

GUIDE SPECIFICATION FOR REZI-WELD™ 1000: MULTI-PURPOSE CONSTRUCTION EPOXY

SECTION 03 05 00

COMMON WORK RESULTS FOR CONCRETE

Specifier Notes: This guide specification is written according to the Construction Specifications Institute (CSI) format. The section must be carefully reviewed and edited by the architect or engineer to meet the requirements of the project. Coordinate this section with other specification sections and the drawings.

Specifier Notes: REZI-WELD 1000 is a medium viscosity, two-component, construction-grade structural epoxy adhesive. It is moisture insensitive and resistant to many chemicals. High modulus, high strength REZI-WELD 1000 is color coded to assure proper mixing, self-leveling and easy to apply.

As a neat mix, REZI-WELD 1000 is used to bond hardened concrete to fresh or hardened concrete. It can also be used to bond metals and other materials to hardened concrete. REZI-WELD 1000 is also used to secure metal anchors, bolts, rebar and dowels in concrete.

Mixed with sand or aggregates, REZI-WELD 1000 may be used to patch spalls or defects in concrete. A thin film coating sprinkled with sand or grit, becomes a durable, non-skid pathway.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Application of a multi-purpose structural epoxy adhesive.

1.02 RELATED SECTIONS

Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.

- A. Section 03 01 30.61 – Resurfacing of Cast-in-Place Concrete.
- B. Section 03 01 30.71 – Rehabilitation of Cast-in-Place Concrete.

1.03 REFERENCES

- A. ASTM C881 – Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
- B. AASHTO M 235 – Epoxy Resin Adhesives.

1.04 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.
- B. Submit manufacturer's product data and application instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Store materials in a clean dry area in accordance with manufacturer's instructions.
- C. Keep product from freezing.
- D. Protect materials during handling and application to prevent damage or contamination.
- E. Mix complete units only.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply product when concrete temperature has been below 40°F (4°C) for the past 24 hours.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. W. R. MEADOWS, INC., PO Box 338, Hampshire, Illinois 60140-0338. (800) 342-5976. (847) 214-2100. Fax (847) 683-4544. Web Site www.wrmeadows.com.

2.02 MATERIALS

- A. Performance Based Specification: Structural epoxy adhesive shall be two component, high modulus, medium viscosity, moisture insensitive and possess the following characteristics:
 - 1. Gel Time, ASTM C881 37 minutes
 - 2. Viscosity, ASTM D2393 (mixed) 3,500 cps
 - 3. Compressive Strength, ASTM D695
 - a. 1 day 10,000 psi (70 MPa)
 - b. 7 days 12,500 psi (79 MPa)
 - 4. Compressive Modulus, ASTM D695 (7 days) 530,000 psi (3,655 MPa)
 - 5. Slant Shear Bond Strength, ASTM C882
 - a. 2 days (Old to Old Concrete) 1,250 psi (8.6 MPa)
 - b. 14 days (Old to Old Concrete) 1,900 psi (13.1 MPa)
 - c. 14 days (New to Old Concrete) 2,100 psi (14.5 MPa)
 - 6. Tensile Strength, ASTM D638 7,250 psi (51 MPa)
 - 7. Tensile Elongation, ASTM D638 1.5%
 - 8. Heat Deflection Temperature, ASTM D648 (7 days) 135°F (57°C)
 - 9. Linear Coefficient of Shrinkage, ASTM D2566 0.002
 - 10. Water Absorption, ASTM D570 (7 days) 0.41% w/w
- B. Proprietary Based Specification: REZI-WELD 1000 Multi-Purpose Construction Epoxy by W. R. MEADOWS.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to receive epoxy adhesive. Notify architect or engineer if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.02 SURFACE PREPARATION

- A. Mechanically abrade all surfaces to be bonded.
- B. Ensure all surfaces are free of standing water and completely clean of dirt, rust, curing compounds, grease, oil, paint and unsound materials.
- C. Vacuum or blow dust away with oil-free, compressed air.
- D. Sandblast exposed steel surfaces and vacuum clean; if not possible, degrease the surface and use sandpaper or a wire brush to reveal continuous, bright metal.

3.03 MIXING

- A. Condition all components to 60-85° F (15° C-30° C) for 24 hours prior to use using the double boiler method or by storing material in a warm room prior to application.
- B. Pre-mix each component.
- C. Mechanically mix at slow speed (600-900rpm) using a drill and Jiffy Blade or drum mixer for three minutes or until completely mixed while scraping the sides to ensure complete blending of components.
- D. Alternatively, mix small quantities by hand for a minimum of three minutes or until sufficiently blended together using the supplied stirring stick.
- E. Scrape sides of the container to ensure complete blending of the components.
- F. Mix only the amount of epoxy that can be applied within the product's potlife.

3.04 APPLICATION

Specifier Notes: Select A, B, C, D, E, or F based on selected application of the REZI-WELD 1000 epoxy adhesive.

Specifier Notes: Cured concrete is defined as concrete that has achieved a minimum of 80% of designed compressive strength.

- A. Bonding Fresh Concrete to Hardened (Cured) Concrete:
 - 1. Use a stiff masonry brush or airless spray equipment to apply a layer of mixed epoxy to concrete surfaces.
 - 2. Ensure application rate is 85-100 square feet per gallon (20 mils).
 - 3. Place fresh concrete to mixed epoxy adhesive prior to adhesive becoming tack-free.
- B. Bonding Hardened Concrete to Hardened Concrete:
 - 1. Use a stiff masonry brush or airless spray equipment to apply a layer of mixed epoxy to concrete surfaces.
 - 2. Ensure application rate is 85-100 square feet per gallon (20 mils).
 - 3. Place hardened concrete to mixed epoxy adhesive prior to adhesive becoming tack-free.
- C. Bonding Metal to Concrete:
 - 1. Apply a layer of the adhesive at 85-100 square feet per gallon (20 mils) to the prepared surfaces.
 - 2. Join immediately.

- D. Aggregates for Epoxy-Resin Mortars:
1. Combine clean, dry aggregates to freshly mixed epoxy in ratio of one part epoxy to one to four parts of dry, clean graded aggregate by volume.
 2. Blend using a rotary drum mixer with a stationary paddle.
 3. Apply a thin coating of aggregate-free epoxy to the prepared surface as a primer.
 4. Ensure patch thickness does not exceed 2" (50.8 mm) per lift.
- F. Metal Anchors in Preformed Holes in Concrete:
1. Prior to proceeding, all anchoring or doweling configurations are to be approved or designed by an engineer.
 2. Ensure preformed holes are ¼" (6.35 mm) larger in diameter than the anchor bolt diameter.
 3. Ensure the depth of the hole should be 10-15 times the bolt diameter.
 4. Fill the hole from the bottom up, about half way, with mixed epoxy and place the bolt, dowel or rebar.
 5. Top off with more epoxy and finish.
- F. Interior Non-Skid Topping:

Specifier Notes: REZI-WELD 1000 is not to be used as a floor covering or protective treatment.
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1. Apply mixed epoxy at a rate not to exceed 80 square feet per gallon.
2. Spread sand thinly over wet epoxy and embed the grains with a mohair roller.
3. For heavy coverage, apply a layer of sand or grit over the epoxy and allow it to set.
4. Blow excess sand away.

END OF SECTION