

DETERMINATION OF THE GRADE OF MATURATION OF PRE-PREGS**Application**

This test method is used to determine the grade of maturation of pre-pregs made from unsaturated polyester resins in combination with glass fiber.

Apparatus Required**Pressure Control Equipment**

Pressure control equipment which allows the application of constant loads of 5 N or 75 N respectively to the sample uniformly and smoothly.

Indentor Foot**Measuring Gauge**

A measuring gauge to measure the depth of penetration with an accuracy of 0.01 mm and a degree of movability of 10 mm.

Stop Watch**Conditioning and Test Conditions**

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Note: Cutting and testing of the samples have to be carried out under the same conditions.

Procedure

1. A fresh pre-preg is to take out from the original sack immediately for each test to avoid any loss of styrol. Attention must be taken that the pre-preg does not contain any wrinkles and thickenings by chance.
2. From the pre-preg 4 samples are cut 100 x 100 mm in size. The 4 samples are piled up in layers without removing the foil.

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2001 03 28	Revised	Editorial – no technical change A. Cockman
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3. Thereafter the prepared pre-preg sample has to be placed under the piston of the pressure equipment and the measuring gauge is to be set to zero.
4. Following this the pre-preg is loaded with the constant preload of 5 N for 30 seconds (stop watch). After 30 seconds the thickness of the pre-preg is read-off on the measuring gauge (h_1).
5. Following the preload period, the constant main load of 75 N is immediately applied. After a further 5 minutes the thickness is read-off again (h_2).

Evaluation

The grade of maturation is calculated as follows:

$$\text{Grade of maturation in \%} = \frac{h_1 - h_2}{h_1} \times 100$$

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.