

SECTION 03905 – INTERIOR CONCRETE SLAB REPAIRS AND JOINT FILLER REPLACEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Joint filler removal and replacement.
 - 2. Bolt hole/spall repair
- B. Related Requirements:
 - 1. Section 01330 – Submittal Procedures. Procedures for submittals.
 - 2. Section 01351 - Regulatory Compliance: Waste management and disposal.
 - 3. Section 01500 – Temporary Facilities and Controls. Requirements for control of substances that have the potential for polluting surface and/or groundwater.
 - 4. Section 01700 – Execution Requirements. Requirements for use of fuel powered equipment within the enclosed building.

1.2 SUBMITTALS

- A. Within 21 days after award of prime contract, submit in accordance with procedures specified in Section 01330. Unless otherwise specified herein, send submittals to Architect of Record as specified in Section 01330.
 - 1. Submit all submittal items required within this section in a single submittal via e-mail (maximum document size 10 Mb).
 - a. Do not submit submittals of this section together with submittals in any other section.
 - 2. If Contractor fails to submit a complete Submittal Package within 21 days after award of prime contract, the Contractor shall pay the Owner \$250.00 per day as liquidated damages and not as a penalty, until the fully completed Concrete Slab Enhancement submittal package is received by the Architect of Record.
 - 3. Submittals shall be complete, accurate, and in full compliance with contract requirements for proper and timely approval.
 - 4. Maintain one copy of approved documents on site.
 - 5. Identify submittals explicitly in accordance with Section 01330.
 - 6. Fill out and submit attached Concrete Slab Repair and Joint Filler Replacement Submittal Form attached at the end of this Section.
- B. Submittal Rejections:
 - 1. Submittals which do not comply with Contract Documents will be rejected. If submittal is rejected for any reason, Walmart Stores, Inc., will back-charge the Contractor \$200.00 via Change Order, to cover the processing costs of each subsequent review until submittal is approved. Reasons for submittal rejections include, but are not limited to, the following:
 - a. Incomplete Submittal Package.
 - b. Lack of required certifications.
 - c. Unspecified equipment.
 - d. Unspecified products.
 - 2. Rejected submittals shall be revised and resubmitted until approved. Extension of Contract time will not be allowed for rejected submittals.
 - a. The Contractor shall revise and resubmit rejected submittals within 7 days of receipt of rejected submittals.
 - b. The Contractor shall verify that the subcontractor has addressed all required revisions in the re-submittal.
- C. Product data and Material Safety Data Sheets (MSDS):
 - 1. All products and primary equipment used for repair of existing concrete slab defects.
- D. Joint Filler and Slab Repair Subcontractor Requirements:

1. Joint Filler and Slab Repair Subcontractor Qualifications: Provide to General Contractor for submittal a list of minimum of 5 projects performed within the last 2 years of similar type, size and complexity as this contract. Provide project names, addresses, contact names, phone numbers, and scope of work for each project at time of Bid and within Submittal Package.
 - a. Joint Filler and Slab Repair Subcontractor shall be a contractor possessing current certifications at time of Bid.
 - b. Joint filler installation and slab repair shall be performed by same subcontractor.
 - c. Joint filler and slab repair subcontractor personnel shall remain the same throughout the completion of specified work unless approved in writing by Walmart.
 - d. Joint Filler and Slab Repair Subcontractor shall not sub-subcontract any work in this Section.
2. Joint Filler and Slab Repair Subcontractor Certifications: Provide to General Contractor for submittal a letter of certification, identifying individuals that are currently certified installers of the following specified materials and are familiar with proper procedures and installation methods as required by the specified product manufacturers.
 - a. Polyurea Joint Filler.
 - b. Low Viscosity Rigid Urethane.

