



Para-Stik Insulation Adhesive and Parafast Insulation Adhesive



Installer's Guide

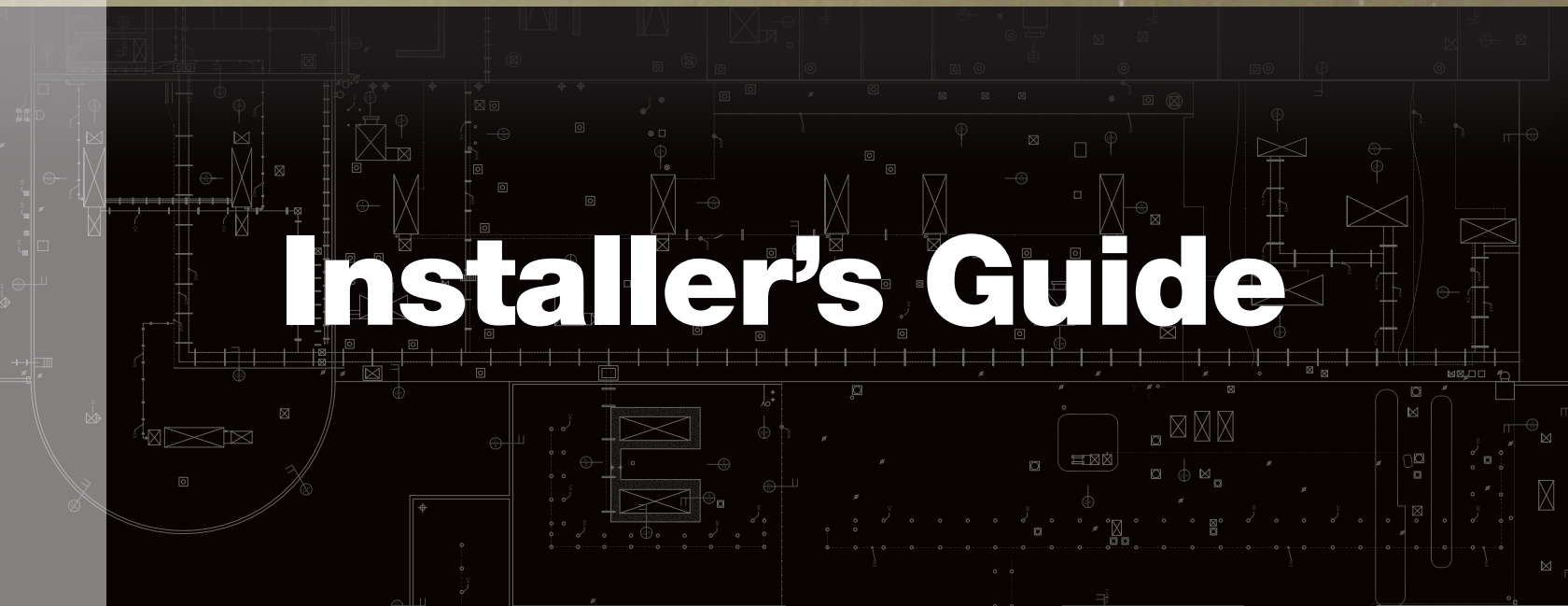


Table of Contents

I.	System Overview and Products	1
II.	Product Uses and Approved Substrates	1
III.	Storage/Temperature Limitations	1
IV.	Safety	2
V.	Substrate Preparation	2
VI.	Application and Coverage Rates	2
VII.	Adhesive Bead Spacing	3
VIII.	Bead Spacing Diagrams	5

I. System Overview and Products

Para-Stik Insulation Adhesive Product Description

Siplast Para-Stik Insulation Adhesive is a single-component, moisture-cured, polyurethane rigid insulation adhesive. Para-Stik is free of conventional solvents (VOC free) and is supplied in a 30-lb (14-kg) tank (23 lb (10.4 kg) net chemical weight). The adhesive is dispensed from the portable, disposable prepressurized metal container using a flexible dispensing hose with a PVC dispensing wand, allowing for single-hand application.

