

## PLASTIC COATING POWDER

ECONOMICAL

HIGH GLOSS

SMOOTH  
SURFACE

GOOD  
DURABILITY  
&  
FLEXIBILITY

GOOD  
ADHESION

WEATHERING  
RESISTANCE

ECO-FRIENDLY  
NO V.O.C'S

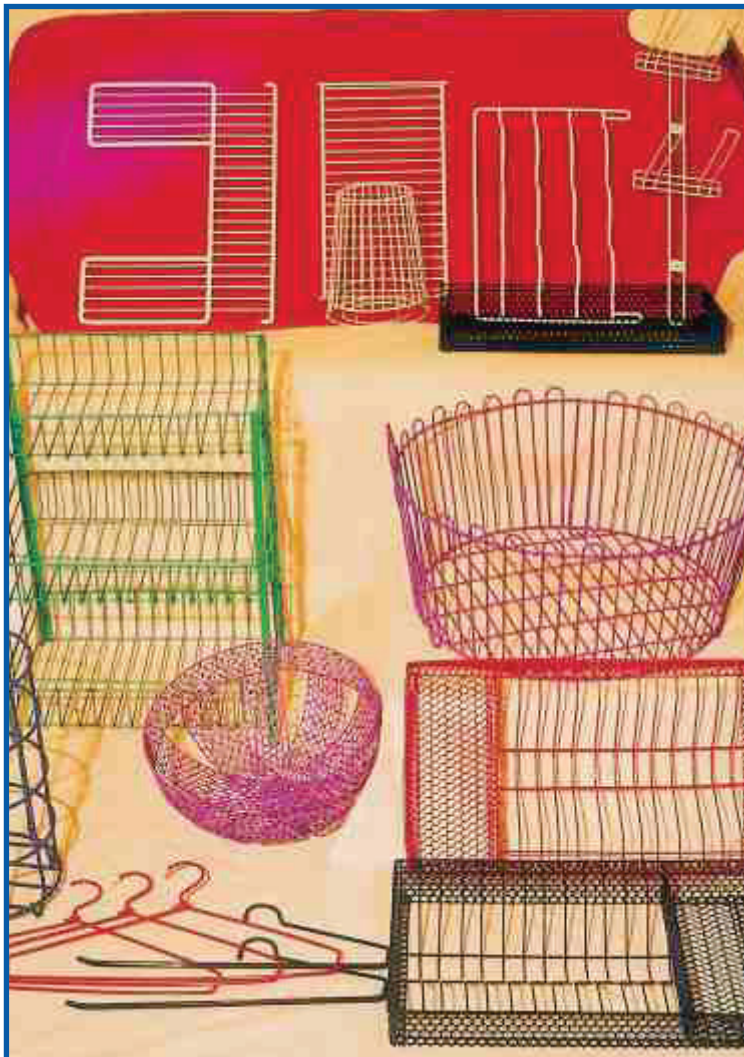
WIDE  
SERVICE  
TEMPERATURE

NO  
HARMFUL  
FUMES

NON HAZARDOUS

WIDE RANGE OF COLOURS

COLOURING IS EXTRUSION COMPOUNDED  
AND HENCE CONSISTENT



FOOD GRADE PRIME POLYETHYLENE USED FOR  
MANUFACTURING

GOOD IMPACT STRENGTH

PRIMERLESS  
COATING

SINGLE COAT  
HIGH  
THICKNESS

EASILY  
REPAIRABLE

PHOSPHATING  
NOT ESSENTIAL

EASE &  
SIMPLICITY OF  
COATING

CORROSION  
PROTECTION

CUSTOM  
COLOURS  
OFFERED

ENHANCES  
PRODUCT  
APPEARANCE  
AND FEEL

## THERMOPLASTIC COATING POWDERS

Thermoplastic coatings offer the ultimate protection of metal structures against corrosion, wear and tear and chemical attack. They outperform other coatings, especially in terms of extended lifetime duration, environmental impact and ability to protect metal from corrosion.

### GRADES AVAILABLE

#### XCEL 1630

- Polyethylene based free flowing powder
- High gloss

**Application:** Wire fabricated articles like refrigerated shelves, scooters/ cycle baskets, kitchen racks/ baskets, hangers display racks, formed wire goods, wire baskets, shower caddies, dish drainers, planter baskets.

#### XCEL 2430

- Polyethylene based free flowing powder
- Semi Gloss Finish
- Ease of application

**Application:** High durable products like outdoor fencing, racks, cable trays and many more applications. Tougher than XCEL 1630 with better abrasion resistance.

#### HIGH ADHESION

- Excellent Adhesion, Corrosion, UV and Chemical Resistance
- Eliminates Primer Requirement

**Application:** Pipes, garden benches, fences, cable trays, fuel tanks, spring shockers, valves in chemical factories and many more applications.

