

CertainTeed
EnergyEdge[®]

Installation Guide





About EnergyEdge®

EnergyEdge is an easy-to-use three-in-one solution that forms, insulates and protects foundation slab edges.

The EnergyEdge system consists of lineals (standard length 12'), braces and corner elements. It is designed for an 8" minimum thickened slab edge but can also be used for basements and crawlspaces. For more information on the complete line of EnergyEdge products and accessories, please refer to the EnergyEdge product brochure (literature code 40-99-02) and the Foundations section of www.certainteed.com.

EnergyEdge saves both contractors and builders time and money:

- EnergyEdge forms the slab instead of wood or metal forms.
 - No return trip needed to remove forms.
- EnergyEdge meets IECC and IRC building code requirements for slab edge insulation (climate zones 4 and up).
 - No return trip to install insulation in order to meet code.
- EnergyEdge provides an attractive and functional finish to the slab edge.
 - Protects the enclosed insulation.

About this Installation Guide

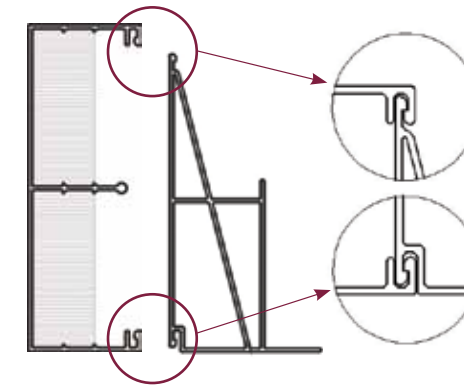
This installation guide provides concrete subcontractors with detailed information on the proper installation of EnergyEdge. EnergyEdge components have been designed to install with the same equipment and in much the same way as traditional wood alternatives. However, EnergyEdge creates an insulated and protected slab edge while eliminating the waste of time and resources associated with typical forming practices.

General Preparation

Product Basics

Secure Braces into the Lineals

- Braces align and connect lineals, function as rebar supports and anchor EnergyEdge lineals into the concrete.
- Install braces into lineals PRIOR to installation of lineals.
- Insure braces are securely set in both the top and bottom channels of lineals.
- If necessary use a rubber mallet to set the braces; it may take two strikes to set both top and bottom knobs of a brace into a lineal.



Brace Spacing Guidelines

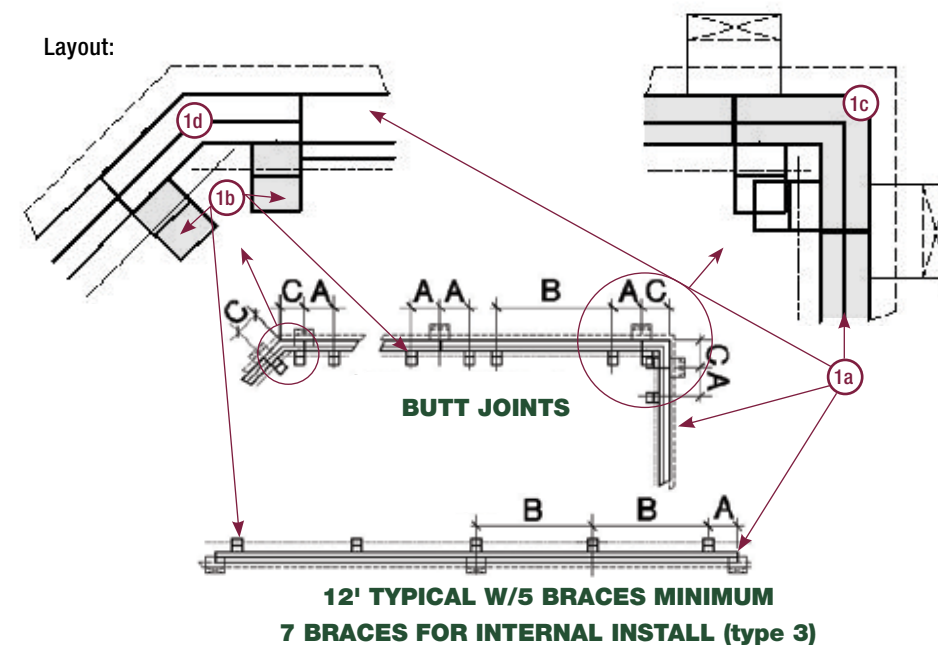
Dimension Key:

A = 18" max from joints with external supports or as a form liner (type 1 & 2);
12" max from joints with internal bracing (type 3)

B = 36" max with external supports or as a form liner (type 1 & 2)
24" max with internal bracing (type 3)

C = for field cut corners, use 1 brace minim each return direction, approx 6" - 8"

Layout:



Components:

- ①a EnergyEdge lineals
- ①b EnergyEdge braces
- ①c EnergyEdge 90° corners – field cut or purchase (fb and mb)
- ①d EnergyEdge 45° corners – field cut (fb and mb)

Installation Basics

ALIGNMENT WITH WALL SYSTEMS

Verify alignment of face of slab with building wall system dimension. For EnergyEdge mb lineal, offset additional 1-1/2" for bearing requirements.

