



Designation: C 1230 – 96

Standard Test Method for Performing Tension Tests on Glass-Fiber Reinforced Concrete (GFRC) Bonding Pads¹

This standard is issued under the fixed designation C 1230; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers determination of the tensile load capacity of glass-fiber reinforced concrete (GFRC) bonding pads used for attaching steel anchors to GFRC architectural panels.

1.2 *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.*

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are provided for information only.

2. Referenced Documents

2.1 *ASTM Standards:*

D 76 Specification for Tensile Testing Machines for Textiles²

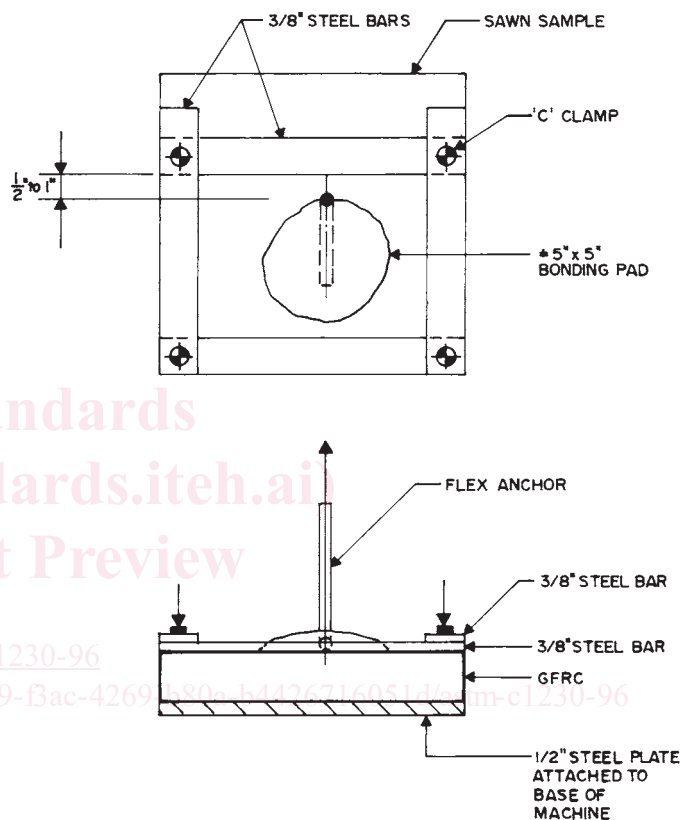
E 4 Practices for Force Verification of Testing Machines³

3. Significance and Use

3.1 Tensile loads determined by this test method are useful for quality control of GFRC architectural panels manufactured using the steel panel frame support design. In addition, test results may be used to verify compliance with governing specifications, research and development, and generating data for use in product design.

4. Apparatus

4.1 *Testing Machine*, a properly calibrated testing machine that can be operated at constant rates of crosshead motion and in which the error in the force measuring system shall not exceed $\pm 1.0\%$ of the maximum force expected to be measured. Equip the testing machine with a deflection measuring and recording device. The stiffness of the testing machine shall be such that the total elastic deformation of the system does not



NOTE 1—Manufacture test specimens to keep flex anchor legs as vertical as possible. Support the legs if necessary during curing of the matrix.

FIG. 1 Tension Test Fixture

exceed 1.0 % of the total deflection of the test specimen during the test, or appropriate corrections shall be made. The force-indicating mechanism shall be essentially free of inertial lag at the crosshead rate used. The accuracy of the testing machine shall be verified in accordance with Practices E 4 and Specification D 76.

4.2 *Loading Fixture*—The load fixture for applying tensile load is shown schematically in Fig. 1. It consists of a $\frac{1}{2}$ in. (13-mm) thick steel base plate. A suitable mechanism for test fixtures is shown in Fig. 2 and Fig. 3. The design of the loading fixture shall be such that the specimen is rigidly attached to the

¹ This test method is under the jurisdiction of ASTM Committee C-27 on Precast Concrete Products and is the direct responsibility of Subcommittee C27.40 on Glass-Fiber Reinforced Concrete Made by the Spray-Up Process.

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² *Annual Book of ASTM Standards*, Vol 07.01.

³ *Annual Book of ASTM Standards*, Vol 03.01.