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DIVISION: 03—CONCRETE**Section: 03130—Permanent Forms****REPORT HOLDER:**

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EVALUATION SUBJECT:

**NUDURA INTEGRATED BUILDING TECHNOLOGY™
INSULATING CONCRETE FORM (ICF) WALL SYSTEM**

1.0 EVALUATION SCOPE**Compliance with the following codes:**

- 2003 *International Building Code*® (IBC)
- 2003 *International Residential Code*® (IRC)
- BOCA® *National Building Code*/1999 (BNBC)
- 1999 *Standard Building Code*® (SBC)
- 1997 *Uniform Building Code*™ (UBC)
- 1998 *International One- and Two-Family Dwelling Code*® (IOTFDC)

Properties evaluated:

- Structural
- Surface-burning characteristics
- Crawl-space installation
- Fire-resistance-rated construction
- Noncombustible construction

2.0 USES

NUDURA Integrated Building Technology™ Insulating Concrete Forms (ICFs) are used as permanent formwork for structural concrete, load-bearing and nonload-bearing, below-grade and above-grade walls. The forms are used in construction of plain and reinforced concrete beams, lintels, exterior and interior walls, and foundation and retaining walls. The forms remain in place after the concrete cures and must be covered by an approved interior- and exterior-wall-finish material. The forms are recognized for use in buildings of Types I, II, III and IV (noncombustible) construction, when installed in accordance with Section 4.2.9.

3.0 DESCRIPTION**3.1 General:**

NUDURA Integrated Building Technology™ ICFs consist of expanded-polystyrene (EPS) foam-plastic panels connected with cross-ties. The forms are classified as a flat ICF wall system in accordance with Sections R404.4.2 and R611.3 of the IRC.

3.2 Materials:

3.2.1 NUDURA Insulated Concrete Forms: The forms consist of two uniform-thickness EPS foam-plastic panels manufactured to a nominal EPS foam density of 1.25 pcf (20.0 kg/m³). The EPS foam plastic complies with ASTM C 578. The EPS foam plastic has a flame-spread index of 25 or less and a smoke-developed index of 450 or less at a 1.5 pcf (24 kg/m³) density when tested in accordance with ASTM E 84. The EPS panels are connected together with cross-ties consisting of either integrally molded, foldable, high-density polypropylene, hinged web/fastening strips (flanges) or injection-molded, high-density polystyrene fastening strips (flanges) interlinked with high-density, polypropylene insert webs, depending upon the web location and required function.

The web/fastening strips run full height of the form panels and are embedded within the EPS at regular 8-inch (203 mm) intervals, are recessed 1/2 inch (12.7 mm) from the EPS surface, and provide a fastening flange that measures 1 1/2 inches (38 mm) in width. The webs connected to the flanges also have openings to permit concrete to pass through, and feature a variety of seat options for support and to lock the horizontal steel-reinforcing bars in place. Either configuration of cross-ties serves to separate the EPS panels at a prescribed uniform core distance and provide an anchorage location for attachment of interior and exterior finishes.

The EPS panels and cross-ties are molded with preformed reversible interlock and vertical clip-locking mechanisms on their top and bottom edges to facilitate stacking and vertical interlocking of the form units.

NUDURA standard form panels and hinged web forms are available in a standard length of 96 inches (2438 mm) and a standard height of 18 inches (457 mm). NUDURA forms are available in widths of 9 1/4, 11 1/4, 13 1/4, 15 1/4 and 17 1/4 inches (235, 286, 337, 388 and 438 mm) to enable formation, respectively, of 4-, 6-, 8-, 10- and 12-inch-thick (102, 152, 203, 254 and 305 mm), flat, monolithic concrete walls.

Forty-five-degree and 90-degree angle form units, "T"-form units, brick ledge forms, brick ledge extensions, height adjusters (with fastening ties) and end caps are also available for each thickness of form unit offered. The corner and "T"-form units are used to construct wall intersections. The brick ledge forms and brick ledge extensions are used to construct

concrete corbels for support of brick or stone veneer exterior finishes or for supporting interior floor construction.

The 3-inch (76 mm) height adjuster panels are fitted on their interior surface with shorter length polystyrene fastening strips that are designed in the same manner as the full-height form unit polystyrene fastening strips. In turn, these can be interconnected across the form cavity using a series of 3-inch-high (76 mm) "slide-in" polypropylene ties that have been designed for use with the height adjuster forms, using the same integrally molded "slide-in" pin design as is featured in the corner form insert web. As with the full-height insert webs, the height adjuster ties are supplied in 4-, 6-, 8-, 10- and 12-inch (102, 152, 203, 254 and 305 mm) cavity widths.

3.2.2 Concrete: The concrete must be normal-weight concrete complying with the applicable code, having a maximum aggregate size of $\frac{3}{4}$ inch (19.1 mm) and a minimum compressive strength of 2,500 psi (17 MPa) at 28 days, except for fire-resistance-rated construction, as noted in Section 4.2.8.

3.2.3 Reinforcement: Reinforcement must be deformed steel reinforcing bars, complying with the applicable code, with a minimum yield stress of either 40 ksi (275 kPa) or 60 ksi (413 kPa), depending on the structural design.

3.2.4 Other Components: When required by the code official, wood members in contact with concrete for plates or windows and door framing must be preservative-treated with an approved wood preservative or be a naturally durable species, and must be attached with hot-dipped galvanized steel anchor bolts and fasteners complying with the applicable code. Materials other than wood, such as vinyl, are permitted for window and door framing, if approved by the code official.