1.3 QUALITY ASSURANCE

- A. Environmental Requirements:
 1. Comply with the requirements of Section 01351 for construction and demolition waste management and disposal.
 2. Comply with current Federal, state and local air quality regulations and with Federal requirements on concrete silica dust emissions. Do not dry grind or polish slab surface.
 3. Limit and control all noise and damage from excessive dust caused by demolition, preparation, and installation of specified work.
 4. Limit and control damage from moisture.
 5. Refer to Section 01500 for control of substances that have the potential for polluting surface and/or groundwater.
 6. Close finished slab area to traffic during application and after application for a time as recommended by manufacturer.
- B. Mockup: Prior to commencement of joint filler repair and replacement and slab surface spall repairs, prepare mock up for evaluation of surface preparation techniques, ability of slab to accept specified products and procedures, and application workmanship.
- C. Walmart Concrete Consultant:
 1. Structural Services, Inc. (SSI), wmr@ssiteam.com.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Subject to compliance with project requirements, provide products as manufactured by the following to the extent as specified hereinafter:
 1. Advanced Blending (817) 477-8022 www.advancedblending.com
 2. Brulin & Company (800) 776-7941 www.brulin.com
 3. Hi-Tech Structural Epoxy Systems (800) 454-5530 www.hitechpolyurea.com
 4. Metzger/McGuire (800) 223-6680 www.metzgermcguire.com
 5. Prime Resins, (800) 321-7212 www.primeresins.com
 6. Prosoco (866) 363-4567 www.prosoco.com
 7. Roadware, Inc. (800) 522-7623 www.concretemender.com
 8. SpecChem (866) 791-8700 www.specchemllc.com
 9. Superior Surface Solutions (888) 471-5227 www.superiorsurfacesolutions.com
 10. VersaFlex, Inc. (913) 321-1416 www.versaflex.com

- B. Polyurea Joint Filler: Rapid setting, two-component polyurea polymer liquid of 100% solids content, Shore hardness 85-90, compatible with construction materials in contact.
 - 1. HT-PE85, High-Tech
 - 2. Spal-Pro RS 88, by Metzger/McGuire.
 - 3. VersaFlex SL/85, by VersaFlex.
 - 4. Match color of adjacent exposed concrete slab surface.

- C. Structural Urethane (low viscosity):
 - 1. 10 Minute Concrete Mender, by Roadware
 - 2. Spall TX, by High Tech
 - 3. Rapid ReFloor, by Metzger/McGuire.
 - 4. Quick Mender, by VersaFlex.
 - 5. Match color of adjacent exposed concrete slab surface.

- D. Silica Sand
 - 1. Dry 00 Sandblasting sand.

- E. Surface Pitting Grout
 - 1. Dimakrete Polish Grout, by Superior Surface Solutions.
 - 2. Quick Mender L.O., by VersaFlex.
 - 3. Rapid ReFloor Pit Grout, by Metzger/McGuire.
 - 4. Approved equal

- F. Non-shrink Grout: Pre-mixed non-shrinking, high strength grout, ASTM C1107, Type A, B, or C; compressive strength of 5000 psi in 28 days.
 - 1. NS Grout, by Euclid.
 - 2. Construction Grout, by Master Builders.
 - 3. SonogROUT, by Sonneborn.
 - 4. Certi-Vex Grout #1000, by Vexcon.
 - 5. Enduro 50, by Conspec.

2.2 EQUIPMENT

- A. Refer to Section 01700 for requirements related to acceptable power sources specified herein.

- B. Subject to compliance with project requirements, provide equipment manufactured by the following:
 - 1. Gator Finishing Products (800) 2554748, www.gatorfinishing.com
 - 2. HTC (877) 482-8700, www.htc-america.com
 - 3. Joe Due Blades and Equipment, Mauston, WI, (877) 563-3833.
 - 4. Norton Abrasives (800) 331-3604, www.nortonabrasives.com
 - 5. Pulman-Ermator (800) 232-2635, www.pullman-ermator.com
 - 6. SASE Company, Inc., Kent, WA (800) 522-2606
 - 7. U.S. Saws, Santa Ana, CA (866) 987-7297.

