

Plascoat® NG30

Polyethylene Coating Powder

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General description

Plascoat NG30 is a polyethylene powder supplied for fluidised bed coating of metal articles. It can be processed at much lower temperatures than most other LDPE coating powders. This has been achieved without loss of stress crack resistance or loss of thermal stability. Since the coating temperatures are lower than for LDPE and the thermal stability is at least equal to that of LDPE, the chances of degradation and hence "post-yellowing" occurring with NG30 are minimised. NG30 coatings can be applied at 30 to 50% less coating thickness than other polyethylene coating powders. Thereby giving a 30-50% reduction in powder usage.

Typical uses

Plascoat NG30 is ideal as a general purpose coating material, particularly suitable for refrigerator shelves.

Typical properties of the powder

Coverage (100% efficiency)	4.0 m ² /kg at 245 microns
Particle Size	Below 300 microns
Bulk Density (at rest)	0.38 g/cm ³
Fluidising Characteristics	Excellent
Packaging	20 kg sacks

Handling and storage

Stored in a clean dry area at 10-30°C and out of sunlight, the material should not deteriorate. However, in the interest of good housekeeping, old stocks should be used first.

Common to all coating powders, there may be the likelihood of agglomerate formation during transportation and storage. The coating powder can be sieved to break up the agglomerates and therefore return the powder to its original condition; this does not affect the quality of the powder. The accumulation of powder particles is a physical phenomenon and may occur as a result of compaction or when cold powder, below 10°C, is brought into direct contact with warm humid air. In this latter situation the powder, still sealed, should be given time to warm up to the ambient temperature before use.

Health and safety

Plascoat NG30 is supplied as a finely divided powder. While there are no known health hazards associated with NG30, normal handling precautions for dealing with fine organic powders should be taken - i.e. excessive dust generation and inhaling of the powder should be avoided. Facilities may be required for removing excess dust from the working area during the coating of certain difficult items.

As with all polymeric powders, the material can ignite if brought into contact with a high temperature source or ignition - particularly in the fluidised condition.

Reference should be made to the respective Plascoat GHS Safety Data Sheet, available on request. Should the coating be required for contact with food or potable water, further details should be obtained from Plascoat.

Guide to typical coating conditions

Recommended Pre-treatment:

Ensure metal is clean by thorough degreasing and removal of rust and mill scale.

Batch Operation:

Metal preheat temperature 270°C - 360°C, depending on metal thickness. Dip for 3-5 seconds. A post-heat cycle at 160°C may be required to obtain smooth finish on thin metal. Water quench optional.

Automatic Coating Plant:

Pre-heat oven	300 - 340°C for 2 to 4 minutes
Dip	3 - 5 secs
Post-heat oven	180 - 220°C for 2 to 4 minutes
Water Quench	Optional

The process temperatures used should only be the minimum to achieve an acceptable surface finish. Overheating may cause the coating to discolour later in storage or in service.

Thicknesses outside the recommended range may be detrimental to the properties of the coating.

Typical properties of the material

Specific Gravity*		0.92 g/cm ³
Tensile Strength	ISO 527	9 MPa at 23°C
Elongation at Break	ISO 527	100%
Hardness	Shore A	95
	Shore D	45
Vicat Softening Point	ISO 306	85°C
Melting Point		116 °C
Dielectric Strength	IEC 243 VDE 0303	25 kV/mm at 350 microns

*These values may vary from colour to colour

Typical properties of the coating

The following data applies to a 350 microns coating applied under standard conditions onto 3mm thick steel. The pre-treatment consisted of degreasing and grit blasting.

Recommended Coating Thickness		300-1000 microns on flat plate 650-1000 microns on wire
Appearance		Smooth, moderately glossy
Gloss	ISO 2813	45
Impact Strength	Gardner (drop weight) ISO 6272 Direct 23°C	2.0 Joules
Abrasion	Taber ASTM D4060/84 H18, 500g load, 1000 cycles CS17, 500g load, 1000 cycles	100 mg weight loss 40 mg weight loss
External Weathering		Not recommended for outdoor use
Chemical Resistance*	- Dilute Acids 60°C - Dilute Alkali 60°C - Salts (except peroxides)60°C - Solvents 23°C	Fair Fair Fair Not recommended
Safe Working Temperature	(Continuous in air)	60°C max

*Further technical advice may be obtained from Plascoat concerning the effects of particular chemicals or mixtures.



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