

Reflecting your ideas

Pre-finished steels for light fittings

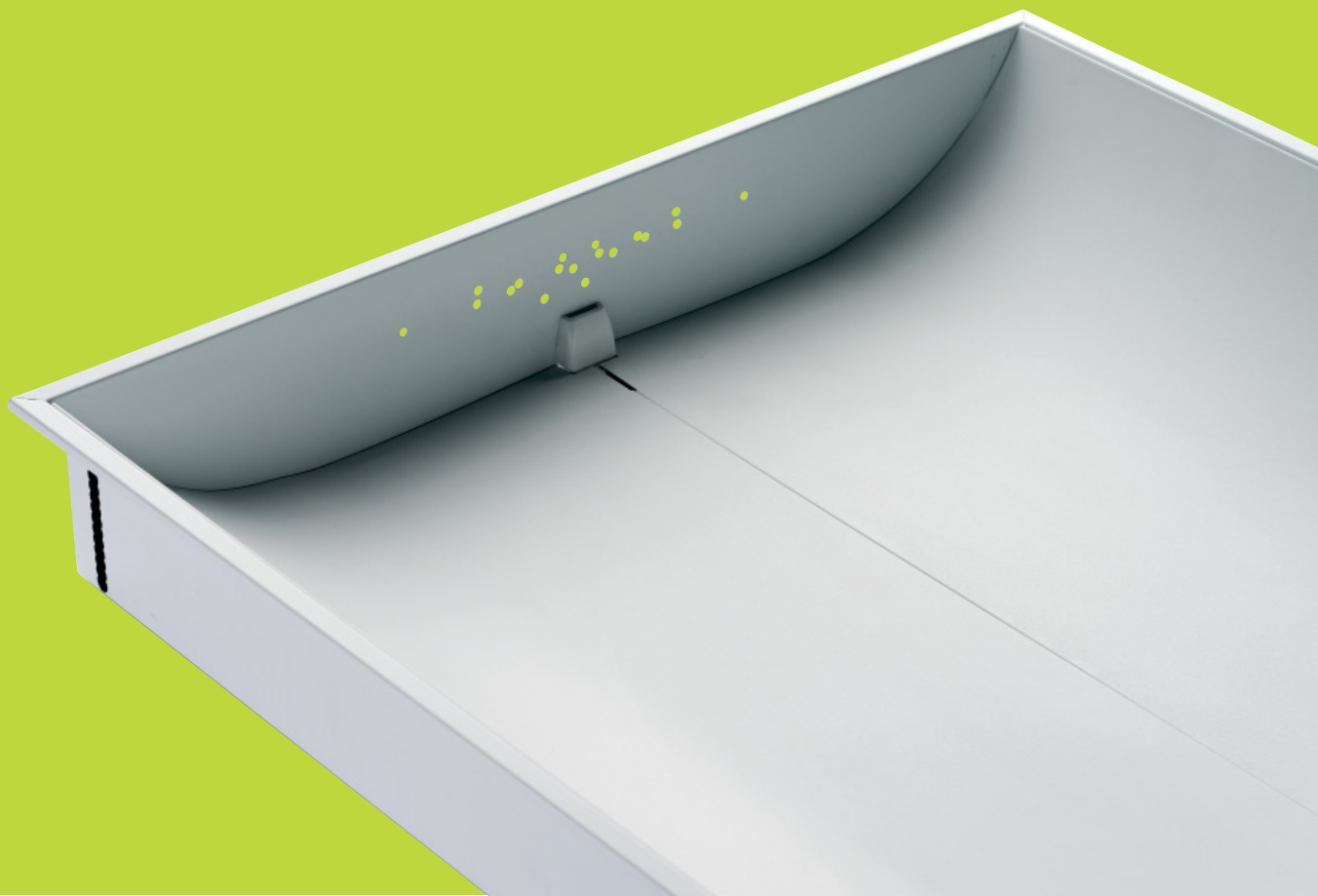
The Sector

Corus offers Colorcoat® High Reflectivity Polyester, specially formulated for light fittings, particularly gear trays and box sections for fluorescent tube lights, reflectors and luminaire light fittings in commercial buildings. Our range can be manufactured to various colours, textures and gloss levels suitable for contrast or as decorative strips to enhance the design and appearance of light fittings.

The Products

The range contains many different products, which Corus has designed with specific properties for particular applications. Corus can therefore help you make the right decision for your purpose.

White light consists of a full rainbow of colours mixed together in exact proportions. The purer the white colour, the more light it reflects. *Colorcoat* High Reflectivity Polyester is an untinted white which will give a specular reflectivity of over 85%. If a white is tinted by Corus to match a manufacturer's 'house' colour, the reflectivity will be reduced according to the amount of tinting required. In these circumstances, reflectivity can drop to 80% or less. The natural colour of *Colorcoat* High Reflectivity Polyester is close to RAL 9010, which is popular in the light fitting market.