GENERAL STEPS:

1. Corners and Transitions: Locate, level and secure corners and transitions. Leave 1/8" space at joints to allow for product expansion.
2. Straight Runs: Install full lengths of EnergyEdge lineals from each corner and transition point. Level and secure each end of lineal first, then level and secure at kicker locations. For internal installation (type 3), secure lineals at brace rather than kicker locations.
3. Cut connecting lineal. Cut only last lineal to complete run.

SLAB PLACEMENT RECOMMENDATIONS

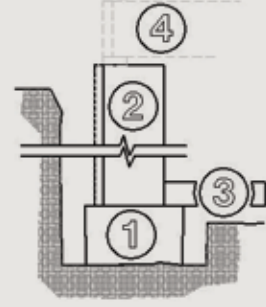
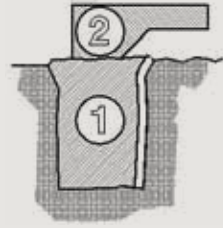
1. Fairly stiff slump is recommended.
2. Do not pour directly on top of lineals
3. Pull concrete into EnergyEdge system and tap exterior face of lineal for maximum encasement – DO NOT VIBRATE.
4. Utilize the smooth screeding surface provided by lineals for efficiency.
5. If external supports (stakes, kickers and forms) are used, remove them all after placement and finishing for re-use.

LINEALS REMAIN IN PLACE – DO NOT REMOVE

- Lineals complete the transition from the foundation to wall insulation system
- Backfill per code requirements – do not allow machinery to come in contact with EnergyEdge product.
- Lineals can be finished if desired.
- Alert other on-site contractors to finished edge; additional protection may be required during construction phases.

Step by Step Instructions

Foundation Types



Mono Pour

Single pour for foundation and slab. Exterior supports required.

Rough Foundation

Two pour foundation-typically trench type with uneven/rough surface. Generally requires shimming below forms. Use exterior supports.

Pre-Levelled Foundation

Three pour foundation-footing with formed concrete or CMU stemwall. Typically level & smooth surface. Internal bracing system applicable.

Crawlspace/Basement

Wall form utilized with lineals installed inside & flush with top of wall forms. No braces necessary.



1. Determine lineal type needed

- a. mb – use with 2x4 sill plate, metal buildings and other full bearing wall systems
- b. fb – use with 2x6 sill plate, ICF block, SIP and CMU systems
- c. Flash – use to protect insulation adhered to slab edge in slab constructions that do not incorporate EnergyEdge lineals

2. Determine components and quantity needed

- a. Layout – see diagram on page 1
- b. Components – see list on page 1
- c. Quantity – depends on configuration of foundation

TYPE 1 FOUNDATION – MONO POUR

EnergyEdge lineals can be used as the concrete form with a kicker system or as a form liner. EnergyEdge braces should be used as lineal connectors, positioned within 18" of the joint or corner and 36" on-center thereafter. Lineals should be laid corners first and straight runs last – minimizing cutting to the middle lineal completing the run. Align, level and mechanically secure the lineals to the kickers with screws on the exterior face of the lineal. After the concrete has been poured and finished, screws may be backed out of the lineals and kickers removed. EnergyEdge products remain in place, leaving a finished and insulated edge.

(5) Assembly Members

- 5a. EnergyEdge lineal with insulation (fb – shown)
- 5b. EnergyEdge brace – see spacing requirements (page 1)
- 5c. Perimeter rebar by others supported by EnergyEdge braces

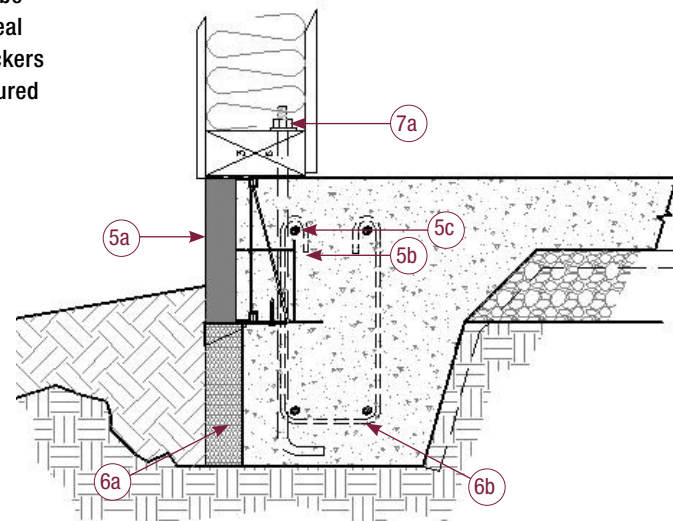
(6) Monolithic foundation

- 6a. Foundation insulation materials by others
- 6b. Perimeter rebar and anchor systems as required by plans

