

*This section includes a manufacturer's guide specification Logix Insulated Concrete Forms Refer also to Beaver Plastics' Product Description for detailed product properties, options, and other technical information. This section includes performance, proprietary, and descriptive type specifications; edit to avoid conflicting requirements.*

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1        Insulated concrete forms (ICF).
- .2        Site-installed stay-in-place polystyrene rigid board insulation panels.
- .3        Polypropylene web connectors.
- .4        Temporary bracing and spray foam insulation.

**1.2                RELATED SECTIONS**

- .1        Section [01330] [01 33 00] - Submittal Procedures].
- .2        Section [01610 - Basic Product Requirements].
- .3        Section [01780 - Closeout Submittals].
- .4        Section [\_\_\_\_\_ - \_\_\_\_\_]: Preparation of adjacent work to receive work of this Section.
- .5        Section 03200 - Concrete Reinforcement: Supply of concrete reinforcement for placement by this section.
- .6        Section 03300 - Cast-in-place Concrete: Supply of concrete.
- .7        Section 06101 – Rough Carpentry: rough bucks for windows and doors.
- .8        Section 07120 - Bituminous Dampproofing: Below grade foundation dampproofing.
- .9        Section 07900 - Joint Sealers.

**1.3                REFERENCES**

- .1        American Society for Testing and Materials (ASTM International)
  - .1        ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
  - .2        ASTM D1761 - Standard Test Methods for Mechanical Fasteners in Wood
  - .3        ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
  - .4        ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials
- .2        Underwriters' Laboratories of Canada (ULC)

- .1 CAN/ULC-S101 - Standard Methods of Fire Endurance Tests of Building Construction and Materials
- .2 CAN/ULC-S701 - Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
- .3 ASHRAE Fundamentals Handbook.
- .4 ICC Evaluation Service, Inc.

#### **1.4 SUBMITTALS**

*Do not request submittals if drawings sufficiently describe the products of this section or if proprietary specifying techniques are used. The review of submittals increases the possibility of unintended variations to drawings, thereby increasing the Specifier's liability. The following submittals are intended for review and acceptability.*

- .1 Section [01300] [01 33 00]: Submission procedures.
- .2 Product Data:
  - .1 Submit product data sheets in accordance with Section [[01330] [01 33 00]].
- .3 Shop Drawings:
  - .1 Before fabrication, submit shop drawings of insulated concrete form building system in accordance with Section [01300] [01 33 00].
  - .2 Submit shop drawings bearing stamp and signature of a qualified professional engineer registered or licensed in [Canada] [the Province of [\_\_\_]].
  - .3 Indicate method and schedule of construction, shoring procedures, materials, arrangement of joints, ties, corner, intersection and web connectors, braces and locations of temporary embedded parts.
  - .4 Indicate sequence of erection of forms.
- .4 Samples:
  - .1 Submit samples for verification in accordance with Section [01330 - Submittal Procedures].
  - .2 Submit one representative sample of EPS form web connector.
- .5 Installation Data: Special installation requirements.

#### **1.5 QUALITY ASSURANCE**

- .1 Manufacturer: ISO 9001:2000 registered company.
- .2 Perform Work in accordance with manufacturer's instructions.

#### **1.6 MOCK-UP**

*Use this article for assessing full sized erected assemblies for review of construction, coordination of work of several sections, testing, or observation of operation.*

- .1 Section [01400] [01 40 00]: Requirements for mock-up.
- .2 Construct a mock-up of insulated forms for [\_\_\_\_\_], <[\_\_\_\_\_] m> <<[\_\_\_\_\_] feet>> long by <[\_\_\_\_\_] m> <<[\_\_\_\_\_] feet>> high, which includes connectors, reinforcement, and [\_\_\_\_\_].
- .3 Locate [where directed.] [\_\_\_\_\_].
- .4 Mock-up may [not] remain as part of the Work.

## **1.7 DELIVERY, STORAGE, AND PROTECTION**

- .1 Section [01600] [01 61 00]: Transport, handle, store, and protect products.
- .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .3 Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- .4 Store materials off ground, protected from direct sunlight..
- .5 Protect Products from exposure to harmful weather conditions. Store at temperature and humidity conditions recommended by manufacturer.
- .6 Remove damaged or deteriorated Products from site.

