

PRODUCT DATA SHEET

DURO-LAST® INSTA-STIK™ PROFESSIONAL INSULATION ADHESIVE

PRODUCT NAME

INSTA-STIK™ Professional Roof Insulation Adhesive

MANUFACTURER

The Dow Chemical Company
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PRODUCT DESCRIPTION

INSTA-STIK Professional Roof Insulation Adhesive is a single component polyurethane adhesive dispensed from a portable disposable prepressurized container requiring no external power source (See figure 1).

BASIC USE

INSTA-STIK is used to attach compatible roof insulation boards to roof decks and substrates in new roof and roof replacement applications, including insulation board to insulation board, insulation board to Class I graveled and non-graveled (bald) built-up roofs for re-cover applications, and insulation or gypsum board to 22 gauge and thicker steel decks and wood decks.

INSTA-STIK is also used to attach compatible roof insulation in loose-laid and ballasted roof systems.

ADVANTAGES

- Maintains adhesion during freeze/thaw cycles
- Prevents shifting of insulation boards in high wind conditions in loose-laid and ballasted applications.
- Maximizes wind uplift resistance
- No fastener/steel deck corrosion or fastener backout – no thermal conductivity

- No structural deck damage caused by mechanical fasteners
- No compressed or melted insulation
- No obnoxious odor or noise pollution
- No building height restrictions
- No puncturing of vapor retarders
- No asphalt penetration into building interior (steel deck)

ROOF DECK APPLICATIONS

Compatible Roof Insulations:

- Expanded polystyrene
- Polyisocyanurate
- Foamglas
- Styrofoam* Deckmate* F/A Extruded Polystyrene Foam Insulation Type X
- Styrofoam* Deckmate* Plus F/A Extruded Polystyrene Foam Insulation type IV

COMPATIBLE ROOF DECKS AND SUBSTRATES:

- Lightweight structural concrete
- Poured-in-place concrete; cured for a minimum of 28-days
- Precast concrete
- Cementitious wood fiber plank (pull test required)
- Lightweight structural plank
- Vapor barriers, temporary approved base sheets approved by Duro-Last Engineering Services Dept.
- Nongraveled (bald) Class I built-up roofs (pull test required)
- Graveled built-up roofs (pull test required)
- Spudded built-up roofs (pull test required)
- Treated/untreated lumber
- Treated/untreated plywood
- Cleaned galvanized steel

Additional preparation procedures are necessary for graveled and spudded built-up roofs. Refer to insulation manufacturer's Factory Mutual (FM) Global listing for minimum insulation thickness requirements.



Figure 1: INSTA-STIK Complete Kit



Figure 1a: 20oz. Canister (Covers 40 Lineal Ft)

The FM listings are for specific combinations of insulation materials and substrates. Please contact Duro-Last Engineering Services or FM to determine if the combination of roofing materials for a specific roofing project meets the desired approval.

STEEL DECK APPLICATIONS

Compatible Steel Deck Types:

- Minimum 22 gauge steel: Types A, B, E, F, H and N

For more information on these and other Duro-Last Products, contact the Duro-Last Engineering Services Department.

E-Mail: engineering@duro-last.com

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Figure 2: Flare tip nozzle for use on fluted metal decks or in high wind conditions.

COMPATIBLE ROOF INSULATION AND GYPSUM BOARDS TO STEEL DECKS:

- Polyisocyanurate
- Fire-rated gypsum board 5/8" (15.9 mm) minimum thickness
- Dens-Deck® Fiberglass-Faced Gypsum Roof Board (Georgia Pacific 1/4" [6.4 mm] minimum thickness)
- Styrofoam* Deckmate* F/A Extruded Polystyrene Foam Insulation Type X
- Styrofoam* Deckmate* Plus F/A Extruded Polystyrene Foam Insulation type IV

COMPATIBLE ROOF INSULATION TO ROOF INSULATION - SUBSEQUENT LAYERS:

- Expanded polystyrene (1.0 pcf [16.02 kg/m³] minimum)
- Polyisocyanurate
- Oriented Strand Board (OSB)
- Styrofoam* Deckmate* F/A Extruded Polystyrene Foam Insulation Type
- Styrofoam* Deckmate* Plus F/A Extruded Polystyrene Foam Insulation type IV

OTHER APPLICATIONS

Other types of metal or fiberglass reinforced decks must be reviewed and approved by the Duro-Last Engineering Services Department.

NONCOMPATIBLE APPLICATIONS Noncompatible Roof Insulation Boards:

- Standard extruded polystyrene (Contact Duro-Last Engineering Services for approved products)
- Fiberglass

NONCOMPATIBLE SUBSTRATES

- Coal tar pitch built-up roofs
- Lightweight insulating concrete
- Active asphalt
- Unapproved base sheets

COMPOSITION & MATERIALS

INSTA-STIK Professional Roof Insulation Adhesive is a single component, moisture cured polyurethane adhesive. INSTA-STIK is free of conventional solvents. INSTA-STIK Complete is supplied in a 30 lb (14 kg) unit, 23 lb (10 kg) net chemical weight, with a flexible dispensing hose and wand assembly. An on/off ball valve at the end of the dispensing hose allows operational control for single-hand application. A flared tipped nozzle (supplied) is ideal for use on fluted metal decks or in high wind conditions. (See figure 2.)