(7) Wall system at slab edge (varies)

- 7a. Anchor bolts for 2x wood plate if applicable (see page 5)

DETAIL OF INSTALLED ENERGYEDGE SYSTEM



TYPE 2 FOUNDATION – ROUGH FOUNDATION

EnergyEdge lineals can be used as the concrete form with a kicker system or as a form liner. EnergyEdge braces should be used as lineal connectors, positioned within 18" of the joint or corner and 36" on-center thereafter. Lineals should be laid corners first and straight runs last – minimizing cutting to the middle lineal completing the run. Align, level and mechanically secure the lineals to the kickers with screws on the exterior face of the lineal. After the concrete has been poured and finished, screws may be backed out of the lineals and kickers removed. EnergyEdge products remain in place, leaving a finished and insulated edge.

(5) Assembly Members

- 5a. EnergyEdge lineal with insulation (fb – shown)
- 5b. EnergyEdge brace – see spacing requirements (page 1)
- 5c. Perimeter rebar by others supported by EnergyEdge braces

(6) Trenched grade beam foundation

- 6a. Foundation insulation materials by others

(7) Wall system at slab edge (varies)

- 7a. Anchor bolts for 2x wood plate if applicable (see page 5)

TYPE 3 FOUNDATION – PRE-LEVELLED

EnergyEdge lineals are used as the concrete form with the EnergyEdge bracing system – no external supports/kickers are needed. EnergyEdge braces should be used as lineal connectors, positioned within 8"-12" of the joint or corner and 18-24" on-center thereafter. Lineals should be laid corners first and straight runs last – minimizing cutting to the middle lineal completing the run. Align and level the lineals, then mechanically secure the braces to the foundation with Tapcons, PAF or duplex nails. The EnergyEdge brace provides a "chair rail" to keep perimeter reinforcing in the proper location. Pour and finish slab as usual. EnergyEdge products remain in place, leaving a finished and insulated edge. Stiff slump recommended.

(5) Assembly Members

- 5a. EnergyEdge lineal with insulation (fb – shown)
- 5b. EnergyEdge brace – see spacing requirements (see page 1)
- 5c. Perimeter rebar by others supported by EnergyEdge braces

(6) Trenched grade beam foundation

- 6a. Foundation insulation materials by others

(7) Wall system at slab edge (varies)

- 7a. Anchor bolts for 2x wood plate if applicable (see page 5)

TYPE 4 FOUNDATION – FOUNDATION CRAWLSPACE/BASEMENT

EnergyEdge lineals can be placed and secured inside crawlspace or basement wall forms. Lineals should be installed corners first and straight runs last – minimizing cutting to the middle lineal completing the run. Align and level the lineals, then mechanically secure the lineals to the wall form. Pour and finish wall as usual. EnergyEdge products remain in place, leaving a finished and insulated edge. No braces needed.

(5) Assembly Members

- 5a. EnergyEdge lineal with insulation (fb – shown)

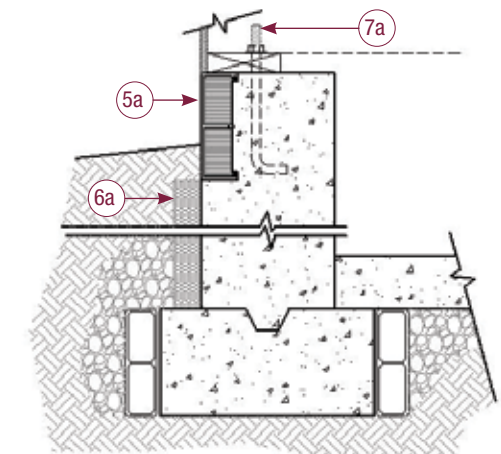
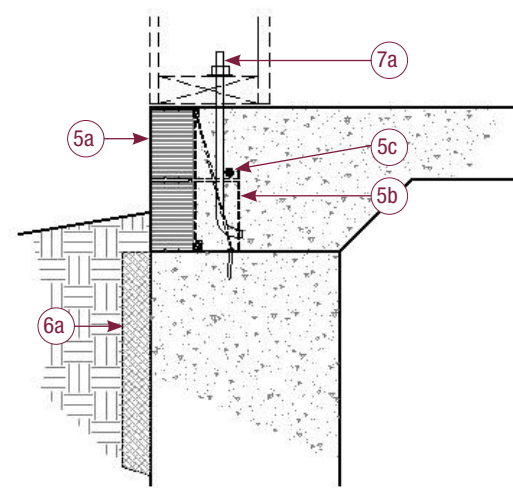
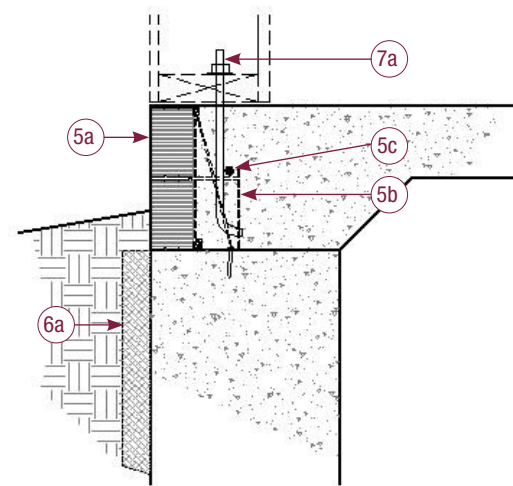
(6) Foundation Wall