Parafast Insulation Adhesive Product Description

Siplast Parafast Insulation Adhesive is a two component, chemically cured polyurethane rigid insulation adhesive. Parafast Insulation Adhesive is available in 5-gallon bladders encased in boxes (Bag-in-Box) and

in 15 gallon drums. Parafast Insulation Adhesive is dispensed from a PaceCart Dispenser that is available from Siplast or OMG.

Siplast Parafast Insulation Adhesive is also available in a cartridge version (Parafast Insulation Adhesive C). Parafast Insulation Adhesive C is supplied in 1,500 ml cartridges packaged 4 per box. Parafast Insulation Adhesive C is dispensed from a Cordless Power Gun Applicator (available from Siplast or OMG).

Siplast Parafast Insulation Adhesive T is supplied in pressurized metal tanks and each set (Part 1 and Part 2) comes with a disposable hose/gun assembly. Siplast Parafast Insulation Adhesive T does not require supplemental application equipment.

II. Product Uses and Approved Substrates

Para-Stik and Parafast Insulation Adhesives are used to adhere approved rigid insulation panels to substrates approved in advance by Siplast for roof constructions requiring a single source guarantee.

Approved Substrates:

- Poured-in-place concrete decks (Minimum 28 day cure)
- Pre-cast concrete panels
- Poured-in-place or pre-cast concrete decks with tear-off residue (adhesion test and additional preparation required)
- Steel Deck (22-gauge minimum); Types A, B, E, F, H, and N (special preparation and adhesion test required)
- Parabase, Parabase FS, Parabase Plus, and Parabase Plus P
- Irex
- Paradiene 20 or Irex (adhesive applied sheets must be allowed to cure before Para-Stik application)
- Existing roofs proposed for re-cover or substrates not listed herein must be reviewed and approved in advance by Siplast Technical Support.

Other substrates may be considered (contact Siplast Technical Support for more information).

Approved Rigid Insulation:

- Paratherm polyisocyanurate (maximum 4' x 4' panel size)
- High-density fiberboard (maximum 4' x 4' panel size)
- DensDeck and DensDeck Prime
- Securock Gypsum-Fiber Roof Board & Securock Cement Roof Board

Other insulations may be considered (contact Siplast Technical Support for more information and qualification procedures).

Non-Compatible Substrates:

- Coal-tar-pitch BUR
- Lightweight insulating concrete
- Substrates with fresh asphalt glaze coat
- Substrates with coal-tar-pitch residue

III. Storage/Temperature Limitations

Storage & Temperature Limitations - Para-Stik Insulation Adhesive

Store Para-Stik at temperatures between 50°F-75°F (10°C-24°C). Storage at temperatures higher than 75°F (24°C) will decrease shelf life. Shelf life of unused Para-Stik stored under the conditions above is 15 months from date of manufacture. The ideal temperature of the adhesive at the time of application is 75°F

(24°C). Yield will decrease if product is below 75°F (24°C) at the time of application. The minimum ambient and substrate temperature during application is 33°F (1°C) and rising. The maximum ambient and surface temperature during application is 110°F (33°C).

The use of conventional and infrared thermometers to measure and record both ambient and substrate temperatures is recommended for all projects.

Storage & Temperature Limitations – Parafast Insulation Adhesive

Store Parafast Insulation Adhesive at temperatures between 55°F-85°F (13°C-30°C). Shelf life of unused Parafast Insulation Adhesive products (with the exception of Parafast Insulation Adhesive T) stored under the conditions above is 18 months from date of manufacture. The shelf life of Parafast Insulation Adhesive T stored under the conditions above is 12 months from the date of manufacture. Minimum temperature of Parafast Insulation Adhesive and Parafast Insulation Adhesive C products at the time of application is 72°F (23°C).