INSTA-STIK Tank Only is supplied in a 30 lb (14 kg) unit, 23 lb (10 kg) net chemical weight, with no dispensing equipment.

LIMITATIONS

- INSTA-STIK is not approved for use with insulation boards larger than 4' x 4' (1.2 x 1.2 m).
- INSTA-STIK is not approved for use when roof surface or ambient temperatures are below 33°F (0.6°C) or above 110°F (43°C).
- INSTA-STIK is not approved for use during inclement weather.
- INSTA-STIK is not approved for use on wet surfaces or on decks with standing water.
- INSTA-STIK is not approved for use on surfaces with frost, ice or snow.

- INSTA-STIK is not approved for use on loose gravel or on excessively dirty or grease-laden surfaces.
- INSTA-STIK is not approved for use if the product has expired.
- INSTA-STIK is not approved for use in attaching base sheets and membranes.
- INSTA-STIK is not approved for use on any active asphalt or most asphaltic-coated base sheets.
- Duro-Last accepts no responsibility for judging the acceptability of the roof substrate or for the roof system's structural integrity.
- INSTA-STIK is not recommended for use on roof decks with greater than a 2:12 slope. For higher slopes, contact DL Engineering Services for additional guidelines.

ACCESSORIES

Using the Multi-Bead Applicator (MBA) can dramatically increase efficiency of dispensing INSTA-STIK. The use of the MBA is recommended on roof deck with few penetrations and obstructions. Please contact Duro-Last Customer Service for availability.



Figure 3: Installation using MBA

For more information on these and other Duro-Last Products, contact the Duro-Last Engineering Services Department.

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Figure 4: Installation using INSTA-STIK™ Complete

TECHNICAL DATA

APPLICABLE STANDARDS

Underwriters Laboratories, Inc. (UL)
- UL 1897 Standard for Safety for Uplift Tests for Roof Covering Systems.

Note: INSTA-STIK Professional Roof Insulation Adhesive meets the requirements of UL 1897 wind uplift resistance tests for steel deck applications. If INSTA-STIK is used in a UL Class A rated roofing system, the roofing system will maintain its UL Class A rating.

APPROVALS

FM GLOBAL (FM)

INSTA-STIK Professional Roof Insulation Adhesive meets the requirements of the following FM fire and wind uplift resistance tests for FM approved roof deck application:

FLAT (Specific Roof Assembly)

- Class 1-60
- Class 1-90
- Class 1-135
- Class 1-150
- Class 1-165
- Class 1-180
- Class 1-195
- Class 1-210
- Class 1-225
- Class 1-240
- Class 1-270

TAPERED (Specific Roof Assembly)

- Class 1-135
- Class 1-150
- Class 1-165
- Class 1-180
- Class 1-195
- Class 1-240
- Class 1-315

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Dade County (Florida)

INSTA-STIK Professional Roof Insulation Adhesive meets the requirements of Metropolitan Dade County, Florida, windstorm and fire classifications for roof deck applications. Miami Dade Notice of Acceptance Number – 02-0726.01, expires 10/10/2007

INSTALLATION

The ideal product temperature at the time of application should be 75°F (24°C). The minimum ambient and surface temperatures must be 33°F (0.6°C) and rising. INSTA-STIK is packaged in a single container that should be stored between 50°F (10°C) and 75°F (24°C). At these temperatures, the shelf life is 15 months from the date of manufacture.

SAFETY

When dispensing INSTA-STIK, the applicator must wear protective clothing, work gloves, and protective eyewear.

SURFACE PREPARATION

All surfaces must be free of any ice, snow, frost, debris, dirt, dust, grease, oil, diesel fuel and standing water before INSTA-STIK is applied.

Re-Cover Over Bituminous Asphalt (BUR) A licensed INSTA-STIK instructor, authorized to perform adhesion tests, must be on site prior to the commencement of the project to determine compatibility. Please contact Duro-Last ES department at least fourteen (14) days in advance for further instructions.

STEEL DECK

The upper flange of the steel deck must be free of any debris, dirt, dust, grease, oil, diesel fuel, standing water, ice, snow or frost. On new steel, the residual shop-oil coating

must be removed using Red Devil TSP90 or equivalent, acetone, naphtha, or comparable cleaner.

INSULATION

Review the roofing insulation plan. The roof insulation boards to be attached must be no larger than 4' x 4' (1.2 m x 1.2 m). In multiple layers of insulation, the staggered joint method must be used to eliminate thermal breaks.

