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Standard Practice for PREPARING COMPRESSION-MOLDED TEST SAMPLE PLAQUES OF RIGID POLY(VINYL CHLORIDE) COMPOUNDS¹

This standard is issued under the fixed designation D 3010; 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 practice covers a method of milling and compression molding test specimens of rigid poly(vinyl chloride) compounds as described in Specification D 1784.

1.2 The values as stated in SI units are to be regarded as the standard. The values in parentheses are given for information only.

1.3 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems 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 Document

2.1 ASTM Standard:

D 1784 Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds²

3. Significance and Use

3.1 Working a compound on a two-roll mill will disperse the compound additives uniformly in the poly(vinyl chloride) resin. A uniform dispersion is needed to fully develop the physical properties of a compound. The milled sheet is then compression-molded to obtain a smooth sheet of uniform thickness from which test specimens can be prepared.

4. Apparatus

4.1 *Mill*—Any size two-roll mill capable of

maintaining a constant temperature of $182 \pm 2^\circ\text{C}$ ($360 \pm 3.6^\circ\text{F}$) may be used. For referee tests, a peripheral roll-speed ratio of 1.33 to 1.0 with the speed of the fast roll ranging from 40 to 70 fpm is recommended. The rolls must be suitable for mixing PVC. A hard-chrome-type has been found to be suitable.

4.2 *Press*—The hydraulic press shall be such that the molding pressure on the specimen can be maintained at 6.9 MPa (1000 psi) during the molding cycle. Provisions for heating and cooling the platens shall be made.

4.3 *Molds*—A picture-frame compression molding plate having a blanked-out area of suitable size for producing plaques from which the required test specimens can be made.

4.4 *Molding Plates*—Two polished chromium-plated ferrotype plates at least 0.64 mm (0.025 in.) thick and of adequate surface area to cover each molding cavity.

5. Method of Sample Sheet Preparation for Compression Molding

5.1 Set the mill rolls at the temperature recommended by the compound supplier (see Note 1). Use a calibrated band pyrometer to verify the temperature. Set the clearance between the mill rolls to band the material as rapidly as possible. After banding, adjust the mill rolls to a clearance of 0.90 ± 0.13 mm (0.035 ± 0.005 in.). The batch

¹ This practice is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.09 on Specimen Preparation.

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² *Annual Book of ASTM Standards*, Vols 08.02 and 08.04.