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 General: Structural analysis and design of the concrete must be prepared in accordance with the manufacturer's recommended design procedure, ACI 318 and Chapter 19 of the applicable code. Design loads must comply with Chapter 16 of the applicable code, except when regulated by the IRC.

Design calculations and details for specific applications must be furnished to the code official verifying compliance with this report and the applicable code. The design calculations and details must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Calculations are not required when the building design is based on Section 4.1.2, 4.1.4 or 4.1.5 of this report.

4.1.2 Prescriptive Design: IRC, SBC and Standard SSTD 10-99: NUDURA Integrated Building Technology™ ICFs are defined as flat ICF wall systems and must be designed and reinforced using the load tables for flat ICF forms in Sections R404.4 and R611 of the IRC, or Sections 1916 and 1804.6.2 of the SBC, or Section 206 of SSTD 10-99 (SBCCI Standard for Hurricane Residential Construction), provided the building conforms to the applicability limits defined in Sections R404.4.1 and R611.2 of the IRC, or Sections 1916.2 and 1804.6.2.1 of the SBC, or Section 101.1 of SSTD 10-99, as applicable. Design for buildings not conforming to the applicability limits must be in accordance with Section 4.1.3 of this report. When using a prescriptive design method, the wall thickness is limited, as noted in the applicable code sections referenced above.

4.1.3 Nonprescriptive Design: When the forms are installed on buildings not conforming to the applicability limits

of Sections R404.4.1 and R611.2 of the IRC, or Sections 1916.2 and 1804.6.2.1 of the SBC, or Section 206 of SSTD 10-99, the structural analysis and design of the concrete must be prepared in accordance with ACI 318 and Chapter 19 of the IBC, BNBC, SBC or UBC, or Section R612 of the IRC, as applicable.

4.1.4 Foundation Design: Design of foundation wall reinforcement must be in accordance with the following code sections, as applicable:

- IBC Section 1805.5 and Tables 1805.5(1), 1805.5(2) and 1805.5(3)
- IRC Sections R404.1 and 404.1.2, and Tables R404.1.1(1), R404.1.1(2) and R404.1.1(4)
- BNBC Section 1812.3.2 and Tables 1812.3.2(1) and 1812.3.2(2)
- SBC Section 1804.6 and Table 1804.6.1(A)
- IOTFDC Section 404.1 and Tables 404.1.1(1) and 404.1.1(2)
- UBC Sections 1806.7.1 and 1914.2.1

4.1.5 Alternative Design: In lieu of calculations required by Section 4.1.1 of this report, the structural design of reinforced concrete formed by the NUDURA Integrated Building Technology™ ICFs for residential construction must comply with the *Prescriptive Method for Insulating Concrete Forms in Residential Construction* (publication EB118), dated May 1998, published by the Portland Cement Association (PCA), subject to all applicability and use limits for flat ICF walls defined in Table 1.1 of that document. Buildings constructed with the NUDURA Integrated Building Technology™ ICF wall system and designed in accordance with this section are limited to a height of two stories plus a basement, where the maximum unsupported wall height is 10 feet (3048 mm).

4.2 Installation:

4.2.1 General: NUDURA Integrated Building Technology™ ICFs must be installed in accordance with the manufacturer's published installation instructions and this report. The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the instructions must be available at all times on the jobsite during installation. The instructions within this report govern if there are any conflicts between the manufacturer's published installation instructions and this report.

4.2.2 Interior Finish: NUDURA Integrated Building Technology™ ICFs must be finished on the interior of the building with an approved 15-minute thermal barrier, such as minimum $\frac{1}{2}$ -inch-thick (12.7 mm) regular gypsum wallboard complying with ASTM C 36. The gypsum wallboard must be installed vertically or horizontally and attached to the furring strips with minimum $1\frac{5}{8}$ -inch-long (41 mm), No. 6, coarse-thread or fine-thread gypsum wallboard screws, spaced 16 inches (406 mm) on center horizontally and vertically in the field. The screws must penetrate through the flange a minimum of $\frac{1}{4}$ inch (6.4 mm). Gypsum wallboard joints and screw heads must be taped and filled with joint compound.

4.2.3 Exterior Finish:

4.2.3.1 Above Grade: The forms must be covered on the exterior with an approved wall covering in accordance with the applicable code or a current evaluation report, except when regulated by the IRC, in which case the forms must be covered on the exterior with a water-resistive barrier in accordance with Sections R703.1 and R703.2 of the IRC, and with an approved wall covering in accordance with the IRC or a current evaluation report.

The exterior wall covering must be designed and installed in accordance with the applicable code or a current evaluation report. When the wall covering is required to be mechanically attached to structural members, the wall covering must be fastened to the flanges of the cross-ties with coarse-thread drywall screws, which have assigned allowable pullout and lateral capacity, as shown in Table 1. The screws must be corrosion-resistant and must have sufficient length to penetrate the flanges of the plastic bridge inserts a minimum of $\frac{1}{4}$ inch (6.4 mm). The maximum spacing of the screws must be designed to resist the gravity loads of the wall covering and to resist the negative wind pressures. Negative wind pressure capacity of the exterior wall covering must be the same as that recognized in the applicable code for a generic wall covering or as listed in a current evaluation report for proprietary materials.

