

**1. PRODUCT NAME**

**EnergyEdge®**, *Form with Function*

Insulating Concrete Forms

**2. MANUFACTURER**

**EnergyEdge, LLC.**

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**3. PRODUCT DESCRIPTION**

These R-10 insulated PVC forming rails replace the old form-and-strip methods by staying-in-place and becoming an integral part of the buildings envelope. This at-grade building technology also delivers critical material interface advantages.

**4. BASIC USE**

EnergyEdge is used as a concrete form for slab construction or form liner at the top edge of walls. The forming rail and its interior R-10 insulation are encapsulated into the concrete edges. Its primary role is to provide an at-grade thermal break as required by ASHRAE 90.1 and related building energy codes. However, the use of this product also provides multiple options and advantages in transitioning construction and finishing systems.

**5. APPLICATIONS**

Product is multi-functional and enhances the performance of both commercial and residential projects including:

- Concrete Forming of slab edges
- Basement & Stemwall sill to wall framing transitions
- Radiant slabs, glazing systems, tilt-up, ICF, SIP, thermal sheathing products, stucco, EIFS and more

**6. INSULATION PROPERTIES**

Contains R-10 Expanded Polystyrene (2lb, Type IX, 2-3/8”), is environmentally safe & contains insect resistant borax.

**7. EXTERIOR FINISH**

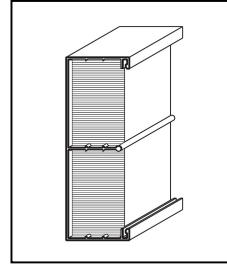
Product is solid core “concrete” grey UV protected exterior grade PVC. Surface color or texture may be applied on site.

**8. PHYSICAL / CHEMICAL PROPERTIES**

Product is resistant to UV exposure, water, snow, fertilizers, insects, rodents, lawn chemicals and remains freeze resistance.

**9. FORM SIZES**

Standard Form Size 2.75" wide x 8" height x 10' long. Special orders 11-1/4” tall available. Stack units to increase coverage on sloping sites.



**FB Rail Profile: Full Edge Insulation**

Height: 8”

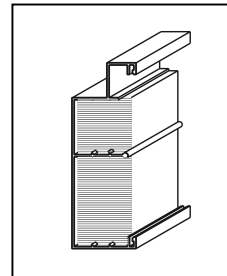
Width: 2-3/4”

Insulation: R-10

Feature: Full Edge Insulation

Commercial: General Use

Residential: 2X6 Frame



**MB Rail Profile: 1-1/2” Top Blockout**

Height: 8”

Width: 2-3/4”

Insulation: R-10

Feature: Full Bearing Conditions

Commercial: Flashing Edge

Residential: 2X4 Framing

**10. APPLICABLE STANDARDS**

American Society for Testing & Materials (ASTM)

- ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
- ASTM D635 Rate of Burning and/or Extent and Time of Burning of Plastics
- ASTM D696 Coefficient of Linear Thermal Expansion of Plastics between -30 C and 30 C with a Vitreous Silica Dilatometer.
- ASTM D1929 Flash Point 850 degrees
- ASTM E84 Surface Burning Characteristics of Building Materials

**11. PREPARATION**

**Slab Layout:** Lay forms around perimeter to insure proper alignment of wall, glazing and finishing materials. Different **EnergyEdge** materials may require slab forming offsets to accommodate insulation and/or insure proper bearing of structural framing.

**Important note:** Reference building and foundation plans, wall sections and details to insure proper alignment of wall framing and drainage plains with face of **EnergyEdge** material specified. IMMEDIATELY notify Architect of discrepancies or with questions prior to product installation.

*Mock-up wall applications are recommended to very finishing details and coordination with final exterior finish.*

**12. SITE CONDITIONS**

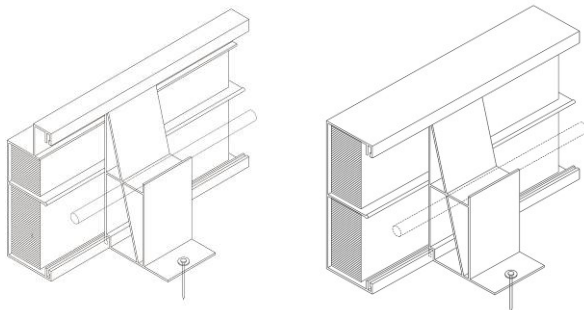
Avoid placement of concrete and **EnergyEdge** under extreme weather conditions. PVC material in extreme heat or cold exhibits unstable behavior and should be avoided. When cutting, using PAF fasteners, drilling or other impact operations, heat material as necessary to lessen brittle characteristic prior to proceeding in cold weather. Ideal application temperatures are 60°F - 00°F (15.5°C – 32.2°C)

### 13. CUTTING MATERIAL

Material may be cut using a table, chop or radial arm saw equipped with a new blade to produce a clean form edge. Important: Product is a stay in place form and will be exposed to visual inspection upon final review. Use of best practices and craftsmanship during installation is required.

