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"FORM WITH FUNCTION"

EnergyEdge™ Product Specification Data Sheet

CSI Division: 03130 (03.11.19)

1. Product Name

Energy Edge™ Insulated Concrete Slab Edge Forms and Flashing Materials

2. Manufacturer

Energy Edge™ LLC
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Wichita, Kansas 67207
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Fax: (316) 684-3984
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3. Product Description

BASIC USE

Energy Edge™ Patent Pending, forming & flashing systems are efficient and cost-effective products providing continuity to building envelope design previously unavailable. The ***EnergyEdge*** Insulated Concrete Edge Forms are positioned to form the perimeter of the required slab remaining in place after the concrete hardens serving as an integral finished and insulated edge. The ***EnergyFlash***™ member provides protection to transition insulation from below to above grade applications. The systems can be used with a wide variety of foundation and wall construction systems in both new construction and retro-fit construction. ***EnergyEdge*** products provide detailing and implementation opportunities that save energy, construction time and material resources rewarding designers, contractors and building owners. The improvement to construction science provided by ***EnergyEdge*** systems meets the design criteria for transition insulation required by ASHRAE 90.1 building energy conservation standards, DOE standards for slab edge insulation and all State Energy Codes as well as LEED standards based on these guidelines.

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MATERIALS

EnergyEdge systems consist of:

1. PVC extruded rail members (EE & EF rail), of varied height and width The length of each rail member are between 8' and 12'.
2. PVC extruded brace members (EE brace) used to support the EE rail during placement of the concrete. This EE brace also acts as a support element for edge slab steel reinforcing.
3. PVC extruded connection members (EE connection) designed to transition corners and angles required in the slab design.

COMPOSITION

The EE rail members hold 1-1/2" of Perform Guard ® 1.5 lb Expanded Polystyrene (alternate rigid insulation systems may be used for performance reasons, check availability in your area) providing a nominal R-7 insulation value measured at 40 degrees F (4.4 degrees C) at the exposed edge of the slab. The EE rail PVC material consists of virgin, fence grade, PVC plastic with UV inhibitors. The color is "concrete grey". All exposed EE connection members are constructed of similar material. The EE brace members and EE shims consist of black, reclaimed PVC plastic.

PROFILES AND FUNCTIONS

The EE rail members are designed to integrate with a variety of construction systems. The EE rail members include:

1. EE8fb – This is the basic EE rail, "E" shape, profile. This profile meets most construction design criteria. It provides a full 8" insulated face to the edge of the concrete slab.
2. EE8mb – This profile adds a 1-1/2" X 1-1/2" block-out notch designed primarily to support typical metal building construction. The profile is also desirable where full bearing of construction materials is required at the leading edge of the wall, for example, typical 2X4 wood frame construction.
3. EE210 – ***EnergyFlash***™ is a 2" wide X 9.25" tall flashing rail designed to provide a protective covering to rigid insulation allowing for the continuation of the building thermal and moisture assembly.

Reference suggested construction details for examples of product application.

The EE brace is a unique and multi-functional member. It is designed to "snap" into the EE rail member at the top and bottom flange requiring no mechanical or adhesive fasteners.

Note: *EnergyEdge* systems are generally the first product line required on site for construction. Order materials allowing time for shipment.

4. Technical Data

APPLICABLE STANDARDS

American Society for Testing & Materials (ASTM)

1. ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
2. ASTM D635 Rate of Burning and/or Extent and Time of Burning of Plastics
3. ASTM D696 Coefficient of Linear Thermal Expansion of Plastics between –30 C and 30 C with a Vitreous Silica Dilatometer.
4. ASTM D1929 Flash Point 850 degrees
5. ASTM E84

ENVIRONMENTAL CONSIDERATIONS

EPS material used in ***EnergyEdge*** is recycled material, contains no CFC's, HCFC's or Formaldehyde. R-Control EPS material is insect resistant providing protection against infestation of carpenter ants and termites.

Use of ***EnergyEdge*** Systems conserves natural resources, reduces construction waste and uses no chemical-releasing agents. ***EnergyEdge*** PVC materials are made of recycled material where UV inhibitors are not required.

5. Installation

RECEIVING AND STORING MATERIALS

Deliver ***EnergyEdge*** rail members to construction site in "nested" pairs to prevent damage to insulation material. Rails should not be exposed to weather for an extended period of time. Install system in a timely manner upon delivery to site. Boxes of brace material should be kept dry and protected from weather. Generally, standard guidelines for installation are located in each EE brace 80-pack box. Additional copies of installation instructions may be downloaded from the EnergyEdge web site. Go to www.EnergyEdgeForm.com.

SUBSTRATE PREPARATION

Foundations for installation of ***EnergyEdge*** (EE rail) systems should be installed pre-leveled allowing for full depth of EE rail profile specified. Properly leveled foundations will limit shimming requirements and decrease installation time. Avoid high spots in foundation placement. High spots will require "grinding" of concrete surface to allow for properly leveled materials.