- 6a. Foundation insulation materials by others

(7) Wall system at foundation top

- 7a. Anchor bolts for 2x wood plate if applicable (see page 5)

DETAIL OF INSTALLED ENERGYEDGE SYSTEM



Bracing Options



External Supporting Options for the EnergyEdge Lineals

OPTION 1 (Foundations type 1 & 2): KICKERS

Kickers can be made from scrap lumber. Space every 4' on center with additional bracing at corners. Screw the kickers into the face of the EnergyEdge lineal.

OPTION 2 (Foundations type 1 & 2): TRADITIONAL STAKE AND KICKERS

Traditional stake and kicker methods can be utilized with lineals by simply replacing the forming lumber with EnergyEdge lineals. Screw the kickers into the face of the lineal or use a finish nail from the inside of the form to allow for easy removal.

OPTION 3 (Foundations type 1, 2 & 4): ENERGYEDGE LINEALS AS A FORM LINER

If preferred, traditional forming lumber may be utilized and EnergyEdge lineals can be screwed to the inside face of the lumber. For EnergyEdge fb lineals, set traditional forms as usual. For EnergyEdge mb lineals, offset forms by 1-1/2". Traditional forms must be vertical for alignment purposes. In basement/crawl space application, mechanically fasten the lineal to the inside, top of the wall form (no EnergyEdge braces necessary) - remove fasteners prior to removing wall forms.

OPTION 4 (Foundations type 3): Internal Bracing System

Mechanically fasten EnergyEdge braces to top of pre-leveled foundation wall. Depending on cure duration of substrate and weather conditions, the best method will vary. Typically, hand drilled and manually driven nails or pins with an inserted wire wedge are sufficient. PAF systems may be used where brace is placed on a flat surface with little or no shimming. Cold conditions may cause system to become brittle, prohibiting use of PAF application.