### 14. SUBSTRATE PREPARATION

Foundations surfaces shall be level and provide full depth of **EnergyEdge** (EErail) specified. Level foundations reduces shimming requirements and decrease installation time. High spots will require “grinding” of footing surface.



**MB rail (left) and FB rail (right) illustrated with EEbrace member installed.** Note location of mechanical fastener in attachment flange of EEbrace. Also note location of support “chair” feature of EEbrace for perimeter rebar as may be required at perimeter of slabs or walls.

### 15. INSTALLATION

#### Pre-Assembly Staging

Place 10’ EErails on solid and level ground and snap EEbraces into each rail as follows:

- One EEbrace 12 inches from each end of rail, then
- Three EEbraces at 24” o.c. between

Total of 5 EEbraces installed in each pre-assemble rail.

One EEbrace is also required at each joint to span between each EErail for support and alignment purposes.

#### General Installation Sequence – EEbrace Attachment

- **Assemble Inside & Outside Corners:** Using pre-made corner connectors (FB90 or MB90) and using longest possible run of pre-assembled rail members in each direction fit members together and tightly fastened using self-tapping and matching colored screws supplied. Add one EEbrace at corner for support & leveling. (Note: Corners may also be field cut, see mfrs. guidelines.)
- **Place Corner Assembles:** Verify corners of building are true in each direction. Aligning base of EE rail with chalk-line. Shim level at each EEbraces using string line or laser level. Begin at corners and proceed toward center of each run of EErail. Mechanically fasten EEbrace at attachment flange. Continue alignment, leveling and attachment process at each subsequent brace.

- **Add Rails to complete Runs between corners:** Add rails connecting each to the next using an EEbrace to span and align butt joint connections. Cut only last member to “fit” final member in each run. (Note: Be aware of door openings and avoid “seams” at those locations).
- **Secure Base:** Use fasteners appropriate for conditions.
  - **New Concrete:** <28 days, secure using hand driven duplex nail or drill, insert wire wedge and duplex nail;
  - **Cured Concrete:** >28 days, use PAF connectors on leveled material (test charge levels) or secure using masonry or concrete screws.

#### EErail used as a Form Liner, Stacking EErail, Basement, Stemwall or Exterior and Reusable Kicker Alternatives

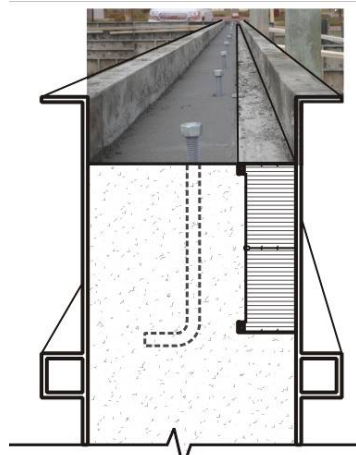
- **Pre-Assembly Staging Variations:** Because the braces are not physically supporting the EErail during concrete placement, fewer are required. Pre-install as follows:

- One EEbrace 24” from each end of EErail and
- One EEbrace in center (36” between)

Total of 3 EEbraces installed in each pre-assemble rail.

One EEbrace is also require at each joint to span between each EErail for not only support but alignment purposes.

