



Designation: E 2098 – 00

Standard Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for Use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to a Sodium Hydroxide Solution¹

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1. Scope

1.1 This test method covers procedures for determining the breaking force of glass fiber mesh following their conditioning in an alkali solution. The method is applicable to glass fiber mesh used in Class PB Exterior Insulation and Finish Systems (EIFS) with base coats that contain portland cement as an ingredient.

1.2 Breaking force is expressed both as force per unit width of mesh and as a percentage of the breaking force of the mesh that has not been exposed to alkali conditioning.

1.3 *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.*

2. Referenced Documents

2.1 ASTM Standards:

- D 579 Specification for Greige Woven Glass Fabrics
- D 5035 Breaking Force and Elongation of Textile Fabrics
- D 76 Specification for Tensile Testing Machines for Textiles

2.2 Other Documents:

EIFS Industry Members Association (EIMA) Guideline Specification for Exterior Insulation and Finish Systems (EIFS), Class PB

3. Summary of Test Method

3.1 Specimens are tested for breaking force with and without conditioning. Conditioning is immersion for 28 days in an aqueous solution of 5% sodium hydroxide.

3.2 Breaking force is determined by mounting a test specimen in a tensile testing machine and applying a force to the specimen until it breaks.

4. Significance and Use

4.1 Glass fiber reinforcing meshes are used to strengthen EIFS. The reinforcing meshes are embedded into base coats that contain portland cement, which potentially exposes the glass fibers in the reinforcing meshes to weakening by the action of alkali. The breaking force following alkali exposure as determined by this method, is a factor used to comparatively evaluate the alkali resistance of EIFS glass fiber reinforcing meshes in the laboratory.

4.2 This test method does not purport to simulate the conditions that may be encountered in service. The performance of an EIFS is a function of many factors, such as proper installation, rigidity of supporting construction and resistance of the EIFS to deterioration by other causes.

5. Apparatus and Reagents

5.1 *Tensile Testing Machine*, of the controlled rate of extension type, as defined in D 76, clumps and jaw faces conforming to those in D 5035.

5.2 *Container and container cover for alkali solution*—material inert to alkali of suitable dimensions to permit unbent mesh specimens to be fully covered with a depth of 25 mm (1 in) of alkali solution. The cover for the container shall be of suitable design to prevent evaporative loss from the solution which would increase its concentration.

5.3 *Distilled water*

5.4 *Reagent Grade Sodium Hydroxide*

6. Sampling

6.1 *Laboratory Sample*—from a sample roll, cut 30 specimens 50 ± 3 mm (2 in) wide at least $600 \text{ mm} \pm 13$ mm (24 in) long; 15 specimens with their long dimensions parallel to

¹ This test method is under the jurisdiction of ASTM Committee E06 on Building Constructions and is the direct responsibility of Subcommittee E06.58 on Exterior Insulation and Finish Systems (EIFS).

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