Temperature of Parafast Insulation Adhesive T at the time of application: 70°F to 90°F (21°C to 32°C). Application at product temperatures of less than 70°F (21°C) will reduce yield. Do not expose Parafast Insulation Adhesive T to open flame or ambient temperatures in excess of 100°F (38°C) under any circumstances.

The minimum ambient and substrate temperature for application of regular grade Parafast Insulation Adhesive and Parafast Insulation Adhesive C: 40°F (5°C) and rising.

The ambient and substrate temperature range for application of winter grade Parafast Insulation Adhesive C: 0°F to 65°F (-17°C to 18°C).

The ambient and substrate temperature range for application of Winter Grade Parafast Insulation (Bag-in-Box or 15 Gallon drums) is 25°F to 65°F (-5°C to 18°C).

The ambient and substrate temperature range for application of Parafast Insulation Adhesive T: 40°F to 100°F (5°C to 38°C).

Protect Parafast Insulation Adhesive from freezing. Frozen product will be rendered permanently unusable.

IV. Safety

Protective eye-wear and clothing as well as work gloves should be worn while working with Para-Stik and Parafast Insulation Adhesives as well as equipment used to apply Siplast insulation adhesives.

See the applicable SDS for detailed information on personal protection requirements.

V. Substrate Preparation

Surfaces to receive insulation adhesive must be free of dirt, debris, petroleum products, moisture and any other material that could adversely affect adhesion. Clean new steel decks using acetone, naphtha, or comparable cleaners that leave no residue.

On projects that involve a re-cover over the existing roof system, the existing roof system should be thoroughly evaluated to ensure that system is suitable for re-cover application.

VI. Application and Coverage Rates

Coverage rates vary depending on adhesive bead width, substrate surface profile, substrate porosity and the ability of the crew to maintain a proper and consistent application of the adhesive. Yield per container can also be affected by ambient conditions.

Typical application and coverage rates are listed in the tables below. The following tables outline typical coverage rates for low-rise foam adhesive applied over various substrates using 3/4" to 1" beads of adhesive spaced 12-inch on-center with the exception of the metal substrate as indicated.

Para-Stik Insulation Adhesive

Bead Spacing	Approx. Coverage per Tank
12 inches	8 squares
6 inches	4 squares
4 inches	2.7 squares

Parafast Insulation Adhesive
(Bag-in-Box - 10-gallons per A+B set)
(Drums - 30-gallons per A+B set)

Application	Typical Coverage (Squares per gallon)
Rigid Insulation to Normal-Weight Concrete	2.5 sq/gal
Rigid Insulation to Rigid Insulation	2.5 sq/gal
Rigid Insulation to Smooth Asphaltic Substrate	1.7 sq/gal
Rigid Insulation to Granule-Surfaced Modified Bitumen Sheets	1.2 to 1.7 sq/gal
Rigid Insulation to Gypsum	1.2 sq/gal
Rigid Insulation to Metal Deck (6" o.c. bead spacing)	1.2 sq/gal

Parafast Insulation Adhesive Cartridges
(Case of four 1500 ml cartridges per case)

Bead Spacing	Approx. Coverage per case
12 inches	6 squares
6 inches	3 squares
4 inches	2 squares

Parafast Insulation Adhesive T Canisters

Bead Spacing	Approx. Coverage per case
12 inches	35 squares
6 inches	17.5 squares
4 inches	11.6 squares

Para-Stik Application
Para-Stik Preparation and Equipment Assembly

Wearing the protective clothing listed in Part IV, mix Para-Stik prior to use by firmly holding the tank on its side and agitating or shaking the contents using a side-to-side motion for at least 30 seconds. Attach the dispensing hose swivel end to the cylinder valve. Tighten the connection using an open-end wrench, being careful not to strip the threads. Close the on-off valve on the dispensing hose. The handle should be perpendicular to the valve. Attach the dispensing wand to the on-off valve by screwing it into the hose fitting until hand tight.