- C. Dust extraction system for grinding/sawing:
 - 1. HEPA filtration vacuum, designed for use with all hand tools when grinding or sawing concrete (minimum 125CFM air flow).
 - 2. Provide one of the following:
 - a. 26D, by HTC.
 - b. S2400, by Pullman-Ermator.
 - c. Bull 50, by SASE Company, Inc.
 - d. Approved equal.

- D. Joint Filler Removal and Preparation
 - 1. Humpback Cutter Complete, by Joe Due.
 - 2. Dust Buggy, by U.S. Saws.
 - 3. Approved equal.

- E. Surface Grinder: Handheld 5"-7" electric surface grinder with dustless shroud/housing.
 1. Dust Avenger 5, by Joe Due.
 2. Dust Avenger 7, by Joe Due.
 3. SawTec 5" Grinder Vac, by U.S. Saws.
 4. SawTec 7" Grinder Vac, by U.S. Saws.
 5. Approved equal.
- F. Fiber Stripping Pads
 1. Rapid Strip Disc, by Norton
 2. Gator Fiber Disc, by Gator Finishing Products
 3. Approved equal.

PART 3 - EXECUTION

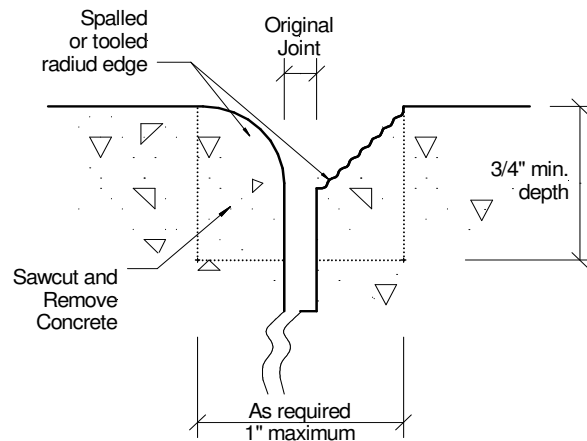
3.1 EXAMINATION

- A. An evaluation of the existing floor slab shall be conducted, identifying all defects. Scope of repairs shall be confirmed by the Walmart Concrete Consultant prior to commencement of work.

3.2 PREPARATION

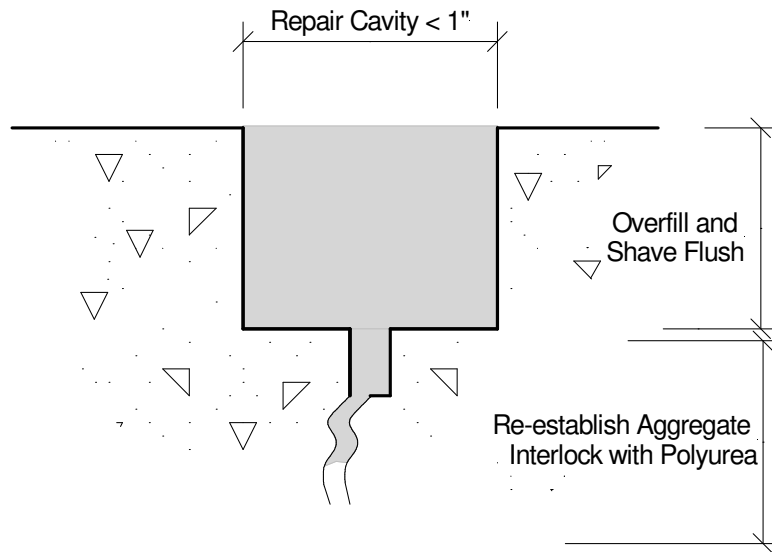
- A. Close areas to traffic during and after floor finish application for time period recommended by product manufacturer(s).
- B. Cover and protect merchandise and racking to prevent damage or contamination of stored products. Provide dust drapes as required to protect merchandise from dust or debris.
- C. Protect surface of slab immediately adjacent to defect under repair.
- D. Do not proceed until Walmart Construction Manager has approved repair material color match.