4.2.3.2 Below Grade: For basement wall installations, form exterior surfaces must be damp-proofed or waterproofed in accordance with the applicable code. The damp-proofing and waterproofing materials must be approved by the code official, and must be free of solvents that will adversely affect the EPS foam plastic boards. No backfill is permitted to be applied against the wall until the complete flooring system is in place, unless the wall is designed as a freestanding wall that does not rely on the floor system for structural support.

4.2.4 Crawl Space Installation: NUDURA Integrated Building Technology™ ICFs are permitted to be used as walls of crawl spaces without an ignition barrier applied to the crawl space side of the foam plastic, provided all of the following conditions are met:

- Entry to the crawl space is only to service utilities, and no heat-producing appliances are permitted.
- There are no interconnected basement areas.
- Air in the crawl space is not circulated to other parts of the building.
- Underfloor ventilation of the crawl space is provided in accordance with the applicable code.

4.2.5 Foundation Walls: The wall system is permitted to be used as a foundation stem wall when supporting wood-framed construction and when the structure is supported on concrete footings complying with the applicable code. Design and installation of the wall system as a foundation stem wall shall comply with IBC Section 1805.5 or IRC Section R404.4, as applicable. For jurisdictions adopting the UBC, compliance with Table 18-1-C of the UBC is required.

4.2.6 Retaining Walls: The wall system is permitted to be used as a retaining wall with reinforcement designed in accordance with accepted engineering principles and Section 4.1 of this report.

4.2.7 Protection Against Termites: In jurisdictions that have adopted the IRC, SBC or IOTFDC, where the probability of termite infestation is defined as "very heavy" by the code official, the foam plastic must be installed in accordance with Section R320.4 of the IRC, Sections 1916.7.5 and 2603.3 of the SBC or Section 323.4 of the IOTFDC. Areas of very heavy termite infestation must be determined in accordance with IRC Figure R301.2(6), SBC Figure 2304.1.4 and IOTFDC Figure 301.2(6), as applicable.

4.2.8 Fire-resistance-rated Wall Assemblies: NUDURA Integrated Building Technology™ ICFs are used to construct fire-resistance-rated wall assemblies as follows:

The interior face of the forms must be covered with minimum $\frac{1}{2}$ -inch-thick (12.7 mm) gypsum wallboard complying with ASTM C 36, and the exterior faces of forms

must be covered with minimum $\frac{1}{2}$ -inch-thick (12.7 mm) gypsum sheathing complying with ASTM C 79. Fire-resistance ratings are as follows:

- Four-inch-thick (102 mm) concrete has a fire-resistance rating of two hours.
- Six-inch-thick (152 mm) concrete has a fire-resistance rating of three hours.
- Eight-inch-thick (203 mm) concrete has a fire-resistance rating of four hours.

The interior face of the forms is covered with minimum $\frac{5}{8}$ -inch-thick (15.9 mm) gypsum wallboard complying with ASTM C 36, and the exterior faces of forms must be covered with minimum $\frac{5}{8}$ -inch-thick (15.9 mm) gypsum sheathing complying with ASTM C 79. In this case, 6-inch-thick (152 mm) concrete has a fire-resistance rating of four hours.

The normal-weight concrete of a sand-limestone mix must have a minimum density of 145 pcf +/- 5 pcf (2300 kg/m³ +/- 50 kg/m³) with a minimum compressive strength of 2,900 psi (20 MPa). The minimum reinforcement must be No. 4 (10M) reinforcing bars. Reinforcing bars must be placed vertically in the center of the wall and spaced 16 inches (405 mm) on center. Horizontal reinforcing bars must be spaced 18 inches (457 mm) on center and be staggered on either side of the vertical bars, from course to course of the forms. The maximum axial compression load must be 7 percent of the load determined in accordance with the applicable code.

4.2.9 Installation in Buildings Required to Be of Noncombustible Construction: Noncombustible construction is defined as Type I, II, III and IV under the IBC [Types 1, 2, 3 and 4 under the NBBC; Types I, II, III and IV under the SBC; and Types I and II under the UBC]. The NUDURA Integrated Building Technology™ ICFs are recognized for use in buildings of noncombustible construction provided the forms are used to form solid concrete walls complying with the following:

4.2.9.1 Exterior Walls of Buildings of Any Height (Including One-story Buildings): The walls must have an exterior wall covering complying with Sections 4.2.9.1.1, 4.2.9.1.2 or 4.2.9.1.3; and an interior wall covering complying with Section 4.2.9.1.4; and must have fireblocking complying with Section 4.2.9.1.5.

4.2.9.1.1 EIFS and One-coat Stucco-Exterior Finish: One of the following EIFS or one-coat stucco lamina must be installed over the exterior of the forms using the reinforcing fabric or lath, base coat and finish coat materials described in their evaluation reports:

- Dryvit Systems, Inc., Dryvit Outsulation EIFS as described in ESR-1232.
- Finestone, Finestone Pebbletex, Pebbletex-D, Quik Clad-D and Impact-R Wall Systems as described in ER-4455.
- Omega Products International Inc., Omega Diamond Wall and Diamond Wall PM Insulating Exterior Stucco Systems as described in ESR-1194.
- Senergy LLC, Senexflex and Senexthick EIFS as described in ER-3850.
- Sonowall Stucco Systems, Sonowall EIFS as described in ER-5678.
- STO Corporation, STO Classic EIFS and STO Classic EIFS with Gold Guard as described in ESR-1748.
- STO Corporation, STO Essence EIFS as described in ESR-1720.
- STO Corporation, STO Essence EIFS and STO EIFS with Gold Guard as described in ESR-1748.