Application of Para-Stik

Slowly open the cylinder valve 1/2 to 1 revolution while the wand dispensing valve is in the off position. Check for leaks. If no leaks are present, the product is ready for application. To dispense Para-Stik, open the on/off valve at the wand and adjust the valve as needed to meet the desired dispensing speed. Open the cylinder

valve further if higher bead velocity is required. As the adhesive is depleted from the tank, it will be necessary to open the cylinder valve further to maintain dispensing speed. Approximately 5 seconds before you desire the product to stop flowing, close the on/off valve. It is normal for a small amount of adhesive to flow from the wand after closing the valve. Apply a minimum 3/4-inch to 1-inch wide bead using spacing to meet requirements for the particular project. Place insulation boards end-to-end with staggered joints in alternating rows. Boards must be set into the Para-Stik before a skin forms on the beads, typically within 3 minutes of application. "Walk-in" the insulation boards every 3-4 minutes or ballast the boards until the panels are firmly secured, typically 10-20 minutes. Note that care should be taken to ensure that beads do not exceed 1 inch in width. The use of wider beads will substantially decrease yield per tank and may result in a rise of the boards above the substrate due to post growth (expansion) of the adhesive. Cold weather and/or low humidity conditions may result in a longer adhesive cure time. If an extended cure time is being experienced, consider leaving the beads exposed for a longer period of time before setting the insulation panels into place.

If the Para-Stik application is interrupted, first close the cylinder valve, followed by closure of the wand valve. Securely wrap the end of the wand using plastic wrap with tape and store the wand with the tip pointing downward, allowing excess adhesive to drain into the plastic wrap. At restart, remove the plastic wrap from the wand tip and remove excess adhesive if necessary. Shake the tank for 30 seconds as described above. Open the cylinder valve 1/2 to 1 revolution while the wand dispensing valve is in the off position. Open the wand valve and flush a small amount of adhesive through the hose and wand. Para-Stik is again ready for use. If flow is interrupted, it may prove necessary to remove a portion of the tip of the wand where the adhesive has hardened.

Application of Parafast Insulation Adhesive using the PaceCart.

Install Part 1 and Part 2 components and a new static mix tip on the PaceCart unit using instructions listed on the Bag-in-Box and PaceCart. Open flow valves on the dispenser completely and turn machine on. This allows adhesive to be pumped at a 1:1 ratio through the disposable mix tip and onto the substrate in a viscous liquid state. Apply a 3/4-inch to 1-inch wide bead over the substrate using a bead spacing to meet requirements for the particular project. Allow the beads of adhesive to rise/thicken and lay the insulation panels into place. Place insulation boards end-to-end with staggered joints in alternating rows. Boards must be set into the adhesive before a skin forms on the beads. Walk-in the panels to ensure that they are embedded and provide a smooth substrate for the next layer of insulation or roofing membrane.

The adhesive typically cures within 10 to 12 minutes of application, depending on temperature and weather conditions. Refer to the PaceCart instructions for detailed information.

Application of Parafast Insulation Adhesive C.

Attach a disposable static mixing tip to the top of the cartridge. Insert the cartridge into the application tool and dispense a 3/4-inch to 1-inch wide bead over the substrate using a bead spacing to meet requirements for the particular project. Allow the beads of adhesive to rise/thicken and lay the insulation panels into place. Place insulation boards end-to-end with staggered joints in alternating rows. Boards must be set into the adhesive before a skin forms on the beads. Walk-in the panels to ensure that they are embedded and provide a smooth substrate for the next layer of insulation or roofing membrane. The adhesive typically cures within 10-12 minutes of application, depending on ambient conditions.

Application of Parafast Insulation Adhesive T

Follow the set-up instructions included with each set of Parafast Insulation Adhesive T tanks. For stand-up applications, attach an extension tube to the mix tip.

Dispense a 1-1/4" wide bead of adhesive over the substrate using a bead spacing to meet requirements for the particular project. Lay the insulation panels into place. Place insulation boards end-to-end with staggered joints in alternating rows. Boards must be set into the adhesive before a skin forms on the beads. Walk-in the panels to ensure that they are embedded and provide a smooth substrate for the next layer of insulation or roofing membrane. The adhesive typically cures within 10-12 minutes of application, depending upon ambient conditions.

