SURFACE VEHICLE RECOMMENDED PRACTICE

J1531	MAY2014

Issued 2008-05
Reaffirmed 2014-05

Superseding J1531 MAY2008

Seam Damage Test Procedure

RATIONALE

J1531 has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE

This procedure is used to determine seam strength and seam fatigue of automotive textiles, vinyl coated fabrics and related soft trim materials.

2. REFERENCES

There are no referenced publications specified herein.

3. TEST EQUIPMENT

3.1 Seam Damage Test Machine[1]

3.1.1 Sewing machine capable of producing a lock stitch seam.

3.1.2 Needle – Number 23 size, round point tip or as specified by contractual parties.

3.1.3 Thread – No. 92 bonded nylon thread (top and bottom).

4. CONDITIONING

At least 24 hours at 23 ± 2 °C and 50 ± 5% Relative Humidity.

5. TEST SPECIMEN PREPARATION

Evaluate 5 test specimens each in the warp direction, fill direction and warp to fill direction. Cut thirty 100 × 100 mm specimens from the material to be tested. Sew specimens face to face with a seam allowance of 10 mm ± 1.0 mm and 5.0 mm ± 0.5 mm stitches for 25 mm. Sew five specimens MD (machine direction) to MD, five specimens XMD (cross machine direction) to XMD and five specimens MD to XMD. If necessary the end on the sewn seam can be backstitched for approximately 10 mm to lock in the thread or the threads can be tied off at the ends. Cut each sewn piece 25 mm from each side for a length of 88 mm as shown in Figure 1 to remove edge effects.

[1] Equipment to be specified by contractual parties.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/J1531_201405

6. TEST PROCEDURE

Place a 50 mm clamp on each end of the specimen (shaded area in Figure 1). The space between the clamps on the test specimen shall be 120 mm. The seam must be centered between the clamps. If the test specimens elongate more than 20 mm between the clamps during the test they should be reclamped to the 120 mm spacing. Set counter to the number of cycles specified by the contractual parties and activate the test apparatus. The test apparatus will stop automatically at the end of the test cycle. (Recommended number of cycles is 2500.) Test to be run at a speed of 30 cycles ± 1 cycle per minute with a load weight of 3 kg ± 0.1 kg.

7. EVALUATION

The test specimen is evaluated in the test apparatus with the 3 kg weight applied. Measure the maximum length of the hole created on each side of the seam due to needle hole elongation. The measurement for needle hole elongation is from the center of the two test pieces (Stitch Line) to the other side of the elongated hole. Refer to Figure 2. Also report any other noticeable change such as tearing.

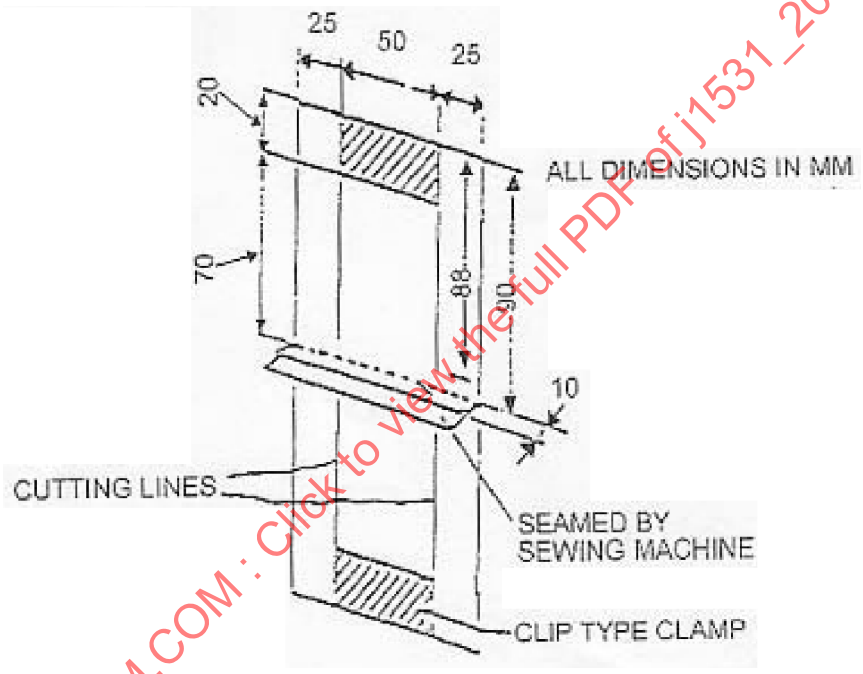

FIGURE 1 - SEWN TEST SPECIMEN WITH DIMENSIONS