PRODUCT & EQUIPMENT INSTALLATION

INSTA-STIK Professional Roof Insulation Adhesive should be mixed prior to use by firmly holding the container on its side and agitating the contents using a side-to-side motion for at least 15 seconds. Attach the dispensing hose swivel end to the cylinder valve. Tighten the connection using an open-end wrench being careful not to over tighten. Verify that the on/off valve on the dispensing hose is closed. The handle should be perpendicular to the valve. Attach the dispensing wand kit to the brass valve by screwing it in until it is hand tight. The dispensing wand kit is recommended for roof decks with many penetrations or confined areas.

IMPORTANT: When applying INSTA-STIK, the insulation boards must be placed onto the INSTA-STIK beads within 5 minutes. Walk on the boards to spread the beads for maximum contact. Continue to walk on the insulation boards every 5-7 minutes until the insulation is firmly attached, usually 15-45 minutes.

TABLE 1: INSTA-STIK HANDLING CHARACTERISTICS

Temperature	Tack free time
40°F (4°C), 50% RH	
75°F (24°C), 50% RH	15 min.
120°F (49°C), 25% RH	13 min.



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ROOF PENETRATIONS/DRAINS

Additional adhesive is required around all roof penetrations and drains.

ROOF DECK APPLICATIONS

Use a parapet wall or gutter as a straight edge guide when dispensing the first bead of INSTA-STIK. Under the normal application rate, place the first bead 3" (76.2 mm) within the outside edge of the insulation board to be attached.

Apply 3 additional parallel beads approximately 12" (304.8 mm) apart so that the fourth bead is 3" (76.2 mm) within the opposite edge of the insulation board. The result is 4

equidistant parallel beads (16 lineal feet (5 m) for each 4' (1.2 m) square (4'x4' [1.2x1.2 m]) insulation board.

STEEL DECK APPLICATIONS

With the edge of the insulation board centered over an upper flange for normal application rate, apply a 3/4" - 1" (19.05 - 25.4 mm) bead of INSTA-STIK on the first full upper flange nearest the edge of the insulation board. Continue to apply 3/4" - 1" (19.05 - 25.4 mm) beads on upper flanges as specified. See Table 2. Place the insulation board onto the beads within 5 minutes and walk on the boards to spread the INSTA-STIK for maximum contact.

Additional walkings are required every 5-7 minutes until the insulation boards are firmly attached, usually 15-45 minutes.

WARRANTY

Duro-Last will warrant the adhesion of INSTA-STIK to specified compatible materials and substrates for a period of fifteen (15) years provided installation is in accordance with Duro-Last specs.

TECHNICAL SERVICES

Roofing Technical Support is available from Duro-Last. Contact Engineering Services for information.

TABLE 2 INSTA-STIK APPLICATION RATES¹²³ - BASED ON 3/4" - 1" (19.05 - 25.4 mm) DIAMETER BEAD

Building Height ft (mm)	Parapet wall height in (mm)	Perimeter bandwidth ft (m)	Perimeter application rate in (mm) oc	Field application rate in (mm) oc
0 - 20 (0 - 6.09)	0 - 24 (0 - 609.6) 25+ (610+)	4 (1.22) 0	6 (154) 12 (304.8)	12 (304.8) 12 (304.8)
21 - 40 (6.40 - 12.19)	0 - 24 (0 - 609.6) 25 - 48 (610 - 1219.2) 49+ (1244.6)	8 (2.44) 4 (1.22) 0	6 (152.4) 6 (152.4) 12 (304.8)	12 (304.8) 12 (304.8) 12 (304.8)
41 - 70 (12.49 - 21.33)	0 - 24 (0 - 609.6) 25 - 48 (610 - 1219.2)	8 (2.44) 8 (2.44)	6 (152.4) 6 (152.4)	12 (304.8) 12 (304.8)
71 - 100 (2.1.64 - 30.48)	0 - 24 (0 - 609.6) 25 - 48 (610 - 1219.2)	12 (3.66) 8 (2.44)	6 (152.4) 6 (152.4)	9 (228.6) 12 (304.8)
101 - 200 (30.78 - 60.96)	0 - 24 (0 - 609.6) 25 - 48 (610 - 1219.2)	12 (3.66) 12 (3.66)	6 (152.4) 6 (152.4)	9 (228.6) 12 (304.8)
201 - 300 (61.25 - 91.44)	0 - 48 (610 - 1219.2) 49+ (1244.6)	12 (3.66) 12 (3.66)	6 (152.4) 6 (152.4)	9 (228.6) 9 (228.6)
301+ (91.74+)	-	0	6 (152.4)	6 (152.4)

1 Coverage is approximately 500 - 800 lineal feet at 3/4" - 1" (19.05 - 25.4 mm) bead of adhesive per 23 lb (10.43 kg) tank of Insta-Stik
2 Chemical temperature below 50 degrees F (10 degrees C) could result in reduced coverage rates
3 Agitating the cylinder of Insta-Stik for at least 15 seconds is required for proper yield and performance

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