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TMC Hallcrest Advanced Thermographic Technologies

Technical Product Information

Thermochromic Function: Irreversible
Product Name: **SC240**
Last Revision: 20/12/2018

Description:

SC240 is a solvent based paint showing a temperature related irreversible colour change. The temperature at which thermal paints change colour is related to the length of time exposed as well the actual temperature. A longer period of heating can initiate the same colour change that would occur after a short exposure at a higher temperature.

The initial colour is yellow and full colour change to a red - brown at 240ºC (temperatures related to 10 minutes heating).

The yellow colour has been seen as largely unchanged after 150 hours at 150ºC, but was seen to change after 150 hours at 200ºC in laboratory tests

Technical Details

Pigments	**Thermochromic**
Binders	**Acrylic and silicon**
Solids	**37% (VOC 660 g/l)**
Solvent	**PMA, Xylene**
Flash Point	**32ºC (Pensky Martin closed cup)**
Drying method	**Solvent evaporation. Touch dry typically 20-30 minutes depending on ventilation / coating thickness.**
Coverage	**Giving 30u dry film allow 12-13 sqm per litre of paint**

Application.

Paint may settle on storage and should be thoroughly stirred before use. Viscosity can be reduced by adding PMA solvent (CAS 108-65-6).

Before use the test surface should be thoroughly cleaned by removing all traces of grease, oil and loose material. Application direct to the metal surface is preferred method. If any kind of primer has previously been applied this should be carefully evaluated to ensure it is not affected by the thermal paint and in turn does not affect the colour change properties and adhesion of the thermal paint when heated. Zinc based primers have been used with thermal paint but compatibility should always be tested.

A single coat of paint should be applied to give an opaque covering. Typically a 30u coat will be suitable. The coating should be completely dry before heating – allow 24 hours.

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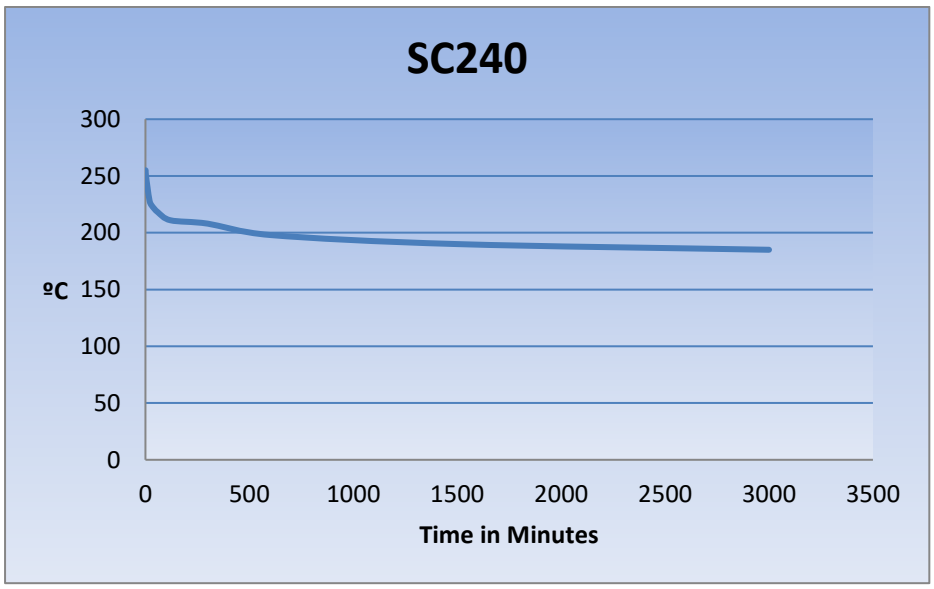
Colour Change.

Initial **240ºC**

The relationship between time and temperature measured on a butterfly test rig gave the following results. Different calibration procedures may give different temperatures but the time / temperature / colour change relationship will be the same.

Colour Change to White

Time in Minutes	1	2	10	20	30	60	120	300	600	1500	3000
Temperature ºC	255	251	240	228	224	218	211	208	198	190	185



Long term heating tests – paint held for 150 hours at indicated temperatures

INITIAL 150ºC 200 ºC 250 ºC 300 ºC