Leveling EnergyEdge Lineals

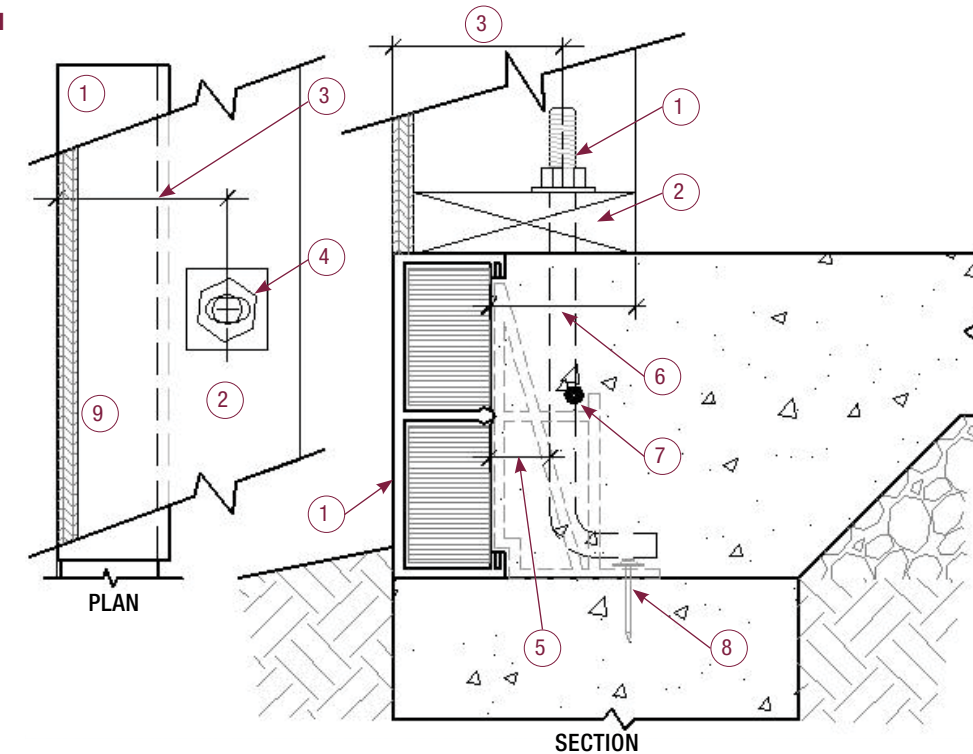
Foundations type 2 & 3 only

- Shim system to level below EnergyEdge braces with 3" wide x 8" long cut strips of common asphalt starter shingles. Note: Do not use untreated wood shims inside concrete slab area.
- Place perimeter rebar in "chair rail" of brace.

Anchor Bolt Placement

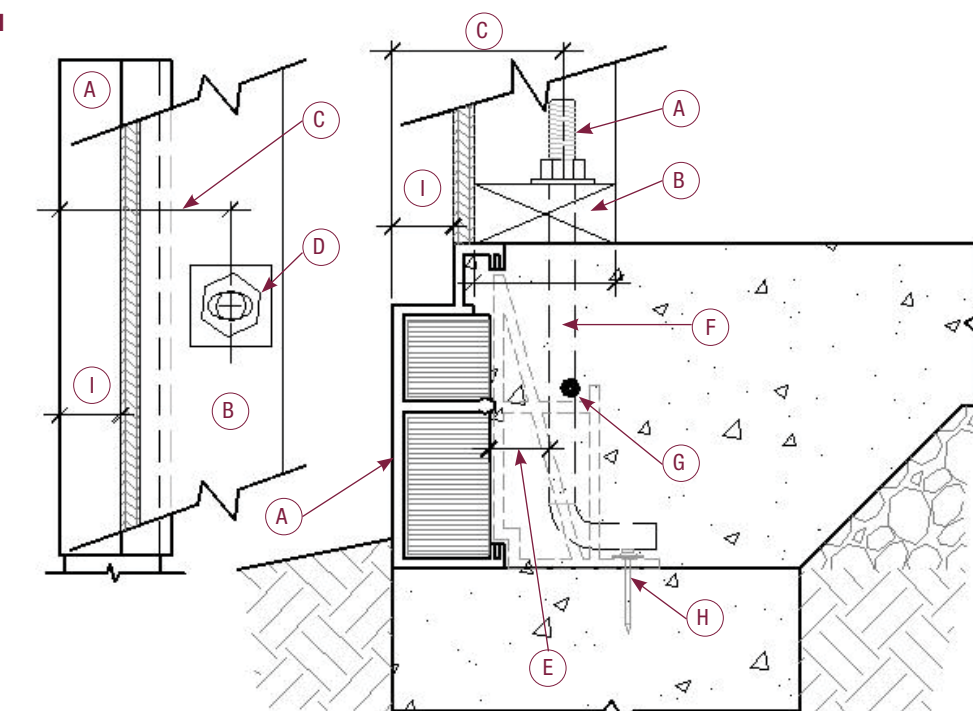
Anchor Bolt Placement with Standard 2x6 Framing & fb Lineal

- (1) EE8fb rail with 2x6 wood framing.
- (2) 2x6 or 3x6 wood sill plate.
- (3) 4-1/4" from face of lineal to CL of 1/2 or 5/8 anchor bolt (AB). (Assume sheathing is flush with face of lineal).
- (4) Plate washer where required. Verify plate & AB requirements.
- (5) Provides 1-1/2" coverage at AB, verify code requirements.
- (6) Provides 3-5/8" bearing below 2x6 sill plate.
- (7) EnergyEdge brace as required also supports perimeter re-bar.
- (8) Mechanical fastener at brace as required by installation.
- (9) Wall sheathing.



Anchor Bolt Placement with Standard 2x4 Framing & mb Lineal

- (A) EE8mb rail with 2x4 wood framing.
- (B) 2x4 or 3x4 wood sill plate.
- (C) 4-1/4" from face of lineal to CL of 1/2 or 5/8 anchor bolt (AB). (Assume sheathing is flush with face of lineal).
- (D) Plate washer where required. Verify plate & AB requirements.
- (E) Provides 1-1/2" coverage at AB, verify code requirements.
- (F) Provides full bearing below 2x4 sill plate.
- (G) EnergyEdge brace as required also supports perimeter re-bar.
- (H) Mechanical fastener at brace as required by installation.
- (I) Sheathing at 1-1/2" mb offset.



EnergyFlash® Monolithic Pour (MP) Assembly

EnergyFlash is designed for shallow monolithic foundation edges 12"-24" in depth typically. The product functions as a stay-in-place form liner that protects transition from below grade material to insulated wall above. It is also ideal for post-applied perimeter insulation materials (retrofit on existing buildings, on post-tensioned slabs, etc.)

