

# Epoxy Adhesive #100

## General and Highway Specification

### Product Description:

Florok Epoxy Adhesive is available in a wide range of 100% solids Epoxy Resins and Activator formulas. Supplied in properly proportioned units to be intermixed just prior to use.



### **Bonds New Concrete to Old**

They are primarily designed as a bonding agent to adhere new concrete to old surfaces; to rebond or weld structural units together; or as a matrix to be mixed with sand for patching, filling, grouting and general adhesive work.

When fully cured, they provide a very tough, durable coating of high adhesive, cohesive, tensile and compressive strength. These products are resistant to water, moisture and most chemicals.

### Basic Uses:

- Bonds new concrete or mortar to old surfaces.
- Interface adhesive to repair or bond structural units together.
- As a matrix, it may be mixed with sand and aggregates for use as a topping or epoxy mortar for surface repairs.

- Grouts bolts, machinery and stan- chions.
- Splices prestressed concrete piles, grouts beam tendons and connec- tions.
- Seals cracks and voids; or as a high pressure injection grout.

### Advantages:

- Use on any structurally sound sur- face as concrete, masonry, metal, wood or ceramic tile.
- Old Surface does not have to be chipped, roughened or scarified.
- Bonding strength many times greater than best grade of con- crete.
- Non-Shrink. No interface stress.
- Use above or below grade.
- Waterproof
- Re-bonds delaminated floor top- ping.
- Re-glues laminated wood beams.

### Formulations:

- MV Grade: Medium viscosity for general purpose work.
- LV Grade: Light viscosity for hair-line cracks and thin glue line.
- HV Grade: Heavy viscosity gel for larger cracks and rougher surfaces.



### **Splices prestressed concrete piles and beams**

### Limitations:

If cause of failure is due to structural fault, over loading or movement consult structural engineer. Refer to technical data chart to determine formula best suited to the job.

### Surface Preparation

The surface to which **Florok Epoxy Adhesive** is to be applied must be clean and structurally sound. Remove unsound material, dirt, oil or foreign matter by sand blasting, scarifying, acid etching, neutralizing and flushing with clean water, as may be required. Surface may be damp at time of application, but not wet.

### Mixing

**Florok Epoxy Adhesive** is supplied as a two part system; RESIN A and ACTIVA- TOR B, properly proportioned as a complete unit. If less than a full unit is to be used, follow mixing instructions on label. Thoroughly mix A and B using a slow speed electric drill with a 3" by 3" square mixing paddle. Mix only sufficient material that can be used within its pot life limitations, (6 minutes to 2 hours), depending on grade used and ambient temperature. (See chart on next page.)



<b>Properties:</b> <b>Florok Epoxy Adhesive</b>	<b>L-V</b> <b>Light Viscosity</b>	<b>M-V</b> <b>Medium Viscosity</b>	<b>H-V</b> <b>Heavy Viscosity</b>
<b>Type:</b> Epoxy/Activator System	2 Component	2 Component	2 Component
Epoxy solids content	100%	100%	100%
Shrinkage	None	None	None
Working pot life at 75°F	30 Minutes	20 Minutes	30 Minutes
Property Retention	100%	100%	100%
Initial Viscosity ( Brookfield Model RVT, Spindle #3 - 20 mins)	600 CPS	800 CPS	20,000 CPS
Absorption of Water	0.4%	0.4%	0.5%
24 Hour cube compression test	9,800 PSI	10,167 PSI	11,000 PSI
7 Day cube compression test	13,500 PSI	15,000 PSI	16,300 PSI
24 Hour tensile split test	1,950 PSI	1,876 PSI	1, 825 PSI
7 Day tensile split test	6,700 PSI	6,500 PSI	7,200 PSI
Chemical resistance to water, most chemicals, alkalies, acids and oil	Excellent	Excellent	Excellent
Adhesive strength variance within normal temperature range. (-20°F to 110°F)	Not effected	Not effected	Not effective

Test cover only that portion of AASHTO test shown

## Installation

### Application

- **Bonding:** When bonding new concrete or mortar to old concrete, apply mixed "A" and "B" by brush, roller or spray at rate of 20 mil thickness or 80 ft<sup>2</sup> per gallon. Allow coating to tack up before applying overlay of concrete. If adhesive hardens before overlay is applied, re-coat with fresh application. Apply concrete topping.
- **Adhering:** When adhering two structural units together or to repair broken members, intermix "A" and "B" and apply a thin coating to both faces. Allow it to tack up. Match surfaces together and secure to prevent vibrations or movement during initial setting.
- **Seal:** Seal hairline cracks and voids by applying a mixture of "A" and "B" by brush or trowel, working material well into cracks. For high pressure injection grouting, see data sheet for Epoxy Injection.
- **Resurfacing or patching:** Intermix "A" and "B" and scrub into surface as a primer. While still wet, follow with top coat of intermixed "A" and "B" to which has been added 3 to 6 parts of clean sand and/or aggregates passing job specifications. Mix thoroughly and apply by trowel. Under certain conditions primer may be omitted.
- **Grouting:** For grouting of bolts, machinery; splicing of pre-stressed concrete pile using dowel system; intermix "A" and "B", then add 3 to 6 parts sand to suit job conditions. Secure member to be grouted to avoid movement and apply adhesive.

Shelf life: 2 Years in original, unopened containers.

Storage Conditions: Store dry at 45-95°F. Condition material to 65-75°F before using.

Color: Natural color is clear without tinting.

Mixing Ratio: Component "A":Component "B" = 3:1 by volume.

Viscosity: Approximately 2,800 CPS

Pot Life: Approximately 30 minutes. (60 gram mass)

Contact Time: 40°F: 14-16 hours, 73°F: 3.5-4 hours, 90°F 1.5-2 hours.

Compressive Modulus: PSI: 7 Day 2.0x 10<sup>5</sup>psi (1,379.3 MPa)

Tensile Properties: ASTM D-638

7 Day Tensile Strength 5, 100 psi (35.1 M Pa), Elongation at break 1.8%

14 Day Modulus of Elasticity 32 X 10<sup>5</sup> psi (2,206.9 MPa)

Flexural Properties: ASTM D-790

14 Day Flexural Strength (modulus of rupture) 7.400 psi (51 MPa)

Tangent modulus of 4. 7 X 10<sup>5</sup> psi

Shear Strength ASTM D-732 14 Day Shear Strength 5,900 psi (40.6 MPa)

Water Absorption ASTM D-570 24 Hour: 0.79%

Deflection Temperature ASTM D-648

7 Day: Deflection Temperature 121 °F (fiber stress loading 264 psi)

### **Compressive Properties (ASTM D-695) Compressive Strength, PSI**

	<b>40°F</b>	<b>73°F</b>	<b>90°F</b>
8 Hour	-	-	100 (.18 MPa)
16 Hour	-	2,400 (16.5 MPa)	4,500 (31 MPa)
1 Day	-	4,600 (31.7 MPa)	6,400 (44.1 MPa)
3 Day	800 (5.5 MPa)	8,100 (55.8 MPa)	8,200 (56.5 MPa)
7 Day	8,100 (5.5 MPa)	10,300 (71 MPa)	8,200 (56.5 MPa)
14 Day	8,100 (5.5 MPa)	10,300 (71 MPa)	8,200 (56.5 MPa)
28 Day	8,800 (5.5 MPa)	10,300 (71 MPa)	8,200 (56.5 MPa)