Specification Sheet

1. PRODUCT NAME:
ECO-Block® Standard Insulating Concrete Form System

2. MANUFACTURER:
ECO-Block®, LLC
11220 Grader Street, Suite700
Dallas, Texas 75238

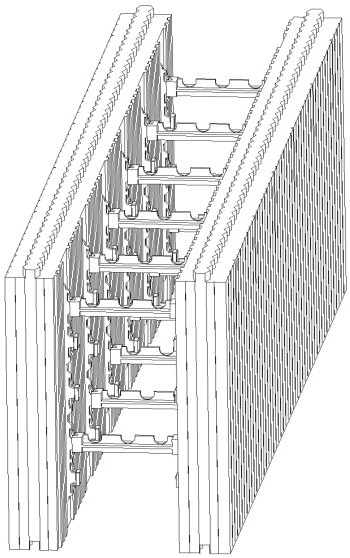
Phone: 800-595-0820
Phone: 214-503-1644
Fax: 214-503-0321

Web Site: www.eco-block.com

3. PRODUCT DESCRIPTION:
ECO-Block® is a stay-in-place, Insulating Concrete Forming system (ICF) consisting of 2-1/2 inches thick fire retardant expanded polystyrene (EPS) side panels joined with separate high-strength plastic connectors. Full height webs of high strength plastic are molded into the EPS panels 8 inches on center to provide attachment for panel connectors and to support interior and exterior wall finishes without imposing loads on the EPS. Concrete with reinforcement is placed between the forms to provide a high strength monolithic concrete wall having excellent fire resistance and high resistance to sound transmission. Wall thickness depends on connector length. Minimum concrete thickness is 4 inches. Concrete thickness can be increased in increments of two inch up to whatever is required. The steady state insulating value of the wall is R-22. Additional insulation credits can be obtained from the thermal mass effect of the concrete wall. No additional vapor and air infiltration barrier is required. The completed wall has a fire resistance rating of 4 hours (6 inch thick concrete) or longer and provides a sound transmission class (STC) of 51 or better. The ignition temperature of the EPS is higher than that of pine. EPS provides a flame spread index of 25 or less and a maximum smoke development index of 450 or less when tested under ASTM E84. A two dimensional interlock is provided on top and bottom of the EPS panels to facilitate accurate stacking during construction.

4. CONSTRUCTION FEATURES:
ECO-Block® panels are modular sized to provide a net 16 inches high by 48 inches long form from each set of two connected panels. Webs are spaced at 8 inches on center and are recessed ¼ inch from the exterior surface of the EPS panel to allow a uniform surface for finish application. Web features include a 1 inch wide x 1/8 inch thick outer flange, five points for connector attachment on the inside and connections through the EPS. A groove over the recessed web outer flange makes it easy to locate the finish attachment point. Attachment to the web flange is made with drywall screws.

Connections to floor joists, roof trusses, concrete block walls and wood walls are easily made using industry standard hardware and methods. Brick ledge forms and 90-degree corner forms are catalog items. Panels can be cut with woodworking tools.



Horizontal reinforcing bars are placed in notches in the panel connectors. These notches precisely locate the bars for predictable structural function and allow concrete to fully surround the bars. Horizontal bars should be staggered side to side for structural considerations and to allow the vertical bars to be confined near the center of the wall. Prescriptive reinforcing design is available for simple structures. Local design professionals must be used for complicated and high load designs to assure that local codes and special design requirements are met.

Chases for electrical cable or plumbing can be cut into the EPS using a router or a hot knife. A 3-inch deep electrical box against the concrete provides a flush installation with ½ inch gypsum board.

Lintels over door and window openings can be integral with the wall by adding required rebar to provide additional strength. Point loads from beams or girder trusses can be supported by locally increasing wall width.

ECO-Block® forms must be installed plumb and straight. A form alignment system approved by ECO-Block® is available. This alignment system is adjustable for uneven floors and provides scaffolding attachment points. Block alignment can also be provided by jobs site fabricated braces made from wood or metal studs. Concrete and concrete placement shall conform to ACI 318 or CAN 3A23.1 and local codes. The EPS forms provide the ideal concrete curing environment by retaining moisture and by insulating the concrete during cold weather placement. Curing inside the form assures that laboratory-cured test cylinders represent the strength of the building concrete. Up to 50% of concrete strength can be lost by improper curing.