General Preparation

EnergyFlash Straps as Concrete Anchors:

- Cut EnergyFlash (EF) "straps" from scrap material. Straps should be 2"-4" wide
- Straps secure insulation during concrete placement
- Straps secure the butt joint of lineal & corner elements
- Straps anchor system into the concrete

Plywood Wedge Anchors:

- Cut 3 1/2" x 3 1/2" minimum blocks from 3-3/4" plywood or 1x4 wood material
- Secure in EF using hinging motion as illustrated below
- Requires no mechanical fastening to EF

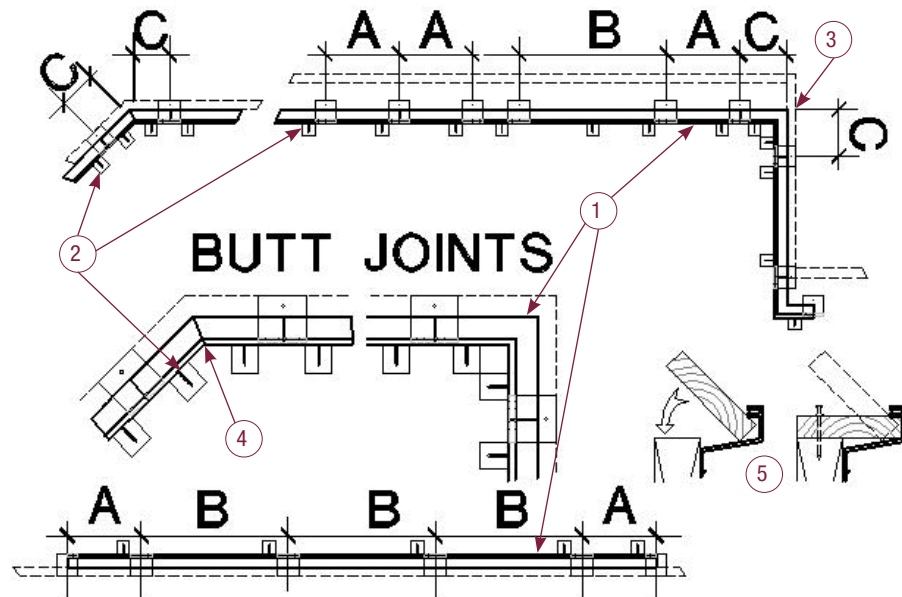
Dimension Key for Straps & Wedges:

Straps should be off-set from wedges and elements should occur generally as follows:

A= 12" max from joints & corners offset strap & wedge

B= 24" max on center offset strap & wedge

C= EF strap on both sides of corner element



12' TYP. w/7 1x4 wedges & EFstraps

- 1 EnergyFlash Lineal
- 2 EnergyFlash Strap
- 3 EnergyFlash 90d corner- field cut or purchase
- 4 EnergyFlash 45d corner- field cut
- 5 Wedge Anchor Installation

Installation Basics

ALIGNMENT WITH WALL SYSTEMS

Verify alignment of face of slab with building wall system dimension. Offset inside face of typical 2x8 form & kicker system 1-1/2" from the face of framed wall* and 1-1/8" down from the finished slab.

GENERAL STEPS:

1. Corner and Transition: Locate, level and secure corners and transitions. Leave 1/8" space at joints to allow for product expansion.
2. Straight Runs: Install full length of EnergyFlash lineal from each corner and transition point. Level and secure each end of lineal first, then level and secure at wedge anchor locations.
3. Cut connecting lineal. Cut only last lineal to complete run.

SLAB PLACEMENT RECOMMENDATIONS

1. Fairly stiff slump is recommended
2. Don't pour directly on lineal

LINEALS REMAIN IN PLACE – DO NOT REMOVE

- Lineals protect the insulation (by others) from the wall insulation system to grade
- Backfill per code requirements—do not allow machinery to come in contact with product
- Lineals can be finished if desired
- Alert other on-site contractors to finished edge; additional protection may be required during construction phase.

