



UNI EN ISO 9001:2008  
Quality System Certified Company



TECHNICAL DATA SHEET  
PRODUCT

**KKW  
EXTRA FLU'**

**TRANSPARENT POLYESTER ADHESIVE  
LOW VISCOSITY and HIGH PENETRATION  
for marble, granite, natural stone**

**DUAL- COMPONENT POLYESTER RESIN BASED ADHESIVE FOR MARBLE, STONE, GRANITE**

Polyester resins feature high-reactivity, rapid hardening, no withdrawal from substrate materials during reticulation, and a modest shrinkage during hardening (1 to 5%); they are chemically inert and offer extended durability.

This adhesive is the culmination of GENERAL® Chemical Engineering's extensive knowledge and experience in the use of polyester resins with marble and natural stone.

KKW EXTRA FLU' is one of the highest quality products available on the market today because are chosen only very high quality rough materials and are selected only suppliers who confirm strict criteria.

This process of quality control assures the consistency of the physical and mechanical properties of the product. Continuous research and innovation enable GENERAL® Chemical Engineering to respond to the needs of the market with a wide range of products.

KKW EXTRA FLU' is formulated to obtain the lowest viscosity, so the highest fluidity, compatible with a pure unsaturated polyester resin; this favours a high penetration capacity even into stones having low porosity or/and micro-cracks. A strengthening effect in depth is obtained and the adhesion between stone surfaces, even if micro-porous, is total and compact. Normally the adhesive thickness is not over 2 mm. and the junctions between marbles, granites and stones in general are more "invisible" when compared to the use of other polyester adhesives.

In consequence of above KKW EXTRA FLU' is not suitable when the stones have macro-porosities or when gluing between rugged or uneven stones must be effected.

**TECHNICAL DATA**

PHYSICAL STATE

**liquid fluid**

COLOR

**transparent**

DENSITY at 25°C (77°F)

**1.13 gr/cm<sup>3</sup>**

VISCOSITY at 23°C (73.4°F)

**1500 - 1800 mPas**

STABILITY

**6 months** in well closed original container, stored in dray place at temperature of 15-25°C (59-77°F)

**PREPARATION**

For best results mix 2% to 3% of the catalyst (dibenzoyl peroxide) with the adhesive; the paste formula make easy to measure. A homogeneous mixing will facilitate uniform catalysis. The catalysis rate is effected by temperature and by the proportion/quantity of catalyst. An excess of hardener/catalyst will increase the hardening speed, but weakens the adhesive seal. The surfaces to be treated/glued must be clean and dry; porosity and light roughness of the surface favour the best adhesion.

**CHARACTERISTICS of the MIXING and CURED MASS**

MIXING TIME	<b>1 minute</b>
APPLICATION TIME (Pot Life)	<b>1 - 3 minutes</b>
GEL TIME from 25 to 35°C (77 to 95°F) [start]	<b>7 minutes</b>
from 25°C (77°F) to max. temperature	<b>9 minutes</b>
SHRINKAGE COEFFICIENT	<b>2.5%</b>
EXOTHERMIC PEAK	<b>150°C (302°F)</b>
DISTORTION TEMPERATURE (HDT)	<b>&gt;80°C (&gt;176°F)</b>
TENSILE STRENGTH (ASTM D638)	<b>60 mPas</b>
TENSILE ELASTICITY MODULUS	<b>3200 mPas</b>
BREAKING ELONGATION	<b>2.3%</b>
BENDING STRENGTH (ASTM D790)	<b>92 mPas</b>
BENDING ELASTICITY MODULUS	<b>3400 mPas</b>



## CAUTION

EXTRA FLU' adhesive is suitable for gluing marble, stone and granite. It is **not** suitable for other materials (steel, wood, glass, etc). In outdoor applications, the adhesive capacity of polyester glues can vary when subjected to abrupt changes in temperature; under these conditions they can even breakdown. In such cases, it is advisable to brace the glued items with fixed pins or other suitable supports. It is also advisable to use pins when the adhesive is subject to great stresses (i.e. counter-hung ceilings, wall coverings, wall claddings etc.).

## COLOR

The colours of the catalyzed adhesive can vary for many different reasons:

- a) AMOUNT OF CATALYST USED, higher or lower catalysis rate;
- b) ULTRAVIOLET LIGHT EXPOSURE, working indoors or outdoors;
- c) DEGREE OF AGING OF THE WORK.

It proves difficult to predict how the final quality of the work will be affected when the user colours the adhesive with his own material, which is beyond our control.

However, whenever the colour of the adhesive is important, a preliminary test must be made for customer approval using a sample, prepared *ad hoc*, because the aesthetic impression is highly subjective. Never mix our product with other similar, competitive products. Always catalyze the product exclusively with the catalyst provided and not with other catalysts available on the market. When the adhesive is colour marked as TRAVERTINO, VERONA RED, ASIAGO PINK, SERENA STONE GREY, BASALTINA, BOTTICINO, etc. these terms indicate the overall tone. Nevertheless, the customer must check the adhesive's colour compatibility with a given material.

## GRIP

The gluing capacity and grip of a polyester adhesive can vary for many different reasons. Therefore we suggest you:

- a) always keep the package well sealed;
- b) apply the adhesive on a surface which is free of dust, dry, not subject to sources of moisture or heat, not located above, over-heated surfaces (use of flames and high temperatures) or subject to any significant mechanical stress.

Under these circumstances, contact the manufacturer to examine the case in question.

Never mix EXTRA FLU' adhesive with any other similar product.

## STUCCO WORK

Polyester adhesives are widely used in stucco work: that is, the filling of cavities or openings in marble, stone and granite flooring. When stuccoing a surface:

- a) never stucco gaps more than 1-1.5 cm wide;
- b) always make certain that the surface to be worked is clean, free of dust and well dried.

## IMPORTANT:

Given that every material absorbs differently and has a different mineralogical composition, before stuccoing a floor, make a preliminary, on-site test and wait 24 hours after sanding down the adhesive and possibly polish the sample. This sample can be shown to the customer for approval. If the sample presents any marks or halos around the stuccoing, do not proceed with the work but determine, together with the manufacturer, the most suitable type of stucco for the job.

## LIMITATION OF LIABILITY

The data provided derive from published information or from our own laboratory tests. The information provided here must be considered as a guideline and not as any form of performance guarantee. Since the application of the product is beyond the control of the manufacturer or supplier, our liability for defective products, when verified, is limited to refund of the purchase price.

**A PRELIMINARY TEST IN A SMALL, HIDDEN, AREA IS RECOMMENDED BEFORE THE APPLICATION**