- **Layout Formwork or Brackets:** Install wood forming boards, metal or plywood forms or locate pre-fabricated support kickers to allow for installation of EErails within frame.
- **Follow same installation sequence used for EErails as Defined in General Installation**
- **Fastening Alternative:** Each rail is mechanically fastened to exterior frame with screws. Screws should



**FB Rail** used as a wall form insert at top of typical basement wall

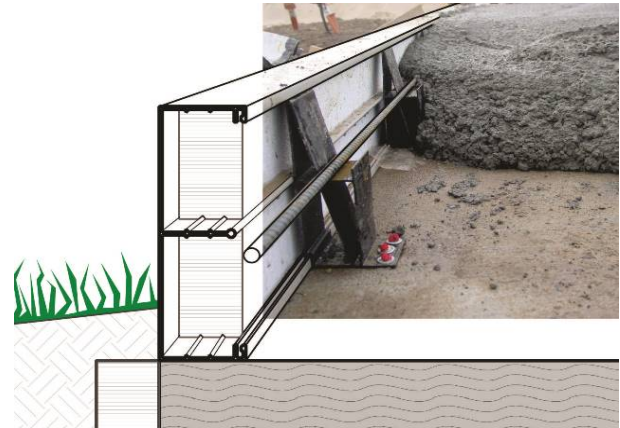
be located at least at every location of an interior brace. Where pouring into a narrow wall form additional fasteners are recommended. Protect EErail used in this method from discharge of concrete as this may pull the EErail away from the form.

#### Columns, Multiple Slab Placement and “Box-Out” Edges

- Insulation material is not adhered to PVC material in rails. If required by bearing conditions, section of insulation may be removed to meet bearing surface requirements yet maintain finished exterior surface continuity.

**Brace Adjustments / Shimming**

- **Brace Adjustment:** In the event braces require horizontal adjustment (to avoid rebar for instance) tap braces using a rubber mallet to achieve clearance. Add additional interior braces or add temporary exterior wood “kickers” as required to stabilize rail during pour.
- **Check Form Level:** Verify top elevation of EE rail and shim below EEbraces and EErails as required for stabilization.
- **Shimming Forms:**
  - **Shimming Forms:** PVC, metal shims or strips of asphalt starter shingles may be used below braces to fine tune elevations. Use the **EEleveler** on rough foundation types. **DO NOT USE WOOD** where covered with concrete.
  - **Shimming Exterior:** Wood shims may be used on *exterior* of EErails where materials can be removed after concrete placement.



Typical Rail installation at concrete pour



**Double Stack of FB rail at grade offset.** Note the Brace in lower rail is turned upside down and fastened to upper corresponding brace in top rail. Radiant slabs, like this project, benefit even more from an EnergyEdge insulated edge.

**Concrete Placement**

- Discharge concrete *away from* the interior surface of **EnergyEdge** and near rails. Pull or push discharged concrete to fill EEbraces and fill cavities of EE rail to full depth of outer height of **EnergyEdge**. Do not over vibrate material against EErail. Tapping outer face of EErail with a rubber mallet, depending upon slump of material will accomplish this requirement.
- Top of EErail makes a machine level surface upon which to screed level the concrete material.
- Immediately after concrete finishing, clean all **EnergyEdge** surface with a clean wet towel to remove concrete debris. Cured concrete adheres to the EErail and will be difficult to remove.

**16. STORAGE / PROTECTION**

Protect panels prior to installation from abuse, damage, water, sun exposure and contamination. Do not paint, coat or seal the product prior to installation.

**17. MAINTENANCE / REPAIRS**

Final material requires no maintenance. Contractor shall inform subsequent trades to be aware of **EnergyEdge** at exposed perimeters. Protect slab edges where materials will be exposed to heavy traffic, point loads or impacts. When backfilling, do not allow grading tractors, heavy equipment or materials to come in contact with edges. When necessary, repair kits are available. Contact **EnergyEdge** or your supplier.

**18. AVAILABILITY**

Distributed through a national network of suppliers.

**19. LEED® CONTRIBUTIONS**

**LEEDv3**

**Material Resource (MR Credits)**

- Credit 1 – Building Reuse
- Credit 2 – Construction Waste Management
- Credit 3 – Resource Reuse
- Credit 4 – Recycled Content
- Credit 5 – Local/ Regional Materials (Kansas | Indiana)

**Energy & Atmosphere**

- Prerequisite 2 - Minimum Energy Performance
- Credit 1 – Optimize Energy Performance

**Environmental Quality**

- Credit – 7 Thermal Comfort – Design

**LEEDv4**

- Prerequisite: Minimum Energy Performance
- Credit: Optimized Energy Performance



