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**Plastic coated steel wire ropes
for vehicle detent cable assembly**

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Plastic coated steel wire ropes for vehicle detent cable assembly

1 Scope

This Standard specifies the terms and definitions, classification and marking, order content, dimensions, shape and tolerances, technical requirements, test methods, inspection rules, packing, storage, transport, and quality certificate, etc. of plastic coated steel wire ropes for vehicle detent cable assembly.

This Standard is applicable to plastic coated steel wire ropes for cable assemblies such as vehicle handbrake detent, door-window detent, box-cover detent, accelerator detent, clutch detent, damper detent, etc. It is also applicable to plastic coated steel wire ropes for other detent cable assemblies such as yachts, ships, aircrafts, etc. (hereafter known as plastic coated ropes for short).

2 Normative references

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

GB/T 1844.1 Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics

GB/T 8358 Steel wire ropes - Determination of measured breaking force

GB/T 8706 Steel wire ropes - Vocabulary, designation and classification

GB/T 9944 Stainless steel wire ropes

GB/T 11115 Polyethylene (PE) resin

GB/T 12670 Polypropylene (PP) resin

GB/T 14451 Steel wire rope for control

GB/T 30512 Requirements for Prohibited Substances on Automobiles

YB/T 081 Rule for Rounding Off of Numerical Values and Judgement of Testing Values for Technical Standards of Metallurgy

the properties based on the original coating material.

7.1.2.6 Reworked materials shall not be used as coating materials.

7.1.2.7 The content of prohibited substances in coating material and in the additives shall comply with the requirements of GB/T 30512.

7.2 Plastic coated rope

7.2.1 The coating of plastic coated ropes shall be uniform, smooth, and flat without cracking. There shall be no defects (such as impurities, bubbles, unmelted particles, etc.) exceeding one-third of the coating thickness. The area of a single defect shall not exceed 2 mm². The total number of defects shall not exceed 5 per meter.

7.2.2 The color of the coating shall be consistent. There shall be no discoloration decomposition line or significant color difference. If the user has special requirements for color, it shall be stated in the contract.

7.2.3 The straightness of plastic coated ropes shall not exceed 150 mm per meter. There shall be no phenomena such as spiral which affect the use. When the buyer has other requirements for the straightness of plastic coated ropes, it shall be indicated in the contract.

7.2.4 The minimum breaking force of plastic coated rope shall not be lower than the minimum breaking force of the steel wire rope used.

7.2.5 The dismantle strand performance of plastic coated rope shall comply with the provisions of GB/T 14451.

7.2.6 The elongation of carbon plastic coated rope shall not exceed the value specified in GB/T 14451 for the corresponding steel wire rope. The permanent elongation of stainless steel plastic coated rope shall not exceed 1.5%.

7.2.7 During the anti-aging test of the coating of plastic coated rope, flaws and cracks shall not occur on the surface. The anti-aging requirements of different coating materials may be determined by negotiation between both parties.

7.2.8 The coating shall be tightly bonded to the steel rope. The slip force of the coating of PA material with a structure of 1×19 shall meet the requirements of Table 3. Other types of plastic coated ropes, if requested by the user, shall be determined by negotiation between the supplier and the buyer.

of the coating by 30 mm. KEEP the intermediate plastic coated length of 100 mm $\pm$ 1 mm.

Then, at the end at which the coating is stripped 30 mm, a coloring mark is made at the joint of the steel wire rope and the unpeeled coating.

8.10.3 Test method

The test shall be carried out at a temperature ranging from 10 °C~30 °C. The arbitration test temperature shall be 23 °C $\pm$ 5 °C.

According to the method of Figure 1, firstly, FIX the end at which the coating is stripped 100 mm on the lower clamping block of tensile tester; and then the stripping position of steel wire rope and coating is caught by the slot mouth of the tooling.

Uniformly STRETCH upward at a speed of 20 mm/min. When the value displayed on the dynamometer does not reach the minimum pull-off force value specified in Table 3, the coating position at the coloring mark cannot be displaced.

8.11 Rounding off of numerical values and judgement

The rounding off of numerical values and judgement of testing for plastic coated ropes shall be carried out according to the provisions of YB/T 081.

9 Inspection rules

9.1 Inspection and acceptance

9.1.1 The inspection and acceptance of plastic coated ropes before leaving the factory shall be carried out by the supplier and shall be classified into type test and exit-factory test.

9.1.2 The acceptance of the buyer may be carried out on its own, or entrusted to a testing department with qualification. The bases for acceptance are this Standard, order contract, and the supplier's quality certificate. The acceptance period (from the exit-factory date) shall not exceed 9 months.

9.2 Rules for lot grouping

Plastic coated ropes shall be accepted according to continuous production lots. Each lot shall consist of the same kind of steel wire rope (same material, same structure, same diameter, same strength grade, same method of lay), and the plastic coated ropes of the same kind of coating (same material, same color, same thickness).

9.4 Exit-factory test

Each lot of plastic coated ropes shall be subjected to exit-factory test. The specific items are as specified in Table 6.

9.5 Test method

The sampling quantity, sampling position, and test method of plastic coated rope shall be in accordance with the requirements of Table 6.

9.6 Reinspection and judgement rules

If one or more test items do not meet the specified requirements, it shall re-sample on the same plastic coated rope for the reinspection of the unqualified items. If the reinspection results meet the specified requirements, the lot (or strip) of plastic coated ropes shall be still judged as qualified.

If one or more of the reinspection results do not meet the specified requirements, the coil of plastic coated ropes shall be judged as unqualified. The remaining plastic coated ropes of the lot can be sampled and tested one by one, and the qualified ones are delivered.

When a plastic coated rope is cut into several pieces for delivery, any one of which is sampled for testing. If it is qualified, the remaining pieces are exempt from testing, otherwise they shall be sampled one by one for testing.

10 Packing, storage, transport, and quality certificate

10.1 Packing

10.1.1 Spool winding packing

The spool shall be made of solid and durable material. The material and size model shall be negotiated by the supplier and the buyer and specified in the contract. However, the minimum radius of curvature for spool winding shall be selected according to the diameter of steel wire rope. The minimum circle diameter for winding up shall meet the requirements of Table 7, to prevent deformation of the plastic coated rope.

When winding the rope, the plastic coated rope shall be evenly wound around the spool. After the rope is wound, the rope head shall be fixed, then wrapped with moisture-proof material, and finally tightened with a cable tie.

The number of plastic coated ropes allowed to be wound in each spool shall be negotiated between the supplier and the buyer. In general, the number of coated plastic ropes allowed to be wound is not more than 5. However, the

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