### TECHNICAL SPECIFICATIONS

PARTICULARS	STANDARDS	Unit	XCEL 1630	XCEL 2430	High Adhesion
Particle Size		μ	<300	<300	<300
Theoretical Coverage @ 500 μm		m <sup>2</sup> /Kg	2.17	2.15	2.15
Bulk Density (at rest)		gm/cc	0.40	0.39	0.39
Fluidizing Characteristics		Visual	Excellent	Excellent	Excellent
Specific Gravity	ASTM D1505	g/cm <sup>3</sup>	0.918	0.924	0.926
Recommended Coating Thickness		μ	300-1000 microns on flat plate 650-1000 microns on wire		
Gloss	ASTM D523 @ 60°	%	60-80	20-40	20-80
Impact Strength Gardner (drop weight) ISO 6272 Direct 23°C		J	27	27	27
Safe Working Temperature		°C	55 (max)	60 (max)	60 (max)
External Weathering	ASTM G155	Hours	Customizable for UV resistance		> 2000
Tensile Strength	ASTM D638/ ISO 527	kg/cm <sup>2</sup>	90	90	90
Vicat Softening Point	ASTM D1525/ ISO 306	°C	84	95	95
Melting Point	ASTM D1238	°C	108-110	120-122	116-118
Environmental Stress Cracking	ASTM D1693	Hours	>100	>100	> 1000
Dielectric Strength	IEC 243 VDE 0303	kV/mm at 370μ	40	40	40
Adhesion	Cross Hatch Test 2mm sq. ASTM-D-3359 GT - 0		Poor	Poor	Excellent
Abrasion	Taber ASTM D4060/84 H18, 500g load, 1000 cycles	mg wt.loss	56	56	56
Chemical Resistance	Dilute Acids 23°C	°C	Fair	Fair	Good
	Dilute Alkali 23°C	°C	Fair	Fair	Good
	Salts (except peroxides) 23°C	°C	Fair	Fair	Good
	Solvents 23°C	°C	Poor	Poor	Poor
Salt Spray Resistance	ISO 7253 ASTM B117 DIN 50021 After 1000 hrs				
	Mild Steel - Undercut /	Rust creep / Loss of Adhesion	Poor	Poor	< 3mm creeping
	Aluminium - Undercut				
	Mild Steel - Without cut / Aluminium - Without cut	Loss of Adhesion	Poor	Poor	No Loss

# DIP/ FLUID ISED BED/ ELECTROSTATIC COATING METHOD

## FABRICATION

Steel wires of the required diameter & length are cut and bent to the desired shape and then spot welded to fabricate the required shape of the article. Jigs should be carefully designed to achieve good accuracy, repeatability and desired production rates.

The prefabricated article is de-greased, de-rusted, de-scaled, passivated and cleaned. Thin "wire loops" should be attached at suitable locations, for ease of handling the article, so as not to mar the product appearance. These are later snipped off after the entire operation is over.

## PREHEATING

The bare article is then heated in the oven at 250-300°C (480-570° F) for 5-10 minutes. The heating time and temperature depends on the mass of the article and the loading of the oven. This has to be practically ascertained to provide the desired production rates and coating thickness. For electrostatic coating lower temperatures may be used.

## COATING

There are two main methods used for coating:

1. **Fluidized Bed:** The heated article is dipped in a tray containing the powder and the powder splashed on it or dipped in a fluidized bed of the powder for 2- 5 seconds.
2. **Electrostatic Spray Gun:** The heat article is sprayed using an electrostatic spray gun.

The powder will stick to the hot article. Once the article is coated, care should be taken to ensure it does not rub or come into contact with any surface, to prevent damage to the coating. At this stage, a rough powdery, but uniform coating on the article is obtained. The excess un-melted powder is shaken off with a slight jerky motion or light tapping. The coating thickness increases with the duration of dipping in the powder medium. In electrostatic coating, pre heating the article will give higher build- up.

## FUSION SINTERING

To smoothen out and provide a glossy surface, the article is re-heated in the oven for 2-3 minutes. This causes the powder to melt, sinter and flow out. Excessive heating may cause the coating to dis-color or sag. The article should be carefully taken out of the oven, without coating coming into contact with any other surface and allowed to cool in a clean dust free atmosphere. Sometimes water quenching is also resorted to, for wire products.

## INSPECTION & POST FINISHING

The thin "wire loops", attached earlier for handling the article, are carefully snipped off at the base so as not to mar the appearance. The article is inspected for pin holes or blemishes. These can be filled or repaired with a little powder with a small soldering iron or hot air gun.

## EXTRUSION COMPOUNDED COLORS

All the colors are hot melt compounded in high Performance extruders. This ensures a uniform dispersion of pigments and additives in the resin. This enhances the UV stability of the polymer. It also prevents color variation from product to product, pigment migration and pigment wipe off.

## FUNDAMENTAL NOTES

The coating thickness increases with:

- Increase in temperature of the article
- The thickness of the wire
- The duration of dipping in the powder.

These three parameters have to be practically optimized by "trial and error" to achieve the desired maximum and minimum coating on the thicker and thinner wires of the coated article.

