

PROTAVIC® EM 590 UV

A 29967-08-03 A

DEFINITION

Highly thixotropic UV resin for the manufacture of rings (DAM) into the DAM & FILL process.

PRODUCT DESCRIPTION

Appearance	pasty liquid	
Odour	faint	
Colour	grey	
Guaranteed specifications	Standards	Methods
Cone and plate Viscosity at 25°C (0.5 to 5 tr/min)	36500 ± 3500 mPa.s	NFT 51211
Thixotropic index between 0.5 and 5 tr/min	> 4	NFT 51211
Significant values (for guidance)		
Curing time under UV	< 60"	
Density	1.40 approx.	
% Active matter	100	
Other information		
Stability at 50°C	no	
Stability at 20°C	1 year	
Stability at 0°C	1 year	
Stability at -20°C	2 years	

APPLICATION PROPERTIES

The rheological behaviour of the **PROTAVIC® EM 590 UV** system is specially adapted for the DAM application.

After exposure under a UV radiation, the **PROTAVIC® EM 590 UV** system exhibits a good adhesion on most of the substrates, either plastic

substrates such as PVC and epoxy glass or mineral substrates such as glass and alumna.

After polymerisation the **PROTAVIC® EM 590 UV** system allows obtaining a good protection against exterior aggression.

USE OF THE PROTAVIC® EM 590 UV SYSTEM

1 - Application process and rheological properties

During handle it is recommended to keep the **PROTAVIC® EM 590 UV** away from the light in order to avoid the uncontrolled starting of the polymerisation.

The **PROTAVIC® EM 590 UV** system can be easily applied with a micro-dispenser.

The rheological behaviour of the **PROTAVIC® EM 590 UV** system allows obtaining geometrically stable dam after deposit (and before polymerisation). Thus, the thixotropic index is between 4.5 and 5.

The great advantage due to this special rheological behaviour is an excellent storage stability of the **PROTAVIC® EM 590 UV** system. Thus, it can be kept at ambient temperature without any problem of sedimentation and problem of rheological behaviour variation.

2 - UV polymerization

The **PROTAVIC® EM 590 UV** system is able to polymerize either under a UV radiation or under a visible radiation. Wavelengths can vary from 250 to 580 nm.

It is strongly recommended to use either a UV lamp or a UV oven with a good ventilation in order to avoid a too high polymerization temperature. Indeed, the optimum temperature is comprise between 20 to 45°C. Beyond, curing time could increase slightly.

Evolution of the polymerization after UV exposure

The **PROTAVIC® EM 590 UV** system continues to polymerise after the UV exposure (this phenomenon is called dark cure). Thus, it means that it is strongly recommended to wait for at least 24 hours after UV exposure before testing the cured **PROTAVIC® EM 590 UV** system, in order to let it to reach its optimum properties.

TYPICAL PROPERTIES OF THE POLYMERIZED SYSTEM

Next properties have been determined at the laboratory from a limited number of samples. These values are given for information. They are not a guarantee.

1 - Adhesion

Each glob top (diameter = 3 mm) is polymerised 3 seconds under a UV spot lamp (Electrolite ELC 7000), the power is 4,15 W/cm², the corresponding energy is 12,45 J/cm². The measurement of the adhesion has been realised with the micro-shear test 24 hours after UV exposure.

Substrates	Rooting up force in daN/cm ²
Glass	45
Epoxy glass	> 76
Alumna	> 76
PVC	> 76

2 - Physical properties

Shore D hardness	About 75
Tensile strength	About 400 kg/cm ²
Elongation at break	About 4%
Glass transition temperature	About 65°C
Coefficient of thermal expansion at 20°C	About 50 ppm
Coefficient of thermal expansion at 80°C	About 150 ppm
Volume shrinkage during the polymerization	About 1,80 %

STORAGE

It is strongly recommended to keep away from the light the **PROTAVIC® EM 590 UV** system. Furthermore, it is recommended to store the **PROTAVIC® EM 590 UV** system at temperature below 30°C.

The **PROTAVIC® EM 590 UV** system must be kept away from oxidative materials. The storage stability at 20°C of the **PROTAVIC® EM 590 UV** system is one year.

PRECAUTIONS IN USE

Refer to the enclosed safety data sheet.

PACKAGING

PROTAVIC® EM 590 UV is delivered in 1 kg boxes.

The information contained in this data sheet corresponds to the present state of our knowledge ; it is intended for your guidance but we are not bound by it since we are not in a position to exercise control over the manner in which our products are used. Moreover, the attention of the user is drawn to the risks that could possibly occur should a product be used for an application other than that for which it is intended.