4.2.9.1.2 Brick Veneer—Exterior Finish: Anchored brick veneer is attached to the flanges of the plastic ties with fasteners as described in Section 4.2.3.1, spaced as required in the applicable code or evaluation report. The brick veneer must comply with the applicable code and must be installed with a minimum 1-inch (25.4 mm) air gap between the face of the exterior EPS formwork and the brick. The brick must be installed with a steel shelf angle attached to the concrete and installed at each floor line and at the top of each window and door opening.

4.2.9.1.3 Exterior Plaster—Exterior Finish: Metal lath and exterior plaster must comply with the applicable code, and the exterior plaster must be a minimum of $\frac{7}{8}$ inch (22 mm) thick. The lath must be attached to the flange of the plastic ties with fasteners as described in Section 4.2.3.1, spaced as required in the applicable code.

4.2.9.1.4 Interior Finish: The forms must be finished on the interior in accordance with Section 4.2.2 or Section 4.2.8.

4.2.9.1.5 Fireblocking: Foam plastic on the interior must be discontinuous at floor lines. Floor-to-wall intersections must be constructed to prevent the passage of flame, smoke and hot gasses from one floor to another. See Figures 17 and 18.

4.2.9.2 Siding Options for One-story Buildings: Buildings required to be of noncombustible construction that are limited to one story in height may be clad on the exterior with either aluminum of a thickness not less than 0.019 inch (0.48 mm) or corrosion-resistant steel having a base-metal thickness of 0.0160 inch (0.41 mm). The following conditions apply:

- The siding materials are installed in strict accordance with the cladding manufacturer's recommendations and are anchored to the form system so as not to exceed load limits per fastener as specified in Table 1 of this report.
- The interior surface of the form system is clad full height with an approved thermal barrier in accordance with Section 4.2.2 of this report.
- The foam plastic on the interior is detailed such that it is discontinuous at the roof line.

Note: The approved thermal barrier noted under Section 4.2.9.2 (b) may be eliminated only under all of the following conditions:

- The building must be equipped throughout with an automatic sprinkler system in accordance with the applicable code.
- The foam plastic on the interior face must be covered with aluminum of a thickness not less than 0.032 inch (0.81 mm), or corrosion-resistant steel having a base-metal thickness of not less than 0.0160 inch (0.41mm).
- The interior covering must be designed to fully encapsulate the insulation such that the insulation is discontinuous at the roof line.
- The attachment of the metal wall covering must be designed by a registered design professional.

4.2.10 Special Inspection:

4.2.10.1 IBC: Special inspection is required, as noted in IBC Section 1704, for placement of reinforcing steel and concrete and for concrete cylinder testing. Special inspection in accordance with IBC Sections 1704.1 and 1704.12 is required when an EIFS wall covering system is applied.

4.2.10.2 IRC: For walls designed in accordance with Section 4.1.2 of this report, special inspection is not required. For walls designed in accordance with the IBC, as permitted by IRC Sections R104.11 and R301.1.2, special inspection in accordance with Section 4.2.10.1 of this report is required.

4.2.10.3 UBC: Special inspection is required, as noted in UBC Section 1701, for placement of reinforcing steel and concrete and for concrete cylinder testing. When approved by the code official, special inspection may be waived when all the following conditions are met:

- Walls are a maximum of 8 feet (2.4 m) high, and are limited to use in single-story construction of Group R, Division 3, or Group U, Division 1, occupancies.
- Maximum height of a concrete pour is 48 inches (1219 mm). Succeeding lifts must be placed in accordance with UBC Section 1905.10.5.
- Installation is by installers trained by NUDURA Corporation.
- Half the allowable stresses or loads permitted by the UBC are used for design of the walls.
- Installation instructions indicate methods used to verify proper placement of concrete.

4.2.10.4 BNBC: Special inspection is required, as noted in BNBC Section 1705.4, and is to include but not be limited to: placement of reinforcing steel and placement of concrete and for concrete cylinder testing and formwork materials; installation of reinforcing steel; formwork installation; bracing; and concreting operations.

4.2.10.5 SBC: Special inspection is required, as noted in SBC Section 1707.1, and is to include, but not be limited to: placement of reinforcing steel and placement of concrete and for concrete cylinder testing and formwork materials; installation of reinforcing steel; formwork installation; bracing; and concreting operations.

5.0 CONDITIONS OF USE

The NUDURA Integrated Building Technology™ Insulating Concrete Form (ICF) Wall System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- Form units are manufactured, identified and installed in accordance with this report and the manufacturer's published installation instructions. If there is a conflict between the manufacturer's published installation instructions and this report, this report governs.
- Design calculations and details for specific applications must be provided to the code official in accordance with Section 4.1 of this report.
- The forms must be separated from the interior of the building with an approved 15-minute thermal barrier installed as described in Section 4.2.2 of this report, except for crawl space construction as described in Section 4.2.4.
- The forms are limited to buildings of combustible Type V-B construction under the IBC [Type 5 under the BNBC, Type VI under the SBC, Type V-N under the UBC] and construction in accordance with the IRC, except as described in Section 4.2.9 of this report.
- Special inspection must be provided in accordance with Section 4.2.10 of this report.
- When used as part of a fire-resistance-rated assembly, Section 4.2.8 of this report applies.
- The forms are produced for NUDURA Corporation by Plasticques Cellulaires Polyform in Granby, Quebec, Canada, under a quality control program with inspections by Intertek Testing Services NA Ltd. (AA-688).

