

EX1-2

GENERAL INFORMATION

EX1-2 is a two component very good reactive system used for Impregnation of the liners for the CIPP pipe repair method.

Product description:

- The EX1-2 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 derivatives,
- 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 5 deg C without heat support.

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COMPONENT	VISCOSITY AT 22 DEG C mPas	DENSITY AT 22 DEG C g/cm ³
COMPONENT A	800-1100	1,13
COMPONENT B	800-1200	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	40-45	30-35	25-30

Processing time for an impregnated liner

Air temperature	10 deg C	15 deg C	20 deg C
PROCESSING TIME (min)	approx 75	approx 60	approx 50

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	20 Hour	12 Hour	8 Hour

Cure schedule time for a system – warm curing

Temperature	40 deg C	50 deg C	60 deg C
Cure time – time recommended	200 min	100 min	70 min

Important!!!

MUST UNDERSTAND: TOTAL CURE TIME CONSISTS OF:

WARMING UP PROCESS

CURING PROCESS

COLLING DOWN PROCESS

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PROCESING 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 RELISE 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 PREVEN THE LINER TO COLLAPSE.

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Technical characteristics

System when cured at 50 deg C for 100min 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.