Protective & Marine Coatings

HEAT-FLEX™ M505
HEAT RESISTING MATT FINISH

FORMERLY KNOWN AS LEIGHS M505

Revised 10/2016 Issue 23

PRODUCT INFORMATION

PRODUCT DESCRIPTION

An air drying silicone resin based coating.

RECOMMENDED USE

For application on to steel surfaces previously coated with Dox-Anode D5V2 or zinc or aluminium metal spray, where heat resistance is required.

Maximum Surface Temperatures:

	No discolouration	Slight discolouration
WHITE	250°C	350°C
BLACK	250°C	350°C
ALUMINIUM	600°C	See additional note below

Zinc silicate or zinc metal spray should not be used above 400°C, use aluminium metal spray

RECOMMENDED APPLICATION METHODS

Airless Spray
Conventional Spray
Brush

Recommended Cleanser: No 2

PRODUCT CHARACTERISTICS

Flash Point: 28°C

% Solids by Volume: 31 ± 2% (ASTM-D2697-91)

Colour Availability: White, Black, Aluminium

VOC
600 gms/litre determined practically in accordance with UK Regulations PG6/23.
599 gms/litre calculated from formulation to satisfy EC Solvent Emissions Directive.
505 gms/kilo content by weight from formulation, to satisfy EC Solvent Emissions Directive.

RECOMMENDED THICKNESS

Dry film thickness	Wet film thickness	Theoretical coverage
25 microns	81 microns	12.3 m²/ltr*

* This figure makes no allowance for surface profile, uneven application, overspray or losses in containers and equipment. Film thickness will vary depending on actual use and specification.

PRACTICAL APPLICATION RATES - MICRONS PER COAT

	Airless Spray	Conventional Spray	Brush
Dry	25*	25	25
Wet	81	81	81

** Maximum sag tolerance typically 129µm wet (40µm dry) by airless spray - see additional notes - Over-application.*

AVERAGE DRYING TIMES

	@ 15°C	@ 23°C	@ 35°C
To touch:	1½ hours	1 hours	45 minutes
To recoat:	6 hours	4 hours	3 hours
To handle:	24 hours	16 hours	12 hours

These figures are given as a guide only. Factors such as air movement and humidity must also be considered.

RECOMMENDED PRIMERS / TOPCOATS

Zinc Clad II EU (up to 400°C)

Topcoat not normally required, but indefinitely overcoatable with itself.

PACKAGE

A single component material

Pack Size: 20 litre and 5 litre units

Weight: 1.22 kg/litre (may vary with shade).

Shelf Life: 2 years from date of manufacture or 'Use By' date where specified.

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SURFACE PREPARATION

Ensure surfaces to be coated are clean, dry and free from all visible traces of surface contamination. Any contamination of metal spray will prevent the M505 film penetrating and sealing, leaving it sitting on top and prone to blowing off.

M505 is not designed to provide anticorrosive protection, but it is possible to apply the product in 2 coats directly onto blast cleaned steel to Sa2½ BS EN ISO 8501-1:2007 (average surface profile in the range of 50-75 microns) provided it is put into service quickly and kept at elevated temperatures. Steelwork coated with M505 should not be exposed to moisture prior to putting into service (see additional notes - Post Curing).

APPLICATION EQUIPMENT

Airless Spray

Nozzle Size:	0.33mm (13 thou)
Fan Angle:	60°
Operating Pressure:	140kg/cm² (2000 psi)

The airless spray details given above are intended as a guide only. Details such as fluid hose length and diameter, paint temperature and job shape and size all have an effect on the spray tip and operating pressure chosen. However, the operating pressure should be the lowest possible consistent with satisfactory atomisation. As conditions will vary from job to job, it is the applicators' responsibility to ensure that the equipment in use has been set up to give the best results. If in doubt Sherwin-Williams should be consulted.

Conventional Spray

Nozzle Size:	1.27mm (50 thou)
Atomising Pressure:	2.5kg/cm² (35 psi)
Fluid Pressure:	0.1kg/cm² (2 psi)

The details of atomising pressure, fluid pressure and nozzle size are given as a guide. It may be found that slight variations of pressure will provide optimum atomisation in some circumstances according to the set up in use. Atomising air pressure depends on the air cap in use and the fluid pressure depends on the length of line and direction of feed i.e. horizontal or vertical.

Brush
The material is suitable for brush application.

APPLICATION CONDITIONS AND OVERCOATING

In conditions of high relative humidity, ie 80-85% good ventilation conditions are essential. Substrate temperature shall be at least 3°C above the dew point and always above 0°C.

ADDITIONAL NOTES

Over-application
Over-application of M505 must be avoided. If the recommended film thickness is exceeded, adhesion may be reduced especially when exposed to high temperatures. Adhesion of M505 may be adversely affected if the applied film is subjected to a very rapid rise in temperature when first brought into high temperature service, due to thermal shock effects - post curing of the applied film is therefore recommended, see note below.

Post-Curing
If M505 is to be exposed to ambient weathering or moisture before service, it is required that the coating is post-cured by gradually elevating the temperature to a minimum of 205°C and maintaining this temperature for 2 hours.
Numerical values quoted for physical data may vary slightly from batch to batch.

USE AS A SEALER FOR THERMALLY SPRAYED METAL COATINGS:
M505 is suitable for use as a sealer for thermally sprayed aluminium (TSA) or zinc (TSZ). Application spreading rate will be dependant upon the porosity of the substrate. Recommendation as stated in NORSOK M501 Rev 6 should be followed:- "The sealer shall fill the metal pores. It should be applied until absorption is complete. There shall not be a measurable overlay of sealer on the metallic coating after application".
Post curing of M505 applied as a sealer for TSA or TSZ is not required.

HEALTH AND SAFETY

Consult Product Health and Safety Data Sheet for information on safe storage, handling and application of this product.

WARRANTY

Any person or company using the product without first making further enquiries as to the suitability of the product for the intended purpose does so at their own risk, and Sherwin-Williams can accept no liability for the performance of the product, or for any loss or damage arising out of such use.

The information detailed in this Data Sheet is liable to modification from time to time in the light of experience and of normal product development, and before using, customers are advised to check with Sherwin-Williams, quoting the reference number, to ensure that they possess the latest issue.