6.0 EVIDENCE SUBMITTED

- 6.1** Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2006, including reports of tests in accordance with ASTM C 578; reports of comparative crawl space fire tests; and a report of room corner fire tests and analysis.
- 6.2** Data in accordance with the ICC-ES Acceptance Criteria for Concrete Floor, Roof and Wall Systems and Concrete Masonry Wall Systems (AC15), dated June 2003 (editorially revised March 2005).
- 6.3** Report on fastener withdrawal and lateral load tests in accordance with ASTM D 1761.
- 6.4** Report on testing of fire-resistance-rated wall assemblies in accordance with ASTM E 119.

7.0 IDENTIFICATION

One face of each form covered by this report must be labeled with the product name (NUDURA) and the evaluation report number (ESR-2092). Each package of forms must be labeled with the company name (NUDURA Corporation), address and telephone number; manufacturing date; lot number; name of the inspection agency (Intertek Testing Services NA Ltd.); and the evaluation report number (ESR-2092).

Plastic cross-ties that are shipped separately from the forms are provided in boxes that are marked with the manufacturing date and lot number. Cross-ties are molded with the word "NUDURA" to identify them as a component of the wall system.

When used in buildings required to be of noncombustible construction, as described in Section 4.2.9 of this report, one label as described in this section must be visible in every 160 square feet (14.7 m²) of wall area.

TABLE 1—ALLOWABLE PULLOUT AND LATERAL CAPACITIES OF SCREWS

SCREW TYPE	ALLOWABLE CAPACITY (pounds)	
	Pullout	Lateral
No. 6 Type S fine thread screw	37	74
No. 6 Type W coarse thread screw	40	87

For SI: 1 lb = 4.45 N.

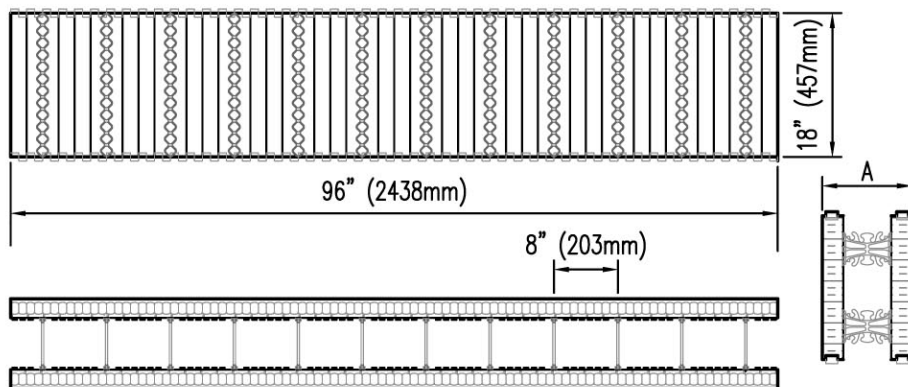


FIGURE 1 - STANDARD FORM UNIT

NOMINAL CONCRETE CORE	DIMENSION A (IMP)	DIMENSION A (MET)
4"	9 1/4"	235mm
6"	11 1/4"	286mm
8"	13 1/4"	337mm
10"	15 1/4"	387mm
12"	17 1/4"	438mm

STANDARD FORM UNIT

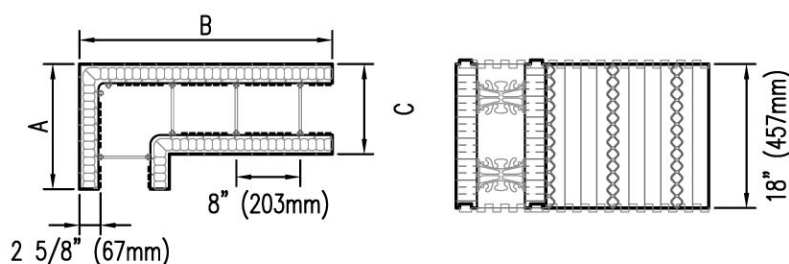


FIGURE 2 - 90° CORNER FORM UNIT

NOMINAL CONCRETE CORE	DIMENSION (IMP)		
	A	B	C
4"	15 5/8"	31 5/8"	9 1/4"
6"	15 5/8"	31 5/8"	11 1/4"
8"	17 5/8"	33 5/8"	13 1/4"
10"	19 5/8"	35 5/8"	15 1/4"
12"	21 5/8"	37 5/8"	17 1/4"

	DIMENSION (MET)		
	A	B	C
102mm	397mm	803mm	235mm
152mm	397mm	803mm	286mm
203mm	448mm	854mm	337mm
254mm	494mm	905mm	387mm
305mm	549mm	956mm	438mm