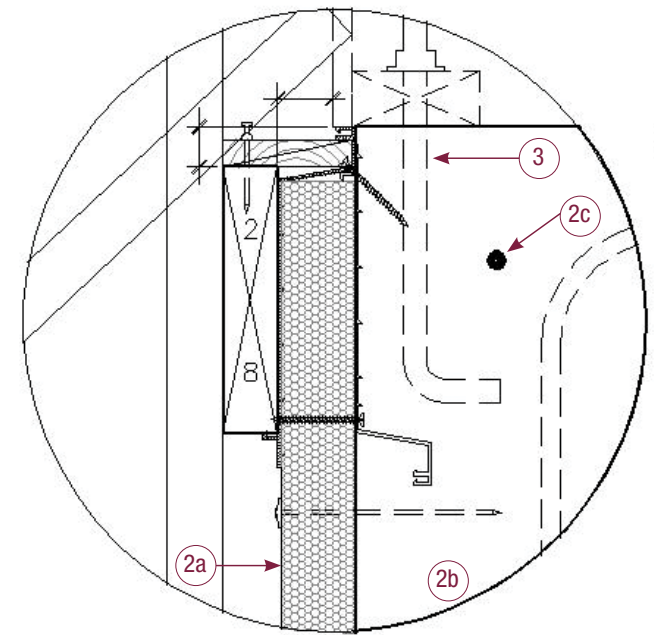
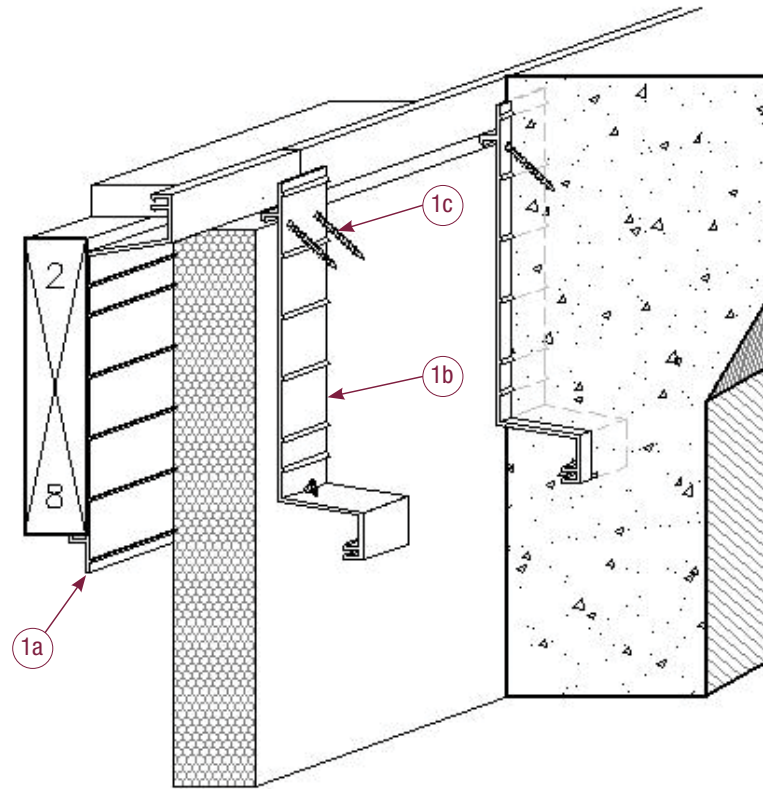
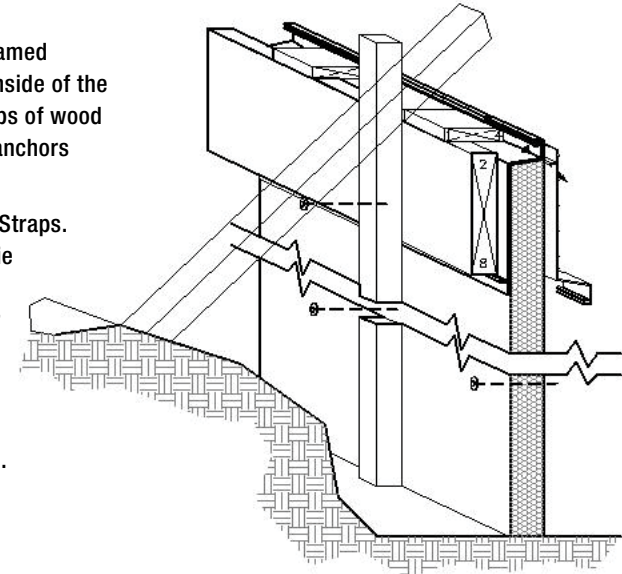
EnergyFlash lineal are a form liner used on shallow monolithically placed slabs.

Offset typical 2x8 wood form inside face of the forms by 1-1/2" from the face of framed wall* and 1-1/8" down from the finished slab, EnergyFlash can be secured to the inside of the form by aligning the bottom flange under the form and adding wedge anchors (strips of wood material) into the top channel. Reference Installation Basics for sequence. Wedge anchors should be mechanically fastened to the wood form.

Rigid insulation should be placed and secured on the inside of the EF lineal with EF Straps. Placing a hole below the EnergyFlash in the insulation, you can run a 24" min zip tie around the system to help with placement. EnergyFlash straps should be inverted and secured to the inside of the lineal with a 2-1/2" screw through the top exterior recess of the lineal and from the bottom interior recess of the strap piercing through the rigid insulation material and through the face of the EF lineal. These straps act as anchors tying the system into the slab.

