Designation: D 3647 – 84 (Reapproved 1995)

Standard Practice for Classifying Reinforced Plastic Pultruded Shapes According to Composition[1]

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1. Scope

1.1 This practice outlines a method for classifying reinforced plastic pultruded shapes according to their composition.

1.2 One objective of this practice is to provide a codification means and descriptive limits for classification.

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. Terminology

2.1 The definitions of reinforcement material, reinforcement type, resin type, and filler amount and their respective levels are described below.

NOTE 1—As an example, a pultruded shape made from a polyester resin mix with 13 % filler and glass roving reinforcement plus woven tape on the surface comprising perhaps 4 % of the total would be designated as "GRPF".

2.2 *Reinforcement Materials*:

2.2.1 G—Fiberglass constitutes 90 % or more by weight of total reinforcement.

2.2.2 C—Carbon fibers constitute 90 % or more by weight of total reinforcement.

2.2.3 O—Other fibers constitute 90 % of reinforcement.

2.2.4 S—Special composition not covered above.

2.3 *Reinforcement Type*:

2.3.1 R—Roving constitutes 90 % of total reinforcement.

2.3.2 M—Mat constitutes 90 % of total reinforcement.

2.3.3 C—Combinations of mat and roving where neither constitutes 90 %.

2.3.4 W—Woven fabric constitutes 90 % of total reinforcement.

2.3.5 S—Special composition not covered above.

2.4 *Resin Type*:

2.4.1 P—Polyester.

2.4.2 E—Epoxy.

2.4.3 V—Vinylester.

2.4.4 O—Others.

2.5 *Filler Amount*:

2.5.1 U—Filler used is less than 5 % of resin weight.

2.5.2 F—Filler used is 5 % or more of the resin weight.

3. Classification

3.1 In classifying the reinforced plastic pultruded shape according to composition, four separate aspects of the composition will be considered.

3.2 The composition will be identified by the use of four capital letters. The sequential position of each letter will have particular significance in describing the composition. In addition, the letter itself will have further specific descriptive value.

3.3 The classification method will be based upon the four-letter code in which each position of this code will have the following significance:

3.3.1 *Reinforcement Material*—The first letter in the composition code will identify the reinforcement material utilized.

3.3.2 *Reinforcement Type*—The second letter in the code will describe the type of reinforcement material employed.

3.3.3 *Resin Type*—The third position in the code will describe the type of resin employed.

3.3.4 *Filler Amount*—The fourth and last position in the code will define relative amount of filler employed.

[1] This practice is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.18 on Reinforced Thermosetting Plastics.

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