Product Characteristics

The efficiency of a light fitting is determined by how much of the light emitted by the source is reflected by the fitting rather than being absorbed by it. The greater the specular reflectivity, the greater the efficiency of the light fitting. All surfaces, even the high reflectivity ones, absorb some light. Near perfect reflectivity is achieved by a mirror, but this has disadvantages in mass production because glass or glass-like surfaces are fragile, expensive and depending upon the mirror material, can be difficult to form. The next best reflective surface is a white one. Oddly enough, gloss level has no effect on specular reflectivity, but the shade of white does have a significant effect.

Selection and Use

Colorcoat High Reflectivity Polyester has an excellent high-gloss surface finish (suitable for most applications in the lighting industry). Its specular reflectivity is high, enabling good light output from a light fitting. UV rays from a light source will not darken or significantly change the colour of this product. Since the coating is stable at the high temperatures produced by fluorescent tubes and light bulbs, it will not craze. Its strong adhesion to its substrates prevents it from flaking, even after long service under the combined effects of intense light and heat. The coating is also very flexible allowing sharp bends to be formed and components to be drawn without cracking. It is specially suitable for roll forming and brake pressing.

Steel as a substrate is particularly suitable for CNC (Computer Numerical Control) machine notching and bending as its magnetic property can trip the built-in magnetic switches which aluminium cannot.

Promica® Lumiforme is a light gauge, high reflective polymer coated steel suitable for reflectors, trims and diffuser chequers. A competitive alternative to anodised aluminium, the material is highly resistant to both scratching and marring. The product can be supplied with a protective strippable film. Standard backing coats available are white or clear.

Some light fittings must have decorative strips or other features that do not require high specular reflectivity. *Colorcoat* High Gloss Polyester is recommended for such applications.

The corrosion resistance of *Colorcoat* High Reflectivity Polyester is suitable for normal light fitting applications indoors. Where extra corrosion protection is required in covered positions outdoors, eg: in loading bays or under a canopy. Galv substrate should be used if the fitting is designed for use outdoors, in positions that are exposed to the weather, one of the *Colorcoat* products formulated for outdoors should be used for the outer (exposed) parts of the fitting, eg: HPS200® by Corus, *Colorcoat* PVDF® (formerly PvF2) or *Colorcoat* Architectural Polyester. The product with the most flexible coating in this group is *HPS200* by Corus, which has excellent forming characteristics.

Substrate

Colorcoat High Reflectivity Polyester is normally supplied on a cold reduced steel substrate to BS EN 10130 : 1999. The substrate for Stelvetite®, *Colorcoat* High Gloss Polyester, *Colorcoat* PVDF and *Colorcoat* Architectural Polyester are on Corus's hot-dip zinc coated steel, Galvatite®, in DX53 quality, with a Z275 coating (275g/m including both surfaces) to BS EN 10142 : 2000. *HPS200* by Corus is on Galvalloy® substrate. Consult Corus about other substrates available.

Reverse-side coating

The reverse-side coating for *Colorcoat* High Reflectivity Polyester is usually a white wash coat or grey polyester. Other reverse-side coatings with special properties are available by arrangement.



Strippable Films

Colorcoat products are available with strippable film to protect the surface finish during handling, fabrication and assembly. However, with experience, careful handling and common-sense precautions, strippable film is not necessary.

Coining

Post-painted light fittings are sometimes stamped with the manufacturer's name or with an earth symbol before they are painted. This practice is not recommended for Colorcoat and Stelvetite pre-finished steels. A self adhesive label should be used instead.

Products

Product	Colour	Finish
Colorcoat High Reflectivity Polyester	Untinted white	High gloss
Colorcoat High Gloss Polyester	Various	High gloss
HPS200 by Corus	Various	Low gloss, embossed
Colorcoat PVDF	Silver and various	Medium gloss
Colorcoat Architectural Polyester	Various	Medium gloss

Typical properties

Property	Colorcoat High Reflectivity Polyester	Colorcoat High Gloss Polyester
Specular reflectivity (y-value, 20 angle)	85% (untinted white)	75-80% (white)
Specular gloss (60), ECCA T2, ASTM D523	80%	75%
Nominal organic coating thickness (µm) ECCA T1, BS 3900/C5	25	25
Pencil hardness ECCA T4, ASTM D3363	H-2H	H-2H
Minimum bend diameter (T = substrate thickness), ECCA T7, BS3900/E1	1T	0.5T
Corrosion resistance (humidity), BS 3900/F2	450h (CR substrate)	1000h (Galv substrate)
QUV weatherometer, ECCA T10, ASTM G53-84	1000 light hours	N/A
Minimum temp for forming	16	16
Maximum continuous operating temperature	120	120

Dimensional limits

Thickness (mm)		Colorcoat coatings			
		High Reflective Polyester		Architectural Polyester	
≥	≤	High Gloss Polyester	HPS200 by Corus	PVDF	Stelvetite
0.400	0.499	1300	1300	1300	1300
0.500	1.200	1420	1500	1500	1400

