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Standard Specification for REINFORCED OLEFIN INJECTION MOLDING AND EXTRUSION MATERIALS¹

This standard is issued under the fixed designation D 2853; 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 specification covers reinforced olefin polymers suitable for injection molding or extrusion. Polymers consist of propylene homopolymers, ethylene homopolymers, or copolymers of either, to which have been added various other materials or combinations of materials to serve as reinforcements from the group including glass fibers, talc, and asbestos.

1.2 This specification provides for the division of reinforced materials into groups based on physical properties. The properties used are tensile strength, flexural modulus, Izod impact strength, and deflection temperature under load.

NOTE 1—The properties included in this specification are those required to identify the types and grades of materials covered. There may be other requirements necessary to identify particular characteristics. These will be added to the specification as their inclusion becomes generally desirable and the necessary test data and methods become available.

2. Applicable Documents

2.1 ASTM Standards:

- D 256 Test for Impact Resistance of Plastics and Electrical Insulating Materials²
- D 618 Conditioning Plastics and Electrical Insulating Materials for Testing²
- D 638 Test for Tensile Properties of Plastics²
- D 648 Test for Deflection Temperature of Plastics Under Flexural Load²
- D 790 Test for Flexural Properties of Plastics²
- D 1898 Recommended Practice for Sampling Plastics²
- D 2146 Specification for Propylene Plastic Molding and Extrusion Materials³
- D 2584 Test for Ignition Loss of Cured Reinforced Resins³

D 3892 Practice for Packaging/Packing of Plastics²

3. Classification

3.1 Reinforced olefin polymers are classified in accordance with Table 1. For each material an identifying number is used made up of four digits using the cell numbers for each characteristic in the order in which they appear in Table 1.

NOTE 2—An example of this classification system is as follows:

The designation 5667 would indicate the following characteristics:

- Tensile strength, min 532 kgf/cm² (7.6×10^3 psi)
- Flexural modulus, min 42×10^3 kgf/cm² (600×10^3 psi)
- Impact strength, Izod, min 16.2 cm·kgf/cm (3.0 ft·lb/in.)
- Deflection temperature at 18.5 kgf/cm² (264 psi), min, 143°C (290°F)

Combining this with the composition option of 4.2, a 30 % glass fiber reinforced propylene homopolymer having the above properties would be specified thus: 30 % Glass Fiber Reinforced Propylene Homopolymer Class 5667. A complete product designation must include reinforcement content and type, polymer type, and classification number as in the foregoing example.

3.2 Although the values listed are necessary to include the range of properties available in existing materials, they should not be interpreted as implying that every possible combi-

¹ This specification is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.12 on Olefin Plastics.

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² Annual Book of ASTM Standards, Part 35.

³ Annual Book of ASTM Standards, Part 36.