

## Practical Application Guide for CMR Clearcoats

# CMR-413.W Antigrffiti Clearcoat

V-2021-001



### General Description:

**CMR-413.W** is a water based clearcoat (2-component), its basic is polyurethane. This clearcoat provides a very high brilliance, abundance and high brightness. A problem-free processing and a high standing fortune in very good levelling are characteristics of this product.

Due to its extremely high density of crosslinking this product provides a very good resistance against different kinds of chemicals. Therefore the surface is easy to clean. Apart from this the product offers an excellent UV protection.

### Pre-Treatment:

Steel:	dry, very well derusted, free of dust and grease, sandblast if possible according to SA 2,5
Aluminium:	dry, very well derusted, free of dust and grease, sandblast if possible according to SA 2,5
Zinc, high yield austenitic steel:	dry, very well derusted, free of dust and grease, sandblast if possible according to SA 2,5
GRP/Plastic:	abrade GRP / check other plastics for adhesion
Old paint layer:	abrade, check for compatibility and adhesion

### Preparation and Handling:

In order to obtain the optimal product properties it is important to strictly follow the processing instructions as detailed below.

Each protective lacquer always has to be stirred well before processing. Using 2 component systems the relevant quantities of lacquer and hardener have to be weighed separately in clean, cylindric containers and finally mixed up.

A mechanical propeller mixer is recommended for all mixing procedures (appr. 500 - 2000 rpm). Type and size of stirrer have to be adjusted to the quantity of lacquer and the format of the container.

The hardener has to be stirred slowly into the basic lacquer with a thin jet during the stirring process. If the hardener is added too fast or without stirring it may result in building up clots.

Apart from this please strictly comply with the mixing ratios of basic lacquer and hardener noted in the relevant data sheets.

The mixture of basic lacquer and hardener should be stirred for at least 5 min. The speed should be chosen that a homogenous mixture arises but mixing in too much air is avoided.

As soon as the hardener is completely and homogeneously dispersed, please filter the mixture with a suitable filter (125 µ minimal). Let the mixture rest for degassing for appr. 20 min before application.

The ready mixed protection lacquer can be processed at room temperature for at least 4 hours provided it is not specified otherwise in the data sheets of the relevant product.

Viscosity of some lacquer systems might increase during this time to this extent that the processing gets difficult. The lacquer coagulates and solidifies finally. High temperatures (e.g. in the summer) or high humidity can reduce the processing time.

Other systems will reach the end of processing time without an increase of their viscosity. In either case no system should be used after the recommended potlife, because the optimum product properties will no longer be reached.

## **Applications:**

The application of CMR protective lacquers can be performed with the usual methods. Automatically application by means of mayer bar liquid laminators or anilox rolls with pressure chamber knives is as well possible as by several manual applications e.g. rolling, spraying, wiping.

Pretreat the substrates before application with CMR lacquer systems adequately and clean them well in order to achieve an optimal and complete wetting of the substrate and permanent adhesion. Every residues (e.g. grease, silicone, oil ect.) on the substrate which may prevent an adhesion have to be removed.

Processing time is very much depending on the ambient temperature. Recommended temperature is between 18 °C and 30 °C. Relative humidity should not exceed 60%.

As with all CMR lacquer systems the value of the individual characteristics is determined by the sort of substrate (tarpaulin, foil and / or ink, e.g. UV, solvent or latex ink). Therefore we recommend to strictly conduct adequate tests in advance.

## **Screen Printing:**

**CMR-413.W** can be applied by screen printing application.

In most of these cases it is not necessary to adjust the viscosity of the mixture of basic lacquer and hardener.

## **Spray Gun Application:**

**CMR-413.W** can also be applied with an appropriate spray gun. Depending on the spray gun it may be necessary to dilute the lacquer. Dilution should be effected by adding 15% demineralized water (also under mechanical stirring).

Assure that the viscosity does not descend 20 sec (4 mm DIN flow cup). Choose the settings that way, that there is not too much spray mist.

Then fill in the sprayable lacquer by passing it through a filter directly into the gun.

**Spray gun:**

Viscosity:	18 - 22 s	DIN 4 mm
Dilution:	Wasser	
Nozzle:	1.2 - 1.6 mm	
Pressure:	3 - 4 bar	
Spaying:	1 - 2	

**Pressure tank/  
pump**

Viscosity:	18 - 22 s	DIN 4 mm
Dilution:	Wasser	
Nozzle:	0.8 - 1.4 mm	
Pressure:	3 - 4 bar	
Spaying:	1 - 2	

**Airless spraying:**

Viscosity:	20 - 25 s	DIN 4 mm
Dilution:	Wasser	
Nozzle:	0.23 - 0.33 mm	
Pressure:	120 - 180 bar	
Spaying:	1 - 2	

**Airmix - spraying:**

Viscosity:	20 - 25 s	DIN 4 mm
Dilution:	Wasser	
Nozzle:	0.23 - 0.33 mm	
Pressure:	90 - 150 bar	
Spaying:	1 - 2	

The application of the lacquer should be done rapidly in one step. Please avoid to overspray already dried areas.

On use of small substrates, spray the lacquer completely wet crosswise on the banner. Big substrates should be applied by moving back and forth with the spray gun. Appropriate breathing protection is recommended.

### **Drying-conditions:**

The drying of the CMR lacquers is physical, that means the level of temperature and the convection determine the time that is required for drying.

The ambient temperature, the humidity and the convection are decisive for the optimal drying of the lacquered surface. Deviations from the ideal value of temperature (18 - 25 °C) and humidity (40 - 60%) may have negative effects. It could come to a disturbance of leveling, degassing and/ or defoaming. The optimal glossiness may be decreased.

The coated surface will be dust-dry after 30 - 60 min at room temperature (20 - 25 °C). After 12 h at room temperature the lacquering will be touch-dry. The lacquered film or banner can be rolled up carefully now.

A forced drying between 60 - 80 °C shortens the process of drying significantly. In any case a sufficient air circulation will improve the drying conditions.

The cross-linking process is not actually finished with a dry lacquer surface. This chemical process will be finished completely after 7 - 10 days at room temperature.

Only then the sealing surface will reach its final properties, that means that the full mechanical robustness and chemical resistances (water, detergents, solvents, etc.) are given.

Physical characteristics and chemical consistencies will be reached after 7 - 10 days, when the interconnection process has been finished. Due to different chemical compositions of plastics, films and inks we recommend to have suitability tests of your own.

### **Cleaning of Equipment:**

Clean all rolls and all devices with lukewarm tap water immediately after use (dry lacquer is not water soluble anymore). A small amount of slightly alkaline detergents added to the water can enhance effectiveness. Dry lacquer residues must be removed mechanically or with the aid of suitable solvents.

### **Storage:**

When the original containers are kept closed tightly and are stored in a cool place (at average temperatures between 10 °C and 25 °C, without frost or sudden temperature changes) shelf life is 6 months.

Open containers should be used up as soon as possible. This is especially necessary for the hardener component. Because some hardeners react with humidity, its container must be closed tightly.

### **Safety:**

Informations on necessary personal protective equipment (gloves, protective goggles, etc.) as well as instructions regarding hygiene and waste disposal are contained in respective material safety data sheet. Therein you will also find advice for appropriate product waste disposal.

Please take notice of additional and specific information of technical data and processing instructions of the relevant system that may be available!

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