

GENERAL INFORMATION

EX2-2 system is a two component very good reactive system used for Impregnation of the liners for the CIPP pipe repair method.

Product description:

- The EX2-2 is a solvent free, pigmented, two component good reactive epoxy system with high mechanical properties and high TG when cured at 50 deg C. It also cures without heat support,
- very good resistant system against acids, bases as well as oil derivate,
- very good bonding ability to the pipes made of concrete and meta,
- Colour hardener: Light orange, resin: blue
- shelf life: two years at least,
- storage conditions: dry place, preferably in originaly sealed containers at temperatures between 5 and 25 deg C.

The system does react until min environmental temperature of 7 deg C without heat support.

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COMPONENT	VISCOSITY AT 22 DEG C mPas	DENSITY AT 22 DEG C g/cm3
COMPONENT A	800-1100	1,13
COMPONENT B	900-1100	1,00
COMPONENT A+B	1000-1200	1,10
MIX RATIO(per weight)	4:1 (100:25)	

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PROCESSING TIME AND CURE SCHEDULE

Processing time for a system mix at room temperature (20-22 deg C)

Material temperature	10 deg C	15 deg C	20 deg C
PROCESSING TIME (min) for the 125g Specimen to warm up to 40 deg C	80-90	60-75	55-65

Processing time for an impregnated liner

Air temperature	10 deg C	15 deg C	20 deg C
PROCESSING TIME (hour)	approx 4	approx 3-3,5	approx 2-2,5

Important!!! Must mix according to the mix ratio.

Must completely empty both cans to get the proper mix ratio.

Must mix with a slowly rotating blender to achieve a homogenous texture.

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PROCESSING TIME AND CURE SCHEDULE

Cure schedule time for a system – ambient curing

Environment temperature	10 deg C	15 deg C	20 deg C
Cure time – time recommended for the pressure drop	36 Hour	24 Hour	18 Hour

Cure schedule time for a system – warm curing

Temperature	40 deg C	50 deg C	60 deg C
Cure time – time recommended	6 Hour	3 Hour	1,5 Hour

Important!!!

MUST UNDERSTAND: TOTAL CURE TIME CONSISTS OF:

WARMING UP PROCESS

CURING PROCESS

COLLING DOWN PROCESS

The system does react until min environmental temperature of 5 deg C without heat support.

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PROCESSING TIME AND CURE SCHEDULE

Cure schedule time for a system – **warming up process**

Liner size	DN 100	DN 125	DN 150	DN 200
Warm up time recommended for the liner length from 10m-50m	6-25 min	10-40min	12-60min	20-90 min

Cure schedule time for a system – **Cool down process**

Temperature	DN 100	DN 125	DN 150	DN 200
Cool down time recommended for a liner length from 10m-50m	15-30 min	20-40 min	30-60 min	40-80 min

Important!!!

- WHEN WARM CURING MUST RELIEVE THE CALIBRATION PRESSURE FIRST WHEN COMPOSITE IS COOLED DOWN TO AT LEAST 20 DEG C,
- DATA GIVEN ARE FOR THE WARM WATER CURING- 50 DEG C. IF HIGHER TEMPERATURE IS IMPLIED WE DO RECOMMEND TO EXTEND THE COOL DOWN TIME.
- WHEN AIR IMPLIED AS COOL DOWN MEDIA THAN EXTEND COOL DOWN TIME UNTIL REACH 20 DEG C IN THE COMPOSITE TO PREVENT THE LINER TO COLLAPSE.

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Technical characteristics

System when cured at 50 deg C for 3 hours results in the following characteristics;

Property	Norm	Unit	Value
Flexural Strength	EN ISO 11296-4 EN ISO 178	MPa	min 59
Flexural Modulus	EN ISO 11296-4 EN ISO 178	MPa	min 2900
Elongation at brake	EN ISO 11296-4 EN ISO 178	%	min 2,1
TG	EN ISO 11296-4	deg C	98

CHEMICAL RESISTANCE GENERALLY

Excellent resistant to low to medium concentration bases and acids as well as to oil derivatives.