

RAKOLLIT 280 + RAKOLLIT-Härter WS 1 I

Emulsion Polymer Isocyanate (EPI) Adhesive for water-resistant bonds

Properties

RAKOLLIT 280 + RAKOLLIT-Härter WS 1 I is a high performance two-component adhesive based on an aqueous synthetic resin dispersion with an isocyanate compound as crosslinker.

RAKOLLIT 280 + RAKOLLIT-Härter WS 1 I adheres very well to wood and wood materials as well as on various plastics. Because of the crosslinking process, RAKOLLIT 280 + RAKOLLIT-Härter WS 1 I forms joints of very high long-term stability which are water-resistant.

Performance Standards / Certifications

- DN EN 204 – D 4
- WATT 91
- KOMO
- ASTM D 5751 Wet Use
- ANSI/HPVA 1994 Type I and Type II
- JIS K 6806
- JAS – Glued Laminated Timber Type I
- EN 12765 – Classification of thermosetting wood adhesives for non-structural

Application

- Bonding joints in boards and block gluing of hardwoods, including oak, where particularly high tension can arise in the joint and high demands are placed on water resistance
- Gluing of windows and doors
- Surface gluing of veneers, gluing of plywood
- Doubling-up of sheet materials

- To be used for exterior use if the glue line is not directly exposed the open weather.
- Gluing on difficult wood species (e. g. Meranti, teak, mahogany)

Instructions for use

RAKOLLIT 280 can be used only when mixed with RAKOLLIT-Härter WS 1 I. The setting process is a physical process in the first phase, by which the dispersion water from the adhesive migrates into the material which is absorbent at least on one side.

For this reason, the open time and the clamping time required will depend on external influences such as the amount of adhesive applied, the absorbency of the workpieces and the climatic conditions.

Good results will be achieved if the following conditions are observed:

Room, material and adhesive temperature	18 ... 20 °C
Moisture content of wood	8 ... 14 %
Relative humidity	50 ... 70 %
Amount of adhesive to apply	130 ... 160 g/m ²

If high joint tension is to be expected, we recommend double-sided application.

Closed Assembly time:
 one side 150 g/m² 9 ... 11 min
 both sides, 150 g/m² each side 14 ... 17 min

Pot life approx. 1,5 h
 (at + 20 °C, proportion of hardener 14 %)

After approx. 1,5 hours pot time, the mixed liquid glue begins to foam. As opposed to other systems, it is possible to continue to use the glue by stirring the mix to remove gas bubbles formed during the isocyanate reaction and then adding another 1,5 ... 2 % RAKOLLIT-Härter WS 1 I to the mix.

Press pressure 0,5 ... 1,5 N/mm²

Minimum pressing times applied to one side:
 - softwood approx. 20 min
 - hardwood (dep. on the wood): 40 ... 45 min
 applied to both sides:
 - softwood more than 30 min
 - hardwood (dep. on the wood): at least 1 h

Longer clamping times result in any case in higher joint strength and therefore better resistance when subjected to creep and moisture.

Lamination of wooden window profiles:
 In accordance with the guidelines of the i.f.t., Rosenheim "Laminated profiles for wooden window", the moisture contents of the wood must lie in the range 13 ± 2 %.

Mixing ratio

Thoroughly mix
 100 parts by weight RAKOLLIT 280 with
 14 parts by weight RAKOLLIT-Härter WS 1 I until the mixture achieves a uniform beige colour. Mixing is best performed using motor-driven agitating vanes or cages.

Wood preparation

All parts should mate well and be dust and grease free. The woods should be as near as possible identical to avoid tension developing in the joint later. In contrast to normal PVA glues, woods with a moisture content of up to 15 % can be processed. This naturally results in longer setting times. In any case, the moisture content of the wood at the time of processing should correspond with that of the intended use to avoid cracks developing in the wood or in the proximity of the joint.

Glue spread

Spread RAKOLLIT 280 + RAKOLLIT-Härter

WS 1 I using spreading machines, manual rollers or toothed trowels.

Pressing

The items to be bonded must be placed together before the end of the closed assembly time and pressed for as long as is needed to achieve adequate strength.

The parts should then be put into temporary storage to allow the glue to set fully. Good mechanical strength is achieved in a relatively short time.

The reaction between RAKOLLIT 280 and RAKOLLIT-Härter WS 1 I is of longer duration, tests for water resistance should therefore be carried out only after a storage period of 7 days after gluing.

Wood discolouration

RAKOLLIT 280 + RAKOLLIT-Härter WS 1 I causes no discolouration of the wood. The use of bleaching agents for surface treatment can bring discolouration of the joints.

Cleaning

Tools can be cleaned with water as long as the glue has not yet set.

Chemical-technical data

RAKOLLIT 280 + RAKOLLIT Härter WS 1 I

	RAKOLLIT 280	RAKOLLIT Härter WS 1 I	Glue mix
Basis	Dispersion	Isocyanate compound	
Colour	white	dark brown	beige
Viscosity	approx. 10.000 mPa.s	approx. 200 mPa.s	approx. 13.000 mPa.s
(Brookfield HB Spindle 3, 20 rpm measured at 20 °C on the day of production)			
White point	0 °C	- - -	- - -
pH value	approx. 7,5	- - -	approx. 7,5

Labelling

RAKOLLIT 280 is not subject to marking regulations pursuant to the Dangerous Goods Act in its present version.
RAKOLLIT-Härter WS 1 I is labelled Xn – harmful.

Hazard warning

RAKOLLIT-Härter WS 1 I contains 4,4 diphenylmethane diisocyanate and is classified as harmful in accordance with the Dangerous Goods Act in its present version.

Safety advice

Please observe the information given in our EC Safety Data Sheets.

Technical stage of development: January 2006

The data in former leaflets which differ from this version are no longer valid.

Storage

RAKOLLIT 280 and RAKOLLIT-Härter WS 1 I in tightly closed original containers at an even temperature. Storage conditions in accordance with VbF must be observed for RAKOLLIT-Härter WS 1 I! The shelf life of RAKOLLIT 280 and RAKOLLIT Härter WS 1 is 6 months.



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OBSERVATIONS

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