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YD/T 1118.3-2018

**Secondary coating materials used for optical fiber -
Part 3: Modified polycarbonate**

光纤用二次被覆材料

第 3 部分：改性聚碳酸酯

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Secondary coating materials used for optical fiber -

Part 3: Modified polycarbonate

1 Scope

This part specifies the technical requirements, test methods, inspection rules, marking, packaging, transportation and storage of modified polycarbonate (hereinafter referred to as PC) of secondary coating materials for optical fibers.

This part applies to modified polycarbonate of secondary coating materials for optical fibers.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

GB/T 1033 Plastics - Determination of density of non-foam plastics (ISO 1183:2004, MOD)

GB/T 1034-2008 Plastics - Determination of water absorption of plastics (ISO 62:2008, IDT)

GB/T 1036 Test method for coefficient of linear thermal expansion of plastics between -30 °C and 30 °C with a vitreous silica dilatometer

GB/T 1040.2-2006 Plastics - Determination of tensile properties - Part 2: Test conditions for molding and extrusion plastics (ISO 572-2:1993, IDT)

GB/T 1410-2006 Methods of test for volume resistivity and surface resistivity of solid electrical insulating materials (IEC 60093:1980, IDT)

GB/T 1634-2004 Plastics - Determination of temperature of deflection under load (ISO 75:2003, IDT)

GB/T 1843-2008 Plastics - Determination of Izod impact strength (ISO 180:2000, IDT)

GB/T 2411 Plastics and ebonite - Determination of indentation hardness by means of a durometer (shore hardness) (ISO 868:2003, IDT)

GB/T 2828.1 Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection (ISO 2859-1:1999, IDT)

GB/T 2918-1998 Plastics - Standard atmospheres for conditioning and testing (ISO 291:1997, IDT)

GB/T 3682-2000 Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics (ISO 1133:1997, IDT)

GB/T 9341-2008 Plastics - Determination of flexural properties (ISO 178:2001, IDT)

GB/T 17037.1 Injection molding of test specimens of thermoplastic materials - Part 1: General principles and molding of multipurpose and bar test specimens (ISO 294-1:2001, IDT)

GB/T 17037.4 Plastic - Injection molding of test specimens of thermoplastic materials - Part 4: Determination of molding shrinkage (ISO 294-4:1996, IDT)

YD/T 1118.1-2001 Secondary coating materials used for optical fiber - Part 1: Polybutylene terephthalate

3 Requirements

3.1 Appearance

The product should be colorless and transparent cylindrical particles with a diameter of 2 mm to 5 mm and a length of 2 mm to 5 mm. The particles shall be smooth, free of impurities, free of continuous beads.

3.2 Physical and electrical properties

The physical and mechanical properties and electrical properties of the PC material shall meet the requirements of Table 1. For technical requirements and test methods of loose-tubes made of PC material, refer to Appendix A.

4.2 Preparation of specimen

The preparation of standard samples required for various properties in Table 1 is made in accordance with the method specified in GB/T 17037.1. Specific injection parameters should be provided by the material supplier.

4.3 Standard environment for conditioning and testing of plastic specimens

Carry it out according to the conditions 2, 3, 4 as specified in GB/T 2918-1998.

4.4 Density

It is performed according to the method as specified in GB/T 1033.

4.5 Melt index

Perform it according to the PC experimental conditions as specified in Appendix B of GB/T 3682-2000. The specimen shall be dried for at (110 ± 1) °C for 4 h.

4.6 Moisture

It is performed according to the method as specified in Appendix B of YD/T 1118.1-2001.

4.7 Saturated water absorption

It is performed according to the method 1 as specified in GB/T 1034-2008.

4.8 Tensile yield strength, tensile yield elongation, elongation at break, tensile elastic modulus

4.8.1 It is performed according to the method as specified in GB/T 1040.2-2006. Use type 1A or 1B standard specimens.

4.8.2 The test speed of tensile yield strength, yield elongation, elongation at break is 50 mm/min. The test speed of tensile elastic modulus is 5 mm/min.

4.13 Volume resistivity

It is performed according to the method as specified in GB/T 1410-2006. Standard samples have a diameter of 100 mm and a thickness of not more than 2 mm.

4.14 Thermal distortion temperature

It is performed according to the method as specified in GB/T 1634-2004. The sample is a standard sample of (120 x 15 x 10) mm³.

4.15 Mold shrinkage

It is performed according to the method as specified in GB/T 17037.4.

4.16 Compatibility of materials and filling factice

4.16.1 The specimen is a standard specimen of type 1A or 1B dumbbell as specified in 6.1 of GB/T 1040.2-2006 and prepared according to the method as specified in GB/T 17037.1.

4.16.2 The conditions of compatibility shall be carried out in accordance with the method as specified in Appendix C of YD/T 1118.1-2001.

5 Inspection rules

5.1 General

Products must pass the inspection of the manufacturer's quality inspection department and be accompanied with a quality mark before they can leave the factory.

5.2 Classification of inspections

Product inspection is divided into exit-factory inspection and type inspection. Product inspection items and categories are as shown in Table 2.

When the type inspection item is unqualified, it shall randomly take double quantity of samples for re-inspection of the item. If it still fails, the type inspection is judged as unqualified. If the type inspection fails, the acceptance of this model of product shall be stopped, and production shall stop. At the same time, it shall analyze the causes and take measures; it can restore production and acceptance after new type inspection is qualified.

6 Marking, packaging, transportation, storage

6.1 Marking and packaging

6.1.1 The product packaging bag that has passed the inspection shall be marked with the name, code, trademark, brand, batch number (or production date), standard number, weight, manufacturer (including factory address, telephone, postal code), the sign of “avoid heat and moisture”.

6.1.2 Each batch of products delivered shall have a product inspection report and a certificate of conformity.

6.1.3 The product uses moisture-proof inner packaging of aluminum-plastic composite film, Kraft paper or non-woven outer packaging, or a packaging bag negotiated between the supplier and the purchaser. The net weight of each bag is 25 kg or other weight approved by both the supplier and the purchaser.

6.2 Transportation

When transporting the product, do not expose it to the sun or rain; keep the product dry, clean, complete, free from pollution.

6.3 Storage

The product shall be stored in a clean, dry, cool and ventilated warehouse.

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