DE NEEF® Gelacryl Superflex AR

Methacrylic Acrylate Copolymer

Product Description

Superflex AR is a system composed of Superflex methacrylic acrylate copolymer resin and DE NEEF® Reinforcing Agent. This system combines the low viscosity of traditional acrylate resins with 300% elongation, excellent adhesion and reduced shrinkage. Its low viscosity makes it ideal for injection into pores, capillaries, hairline cracks, and honeycombed concrete. Superflex AR's low surface tension also allow for penetration into even clayey- silt soils, making it an excellent choice for curtain wall grouting. It may also be used in combination with DE NEEF® Reinforcement Foam in the Superflex Joint System. (Formally called GASFAR Joint System)

Product Advantages

- Low viscosity – penetrates into fine cracks
- Reinforcing agent provides reduced shrinkage
- NSF/ANSI 61 Certified for use with potable water
- Non corrosive and non toxic
- Insoluble in water and petroleum based solvents once cured.
- Resistant to most acids and alkalis
- Excellent thermal resistance 40ºF - 160ºF
- Reaction time can be controlled

Product Applications

Superflex is designed for use in any below ground structure or any water retaining structure, where there is permanent moisture. Especially well suited for:

- Hairline & spider cracks in concrete
- Re-injection of failed polyurethane grout
- Expansion & moving joints
- Honeycombed concrete
- Curtain grouting
- Potable water applications

Properties

SUPERFLEX	
Appearance	Blue Green
Specific Gravity	1.17
Viscosity 77ºF	15-20 cps

Mixed Viscosity 77ºF	10 cps

DE NEEF® REINFORCING AGENT	
Appearance	Milky white liquid
Specific Gravity	0.98-1.04
Viscosity	500 cps at 77°F
Freezing Point	32°F
Solubility in water at 68°F	Unlimited
Corrosiveness	Non-corrosive
Toxicity	Non-Toxic
pH	7.5-8.5

SUPERFLEX AR SYSTEM CURED	
Elongation at Break	300% (ASTM 638)
Post Reaction Expansion	56% at 90% Humidity
Permeability at 29 psi	3.53 x 10^{-9} cm/s

Note: The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result.

Mix Ratios

REACTIVITY T° (F)	SUPERFLEX (GAL)	TE300 (OZ)	% TE300	WATER (GAL)	REINFORCING AGENT (GAL)	SP200 (OZ)	32% SP200	GEL TIME (MIN)
41	5.6	32	4.5	2.8	2.8	40	5.4	1
						24	3.2	2
						16	2.1	3
50	5.6	22	3.1	2.8	2.8	32	4.3	1
						16	2.1	2
						8	1.1	3
59	5.6	18	2.6	2.8	2.8	24	3.2	1
						16	2.1	2
						8	1.1	3
68	5.6	14	1.9	2.8	2.8	24	3.2	1
						16	2.1	2
						8	1.1	3
77	5.6	18	2.5	2.8	2.8	18	2.5	0.5
		14	1.0			14	2.0	1
		10	1.5			10	1.5	3

Superflex AR is designed for use below ground or where there is permanent moisture. Gel time varies depending on the amount of acceleration and temperature. See chart above for time and temperature information. For concentrations above 3%, use TE-300 at 3% and increase SP-200 only. Adding excessive amounts of TE-300 can adversely affect the quality of the reacted gel. (All results above are based on 77ºF. Site trials should always be carried out to determine the gel time required.)

Packaging & Handling

Superflex AR System:

Gelacryl Superflex Kit

- 5.6 gallons grout (55/lb jerrican)
- 2 lbs. jar of SP-200 initiator*
- 28 oz. can of TE-300 activator. **

DE NEEF® Reinforcing Agent, 5 gal pail

Superflex Joint System:

Gelacryl Superflex Kit

- 5.6 gallons grout (55/lb jerrican)
- 2 lbs. jar of SP-200 initiator*
- 28 oz. can of TE-300 activator. **

DE NEEF® Reinforcing Agent, 5 gal pail

DE NEEF® Reinforcement Foam INJECTO®Grout Tube

*Shipped: Oxidizer (shipped as haz-mat)

**Shelf life for TE-300 activator is 6 months.

All components should be stored in a dry place at temperatures between 40°F and 80°F. Do not thin with solvents.

Warning! Do not let SP-200 and TE-300 come into contact with each other prior to field mixing. A poisonous gas may result! STORE COMPONENTS SEPARATELY FROM EACH OTHER

Installation Guidelines

Mixing:

"A" Side: In a clean pail pour desired amount of Superflex resin and add TE-300 in accordance with the Mix Ratio table to achieve the desired set time. Mix well.

