



IPC-TM-650 TEST METHODS MANUAL

1.0 Scope This method is designed to determine thread count of woven glass fabric used for prepreg (resin-impregnated glass fabric, or B-stage). It is applicable for glass fabric inspection before and after impregnation.

2.0 Applicable Documents None

3.0 Test Specimens Unless otherwise specified, three specimens cut to the size convenient to performing the test, with a minimum of 101.6 x 101.6 mm [4.0 x 4.0 in], shall be cut from random locations in a roll or one each from three sample sheets. The warp and fill directions of the fabric shall be noted.

4.0 Apparatus or Material

4.1 Muffle furnace A muffle furnace that is capable of maintaining 550 ±50°C [1022 ±90°F].

4.2 Magnifier and counting device. Type and model to be determined, or equivalent.

4.3 Gingher Thread Counter, Model G4, or equivalent.

5.0 Procedure

5.1 Method A: Thread Count by Picks per Inch Method

5.1.1 For prepreg, place specimens in a muffle furnace at 550 ±50°C [1022 ±90°F] for a minimum of 15 minutes or until sufficient resin is burned away to be able to clearly see the yarns of the fabric. After removing the specimens from the muffle furnace, allow to cool to room temperature on a flat surface to prevent distortion of the fabric.

Number 2.1.7	
Subject Thread Count of Glass Fabric	
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Originating Task Group MIL-P-13949 Test Methods Task Group (7-11b)	

5.1.2 Place the specimen as flat as possible, without tension, on a smooth horizontal surface. Use the magnifier and measuring device to count the yarns within a specific distance, 25.4 mm [1.0 in] minimum, in each direction of the cloth.

5.2 Method B: Thread Count by Gingher Thread Counter Method

5.2.1 Lay the Gingher comparator parallel along one grain direction to be counted. Rotate the comparator back and forth out of parallel with the grain by 10 to 15 degrees until an optical parabola is observed. The apex of the parabola is tangent to the thread count per inch.

5.2.2 Repeat 5.2.1 for the other (othogonal) direction of the cloth yarns.

5.3 If any discrepancies or disagreement between test data is found, Method 5.1 shall be the referee method.

5.4 Report Average the number of yarns for each direction. Report the individual readings and average results.

6.0 Notes

6.1 Summary The following details should be specified in the applicable performance specification or product procurement specification.

- Test Method to be used (see 5.1, and 5.2).
- Specimen size and number to be tested, if other than specified (see 3.0).
- Where applicable, any additions or modifications to the specified procedure and criteria.