

# Technical Performance Data



## CONCRETE WALL CONSTRUCTION (4", 6", 8", 10" & 12" Reinforced Concrete Core):

Design Criteria For Structural Concrete Wall System:	ACI 318 and CSA A23.2 concrete design for slender walls
Recommended Concrete Consolidation:	ACI 309 and Tech Bulletin 1.06.05
Prescriptive Engineering for Exterior Concrete Walls:	PCA100-2012, IRC R404, R611, ACI 332
Average weight of Reinforced Structural Concrete:	150 lbs /cu. ft. (including steel reinforcement)
Thermal Mass (Form & 4" Reinforced Concrete Core):	50 lbs. / sq. ft.
Thermal Mass (Form & 6" Reinforced Concrete Core):	75 lbs. / sq. ft.
Thermal Mass (Form & 8" Reinforced Concrete Core):	100 lbs. / sq. ft.
Thermal Mass (Form & 10" Reinforced Concrete Core):	125 lbs. / sq. ft.
Thermal Mass (Form & 12" Reinforced Concrete Core):	150 lbs. / sq. ft.
Recommended Concrete Compressive Strength:	Minimum 2500 recommended 3000 psi for walls
Recommended Concrete Slump for ICFs:	4" ICF - 6" to 7"; 6" ICF - 5.5" to 6.5"; 8", 10" or 12" ICF - 5" to 6"
Recommended Aggregate Size for Concrete Mix Design:	4" ICF - 3/8" max.; 6" ICF 3/8" to 1/2" max.; 8", 10" & 12" ICF - 1/2" to 3/4" max.
Recommended Steel Reinforcing Compressive Strength:	Minimum yield strength 60,000 psi

## PRODUCT PERFORMANCE & THIRD PARTY TESTING:

### Expanded Polystyrene (EPS) Testing:

EPS Foam Resin: Modified low pentane, B/C bead size (resin is self-extinguishing)  
EPS Average Manufacturing Density: 1.5 lbs / cu. ft. ( Type II, Rigid Cellular EPS Foam Plastic)  
ASTM C578, EPS Thermal Insulation Properties  
CAN /ULC S701, EPS Thermal Insulation Properties

### Plastic Tie (Web) Strength Testing:

Fastener Withdrawal and Lateral Shear - ASTM D1761  
Tie Tensile and Shear – ASTM D638 and D732

### Performance Testing:

Sound Transmission Classification (STC) - ASTM E90  
4"=STC 46, 6" & 8" = STC 50+

### Environmental, Safety & Energy Performance:

No HCFCs or CFCs emitted in the manufacturing process  
No toxins, formaldehydes are produced, no off-gassing.  
Plastic ties are made from 100% recycled material.  
EPS forms, concrete and rebar are recyclable products.  
MSDS sheets are available on website.

### Energy Efficiency and Performance

Thickness of EPS insulation: 2.625" per panels (total 5.25" EPS insulation)  
EPS, Type II, Thermal Resistance R-Value: R-4.17 per inch (@ 70°F)  
Engineered Thermal Resistance Calculations: R-23+, U-factor 0.0425 whole wall assembly per ASHRAE 90.1  
Air Leakage (infiltration rate) ASTM E283: 0.002 cfm / sq. ft.  
No Thermal Bridging, Continuous Insulation  
Energy Enhancement with Energy Stick: 2" EPS insert for additional R-8  
Fox Buck Insulated Opening Buck

### Resiliency Design:

High Wind Capacity: Fox Blocks reinforced concrete walls can be designed to exceed building code wind requirements.  
Seismic Zones: Fox Blocks reinforced concrete walls can be designed for all seismic zones and used for FEMA approved safe rooms

### FIRE TESTING

#### Surface Burning Characteristics of Foam Plastic:

ASTM E84, ANSI/UL723, CAN / ULC S102  
Flame Spread – less than 25  
Smoke Development – less than 450

#### Fire Burning Characteristics of Plastic Ties:

ASTM D1929 Flash Ignition Temp: 752° F (400°C)  
ASTM D1929 Spontaneous Ignition Temp: 716° F (380°C)  
ASTM D635 Burn Rate – Meets Class CC1

#### Fire Resistance Rating – ASTM E119 (Equivalent Standard Test Methods)

4" Fox Blocks 2 hours  
6" Fox blocks 4 hours

### BUILDING CODES AND STANDARDS

ICC Code Compliance: Intertek CCRR-1010  
AC 353: Acceptance Criteria for Flat Wall ICFs  
ASTM E2634: Standard for Flat Wall ICFs  
CAN/ULC S717.1: Standards for Flat Wall ICFs

Fox Blocks is code compliance for foundations and Building Types I,II, III and IV (noncombustible) any height.

