This document is intended for general information purposes only regarding specifications for the Element ICF® insulated concrete forms system (herein referred to as Element ICF®). The technical specification sheet, as per Construction Specifications institute (CSI) formatting, can be downloaded at www.ElementICF.com.

1 PRODUCT DESCRIPTION

- Element ICF® consists of a series of flame-resistant EPS foam panels and polypropylene connector webs knows as Flexties™. Two Element panels and six Flexties are site-assembled together to create a reversible Element ICF® block.
- Element ICF® panels are a minimum of 2.75 inches (70mm) thick.
- The Flexties™ lock in place into the center locking channels of the side webs molded into the Element ICF® panels to create site-assembled Element ICF® blocks with a 6 inch (152mm) concrete core thickness.
- Each Element panel contains embedded side webs every 16 inches (406 mm) on center vertically. Each side web creates a 1.5 inch (38 mm) wide furring strip that is recessed ½" behind the exterior foam surface of the block.

  The furring strips accommodate fasteners for attachment of both exterior and interior finishes. The furring strips extend 14.95 inches (380 mm) in height creating an all-foam space between courses on the exterior foam side to facilitate easy installation of wiring.

  Element's side webs feature extended flanges on the concrete core side that clip together top to bottom to prevent floating and settling during the concrete pour.

  Additional Flexties™ can also be locked into the end-locking channels of the side webs in adjacent courses to permanently bond two courses together if desired.
- The webs facilitate rebar placement in accordance with CAN/CSA A23.1, and ACI 318.

3 CODE/CERTIFICATION APPROVALS

The Element ICF® panels have been tested to the following standards:

- ASTM C578, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
- CAN/ULC S701, Standard for Thermal Insulation, Polystyrene Boards
- ASTM E2634, Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems
- CAN/ULC S717, Standard for Flat Wall Insulating Concrete Form (ICF) Units
- QAI Evaluation Report CERus 1005
- QAI listing B103-1
- State of Florida Product Approval 14469
- Wisconsin Building Products Evaluation 20199000

Pending evaluations:

- Miami-Dade County Approval
- City of Los Angeles Research Report

4 DESIGN/PERFORMANCE OF ELEMENT ICF®

A brief description of material properties are outlined in the following table. Test reports are available upon request.

DESCRIPTION	ASTM C578 (TYPE II EPS)	CAN/ULC S701 (TYPE 2 EPS)	REFERENCED STANDARD TEST METHOD
R-Value (Thermal Resistance) per inch (per 25.4mm)	Min. R 4.00 (RSI 0.70) Min. R 4.00 (RSI 0.70)		ASTM C518
Water Absorption	Max. 3.0%		ASTM D2842
Water Vapor Presence	3.5 perm-In (Max. 200 ng/Pa-s-m2)		ASTM E96
Compressive Strength	Min. 15 psi	Min. 16 psi (110 kPa)	ASTM D1621 & ASTM C165
Flexural Strength	Min. 35 psi (240 kPa)		ASTM C203
Dimensional Stability – Thermal & Humid Aging	2.0%	Max. 1.5%	ASTM D2126
Density	Min. 1.35 pcf (22 kg/m3)		ASTM C1622 & ASTM C303
Limiting Oxygen Index	Min. 24.0%		ASTM D2863
Flame Spread Index (max thickness)	≤ 25 (4 in)	≤ 250 (100 mm)	ASTM E84/CAN ULC S102.2
Smoke Developed Index (max thickness)	≤ 450 (4 in)	≥ 500 (100 mm)	ASTM E84/CAN ULC S102

Table 2: System and Web Tie Test Results

Physical

Test Description	Result	Pass/Fail Criteria	Referenced Standard Test Method
Shear Strength of Polypropylene Web	18 MPa (2610 psi)	N/A*	ASTM E2634, Figure 2
Average Tensile Strength of Polypropylene Webs	3.11kN (700lbs)	N/A*	ASTM D638

Fire

Test Description	Result	Pass/Fail Criteria	Referenced Standard Test Method
Fire Endurance Test	See Fire Resistance Rating table	N/A*	ASTM E119/CAN ULC S101/ANSI UL 263
Standard Room Fire Test	w/in acceptable limits	Met conditions required for exposure to fire for 15 minutes.	UBC 26-3/CAN ULC 1715
Flammability of Polypropylene Webs	CC1 Classification	N/A*	ASTM D635
Smoke Density Rating of Polypropylene Webs	19.1%	Max. 75%	ASTM D2843
Self Ignition Temperature of Polypropylene Webs	680°F	> 650°F	ASTM D1929

FIRE RESISTANCE RATING (ASTM E119 / ANSI UL 263)

Form Size (Concrete Wall Thickness)	Rating with ½" drywall
100mm (4")	2hrs
152mm (6")	3hrs (4hrs if 5/8" drywall used)
203mm (8") and above	4hrs

Bearing load applied to wall = 360,000lbs (360kips)

*Code body or referenced test standard required reporting test results only - no Pass/Fail criteria specified.