Hybrid product

Product technical parameters

This series of products is a thermosetting powder coating with excellent physical, chemical and decorative properties. It is made of saturated polyester resin and epoxy resin as the main components, supplemented with necessary pigments, fillers and additives, and processed by melt extrusion and grinding.

This product series can be customized with different curing temperatures (160℃~200℃), textures (flat, sand, or vertical), and gloss levels (3%~95%).

1， powder property

Density 1.2-2.0 g/cm³, depending on the color

Particle size: The average particle size D(v,50) of the standard product ranges from 30 to 42 μm.

Volatile matter <1%

Storage stability: The shelf life is 12 months under conditions of temperature below 25°C and relative humidity below 60%. Exceeding 12 months, and must be retested before use.

Curing conditions: 180°C for 15 minutes (workpiece temperature)

200°C for 10 minutes (workpiece temperature)

The extinction product needs to be extended for 5 minutes.

2， film properties

The standard thickness of spray-coated films ranges from 60 to 100 μm, while textured products exhibit varying thickness depending on the texture size. Exceeding the specified thickness may result in pinholes or uneven texture distribution.

The relevant test results were obtained under the corresponding standard requirements (or specific) substrate and pretreatment conditions, which may differ from the actual effects achieved by the customer's pretreated substrate. Furthermore, the tests were conducted under laboratory conditions and are provided for reference only.

project	metric	testing standard	remarks
surface	visual approach	visual	Generally refers to natural light
lustre	3%~95%	GB/T9754-2007	60° angle
lash	50 kg/cm	GB/T1732-2020	Low-light performance is slightly inferior
winding	≤2mm	GB/T6742-2007	Low-light performance is slightly inferior
cup drawing	≥6mm	GB/T9753-2007	Low-light performance is slightly inferior
adhesion	Level 0	GB/T9286-2021	
hardness	≥H	GB/T6739-2022	
salt spray resistant	After 500 hours, the coating shows no changes, and the single-side corrosion in the grid marks is ≤2mm.	GB/T1771-2007	The standard treatment of Bondrite 1000 steel plate with a coating thickness of 100um. The sand grain, vertical grain and low gloss products showed slightly poorer test results. The standard treatment of Bondrite 1000 steel plate with a coating thickness of 100um. The sand grain, vertical grain and low gloss products showed slightly poorer test results.
hygrothermophilic	1000 hours, slight film gloss loss, ≤ 1 grade	GB/T1740-2007	Bondrite 1000 standard treated iron plate with a coating thickness of 100 μm. The test results for sand texture, vertical texture, and low-gloss products were slightly inferior. Bondrite 1000 standard treated iron plate with a coating thickness of 100 μm. The test results for sand texture, vertical texture, and low-gloss products were slightly inferior.
chemical resistance	exhibits excellent resistance to common acids, alkalis, and oils		normal atmospheric temperature

3， pretreatment

Treatment of ordinary iron materials with zinc phosphate

aluminum chrome treatment

Prior to the aforementioned processing, the substrate must be thoroughly cleaned to remove

oils and then dried. The drying temperature should not exceed 120°C to avoid damaging the pretreatment film, which could result in the final powder coating film failing to meet performance requirements.

Before spraying, castings (especially castings) must be heated to high temperatures to remove internal moisture and gases to prevent bubble formation. Please notify us in advance so we can make necessary adjustments to the formula.

4. Construction Conditions

This product series is suitable for manual or automatic electrostatic spray gun application. Other spraying methods (such as friction guns, electrostatic fluidized beds, etc.) require prior consultation.

5. Safety Matters

This product requires the use of appropriate PPE (Personal Protective Equipment) such as masks, gloves, and caps to ensure safety. The product is not for oral ingestion. Due to the tendency of the powder to aggregate at certain concentrations, there is a risk of explosion. During use, proper grounding must be implemented to eliminate static sparks and open flames. For details, please refer to our company's Product Safety Data Sheet. Coatings for toys in this category must be pre-submitted to ensure that the relevant heavy metal content meets the requirements and avoids harm to children's health.

statement

This manual cannot detail all applications. Any user intending to use the product for the first time or in scenarios beyond this description must first contact us to confirm suitability. Since we cannot control every operational factor—including substrate quality, pretreatment processes, and oven temperature uniformity—users should conduct their own tests to ensure post-spraying product quality meets requirements. Unless otherwise expressly agreed in writing, we do not guarantee against losses arising from applications beyond the powder's inherent properties (as mutually agreed).

We will update the above data from time to time based on product improvements.