90° CORNER FORM UNIT

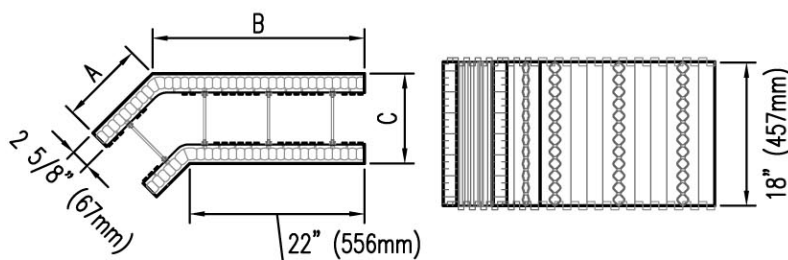
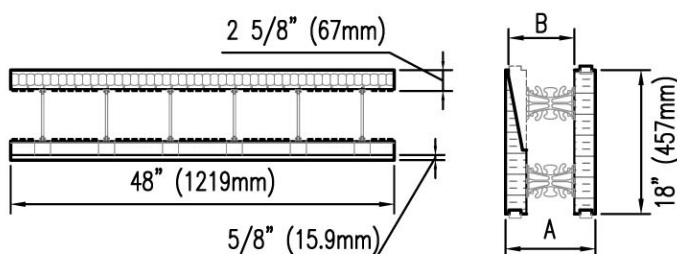


FIGURE 3 - 45° CORNER FORM UNIT

NOMINAL CONCRETE CORE	DIMENSION (IMP)		
	A	B	C
4"	10 1/2"	26 1/2"	9 1/4"
6"	10 1/2"	26 1/2"	11 1/4"
8"	10 1/2"	26 1/2"	13 1/4"
10"	12 1/2"	28 1/2"	15 1/4"
12"	14 1/2"	30 1/2"	17 1/4"

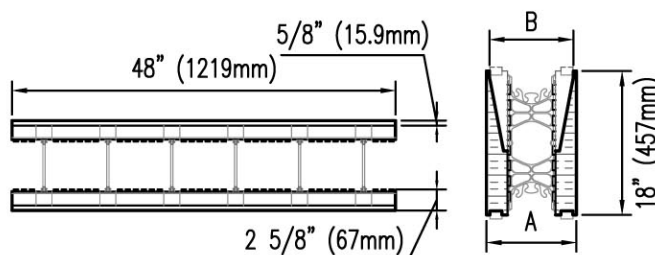
	DIMENSION (MET)		
	A	B	C
102mm	267mm	673mm	235mm
152mm	267mm	673mm	286mm
203mm	267mm	673mm	337mm
254mm	318mm	724mm	387mm
305mm	368mm	775mm	438mm

45° CORNER FORM UNIT

FIGURE 4 - TAPERED TOP FORM UNIT
ONE SIDED

NOMINAL CONCRETE CORE	DIMENSION A (IMP)	DIMENSION B (IMP)	DIMENSION A (MET)	DIMENSION B (MET)
4"	9 1/4"	6"	235mm	102mm
6"	11 1/4"	8"	286mm	152mm
8"	13 1/4"	10"	337mm	203mm
10"	15 1/4"	12"	387mm	254mm
12"	17 1/4"	14"	438mm	305mm

TAPERED TOP FORM UNIT

FIGURE 5 - TAPERED TOP FORM UNIT
TWO SIDED

NOMINAL CONCRETE CORE	DIMENSION A (IMP)	DIMENSION B (IMP)	DIMENSION A (MET)	DIMENSION B (MET)
4"	9 1/4"	8"	235mm	203mm
6"	11 1/4"	10"	286mm	254mm
8"	13 1/4"	12"	337mm	305mm
10"	15 1/4"	14"	387mm	356mm
12"	17 1/4"	16"	438mm	406mm

TAPERED TOP FORM UNIT

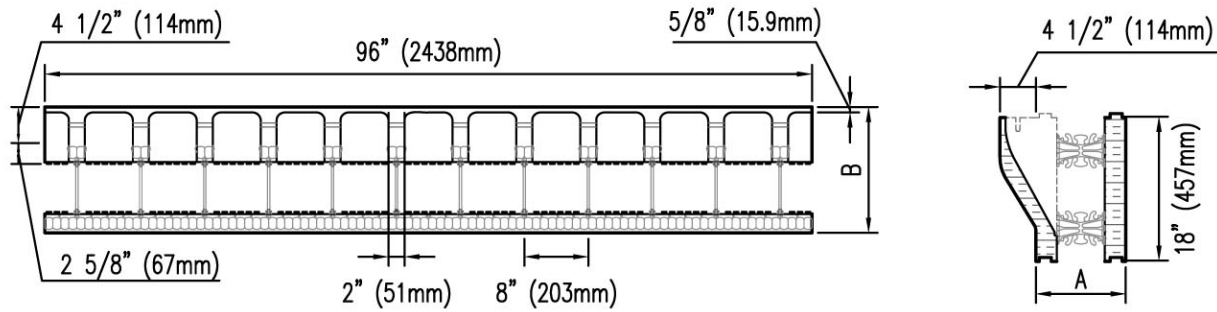


FIGURE 6 - BRICK LEDGE FORM UNIT

NOMINAL CONCRETE CORE	DIMENSION A (IMP)	DIMENSION B (IMP)	DIMENSION A (MET)	DIMENSION B (MET)
4"	9 1/4"	13 3/4"	235mm	349mm
6"	11 1/4"	15 3/4"	286mm	400mm
8"	13 1/4"	17 3/4"	337mm	451mm
10"	15 1/4"	19 3/4"	387mm	502mm
12"	17 1/4"	21 3/4"	438mm	552mm

