



Stitch Tear Out Resistance

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. The object of this test is to determine the resistance to which threads or fibers of felts, leather and other trim materials have to being “torn” out.

There are two (2) test procedures:

- **Procedure A:** Stitch Tear Out (using a needle).
- **Procedure B:** Stitch Point Tear Out (using a flat mandrel).

Note: **Procedure A** shall be used for all materials except leather. Use **Procedure B** for leather.

1.2 Applicability. This standard applies to textile materials including fabric and leather.

1.3 Remarks. This test procedure measures the stitch tear out resistance as defined as the maximum force attained when a penetrator (needle or flat mandrel), acting perpendicular to the thread direction, is pulled through a test piece at a specified speed.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3221

2.3 Additional References.

- Prym products available at www.prym-consumer.com/prym/proc/docs/produkt_db_en.html.
- Zwick Roell products available at www.zwick.com/products.

3 Resources

3.1 Facilities. Not applicable.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

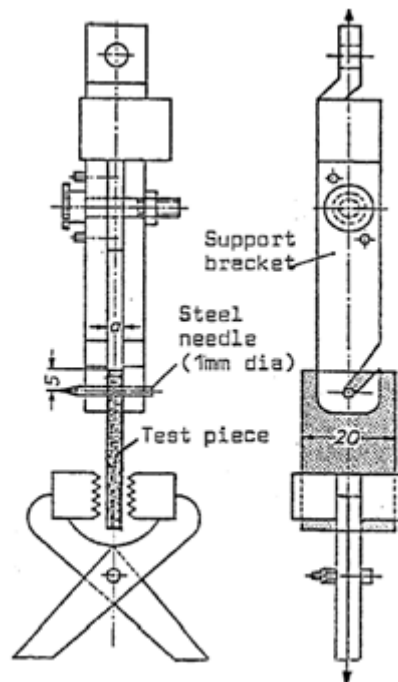
3.2 Equipment.

3.2.1 Test Machine. Use a Constant Rate of Extension (CRE) tensile test machine and a test speed of 100 mm ± 10 mm/minute.

3.2.2 Clamping Device. The support brackets of the clamping device shall be adjustable to accommodate the thickness of the test specimen. See Appendix A for additional information to order the clamping devices for Procedures A and B.

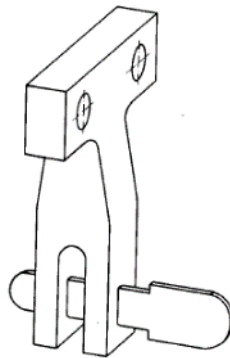
3.2.2.1 Procedure A. A special clamping device, see Figure 1, is required for holding the steel needle.

Figure 1: Clamping Device for Procedure A (all dimensions are in millimeters (mm))



3.2.2.2 Procedure B. A special clamping device, see Figure 2, is required for holding the stitch point penetrator.

Figure 2: Clamping Device for Procedure B



3.2.3 Stitch Penetrator. See Appendix A for additional information to order the penetrators for Procedures A and B.

3.2.3.1 Procedure A. The stitch penetrator for Procedure A is a needle. The needle shall be 1 mm in diameter and have a conical tip, see Figure 3. The length of the needle is dependent on the clamping device. The typical length is about 38 mm.

Figure 3: Needle