3.3 CONTROL JOINT REPAIR (LESS THAN 1")



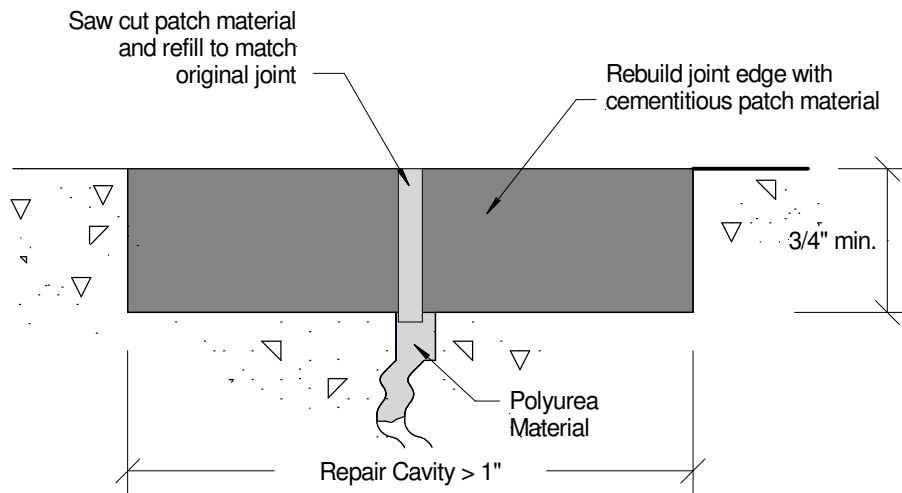
- A. For joints that are spalled or have radius tooled edges not exceeding 1" in width at slab surface.
- B. Re-saw the joint edge to a minimum depth of 3/4" with a dry-cut, vacuum-equipped saw allowing removal of the widest spall (or top of radius) along a given joint segment to produce a sharp corner on each side of the joint with a minimum of two passes through joint.
- C. Clean joint of loose concrete, joint filler, laitance, dirt, debris, backer rod, etc.
- D. Joints must be free of all visible moisture.

- E. Ensure filler penetrates the irregular aggregate interlock portion of the sawn contraction joint as shown below, re-establishing the aggregate interlock that may have been lost due to shrinkage, curling, and lack of reinforcement.



- F. Gravity feed a trace amount (1/8") of silica sand into joint to prevent 3-sided bonding of joint filler.
- G. Fill joint cavity per manufacturer's instructions, taking care not to entrap large air bubbles. Overfill joint slightly and shave flush to slab surface prior to grinding process.

3.4 CONTROL JOINT REPAIR (GREATER THAN 1")



- A. For control joints that exceed 1" in width at slab surface or where the slab displays height differential greater than 1/4" at either side of joint.
- B. Re-saw the control joint edge to a minimum depth of 3/4" with a dry-cut, vacuum-equipped saw allowing removal of the widest spall along a given joint segment to produce a sharp corner on each side of the joint with a minimum of two passes through joint. Maintain consistent width of repair to within 1/2 inch in 10 feet.
 - 1. For construction joints experiencing 1/4" or greater height differential at abutting joint edges, repair material should slope at 1/4" per foot at floor surface.
- C. Acceptable Patch Materials

1. Structural Mortar installed in accordance with manufacturer's recommendations.
2. Sand Modified Structural Urethane:
 - a. Place 1/2" layers of dry Silica Sand in bottom of spalled cavity.
 - b. Pour structural urethane material over sand until sand is slightly covered.
 - c. Repeat 1/2" blended layers of sand and structural urethane material until slightly overfilled above finished concrete surface.