BRICK LEDGE FORM UNIT

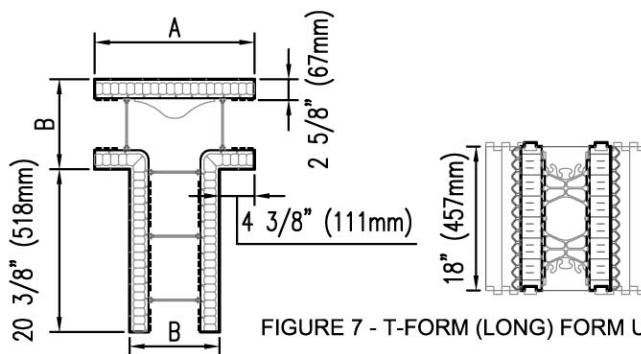


FIGURE 7 - T-FORM (LONG) FORM UNIT

NOMINAL CONCRETE CORE	DIMENSION A (IMP)	DIMENSION B (IMP)	DIMENSION A (MET)	DIMENSION B (MET)
4"	18"	9 1/4"	457mm	235mm
6"	20"	11 1/4"	508mm	286mm
8"	22"	13 1/4"	559mm	337mm
10"	24"	15 1/4"	610mm	387mm
12"	26"	17 1/4"	660mm	438mm

T-FORM (LONG) FORM UNIT

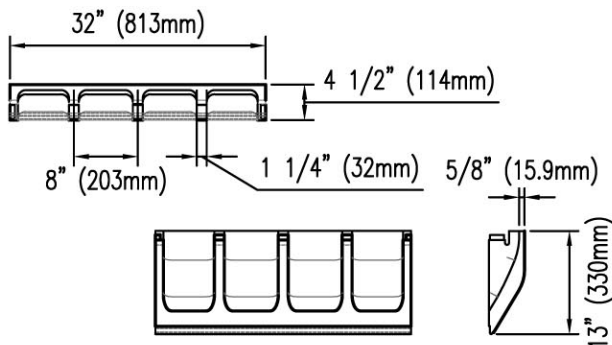


FIGURE 9 - BRICK LEDGE EXTENSION

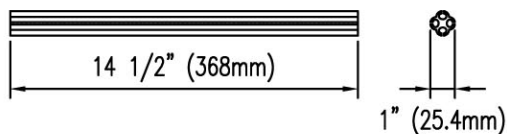


FIGURE 11 - 4 WAY WEB CONNECTOR

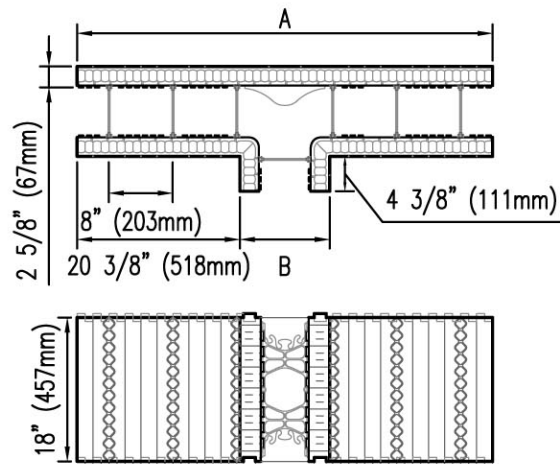


FIGURE 8 - T-FORM (SHORT) FORM UNIT

NOMINAL CONCRETE CORE	DIMENSION A (IMP)	DIMENSION B (IMP)	DIMENSION A (MET)	DIMENSION B (MET)
4"	50"	9 1/4"	1270mm	235mm
6"	52"	11 1/4"	1321mm	286mm
8"	54"	13 1/4"	1372mm	337mm
10"	56"	15 1/4"	1422mm	387mm
12"	58"	17 1/4"	1473mm	438mm

