



P.O. Box 11946, Dublin 1. Tel: 01-822 6030 / 820 1816. Fax: 01-821 1853
Email: info@markaline.ie Website: www.markaline.ie

SURFACE MARKING CONTRACTORS
Roads • Car Parks • Tennis Courts • Airports • Sports Grounds • Factories • Schools • Hotels
Surface Retexturing • Floor Sealing • Cat's Eyes Installed • Line Removal

MATERIAL APPLICATION DATA

Paint coatings cannot be applied in all weather conditions; restrictions apply.

The specific restrictions are always listed in the product technical data sheets which are supplied by the material manufacturers.

It is incumbent on us as line marking contractors to ensure that we apply materials in accordance with the manufacturer's instructions. In doing this we are able to give the client a finished product which will perform as intended by the manufacturers.

We record the following details:

Surface preparation method used.

Paint type used and batch numbers used.

Applied wet-film thickness of paint used.

Environmental data relating to the following:

Air temperature & Surface temperature.

Relative Humidity.

Dew Point.

Concrete moisture content.

Air and surface temperature are self-explanatory. Paint should generally not be applied to a surface when the surface temperature is <10C. Air temperature & surface temperature should always >3C above the dew point. This ensures that fog / condensation are not likely to cause damage to paint while it is curing.



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Relative humidity is the amount of water vapour in the air expressed as a percentage. It tells us how much water vapour can be contained in the air before it condenses to form condensation / fog. A relative humidity value of 90% is generally considered to be the maximum allowable during paint application.

The dew point is the temperature at which water vapour in the air will condense to form condensation / fog. It is a function of the air temperature and the relative humidity and is variable. Paint should not be applied when the air or surface temperatures are <3C above the dew point.

Concrete moisture content records the amount of moisture within the concrete (not at the surface) which could have a bearing on paint curing. As a general rule paint should not be applied when the moisture reading exceeds 5% on the Concrete Moisture Encounter scale.

Markaline Ltd. use annually calibrated equipment to provide us with this information.

The CME Xpert concrete moisture encounter metre provides us with the moisture content.

A probe attachment is connected to the CME Xpert to provide us with air temperature, relative humidity and dew point.

The calibration certificates for this equipment are included in the appendices.

An Infra-Red spot thermometer is used to show the surface temperature.

A wet film thickness gauge is used to measure applied film thickness.

The following values are generally accepted for all paint coatings. Some products may differ slightly and the appropriate values will be provided in the product data sheets.



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Air Temperature

Should be above 10C and >3C above the dew point.

Surface Temperature

Should be above 10C and >3C above the dew point.

Relative Humidity

Should not be >90%.

Dew Point

Should be >3C *below* the recorded air and surface temperatures.

Concrete Moisture Content

Should be <5%.

Paint should only be applied to a clean dry surface.

It should not be applied if it is likely to rain.

It should not be applied when condensation is likely to occur.

We record all the relevant data during the course of our works.

This data is compiled and placed into Material Application Data Sheets for each day on which painting took place. These sheets are included in the appendices.



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The following is an email from our paint manufacturer which explains the importance of correct paint application:

From: Steve Turvey [mailto:steve@prontopaints.co.uk]
Sent: 15 January 2013 16:41
To: clinton@meonireland.com
Subject: Drying and Curing times

Clinton,

Further to your E-mail with regard to curing times in cold conditions. Certainly it is not good practice to apply the lining materials in cold conditions.

The atmospheric application conditions are stated in the Technical Data Sheets appertaining the respective products:-

"Do not apply or dry when either the air or surface temperature is below 5°C or when there is mist, fog, high humidity, snow, when rain is imminent, or when the surface to be painted is wet with condensation or when condensation may occur during the drying period.

The surface temperature must always be a minimum of 3°C above dew point. Preparation, painting and drying should never be undertaken when the air temperature falls below the minimum temperature for the coating".

To explain their relevance a little further.

Temperature

Below 5° centigrade the rate at which the solvent is released from the line marking material is such that there is potential for severe retardation of drying due to the solvent remaining within the line marking material.

Furthermore at below 5° centigrade the oxidation drying process is reduced therefore curing times are dramatically increased which will give rise for the possibility of the destruction of the coating due to the action of moisture, and is at a temperature which can render the material susceptible to destruction by icing or ground frost. (The line marking will appear dry but extremely friable and lacking in cohesion and



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adhesion).

Application or drying during times of precipitation.

High relative humidity, 80% Relative Humidity should be considered a maximum for application and drying. Moisture ingress into the film will adversely affect film properties, flaking friability, and adhesion.

Dew Point

The dew point temperature is the temperature at which the air can no longer "hold" all of the water vapour, which is mixed with it, and some of the water vapour must [condense](#) into liquid water. The dew point is always lower than (or equal to) the air temperature.)

Therefore substrate temperature must be at least 3 degrees above the dew point to avoid condensation.

Measurement of the above criteria

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Air temperature is measured with a suitable thermometer at 1- 2 metres above ground away from direct sunlight.

Relative humidity is measured with a hygrometer, or more accurately a whirling hygrometer in the area of application.

Relative humidity figures can be also obtained from area weather forecasts. However they may not be accurate enough for actual RH in the areas in which the line markings are to be applied.

Dew Point. There are nowadays many, "on line", calculators for determination of the Dew Point. However a contact thermometer will be required to determine substrate temperature and also the value for Relative Humidity is required.

The Dew point is also quoted on detailed weather forecasts, but again may not be accurate enough for local conditions.



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I hope this information explains things a little

I enclose data sheets relating to the line marking products:-

Regards

Steve Turvey

Technical Manager

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