoing	Test Lab	Low

2.4 Cross-sectional area and gauge-length documentation clarity

Change: The 2026 edition keeps the same calculation intent for original and final cross-sectional area and gauge-length marking, but clarifies certain equations and notation, including fuller specification for strips

Confidentiality: Intended solely for use of recipient organization.
Unauthorized distribution Is prohibited

cut from tubes and minor terminology adjustments. The comparison indicates these are largely documentation refinements rather than changes to acceptance criteria.

DHF Impact:

- Calculation worksheets, report forms, and software field names may need updates to match current notation and terminology.
- Where automated systems generate reports, report headers and formula references should be checked for consistency with 2026 language.
- No new physical validation is required unless custom software hard-codes obsolete or incomplete equations.

Recommended Actions:

Action	Timeline	Owner	Priority
Review calculation templates and software outputs for notation and equation reference accuracy	4 weeks	Test Engineering / Software Validation	High
Update manual worksheets for original/final area and gauge-length marking references	3 weeks	Lab Documentation	Medium
Confirm no hidden software logic depends on outdated equation wording	4 weeks	Validation / IT	Medium

2.5 Strain-rate requirements for proof stress and tensile strength

Change: This is the main substantive procedural change in the 2026 edition. The 2005 version used explicit strain-rate values for proof stress and a fixed maximum rate for tensile strength, while the 2026 edition replaces those fixed numeric values with references to Tables 2 and 3.

DHF Impact:

- Test protocols must be revised because the controlling strain-rate criteria are now table-driven rather than fixed-value text statements.
- Verification and method validation for proof stress and tensile strength should be re-reviewed or revalidated to show the system applies the correct tabulated rates for the relevant material/product context.
- Operators and reviewers need clear instructions on which table applies and how compliance is documented during execution.

Confidentiality: Intended solely for use of recipient organization.
Unauthorized distribution Is prohibited