



New Guard Coatings Group

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This information is not exhaustive and it is the user's responsibility to ensure that this data sheet is the most current by contacting their local New Guard Coatings Group branch prior to using the coating/product.

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Protective & Marine Coatings

MACROPOXY™ C401 EPOXY UNDERCOAT/MIO

FORMERLY KNOWN AS EPIGRIP C401

Revised 08/2019 Issue 19

PRODUCT INFORMATION

PRODUCT DESCRIPTION

A high solids 2-pack epoxy, pigmented with micaceous iron oxide

RECOMMENDED USE

For use as an undercoat in conjunction with other Macropoxy high performance primers. Without topcoat, the material will quickly discolour and patchiness may be exaggerated due to film thickness variation, but will nonetheless provide corrosion protection as a single coat protective epoxy nor will intercoat adhesion be affected by any discolouration. See reverse side for further information on colour stability.

ENDORSEMENTS

Network Rail Item No's 7.2.2 and 7.1.7

RECOMMENDED APPLICATION METHODS

Airless Spray Brush
Conventional Spray Roller

Recommended Thinner: No 5 (for thinning)
No 9 or No 13 (for cleaning)

PRODUCT CHARACTERISTICS

Flash Point: Base 24°C Additive: 51°C

% Solids by Volume: 75 ± 3% (ASTM-D2697-91)

Pot Life: 3 hours at 15°C 2 hours at 23°C 1 hour at 35°C

Colour Availability: Light Grey MIO, Dark Grey MIO.

VOC

217 gms/litre determined practically in accordance with UK Regulations PG6/23
247 gms/litre calculated from formulation to satisfy EC Solvent Emissions Directive
134 gms/kilo content by weight from formulation, to satisfy EC Solvent Emissions Directive

TYPICAL THICKNESS

Dry film thickness	Wet film thickness	Theoretical coverage
100 microns	133 microns	7.5m ² /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	Roller
Dry	100*	100	75	65
Wet	133	133	100	87

* Maximum sag tolerance with overlap typically 533µm wet(400µm dry) by airless spray and 187µm wet (140µm dry) by brush.

AVERAGE DRYING TIMES

	@ 15°C	@ 23°C	@ 35°C
To touch:	2 hours	1½ hours	1 hour
To recoat:	6 hours	4 hours	3 hours
To handle:	16 hours	8 hours	5 hours

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

RECOMMENDED PRIMERS / TOPCOATS

Macropoxy C425V2
Macropoxy C400V3
Zinc Clad J984
Macropoxy C402V2

Where a high degree of gloss and colour retention is required, overcoat with Acrolon C137V2, Acrolon C237, Acrolon 1850 and Acrolon 7300 within 7 days at a minimum d.f.t. of 50 microns or in the case of Acrolon C750V2 overcoat within 4 days. These overcoating times refer to achievement of optimum adhesion at 23°C and will vary with temperature. For overcoating outside the above parameters and with alkyd systems, consult Sherwin-Williams for advice.

PACKAGE

A two component material supplied in separate containers to be mixed prior to use

Pack Size: 20 litre and 5 litre units when mixed

Mixing Ratio: 4 parts base to 1 part additive by volume

Weight: 1.89 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 surface contamination.

APPLICATION EQUIPMENT

Airless Spray

Nozzle Size:	0.38mm (15 thou)
Fan Angle:	40°
Operating Pressure:	155kg/cm ² (2200 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 :	2.8kg/cm ² (40 psi)
Fluid Pressure :	0.4kg/cm ² (6 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. For application by conventional spray, it may be necessary to thin the paint by the addition of up to 10% Cleanser Thinner No. 5. Where thinning has been carried out the wet film thickness must be adjusted accordingly.

N.B. Thinning will affect VOC compliance.

Brush and Roller: The material is suitable for brush and roller application.

APPLICATION CONDITIONS AND OVERCOATING

Epoxy paints should preferably be applied at temperatures in excess of 10°C. Relative humidity should not exceed 90% and in these conditions good ventilation is essential. Substrate temperature shall be at least 3°C above the dew point and always above 0°C. At application temperatures below 10°C, drying and curing times will be significantly extended, and spraying characteristics may be impaired. Application at ambient air temperatures below 5°C is not recommended. In order to achieve optimum water and chemical resistance, temperature needs to be maintained above 10°C during curing.

If it is desired to overcoat outside the times stated on the data sheet, please seek advice of Sherwin-Williams.

ADDITIONAL NOTES

Drying times, curing times and pot life should be considered as a guide only.

The curing reaction of epoxies commences immediately the two components are mixed, and since the reaction is dependent on temperature, the curing time and pot life will be approximately halved by a 10°C increase in temperature and doubled by a 10°C decrease in temperature.

Epoxy Coatings - Colour Stability:

Variable colour stability is a feature of epoxy materials which tend to yellow and darken with age whether used on internal or external areas. Therefore any areas touched-up and repaired with the same colour at a later date may be obvious due to this colour change.

When epoxy materials are exposed to ultra-violet light a surface chalking effect will develop. This phenomenon results in loss of gloss and a fine powder coating at the surface which may give rise to colour variation depending on the aspect of the steelwork. This effect in no way detracts from the performance of the system.

Epoxy Coatings - Tropical Use

Epoxy paints at the time of mixing should not exceed a temperature of 35°C. At this temperature the pot life will be approximately halved. Use of these products outside of the pot life may result in inferior adhesion properties even if the materials appear fit for application. Thinning the mixed product will not alleviate this problem. The maximum air and substrate temperature for application is 50°C providing conditions allow satisfactory application and film formation. If the air and substrate temperatures exceed 50°C and epoxy coatings are applied under these conditions, paint film defects such as dry spray, bubbling and pinholing etc. can occur within the coating. Numerical values quoted for physical data may vary slightly from batch to batch.

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.