"B" Side: In a separate clean pail, pour clean water of equal quantity to the amount of 1/2 the Superflex resin previously poured. Add SP-200 in accordance with Mix Ratio Table and mix well. Add an equal amount of DE NEEF® Reinforcing Agent to the water and SP- 200 so the total volume equals that of the Superflex resin on the "A" side and mix well.

Pumping:

Gelacryl Superflex AR System is pumped at 1:1 through a pump with all stainless steel wetted components. Always begin at the lowest pressure setting available on the pump and increase to the minimum pressure required to get desired resin flow.

Crack Injection:

For concrete crack injection applications consult DE NEEF® Standard Crack Injection Procedures. Due to the ultra low viscosity of the Superflex AR resin, larger cracks may require application of a surface seal such as hydraulic cement or epoxy.

Curtain Wall grouting:

For curtain grouting applications consult DE NEEF® Standard Curtain Grouting Procedures. Adjust set time to allow for permeation through soils surrounding the structure.

Confirm product performance in specific chemical environment prior to use.

Installation Instructions

Superflex Joint System:

1. For joints less than 1", remove joint fillers and clean the faces of joint to a minimum of 3" depth. For joints wider than 1", clean to a minimum depth of 3 times the width of the joint.
2. Install a urethane soaked layer of oil-free Oakum or open cell backer rod in bottom of joint.
3. Place reticulated foam on top of backer rod.
4. Install INJECTO® Tube on top of reticulated foam and top with another layer of reticulated foam. For joints less than ¾" use SIS tube.
5. Injection Ports for Injecto Tube must be placed vertically and left exposed.
6. If formwork is not used, place a layer of polyurethane soaked open cell foam backer rod or polyurethane soaked oakum to create a seal over the reticulated foam. (rod should be 1½ - 2 times joint size) Be sure to leave an air space between the reinforcing foam and the backer rod.
   - Cut rod to 20"-30" lengths. For rods over 1" in diameter, cut a split lengthwise down the rod its full- length to insure proper grout absorption.
   - Saturate rod with water.
   - Wring out rod, leaving moist.
   - After rod has been wrung out, place rod in Sealfoam PURe by DE NEEF® and allow resin to penetrate all pores of rod.
   - Spray joint with water.
   - Place the soaked backer rod or oakum in the joint.
   - Confine the expansion of the grout by placing a board in the top of the joint and weighing down or wedging to prevent
7. After the grout has fully cured, proceed to the injection process.
8. Inject a small amount of water through the Injecto Tube to prime for grout injection.
9. Inject Superflex or Superflex AR Grout through tube. When grout appears at downstream tube outlet, crimp end of outlet and continue grout injection. As pump pressure increases 400-500 psi, move to next injection port and continue process. Take care not to lift the previously installed saturated oakum / backer rod layer.
10. Repeat steps 6 until all of tube is injected.
11. Clean the faces of the joint to allow for proper adhesion of the polysulfide sealant. Remove any excess grout that protrudes into the area to receive sealant from the saturated oakum / backer rod layer.
12. Apply a bond breaker tape to the top of the saturated oakum / backer rod layer.
13. Apply polysulfide sealant to the faces of the joint per manufacturer's published instructions.
14. Apply DeneSeal Polysulfide Joint Sealant per manufacturer's published instructions.

Health and Safety

WARNING:

TE-300 and SP-200 are incompatible with aluminum. Do not use aluminum equipment.

In the event of an EMERGENCY call:

CHEMTREC 800-424-9300.

Always use protective clothing, gloves and goggles consistent with OSHA regulations during use. Avoid eye and skin contact. Do not ingest. Refer to Safety Data Sheet for detailed safety precautions.

Note: If there is insufficient depth to allow for a saturated oakum / backer rod layer, this layer may be omitted. However, care must be used in the injection phase to prevent lifting of the reinforcing foam.

Limitations

Low temperatures will significantly elongate set times. For best results, bring product to a minimum temperature 50°F for a minimum period of 24 hours prior to use. If site temperatures are extremely low, material should be held in a warm area before and during use to maintain the products temperature. Allow no water into open containers. Do not apply when ice is present. DO NOT EXCEED 90ºF WHEN WARMING.

CAUTION – pH NOTICES

- Water used to activate grouts (“B” side of mix) must be in a range of pH 5.5 – 7 for optimum grout quality.
- Varying water pH will cause the reaction times to change.
- Groundwater should be in the range of pH 3-12.

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ca.gcpat.com/solutions/products/de-neef-waterproofing-injection-solutions/de-neef-gelacryl-superflex-ar