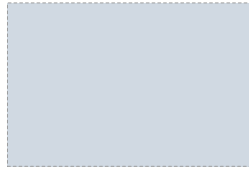
A coating thickness of 0.3 to 0.5 mm is normally considered sufficient. It is recommended that the oven should have a circulating fan inside it, to provide uniform temperature and better heat transfer.

## COLOUR CARD: PLASTIC COATING POWDERS

**Rapid Coat**  
POWDER COATINGS



RAL 9016



CLASSIC WHITE



RAL 9005



GREY



RAL 3020



RUBINE PINK



VIOLET



OXFORD BLUE



BLUE



RAL 6005



LIGHT GREEN



LIGHT BLUE

*\* These are indicative colours only, the actual sheets may vary.*

### PRODUCT COMPOSITION AND COLOUR CUSTOMIZATION

1. Plastic powders are free of heavy metals (lead, chrome, cadmium, mercury and arsenic) and conform to environmental standards like EN71 Part III, ROHS & REACH.
2. We match all colors as per internationally accepted standard RAL, Pantone, NCS and IS standards.
3. Customize colors and finishes can be offered.



# ABOUT US

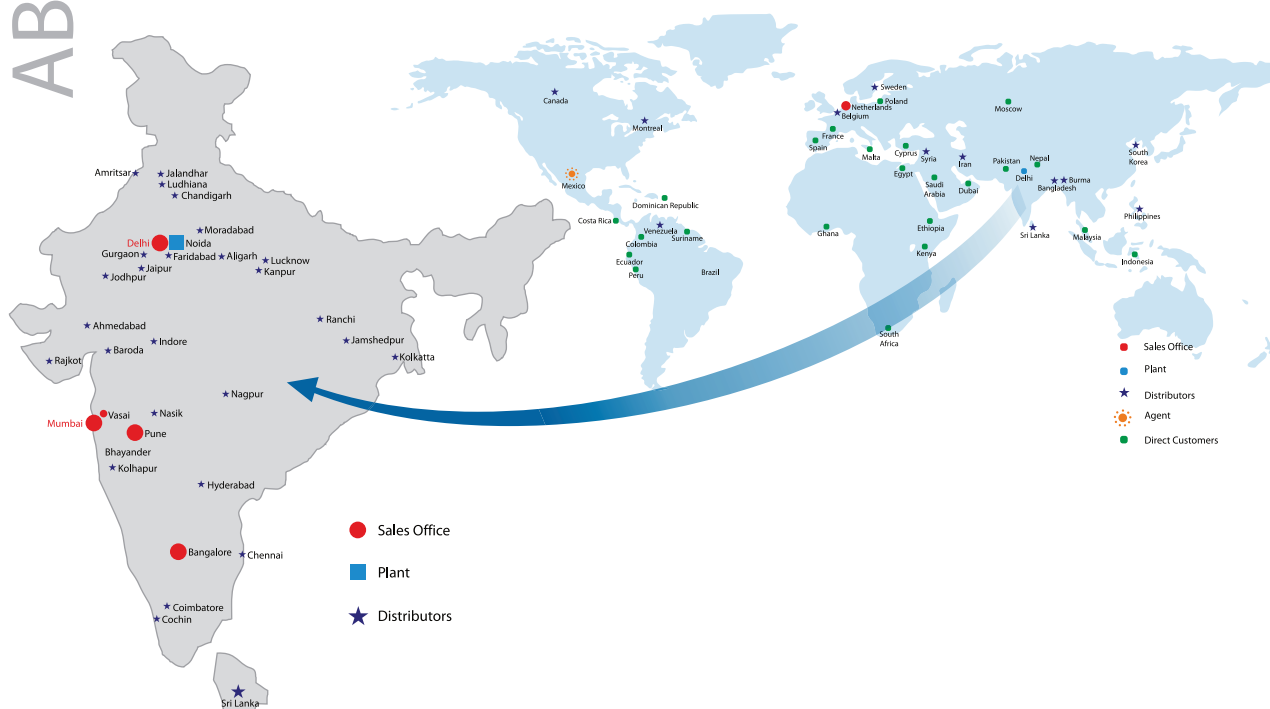
Rapid Coat is a powder coatings brand of Rapid Engineering Co. Pvt. Ltd. (RECPL). The company started operations in 1974 and is located on 2 acres of land in a prime industrial area on the outskirts of New Delhi, India with approximately 75,000 sq. ft. of built up space.

## PRODUCTS:

- Epoxy Polyester Powders for Powder Coatings - We are one of the largest manufacturers of this product in India with 7 production lines and a total manufacturing capacity of 6000 tons annually.
- Thermoplastic Powders for Plastic Coating - We are the leaders in India with a manufacturing capacity of 1800 tons annually.

## CERTIFICATIONS:

- ISO 9001:2008 Quality Certification no. TUV100 07 1477 from TUV SUD Management Service GMBH
- Dun and Bradstreet Certification no. 86-228-4721
- CRISIL Credit Rating - SE1B



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POWDER COATINGS



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