Specification Document
Product: SpecPlug

Division 3 – Concrete
Section 03930 – Concrete Rehabilitation

Part 1 – General

1.01 Summary

A. This section outlines the specifications for rapid repair of water leakage and seepage utilizing a fast-setting hydraulic-cement called SpecPlug by SpecChem.

1.02 Quality Assurance

A. Manufacturer qualifications: SpecChem must have an ongoing quality assurance program, independently audited regularly.

B. Contractor qualifications: Must have successful experience in concrete construction.

C. Comply with all safety and environmental conditions as recommended by SpecChem and local, state, and federal regulations. Refer to Safety Data Sheets (SDS) for safety and handling practices.

1.03 Delivery, Storage, and Handling

A. Delivery: Products should arrive in original, unopened packaging with clear labels.

B. Storage: Keep materials off the ground, protected from extreme temperatures and moisture.

C. Handling: Follow the manufacturer's recommendations for product conditioning.

1.04 Job Conditions

A. Environmental Conditions: Avoid application during adverse weather. Minimum temperature for application should be 40ºF and rising.

B. Protection: Guard surrounding areas against potential damage from product use.

1.05 Submittals

A. Documentation: Provide technical data sheets, safety data sheets, and any necessary technical data.

Part 2 – Products

2.01 Products

A. SpecPlug as manufactured by SpecChem must be used, adhering to this specification.

2.02 Materials

A. Comprised of a proprietary blend of hydraulic cements and aggregates formulated for fast setting and durability.

2.03 Performance Criteria

A. **Compressive Strength (ASTM C109):**

- 1 hour: 1850 psi (12.8 MPa)
- 1 day: 3050 psi (21.0 MPa)
- 28 days: 7650 psi (52.7 MPa)

B. **Expansion (ASTM C157, moist cure):**

- 28 days: 0.08%

C. **Flexural Strength (ASTM C78):**

- 28 days: 1200 psi (8.3 MPa)

D. **Tensile Strength (ASTM C190):**

- 28 days: 800 psi (5.5 MPa)

E. **Set Time:**

- Initial Set: Approximately 3-5 minutes

F. **Color:**

- Concrete gray

Part 3 – Execution

3.01 Surface Preparation

A. Enlarging Cracks: Best results are achieved by enlarging the crack to at least 3/4" in width and depth, ensuring a square or undercut shape rather than a “V” shape.

B. Cleaning: Remove all grease, wax, oil, contaminants, curing compounds, weak, contaminated, or deteriorated concrete from the substrate.

C. Wetting Surface: Saturate the repair area with water. SpecPlug can cure in the presence of running water, making it ideal for active leaks.

3.02 Mixing and Application

A. Mixing SpecPlug: Create a putty-like consistency by adding a small amount of clean water to SpecPlug. Aim for a 20%-21% water to product ratio by weight, equivalent to about 9.5 pints of water per 50 lbs of SpecPlug. Mix enough material that can be placed within 2 minutes.

B. Application Procedure: For Vertical and Moving-Water Applications: Hold the mixed SpecPlug firmly in place until it sets, typically in about 3 minutes. Adjust water temperature to manage the setting time; use hot water and warm material to speed up the setting in cold temperatures (below 60°F) and cold water to slow down the setting in hot temperatures (above 80°F).

C. Curing: Keep SpecPlug damp for at least 30 minutes to support curing, with optimal strength achieved through wet curing for up to 2 days. This concise guide ensures the effective application of SpecPlug for stopping water flow through concrete and masonry cracks and holes. For additional information or assistance, contact SpecChem's technical support team.

3.03 Limitations

A. Do not apply if temperatures are expected to drop below 40°F within 24 hours. Ensure proper ventilation in confined spaces.

3.04 Cleaning

A. Remove uncured SpecPlug with water. Cured material can only be removed mechanically.