SLAB EDGE LAYOUT

Layout slab edge with chalk and string lines allowing for proper horizontal relationship of finished surface EE of EF rail and wall construction. Reference building plan wall sections and details to insure proper allowance for wall construction. **CONSULT ARCHITECT IMMEDIATELY WITH DISCREPANCIES OR QUESTIONS REGARDING LOCATION OF SLAB EDGE.**

MATERIAL STAGING

Pre-assemble EE rails with EE braces installing all but connecting joint brace by snapping in place 1 brace 9" from each end and 6 additional braces between at 18" oc, typical of all 12' members. Distribute pre-assembled EE rail materials to edge of foundations for installation sequence.

METHODS AND PROCEDURES

General installation sequence:

1. Locate, plumb and level first corner member in each direction, aligning base of EE rail with chalk-line and top of rail with string line. Use EE connection members or field cut corners per manufacturers installation guidelines.
2. Install EE braces as per manufacturers installation instructions at joints and within recommended distance of joints. Snap in additional EE braces as required to meet requirements.
3. Mechanically fasten EE braces at base connection flange hand driven duplex nail (green concrete installations), predrilled & hand driven, washered PAF nail or Concrete & Masonry Screw. Reference installation guide.
4. Locate and "box-out" edge areas requiring placement of columns and structural members designed to tie into or bear directly on foundations. These blocked out area may be formed with EE rail material or 2X wood materials and removed after pour.
5. Install straight runs of material between corners aligning base of EE rail with chalk line and top with string line. Check elevation of top flange of EE rail and shim at each brace location inside and outside as required.
6. Adjustments to locations of EE braces to avoid vertical rebar members may be made by tapping the braces to one side. Slight variations to the 18" center requirement are acceptable to make these fine adjustments.
7. Shims located on interior of slab cannot be wood material. Use only PVC shims, metal shims on interior side of EE rail system. Exterior shimming may be wood where shim material can be removed after placement of concrete.
8. Field cut final length of EE rail to close each straight run of material only after installing full 12' long EE rail members to a point near the middle of each straight run.
9. Install edge reinforcing bar material (supplied by others) onto support "chair" of EE brace. Wire bar to chair through openings in EE brace extrusion. After placement of sand and vapor barrier material as required by other sections of specifications and building documents, install WWF material and wire edge of fabric to end reinforcing bar.
10. Placement of concrete should be done in a manner as to avoid direct discharge of material against or on EE rail. Concrete material should be pulled into the EE rail edge with tool. Concrete should be encouraged to thoroughly envelope EE braces and fill cavities of EE rail to full depth of outer insulation. Do not over vibrate material against EE rail. Tapping

outer face of EE rail with a rubber mallet, depending upon slump of material will accomplish this requirement.

11. Top of EE rail makes a machine level surface upon which to screed level the concrete material.
12. Clean surfaces of exposed EE rail upon final placement of concrete material. Hardened concrete on exterior face of EE rail becomes difficult to remove when allowed to cure.

INSTALLATION CONDITIONS

Placement of concrete and ***EnergyEdge*** materials under extreme conditions is not recommended. PVC material in extreme heat or cold exhibits unstable behavior and should be avoided.

EnergyEdge products are designed to be cut and installed using standard building tools. Construction sequences and procedures are to be performed in strict accordance with OSHA and common construction jobsite safety recommendations. Use only new or sharpened tools in cutting.

It is recommended, for ease and accuracy, that all ***EnergyFlash*** and ***EnergyEdge*** (if ***EnergyEdge*** transition members are not used) corners be pre-cut on a fixed saw (table, chop or radial arm) for clean mitered corner transitions and delivered, if onsite fixed equipment is not available, to the site after preparation.

BUILDING CODES

Observe all local and state building and compliance codes when specifying and installing EnergyEdge products.

6. Availability & Cost

ORDERING AND SHIPPING

EE rail members are ordered and shipped in packages of 2, 12' long members. Orders should be placed in multiples of 24' with consideration of waste proportionate with complexity of building layout. EE braces are spaced generally at 18" oc. We suggest you order 10 braces per 12' member to allow for additional brace requirements at joints and transitions. EE braces are shipped in boxes of 80 members, typically. Reference ***EnergyEdge*** installation guidelines. EE shims may by order in quantities desired. If ***EnergyEdge*** system is installed on a leveled foundation, minimal shimming will be required.

EF rail members are ordered individually in 8' pieces.

Contact: Casey Barbour at ***EnergyEdge*** (316) 618-1983 or Email: ceb@EnergyEdgeForm.com for information on nearest distributor.

7. Warranty

WARRANTY
R-Control provides a warranty covering thermal performance and termite resistance of its R-Control Insulation material. Contact the manufacturer for details regarding the warranty program.

EnergyEdge LLC, provides a limited manufacturers warranty. Contact ***EnergyEdge*** for a copy of this warranty.

8. Maintenance

MAINTENANCE
No specific maintenance is required of these ***EnergyEdge*** systems when properly installed according to manufacturer's recommendations.

9. Technical Services

TECHNICAL SUPPORT
EnergyEdge has developed and continues to develop a series of details that support the use and application of the system to common building details. These details may be reviewed and downloaded from the ***EnergyEdge*** web site at www.EnergyEdgeForm.com.

Technical questions regarding the installation and use of ***EnergyEdge*** products can be submitted by phone, (316) 618-1986 or by Email to info@EnergyEdgeForm.com.

10. Filing Systems

Consult Manufacturer for reference materials regarding *EnergyEdge* products.