Slope Limitation

Note that Siplast Insulation Adhesives are limited to use over substrates having a slope 2 inches per foot or less. Contact Siplast Technical Support for guidelines on using insulation adhesive on higher slopes.

VII. Adhesive Bead Spacing

Application rates (bead spacing) are typically determined by the specific wind uplift requirement for a particular project and/or substrate and insulation types. Building height, exposure, and type as well as the wind zone for the location of the building, are factors used to calculate the uplift rating required for the particular construction. Contact Siplast for specifics on roof constructions that have been tested or approved for uplift resistance. Most rated constructions are based upon a bead spacing of 12 inches on center for the field of the roof although there are specific configurations that require tighter bead spacing. Unless the tested construction and associated bead spacing meets the uplift requirement for the roof perimeter and corners, the bead spacing for the roof perimeter is typically decreased by 40% and in the corners by 60%. See below for a guideline on determining perimeter and corner zones. In no case should bead spacing exceed 12 inches o.c.

Calculating Field/Perimeter Zones

The width of the roof perimeter is typically defined as the smaller of:

- 0.1 times the building lesser plan dimension, or
- 0.4 times the roof surface height at the perimeter, or
- 0.6 times the roof surface height at the perimeter.

NOTE: Roof perimeter determination should be based project specifications and/or prevailing building code requirements. Contact the Siplast Technical Department for more information.

A minimum perimeter band width of 4 ft (1.2 m) is required.

Calculating Corner Zones

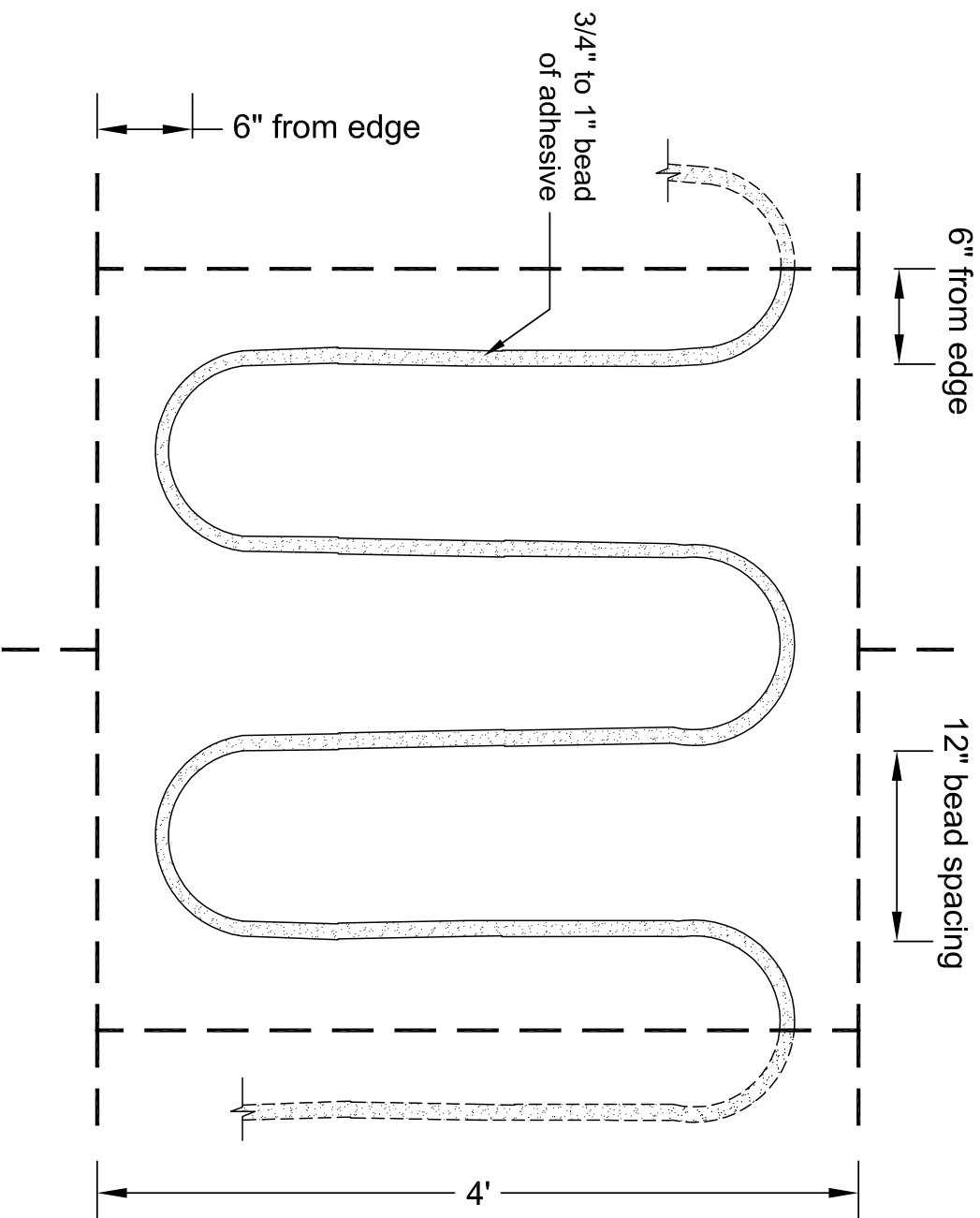
Corner zones are the intersections of the perimeter zones at all building corners.