ECO-Block® provides an "INSTALLATION MANUAL" with detailed installation instructions. Detailed technical information is also available on a CD and video.

ECO-Block® structures can be designed to safely withstand seismic and wind loads.

5. MANUFACTURE:
ECO-Block® panels and connectors are manufactured at several locations in the United States and Canada. Panels are formed in precision molds by injecting polystyrene beads around pre-positioned webs. This manufacturing method provides the piece-to-piece uniformity that is required for this product.

6. CODE APPROVALS:
ECO-Block® is approved by the following agencies:

- ICC-ES Report #1182
- CCMC #12966-R
- Miami-Dade Notification of Acceptance # 00-1024.02
- City of Los Angeles, CA #RR 25446

7. APPLICATIONS:
ECO-Block® ICFs can be used below and above grade in single and multi-story residential, commercial, institutional and industrial construction. They can be used for fire and noise resisting party walls and provide the necessary sound blocking for building next to airports, highways and railroad tracks.

Placing ECO-Block® panels on the casting bed prior to placing the reinforced concrete or wet setting in the concrete can form **insulated tilt-up concrete walls.** ECO-Block® panels on the side of an elevated concrete slab provide R-11 (or R-22 when placed on both sides) insulation with mechanical attachment to the concrete via the inside protrusion of the molded-in web.

8. ECO-Block® ADVANTAGES:

- Environmentally friendly – use of wood products is significantly reduced.
- Energy efficient – provides excellent insulation and air infiltration resistance that can reduce heating/cooling costs up to 50%.
- Sound suppressing – interior spaces are effectively shielded from environmental noise and from adjacent space noise.
- Reduced labor costs—due to speed of construction. Typically 1 house per day with a 4-person crew.
- Construction schedules are compressed – assembly is quick and form stripping with form clean up or disposal is not required.
- Extremely strong – the structure is reinforced cast-in-place concrete. The only strength limitations are those of the rebar, the concrete and the designer.
- Easy to work – EPS panels can be cut and shaped using wood working tools. Chases can be made with a router or a hot knife.
- Versatile – concrete wall can be of any thickness (4 to 24 inches) using the same side panels. Any standard interior or exterior finish can be applied.

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- Preformed 90-and 45 degree corners are catalog items. Corners other than 90-degrees and curved walls can easily be created. Can be used for insulation on tilt-up wall systems and under elevated slabs.
- Precision rebar placement - rebar is accurately located by notches in the connectors.
- Precision walls – block-to-block alignment is perfect due to panel interlocks. Forms can be moved into plumb and flatness after assembly. Simple alignment tools maintain the perfect wall during concrete placement.
- Concrete curing – concrete remains moist during curing and is insulated during cold weather curing that in most cases reduces the need for covering and supplemental heat.
- Easier to transport – components allow assembly on site; almost no "dead air" is shipped during transport.
- Less expensive – single EPS panels reduce mold and manufacturing costs, which are passed on to the customer. Inventory costs are reduced because one size panel fits all wall thickness.
- Life Safety – a 2-hour fire rating is provided with a 4-inch thick concrete wall. Flash point of the EPS is greater than wood.
- Structure life – there is no limit to the life expectancy of the ECO-Block® wall.

9. AVAILABILITY:
ECO-Block® is produced at several locations in the U.S. and Canada and is available through ECO-Block® distributors.

10. COST:
Contact local ECO-Block® distributor or ECO-Block® home office.

11. SPECIFICATIONS CHART:

Cavity size	**4- inch**	**6- inch**	**8- inch**
Block Dimensions	48 x 16 x 9 in	48 x 16 x 11 in	48 x 16 x 13 in
Concrete Thickness	4 in	6 in	8 in
Concrete Volume per block	0.07 yd^3	0.10 yd^3	0.13 yd^3
EPS Thickness (total)	5 in	5 in	5 in
EPS Density	1.45 pcf	1.45 pcf	1.45 pcf
Wall Surface Area per block	5.3 ft^2	5.3 ft^2	5.3 ft^2
Fire Rating*	2 hours	4 hours	4 hours
Smoke Development Index	300	300	300
Flame Spread Index	0	0	0
Sound Transmission Class**	50	51	54
Thermal Insulation*	R-22	R-22	R-22
Block Dimensions (90 deg Corner)	Long side: 32 in Short side: 16 in	Long side: 32 in Long side: 16 in	Long side: 32 in Short side: 16 in

**Concrete filled* ***Concrete filled, dry wall one side*