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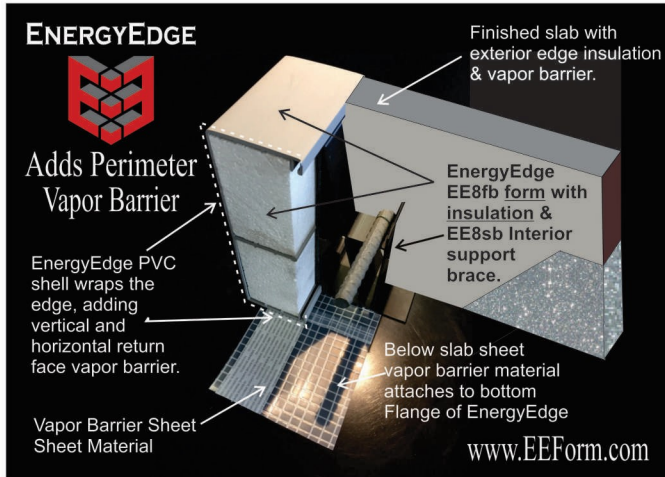


# EnergyEdge Applied At-Grade Building Technology

EnergyEdge materials have been installed on all classes of foundations including mono-pour, grade beam, stemwalls, frost walls, and basements. The **EEleveler** allows for the **EErails** to be install on rough placed and uneven "trench" footings.



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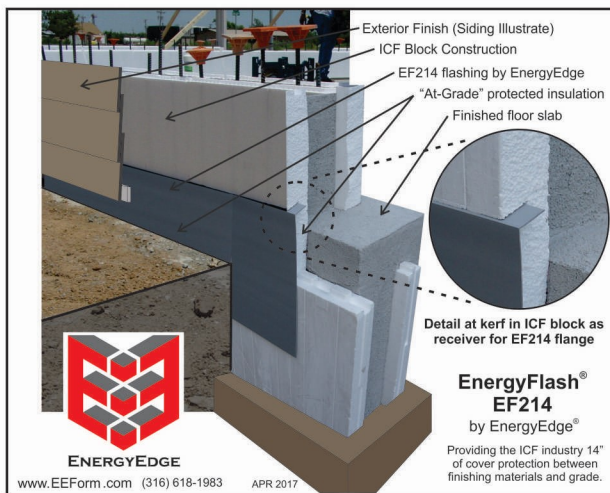
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EnergyEdge improves building comfort, energy performance and sustainability by completing the buildings thermal envelope. Its PVC shell also works with below slab vapor barrier materials to complete the job at otherwise exposed perimeter edges.



EnergyEdge works with and extends the performance of the many building systems and products that terminate at the slab edge.

Examples include insulated sheathing materials and exterior finishes, like EIFS, that require a weep edge.



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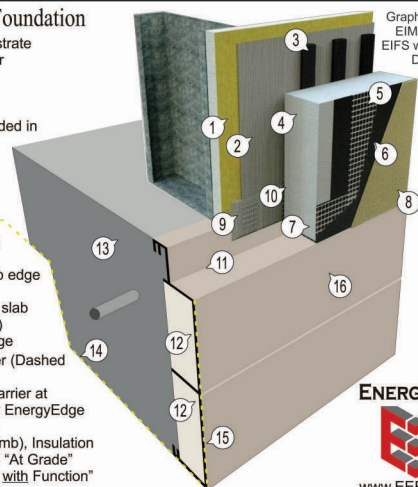
**EnergyFlash® EF214**  
by EnergyEdge®  
Providing the ICF industry 14" of cover protection between finishing materials and grade.

EnergyEdge also produces EnergyFlash a protective flashing for post-applied or retrofit perimeter insulation. The EF product is ideal for use with ICF block construction and post tensioned slabs.

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## EIFS Terminating at Foundation

1. Approved Sheathing Substrate
2. Air/Water Resistant Barrier
3. Vertical Notched Trowel Adhesive
4. Insulation Board
5. Reinforcing Mesh Embedded in Base Coat
6. Base Coat
7. Backwrap
8. Finish Coat
9. EIFS Manufacturer Recommended Transition
10. Manufacturers Approved Drainage Strip
11. Flashing formed into slab edge by EnergyEdge
12. Continuous insulation at slab edge by EnergyEdge (EE)
13. Slab with EE integral edge
14. Below Slab Vapor Barrier (Dashed Line)
15. Continuation of Vapor Barrier at Exterior slab perimeter by EnergyEdge (Continued Dashed Line)
16. EnergyEdge Form (EE8mb), Insulation and Protection as Integral "At Grade" transition solution. "Form with Function"



Graphic based on EIMA Guide to EIFS with Drainage Detailing

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EnergyEdge Completes the Thermal Benefits of the EIFS system & Provides Base Drainage Offset!