

## SuperPersianas Production and Material Specifications

This report details the definitions of the materials and processes used in the production of the SuperPersianas range of motorized, aluminum sun control devices. The information is formatted into four sections as follows;

- (1) Substrate
- (2) Paint
- (3) Paint Process
- (4) Characteristics of the Painted Metal Lengths

### (1) Substrate

The materials that Industrial Gradhermetic, S.A.E. use for the fabrication of the SuperPersianas is of aluminum laminated in their own factory in Spain. The material, characteristics and composition are indicated in the following table.

Product Description												
Thickness			Alloy				Temper					
0.53 to 0.57mm			3005				H - 18					
Mechanical Composition												
Rupture - KG/mm <sup>2</sup>				Lengthening %				Hardness - Vickers HV				
23 to 24				2 to 3				67 to 70				
Chemical Composition												
%	Al	Si	Fe	Cu	Mn	Mg	Zn	Ti	Cr	Sn	Pb	Ni
Min.	95.8	-	-	-	1	0.2	-	-	-	-	-	-
Max.	98.8	0.6	0.7	0.3	1.5	0.6	0.25	0.1	0.1	-	-	-

### (2) Paint

The type of paint used throughout the SuperPersianas range is Thermo-hardened, polyester polyurethane with polyamide. Characteristics and properties of the paint are detailed in section (4).

### (3) Paint Process

The SuperPersianas range is painted via a continuous coil-coating process, onto the pre-lacquered metal bands.

Coil-coating allows the base metal to pass through the whole production line at a controlled and constant speed. The following lists the pre-finishing stages, all completed on-line;

- Cleaning and preparation of the metal
- Chemical conversion
- Application of paint
- Evaporation of solvent
- Reticulation of resin
- Curing of resin

All pre-lacquered metal bands are quality controlled in accordance to the European Coil Coating Association, ECCA, ([www.eccacoil.com](http://www.eccacoil.com)) who are located in Brussels. Industrial Gradhermetic, S.A.E. is a member of ECCA.

#### **(4) Characteristics of Painted Metal Bands**

##### 4.1 Thickness of paint

Test: ECCA T1

Face A:	First antioxidant	5 to 7 microns
	Polyamide finish	21 to 23 microns
	Total thickness	26 to 30 microns
Face B:	Polyester finish	7 to 9 microns

##### 4.2 Brilliance

Test: ECCA T2

Polyamide finish	20 to 30% according to colors
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##### 4.3 Resistance to solvent

Test: ECCA T11

100 double passes with acetone or methyl acetone without film becoming unattached

##### 4.4 Resistance to impact

Test: ECCA T5

Aluminium thickness = 0.55mm. Impact to rupture = GOOD

4.5 Hardness of paint

Test: ECCA T4

Pencil H to 2H = GOOD

4.6 Elasticity

Test: ECCA T7

Thickness of aluminum 0.55mm : 1/2 T = GOOD

4.7 Adherence

Test: ECCA T6

Polyamide finish 100%

4.8 Resistance to saline mist

Test: ECCA T9

1,500 hours of exposure = VERY GOOD

(Less than 3 points of corrosion on sample and all smaller than 2mm)

4.9 Resistance to solidity of color

The resistance to solidity of color is controlled by exposure to the exterior in Florida, USA and Lisbon, Portugal within the EURODES program of ECCA and GRANOLLERS.

Comparatively there are accelerated tests made to resistance of color to UV rays, using the QUV Q-PANEL, a program which combines UV rays at 60% and humidity at 50°C according to rule ASTM-G-53-84.

The results of the variation of color according to tests of one exposure of five years, which is expressed as a variation of the coordinates of LAB color in  $\Delta E$ , is as follows; Light colors 0.8, Dark colors 2.0, Reddish colors 1.5, Bluish colors 2.0, Bronze colors 2.0, Wood colors 1.8 and Green colors 2.6