



ST POWDER COATINGS

presents

EXATHERMA AND SILICHROME POWDER COATINGS

High temperature applications



EXATHERMA AND SILICHROME POWDER COATINGS

Powder coatings with high thermal resistance are becoming more and more attractive for many end-users. The application field has a wide range: from heater components to exhaust manifolds, from fireplaces to any item subjected to very high temperature.

Exatherma Powder Coatings withstand very high temperatures, up to 500°C, and are therefore perfect for applications on wood burning stoves and pipes, that need to reach high temperatures and, at the same time, to be aesthetically attractive.

Based on a proper balance between a resin characterised by a high thermal resistance and a resin whose strong point is the chemical resistance, this series allows to reach high standards also in terms of corrosion resistance. The unique thermal resistance properties of Exatherma powder coating series arise from characteristics and mutual interactions of the coating components, and their own quality.

These coatings have been specifically formulated for protecting metallic components whose use requires the achievement of high temperatures – 250 to 350°C, with peaks up to 500°C. The coatings' polymerisation requires the items to stay at least at 200°C (item temperature) for 30 minutes. A higher curing temperature (230°C) can improve the mechanical properties of the coating film and its adhesion to the substrate. The adhesion properties of the Exatherma series are influenced by the thickness of the applied film, the kind of support and the type of pre-treatment. While applying the product, we recommend not exceeding a thickness of 40 microns.

Thermal stability test of a black Exatherma finish on Bonder panels of iron phosphate WH/60/0C		
350°C x 24 hours	ISO 7724-3	Delta E = <5
350°C x 48 hours	ISO 7724-3	Delta E = <7
350°C x 96 hours	ISO 7724-3	Delta E = <10
500°C x 1 hour	ISO 7724-3	Delta E = <10

The biggest limit of these powder coatings is the colour tone: generally they are made in black shades or, at most, in dark grey ones.

Silichrome Powder Coating line was developed in order to overcome this colour limitation: it is a coloured silicone based powder coatings' line for high temperature. Actually this line has eight different coloured tones, but in the next future, it could be extend to more ones.

The general and the thermal resistance characteristics of the Silichrome line are summarized below. According to the coating's curing cycle, the items should remain at 200°C at least (object's temperature) for 30 minutes. A higher curing temperature (230°C) can improve the mechanical properties of the coating film and its adhesion to the substrate.

Colour	Finishing	Curing cycle	Delta E 500°C x 1h	Delta E 350°C x 96h
Grass green	Light texture	200°C x 30'	8,42	5,24
Lemon yellow	Light texture	200°C x 30'	4,28	3,2
Ocher yellow	Light texture	200°C x 30'	3,17	1,21
Oxide red	Light texture	200°C x 30'	4,39	1,67
Cobalt blue	Light texture	200°C x 30'	17,39	11,84
Brick red	Light texture	200°C x 30'	4,82	3,24
Brown	Light texture	200°C x 30'	5,68	3,37
Pastel green	Light texture	200°C x 30'	4,86	3,05



Warning: the substrate adhesion is strongly influenced by film thickness, substrate type and pre-treatment type. These powder coatings should be applied with a thicknesses not exceeding **40 microns**.

Warning: Silichrome powder coatings cannot be over-coated because of weak intercoat adhesion.

ST Exhatherma and Silichrome powder coatings are available in these versions:

Finishes	Gloss	Colour
fine texture	matt	blue, grey, black, brown, white, red, green and yellow
available also in Metallic version and in Marble and Bronze effects		

To be used only in unclosed environments



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