## **Part 2 Products**

### **2.1 MANUFACTURERS:**

- .1 Beaver Plastics, model Logix.
- .2 Substitutions: [Refer to Section [01600] [01 60 00.] [Not permitted.] [Refer to Instructions to Bidders.]

### **2.2 MATERIALS**

- .1 Insulated Concrete Forms: Closed cell expanded polystyrene rigid boards to CAN/ULC-S701, Type 2.
  - .1 Thermal Resistance: <RSI 0.70 per 25 mm><<R-4 per inch>> of thickness.
  - .2 Compressive strength: Minimum 110 kPa (16 psi).

### **2.3 ACCESSORIES**

- .1 Connector Webs: Polypropylene, designed for intended function, with snap-in reinforcement bar mounting points.
- .2 Bracing: Manufacturer's standard alignment brace.
  - .1 Anchor Bolts: to CSA G40.20/G40.21, Grade 300W.

- .2 Furring Channels: <0.5 mm><<0.02 inch>> core thickness galvanized steel channels.
- .3 Polyurethane Spray Foam: compatible with polystyrene, as recommended by ICF manufacturer.

## **2.4 FABRICATION**

- .1 Fabricate panels and special shapes in shop to facilitate on-site assembly with mechanically-interlocked joints.
- .2 Fabricate panels with connector webs spaced at <200 mm> <<[8"]>> on center, embedded <13 mm> <<[1/2"]>> below outside surface of foam board.

## **Part 3 Execution**

### **3.1 PREPARATION**

- .1 Verify that site conditions are ready to receive work.
- .2 Verify lines, levels and centres before proceeding with form erection. Ensure site dimensions agree with shop drawings.
- .3 Beginning of installation implies acceptance of site conditions.

### **3.2 INSTALLATION**

- .1 Install insulated concrete forms to manufacturer's instructions.
- .2 Install forms to lines and levels, widths and sizes indicated on shop drawings, including special shapes.
- .3 Place forms on [grade beam] [standard footing] [concrete pad] as indicated.
- .4 Attach alignment bracing to align and support forms in accordance with shop drawings.
- .5 Install reinforcing in accordance with manufacturer's instructions and Section [03200] [03 20 00].

*The following paragraph is a general statement regarding items to be placed in or attached to formwork. Ensure type of device is coordinated with the specific affected Section. Location and spacing of these components is critical; specify that shop drawings specifically indicate component position and dimension.*

- .6 Coordinate with work of other sections for mechanical and electrical service penetrations, window and door openings, [\_\_\_\_\_], and other components of Work.
- .7 Apply spray foam along perimeter of installed forms to anchor forms, to manufacturer's instructions.
- .8 Install concrete in accordance with Section [03300] [03 33 00].

### **3.3 MANUFACTURER'S FIELD SERVICES**

*Use the following paragraphs only when the manufacturer's field review services are desired to verify quality of installation. Consult with manufacturer to ascertain extent of services available.*

- .1 Section [01700] [01 45 00]: Prepare and start components.
- .2 Arrange with manufacturer's representative to review work of this Section and submit written reports to verify compliance with Contract Documents.
- .3 Manufacturer's Field Services: consisting of product use recommendations and periodic site visits to review installation, scheduled as follows:
  - .1 After delivery and storage of Products.
  - .2 After preparatory work is complete but before installation commences.
  - .3 Twice during the installation, at [25]% and [60]% completion stages.
  - .4 Upon completion of installation.
- .4 Submit manufacturer's reports to Consultant within [3] days of manufacturer representative's review.

### **3.4 CLEANING**

- .1 Remove temporary coverings and protection of adjacent work areas.
- .2 Clean installed Products in accordance with manufacturer's instructions.
- .3 Remove and dispose of construction debris to requirements of authorities having jurisdiction.

### **3.5 PROTECTION OF FINISHED WORK**

- .1 Where polystyrene forms may remain exposed to sunlight for a period greater than 60 days, protect insulation from ultra-violet radiation by installing temporary covers.

**END OF SECTION**