D. Allow patch material to dry (drying time will vary based on temperature).

E. Overfill repair cavity with patch material per manufacturer's instructions and grind flush to slab surface.

F. Use hand grinder with Fiber Stripping Pad to hone over -fill level to adjacent slab surface.

G. After patch material has cured, and prior to any traffic on patched surface, re-saw original slab joint(s) and fill with polyurea joint filler per manufacturer's instructions.

H. Polish or burnish repair material to match adjacent slab surface after material has properly cured.

3.5 BOLT HOLE/SPALL REPAIR

A. Recess steel bolt a minimum of 1/2" below finish floor by either punching or cutting.

B. For spall fracture edge less than 30 degrees, square edge to a minimum 3/8" depth with either a drill bit or chisel.

C. For surface spalls resulting from removal of transition strips, use hollow core drill bit to remove surrounding concrete spall to nominal depth of 1/2". Adjacent repairs shall be of a consistent diameter (max repair size 1" nominal).

D. Clean cavity of all debris and laitance with drill activated, brass wire wheel. Vacuum hole to remove all dirt, debris and other laitance.

E. Dispense low viscosity rigid urethane at moderate pace using steady pressure. Dispense material into void, refilling as necessary to produce slight crown.

F. Grind material flush to slab surface per manufacturer's instructions.

3.6 PROTECTION

A. Protect surfaces of finished floor.

B. Prohibit traffic until floor repairs have received final approval by Owner.

3.7 FIELD QUALITY CONTROL

A. Field quality control shall be the responsibility of the Contractor in accordance with Section 01452. Except as specified as mandatory, field quality control testing and inspection shall be at the discretion of the Contractor as necessary to assure compliance with Contract requirements. Owner T&I specified in Appendix B shall not preclude Contractor's responsibility to perform similar routine, necessary, and customary testing and inspection of the methods and frequency suitable for the type of work involved.

END OF SECTION

WALMART STORES
INTERIOR CONCRETE SLAB REPAIR AND JOINT FILLER REPLACEMENT SUBMITTAL FORM
Section 03905 – INTERIOR CONCRETE SLAB REPAIRS AND JOINT FILLER REPLACEMENT

Date _____

WALMART: SAM'S CLUB DISCOUNT STORE SUPERCENTER NEIGHBORHOOD MARKET

STORE INFORMATION

STORE # _____
ADDRESS _____
CITY, ST _____
GENERAL CONTRACTOR _____
JOINT FILLER AND SLAB REPAIR _____
SUB-CONTRACTOR _____
JOBSITE PHONE _____

A. **ATTACHMENTS:** Include the following with this Submittal Package.

- Completed Interior Concrete Slab Repair and Joint Filler Replacement Qualification Statement of Conformance.
 - Letter of Certification for Joint and Slab Repair Material and Installation.
 - Product data.
 - Manufacturer and model of all equipment used relating to scope of work.
 - Anticipated Slab Enhancement Floor Polish Plan (Developed from Sheet A1.1) for the following:
 - Anticipated start and finish date of work.
 - Size, location and anticipated progression of individual nightly work areas, forecasted two weeks out from the current date of submittal.
 - Location of all joint filler replacement, cracks, spalls and other surface defects requiring repairs specified herein.
 - Electrical supply locations.
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INTERIOR CONCRETE SLAB REPAIR AND JOINT FILLER REPLACEMENT QUALIFICATION STATEMENT OF CONFORMANCE
SECTION 03905

Project Location: _____ Date: _____

Project Number: _____ Store Number: _____

By signing below as approved, the Contractor hereby confirms that the qualifications of the joint filler and slab repair subcontractor conforms to the qualifications as follows:

The joint filler and slab repair subcontractor has experience in finishing interior floors of similar size and scope in at least 5 previous projects. Projects name and location are identified as follows

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

Concrete Joint Filler and Slab Repair Subcontractor Company Name and Address:

Signature of Responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (_____) _____

General Contractor Company Name and Address:

Signed by: _____ Date: _____

Submit one copy of this Statement to the Architect of Record.