Bead Spacing and Application

The typical bead spacing is 12 inches o.c for the field zones of the roof, 6 inches at the perimeter zones and 4 inches in the corner zones. A 4-inch bead spacing is used to achieve near full adhesion of the panel.

PARA-STIK & PARAFAST BEAD SPACING

4' X 4' INSULATION PANEL
12" BEAD SPACING



NOTES: 1. THE ABOVE BEAD SPACING FREQUENCY IS INTENDED AS A GUIDELINE FOR INSULATION ADHESION BELOW SIPLAST MEMBRANE SYSTEMS AND IS SUBJECT TO SIPLAST AND INDUSTRY STANDARD REQUIREMENTS

N.T.S.



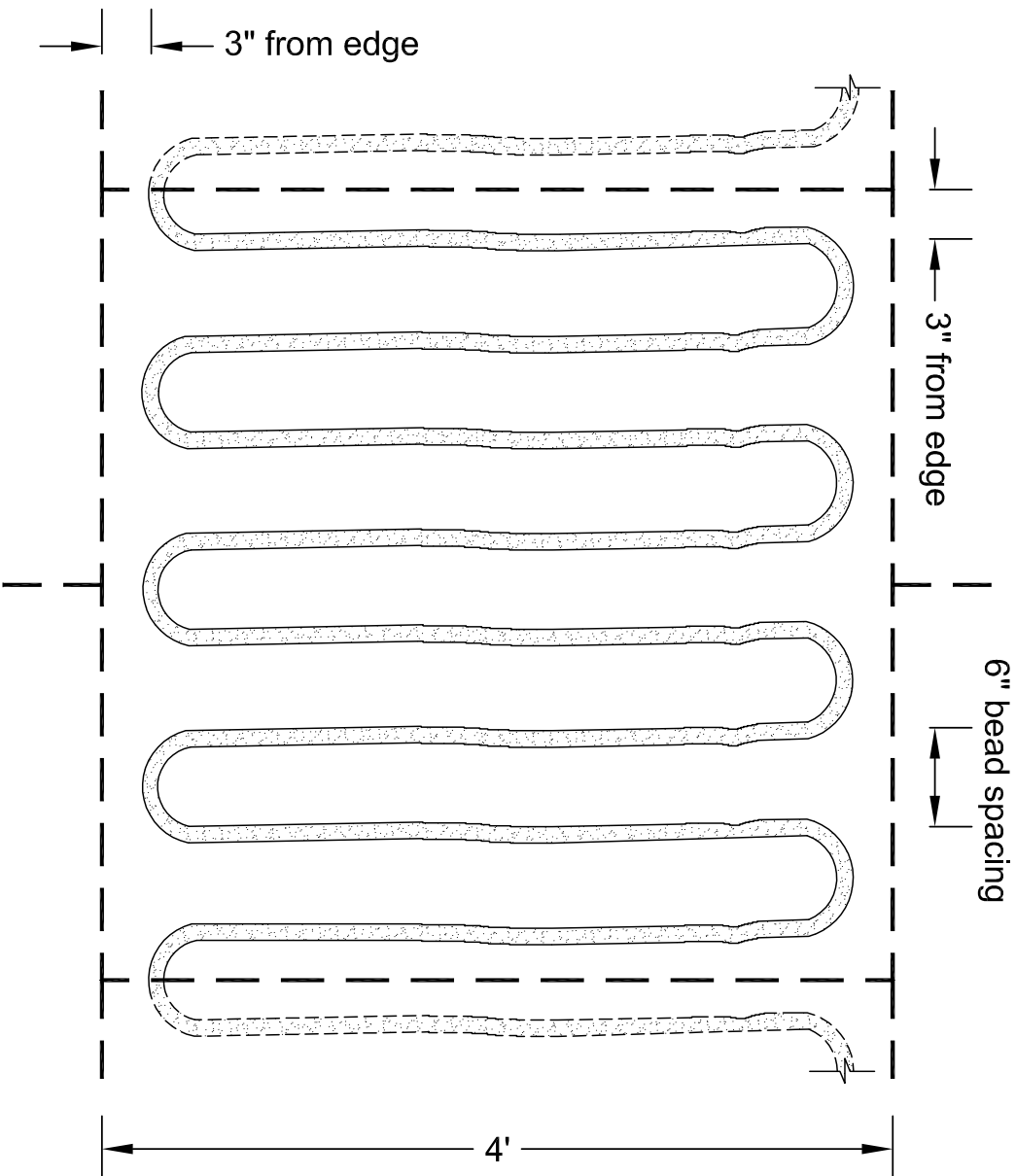
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Ref: adhesive 4X4 12-inch oc

Rev: 12/20/13

PARA-STIK & PARAFAST BEAD SPACING

4' X 4' INSULATION PANEL
6" BEAD SPACING



- NOTES: 1. THE ABOVE BEAD SPACING FREQUENCY IS INTENDED AS A GUIDELINE FOR INSULATION ADHESION BELOW SIPLAST MEMBRANE SYSTEMS AND IS SUBJECT TO SIPLAST AND INDUSTRY STANDARD REQUIREMENTS.
2. BOARDS MAY RISE FOLLOWING APPLICATION OF BEADS AT 6-INCHES O.C. DUE TO POST GROWTH OF THE ADHESIVE AND MAY REQUIRE REPEATED WALK-IN OR TEMPORARY BALLAST UNTIL THE ADHESIVE CURES.

N.T.S.