T-FORM (SHORT) FORM UNIT

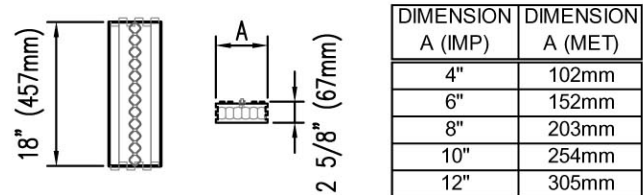


FIGURE 10 - STANDARD END CAP WITH FASTENING STRIP

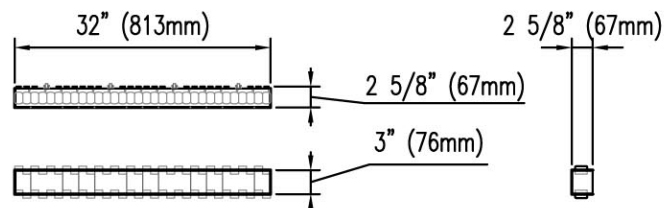


FIGURE 12 - HEIGHT ADJUSTER WITH FASTENING STRIPS

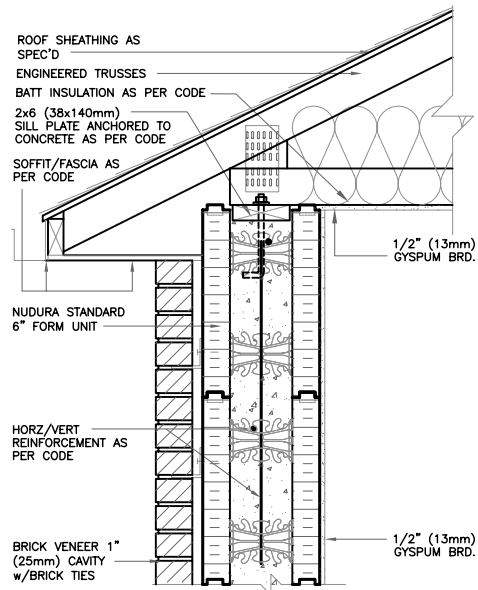


FIGURE 13 - TYPICAL ROOF TRUSS CONNECTION DETAIL

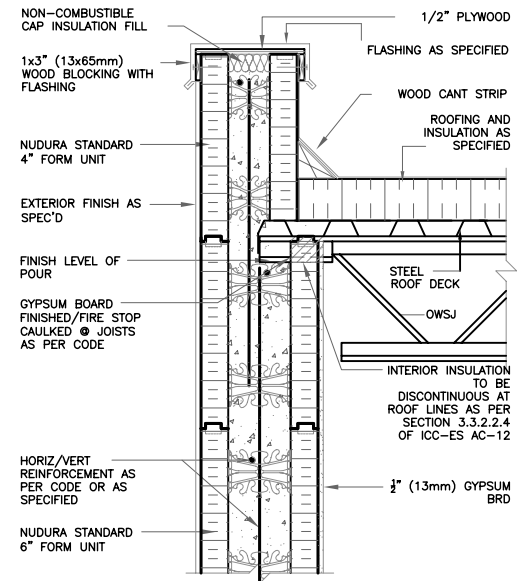


FIGURE 16 - TYPICAL FLAT ROOF CONNECTION DETAIL

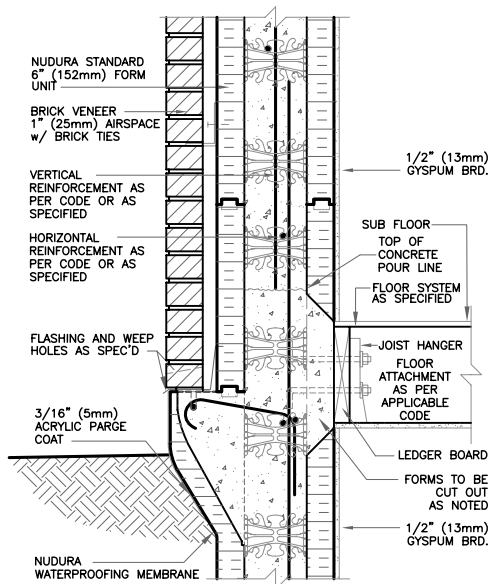


FIGURE 14 - TYPICAL FLOOR CONNECTION DETAIL WITH BRICK LEDGE

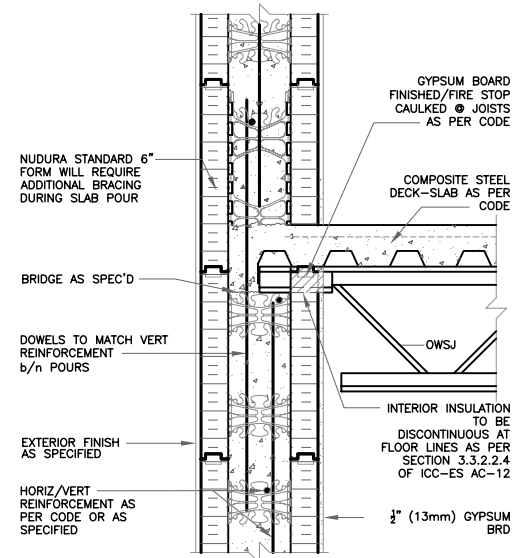


FIGURE 17 - INTERMEDIATE FLOOR LOAD BEARING COMPOSITE DECK

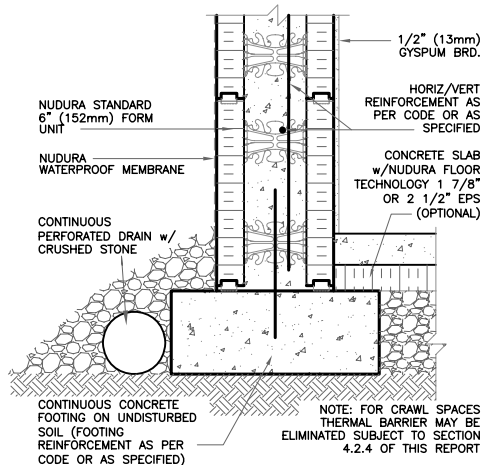


FIGURE 15 - STANDARD STRIP FOOTING (INSULATION OPTIONAL)

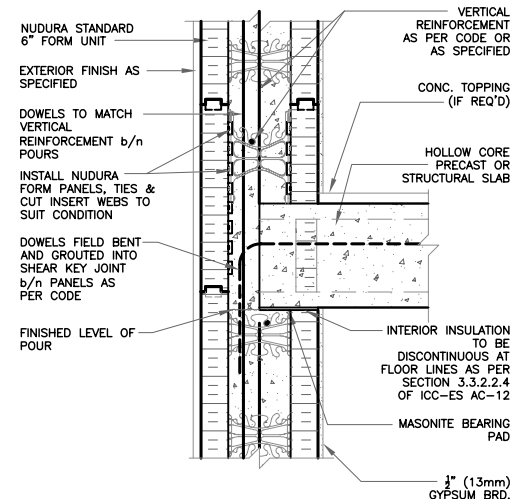


FIGURE 18 - INTERMEDIATE FLOOR CONNECTION LOAD BEARING HOLLOW CORE / STRUCTURAL SLAB