After the concrete has been poured and finished, form and kickers can be removed. EnergyFlash remains in place, leaving a finished and protected edge.

* The face of framing wall is the outside face of the sheathing material.



- 1. Assembly Members
- 1a. EnergyFlash lineal
- 1b. EnergyFlash Strap
- 1c. Mechanical Fasteners

- 2. Monolithic Foundation
- 2a. Foundation insulation material by others
- 2b. Typical fasteners for rigid insulation
- 2c. Steel reinforcing and anchor systems as required by plans

- 3. Wall System (varies)
- 3a. Anchor bolts for 2x wood plate if applicable.

Order Worksheet

Item	Usage	Part Number	Lineal Order Qty	Brace Order Qty	Corner Order Qty
			Take total lineal footage of slab edge, divide by 12, round up, add 1	Order quantity of mb or fb lineals times 5 (type 1 and 2 foundations), times 7 (type 3 foundation) (no braces type 4)	Total number of corners from layout
MB Products					
EnergyEdge mbForm FD 12' GY	2x4 sill plate, metal buildings and other full bearing wall systems	EELN124mb			
EnergyEdge mb90 inside corner FG GY		CNINMB90			
EnergyEdge mb90 outside corner FG GY		CNOUMB90			
EnergyEdge Brace FG BLK		EEBR			
FB Products					
EnergyEdge fbForm FD 12' GY	2x6 sill plate, ICF block, SIP and CMU systems	EELN126fb			
EnergyEdge fb90 universal corner FG GY		XCNFB90			
EnergyEdge Brace FG BLK		EEBR			
EnergyFlash Products					
EnergyEdge FlashForm FD 12' GY	Protect insulation adhered to slab edge	EELN12EF			
EnergyEdge Flash90 inside corner FG GY		CNINEF90			
EnergyEdge Flash 90 outside corner FG GY		CNOUEF90			

Plan Your Installation

Frequently Asked Questions

Is expansion and contraction of EnergyEdge lineals a concern and how should it be addressed?

As indicated in this Guide, lineal-lineal and lineal-corner joints should be installed with approximately 1/8" to 1/4" spacing between them when installed on a sunny and warm day. This small gap will not impact the insulation value of EnergyEdge when caulked.

What type of caulk should be used?

A product with low modulus characteristics should be used. A polyurethane-based, non-sag elastomeric product is best (e.g., Sikaflex 15LM from Sika Corporation). This type of material delivers high performance in both compression and expansion. Usually off-white or limestone are the best color matches to EnergyEdge.

Can EnergyEdge be painted?

Yes. We recommend using an elastomeric acrylic or bonding primer under a high outdoor quality acrylic latex. Specific paint manufactures' recommendations should be reviewed and followed.

Where should braces be placed and at what spacing?

One brace should span each fb or mb lineal-lineal joint, and each mb lineal-mb corner joint. The first brace in an fb lineal from the fb corner joint should be placed 8"-12" from the corner; this is the joint brace. Braces should be spaced every 36" for type 1 and 2 foundations (5 total including joint braces) and 18"-24" for type 3 foundations (7 total including joint braces).

How does the lack of foam in the top portion of the MB affect the insulation value?

The initial R value comes into play as the sheathing and exterior finish will overlap this area-resulting in a thermal break at that point.

How can one be certain that concrete fills the void in the top of the mb lineal?

As concrete is poured pull the concrete into the perimeter of the slab. For maximum encasement the edge of the forms should be tapped.

How can fb corners be used with mb?

Fb corners can be used as is. To improve aesthetics it is recommended that the fb corner be cut down to a height of 6-1/2"; this will align with the larger face of the mb lineal.

How can one field miter corners?

EnergyEdge can be cut using saws commonly available on job sites including power saws (circular, miter or reciprocating), hand saws and hacksaws. Use braces & wire to hold formed angle.



QUALITY IS JUST THE BEGINNING

Since 1904, CertainTeed has been manufacturing high quality, innovative building products, including roofing, insulation, vinyl and fiber cement siding, vinyl fence, linealing and deck and pipe. Our name is derived from the slogan "Quality made certain, satisfaction guaranteed," and reflects an unwavering commitment to the building professionals who rely on us. This commitment, and our many years of experience in product design, were applied to the challenge of creating a better foundation.



Mixed Sources
Product group from well-managed
forests, controlled sources and
recycled wood or fiber
www.fsc.org Cert no. XXX-XXX-000
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buildingresponsibly™

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www.certainteed.com <http://blog.certainteed.com>

CertainTeed Corporation
P.O. Box 860
Valley Forge, PA 19482

Professional: 800-233-8990
Consumer: 800-782-8777

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Code No. 40-99-03A

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