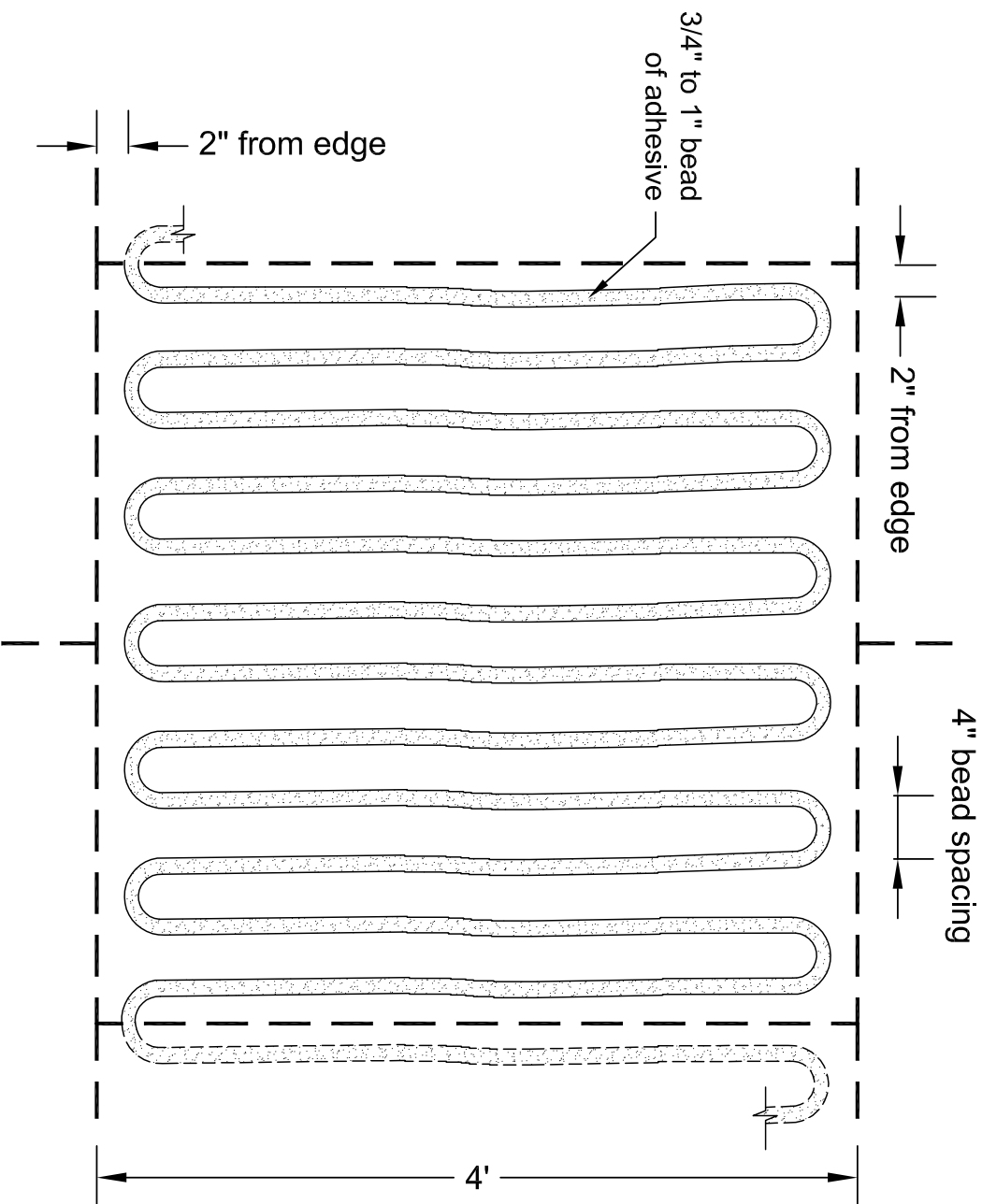
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Ref: adhesive 4X4 6-inch oc

Rev: 12/20/13

PARA-STIK & PARAFAST BEAD SPACING

4' X 4' INSULATION PANEL
4" BEAD SPACING



- NOTES: 1. THE ABOVE BEAD SPACING FREQUENCY IS INTENDED AS A GUIDELINE FOR INSULATION ADHESION BELOW SIP LAST MEMBRANE SYSTEMS AND IS SUBJECT TO SIPLAST AND INDUSTRY STANDARD REQUIREMENTS.
2. BEADS OF ADHESIVE APPLIED AT 4-INCHES O.C. WILL SPREAD TO OFFER NEAR-FULL COVERAGE. INSULATION PANELS MAY RISE FOLLOWING APPLICATION DUE TO POST GROWTH OF THE ADHESIVE AND MAY REQUIRE REPEATED WALK-IN OR TEMPORARY BALLAST UNTIL THE ADHESIVE CURES.

N.T.S.



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