

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 03 30 00 – Cast-In-Place Concrete

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM D217-[10], Standard Test Method for Cone Penetration of Lubricating Grease.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .3 CSA International
 - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for bentonite materials and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements. Indicate VOC's for bentonite waterproofing materials.
- .3 Samples:
 - .1 Submit duplicate 300 x 300 mm samples of bentonite waterproofing panel and other components.
- .4 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:

- .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Store and protect bentonite panels from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.

1.6 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Maintain air temperature and structural base temperature at waterproofing installation area above 5 degrees C for 24 hours before, during and 24 hours after installation.
- .2 Do not install in standing water or in rain.

1.7 WARRANTY

- .1 Contractor hereby warrants that the bentonite waterproofing work will not leak for 12 months.

Part 2 Products

2.1 MATERIALS

- .1 Granular bentonite: Wyoming bentonite clay (sodium montmorillonite), 90% minimum passing 20 mesh sieve and 10% maximum passing 200 mesh sieve.
- .2 Single corrugated core panels: smooth faced biodegradable kraft panels; 1200 x 1200 x 5 mm thick; core filled with granular bentonite, minimum 5 kg/m².
 - .1 Panel weight: 8 kg minimum.
- .3 Joint seal formulated to comply with ASTM D217. Gel formulated to use with potable water.
- .4 Bentonite/butyl joint sealant: 19 x 10 mm flexible bentonite strip for use in cold joints subject to hydrostatic pressure.
- .5 Bentonite tubes: water soluble polyvinyl filled with dry granular bentonite; 50 mm diameter, 600 mm long; minimum 1.4 kg mass.
- .6 Mechanical fasteners: to CSA B111, galvanized finish.
- .7 Adhesive: to manufacturer's standards.
- .8 Polyethylene sheet: 0.1 mm thick, to CAN/CGSB-51.34, Type 1.
- .9 Protection board: insulating fibreboard: to CAN/ULC-S706, Type II, 9.5mm thick.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative & Consultant.

- .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.3 PREPARATION

- .1 Repair holes, cracks, honeycombs and voids in substrate with joint seal, applied minimum 3 mm thickness, extending minimum 75 mm beyond defect.
- .2 Seal construction joints & through wall projections with joint sealant & as detailed.

3.4 APPLICATION

- .1 Do bentonite waterproofing in accordance with manufacturer's printed installation instructions.
- .2 Vertical surface (foundation walls & blind side):
 - .1 Apply single corrugated core panels with concrete nails or adhesive starting at wall base.
 - .1 Fold and attach panels around corners with corrugations vertical.
 - .2 Attach unfolded panels with corrugations horizontal.
 - .3 Lap adjoining panel edges minimum 40 mm.
 - .4 Stagger vertical joints of succeeding courses.
 - .2 Cut panels longitudinally with corrugations to avoid bentonite loss.
 - .3 Lay bentonite tubes continuously along wall/footing juncture.
 - .1 Secure tubes to prevent shifting.

3.5 CONSTRUCTION JOINTS

- .1 Apply bentonite/butyl joint strips and additional bentonite panels at construction joints.

3.6 FIELD QUALITY CONTROL

- .1 Site Tests, Inspections:
 - .1 Do not backfill foundation walls until waterproofing inspected by Departmental Representative & Consultant.
 - .2 Do not backfill foundation wall until waterproofing inspected by Departmental Representative & Consultant.
- .2 Manufacturers Field Services:
 - .1 Have manufacturer of products supplied under this Section review Work involved in handling, installation/application, protection and cleaning of its product, and submit written reports in acceptable format to verify compliance of Work with Contract.
 - .2 Obtain reports within 5 days of review and submit.

3.7 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.8 PROTECTION

- .1 Protect completed waterproofing from precipitation or contact with ground water until ready for backfilling or simultaneously backfilling after each panel course completed.
- .2 Remove protection before backfilling.
- .3 Protect waterproofing with protection board from damage by backfilling or other causes.
- .4 Protect waterproofing from frost damage in accordance with manufacturer's instructions.
- .5 Repair damage to adjacent materials caused by bentonite panel waterproofing installation.

END OF SECTION