

**TECHNICAL DATA BULLETIN**  
**CARLISLE SYNTEC** a DIVISION OF CARLISLE CONSTRUCTION MATERIALS INCORPORATED

**CARLISLE One Step Adhesive**

**GENERAL:**

Carlisle One Step Adhesive is a construction-grade, two-component, low-rise, polyurethane adhesive designed for bonding insulation to various substrates. Carlisle One Step Adhesive is compatible with: HP Wood Fiberboard, polyisocyanurate insulation, expanded polystyrene (EPS), extruded polystyrene (XPS), DensDeck®, Securock® and OSB. Compatible deck types include concrete, cellular lightweight concrete, gypsum, cementitious wood fiber, wood and painted or galvanized steel. Carlisle One Step Adhesive is also compatible with the following roofing materials: smooth BUR (previously exposed), mineral cap sheet, smooth (previously exposed) or granulated SBS Mod-Bit and Carlisle's 725TR Vapor Barrier. Carlisle One Step Adhesive is applied in beads or ribbons 4", 6" or 12" o.c. depending on the wind zone, building height and code requirements to produce a strong adhesive bond between the insulation and the substrate. Factory Mutual approval over a variety of deck types and substrates has been achieved.

**TYPICAL PROPERTIES AND CHARACTERISTICS\*\*:**

| <b>Base</b>   | <b>Part A (1)<br/>Polymeric Isocyanate</b>  | <b>Part B (2)<br/>Polyols, Surfactants<br/>&amp; Catalysts</b>      |
|---|---|---|
| Mixing Ratios by Volume<br>Viscosity (CPS@25°C)<br>Avg. Net Weight<br>Packaging<br>Shelf Life | 1:1 Part A to Part B<br>500-3500<br>8.8 lbs/gal<br>0.2 gal per cartridge (0.75 L)<br>1 year | 500-3500<br>8.8 lbs/gal<br>0.2 gal per cartridge (0.75 L)<br>1 year |

**CAUTIONS AND WARNINGS:**

- 1. Review the applicable Material Safety Data Sheet for complete safety information prior to use.**
- The foam produced is an organic material. It must be considered as combustible and may constitute a fire hazard. The foam adhesive must not be left exposed or unprotected. Shield from heat and sparks.
- Do not smoke during application.
- Use with adequate ventilation. Avoid breathing vapors. Wear a NIOSH or MSHA approved respirator for organic vapors with prefilters and solvent resistant cartridges if concentrations of MDI exceed the TLV or are unknown. Proper safety training is essential for all persons involved in the installation process. If inhaled, remove to fresh air and administer oxygen if breathing is difficult. Consult a physician immediately.
- Avoid contact with eyes. Safety glasses or goggles are required. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Wear long sleeves and pants. Wash thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water or corn oil. NOTE: Permeation resistant gloves that meet ANSI/ ISEA 105-2005 are required when handling the material or during application.
- Job site storage temperatures in excess of 90°F (32°C) may affect product shelf life. Should the components be stored at temperatures lower than 55°F (13°C), restore to room temperature prior to use. Do not allow Carlisle One Step Adhesive to freeze.
- All air intake vents on roofs must be closed during application of Carlisle One Step Adhesive.
- One Step does not adhere well to previously unexposed asphalt products. Cav-Grip or 702 Primer is required.
- 10. KEEP OUT OF THE REACH OF CHILDREN.**

**COVERAGE RATE:** For 12" o.c. bead application (may vary due to job site conditions)

Insulation attachment to: Per carton - 4 cartridge sets  
Gypsum, lightweight concrete, concrete, wood, steel, 400 sq.ft.  
smooth (previously exposed) BUR, Mod-Bit, mineral cap,  
or multiple layers of insulation.

## APPLICATION:

1. The surface to which the adhesive is to be applied shall be smooth, dry, free of fins, sharp edges, loose and foreign materials, oil and grease and standing water. All sharp projections and loose material shall be removed by sweeping, blowing or vacuum cleaning. Previously unexposed asphalt must be primed with Cav-Grip or 702 Primer.
2. **Seal gaps between the wall/penetration and concrete deck with Carlisle 725TR or other suitable material to avoid condensation issues and positive pressure from air infiltration.**
3. Adhesion tests must be conducted on lightweight concrete, smooth BUR, smooth Mod-Bit and gypsum decks to determine deck integrity prior to using the Carlisle One Step Adhesive product for insulation securement.
4. Proper adhesion of existing roof coatings to their substrate must be verified prior to bonding to these materials.
5. Fibrous cement decks must be investigated for their ability to retain liquid adhesive. (Some types of fibrous cement decks may allow liquid adhesive to flow through the deck).
6. Apply Carlisle One Step Adhesive when the substrate and ambient temperature is 0° F (-18° C) or above.

## Insulation Attachment

1. Apply a 1/2" to 3/4" wide bead of Carlisle One Step Adhesive using a portable 1:1 applicator (oversized, dual-cartridge caulking gun)\* with beads spaced as outlined on the following chart for 5, 10, or 15 year 55 mph warranties (20 yr requires 6" o.c.) in the field: Applying a wet bead less than 1/2" wide is not acceptable.

| Building Height | Bead Spacing (Perimeter)                       | Bead Spacing (Field) |
|-----------------|--|----------------------|
| 0' - 25'        | 6" o.c. - 4' perimeter                         | 12" o.c.             |
| 25' - 50'       | 6" o.c. - 8' perimeter                         | 12" o.c.             |
| 50' - 75'       | 6" o.c. - 12' perimeter                        | 12" o.c.             |
| 75' - 100'      | 6" o.c. - 16' perimeter                        | 12" o.c.             |
| 100' or greater | Contact Carlisle for bead spacing requirements |                      |

2. Factory Mutual bead spacing guidelines, bead spacing in the perimeter and corners may differ from the table above. Beads at 12" o.c. are not acceptable at perimeters or corners.
3. **Place 4' x 4' maximum insulation boards into Carlisle One Step Adhesive after allowing it to rise 1/2" and develop string/body (approx. 1min. at room temperature) but before the adhesive reaches a "tack-free" state. String time will vary based on environmental conditions like temperature and humidity.**
4. Designate one person to walk and roll boards into place using a 150 lb. weighted roller adding constant weight or slitting boards where necessary until adhesive sets-up.
5. At the beginning of the insulation attachment process and periodically throughout the day check the adhesion of boards to insure a tight bond is created and maximum contact is achieved.

\* The portable 1:1 applicator is a hand operated, lightweight, portable unit that consists of an oversized, dual-cartridge caulking gun used to transfer the 2-component Carlisle One Step Adhesive from the plastic cartridges to the substrate. From the applicator, the adhesive flows through a disposable static mixing nozzle and onto the substrate. Since the adhesive reaction occurs in the nozzle, clean up and maintenance is fast and easy. Each carton includes 4 cartridge sets and 6 static mixing tubes.

\*\* General properties. Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification or specification range for any particular property of this product.