

LY Polyethylene Powder Coating

Product Description

The LY polyethylene powder coating for drinking water is a thermoplastic powder coating prepared with polyethylene resins, compatibilizers, functional additives, pigments and fillers, etc. Through the national quality detection and the health safety assessment, it can be completely used for the coating of normal-temperature drinking water transport and distribution equipment as well as pipelines. Meanwhile it has good chemical stability, electrical insulation and low temperature resistance, and the corrosion resistance is excellent and long-lasting. The product complies with CJ/T 120-2016 Industry Standards for Urban Construction of the People's Republic of China.

Application Field

It is suitable for the coating of normal-temperature drinking water transport and distribution equipment as well as pipelines.

Powder Properties

Non-volatile content: $\geq 99.5\%$

Dry fluidity: fluidization floating $\geq 20\%$

Specific gravity: 0.91-0.95 (varies by different colors)

Particle size distribution: $\leq 300\mu\text{m}$

Melt index: 5-20g/10min (2.16kg, 190°C) [depending on the workpiece to be coated and the process].

Storage: Store in a ventilated and dry room below 35°C, and prevent from being close to the source of ignition. The storage period is two years from the manufacturing date. It shall be retested when it is expired, and it can still be used if it is qualified. In addition, it is recommended that the product shall be used on the first-in and first-out basis.

Packing: It is packed in composite paper bags, and the net weight per bag is 20 kg.

Application

- Pre-treatment: For the base pipes, rust and oil dirt on the surface of base metal, oxidation film on the surface of the galvanizing coat, etc. shall be removed by adopting the processes and methods of sand blasting or pickling and phosphating before coating.
- Pre-heating temperature of workpiece to 230-280°C [it can be adjusted according to the pipe diameter].
- Coating method: vacuum suction coating.
- Plasticization at 180-220°C for 0-5 minutes [The plasticization process is determined according to the pipe diameter and specifications as well as the film smoothness, and the post-heating plasticization process is beneficial to obtain a smooth coating].
- Cooling: Air cooling or natural cooling.

Coating Performance

Sample panel prepared for the following test data.

2mm thick steel plate, degreasing and rust removal, and coating applied with thickness of 400 μm .

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Color GB/T9761	No visible difference (compared with the standard plate)
Appearance (visual inspection)	Level and smooth (slight orange peel is permissible)
Film thickness μm GB/T 13452.2	250~600
Gloss % GB/T 9754, 60°	10~80 (it is adjusted according to customer requirements)
Bending GB/T 6742	$\leq 2\text{mm}$ (with the film thickness of 200 μm)
Shore hardness (D) GB/T 2411	45~55
Vicat softening point (°C) GB/T1633	85-95
Low temperature resistance Q/HJ 008-2008	No cracking at -35°C for 60h
Adhesion (10mm width 180° peeling)	$\geq 3\text{ kg}/10\text{mm}$ (it is judged to have qualified adhesion when the coating snaps and breaks)
Tensile strength (MPa) GB/T 1040	> 9.80
Elongation (%) GB/T 1040	> 300
Flattening test CJ/T 120	No peeling or fracture occurs in the coating
Bending of pipe fitting CJ/T 120	No peeling or fracture occurs in the coating
Impact test CJ/T 120	No peeling or fracture occurs in the coating
Hygienic performance test GB/T 17219	Meet the requirements of Standard for the Hygienic Safety Evaluation of Equipment and Protective Materials in Drinking Water issued by Ministry of Health
Non-volatile content GB/T 2914	$> 99.5\%$

Hygiene & Safety

This powder coating is a non-toxic product, but the inhaling of dust shall be avoided during use. It is recommended that operators shall wear appropriate dust masks and glasses.

Caution

- In order to obtain the best adhesion, it is recommended to carry out phosphating or chromizing treatment on the basis of degreasing and de-rusting of the substrate.
- Excessive heating will lead to aging and discoloration of the coating film. However, if the temperature is too low, it would cause the defects such as thin and rough coating film, etc. Therefore, the optimum heating temperature shall be determined through experiments according to the metal thickness and the coating facilities of the customer.
- Workpiece design: the sharp parts shall be ground, there shall be no gap in the welding, the metal thickness and the wire diameter in a workpiece shall be close.
- This product is not recommended to use in post-processing (re-deformed workpiece after coating) products.
- Like all polymer powders, especially in the flowing condition, the powder coating can be ignited or burned if contact with a high-temperature source.

黄山华佳表面科技有限公司
中国, 安徽省, 黄山市, 徽州区, 永佳大道 109#
电话: 0086 559-3515170 传真: 0086 559-3511660
网站: www.hjchem.com

Huangshan Huajia Surface Technology Co., Ltd
No. 109 Yongjia Ave., Huizhou Dist, Huangshan City, Anhui, PRC
Tel: 0086 559-3515170 Fax: 0086 559-3511660
www.hjchem.com