



Polyurethane Foam Insulation Adhesive

CR-20

Technical Data

December, 2009

Product Description

3M™ Polyurethane Foam Insulation Adhesive CR-20 is a two component elastomeric polyurethane froth adhesive. 3M Adhesive CR-20 is specifically designed to provide outstanding adhesive properties as well as controlled gap fill without lifting the insulation boards. The “A” and “B” components are dispensed from two pre-pressurized disposable cylinders utilizing 3M’s two-component disposable foam applicator.

Basic Use

3M™ Polyurethane Foam Insulation Adhesive CR-20 is specifically designed to adhere a variety of insulation board stock to various substrates in both new and recover applications. It can also be used to adhere insulation board to insulation board where multiple layers are required. The adhesive is applied in a bead form directly to an approved substrate. The insulation board is placed onto the adhesive. A chemical cure takes place several minutes after application, depending on temperature and weather conditions.

Listing and Approvals

3M™ Polyurethane Foam Insulation Adhesive CR-20 is approved by the following agencies:
 Factory Mutual (FM)
 Underwriters Laboratories (UL)

Typical Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

| Product | A - Component | B - Component |
|---|----------------------|---------------|
| Base: | Polymeric Isocyanate | Polyol Amines |
| Blowing Agent: | 134a | 134a |
| Net Weight lbs.: | 40 | 35 |
| Volatile Organic Compounds (VOC): When use as intended with both parts | 67.5 g/L | |

| Properties | Mixed Components |
|--|------------------------------|
| Open Time (2.5" bead): | 1 - 10 minutes ¹ |
| Work Life in Mixing Nozzle: | 1 minute ¹ |
| Set-up Time: | 10 - 20 minutes ¹ |
| Time to Full Cure: | 24 hours |
| Coverage ² (2.5" bead, 12" on center rows): | 1800 - 2000 sq. ft. |

¹Times may be affected by temperature and weather conditions.

²The application rate must be increased for rougher surfaces and will vary depending on the roughness.

3M™ Polyurethane Foam Insulation Adhesive

CR-20

Compatible Roof Decks and Substrates

- Structural Concrete
- Asphalt Primed Concrete
- Pre-cast Concrete
- Various BUR (smooth or gravel)
- Base Sheets
- Steel-22 gauge or lower with approved cross section
- Lightweight Structural Concrete
- Cementitious Wood Fiber Planks
- Insulating Concrete
- Vapor Retarders (hot, cold, torch-applied)
- Gypsum

Compatible Roof Insulations and Cover Boards

- Polyisocyanurate (flat or tapered)
- Extruded or Expanded Polystyrene
- High density wood fiber
- Dens-Deck® and other gypsum boards
- SecureRock® roof board

Contact 3M for compatibility and surface preparation instructions for:

- Cold Tar Pitch BUR
- Gravel Surfaced BUR

Application and Product Features

- No structural deck damage caused by mechanical
- No fastener back out
- No asphalt contamination or offensive fumes
- Continuous walk-in of insulating board is not required
- No extensive set-up or breakdown time
- Portable Kit is a complete, self-contained system that is portable and easy to maneuver
- No fear of drilling through electrical conduit or fasteners
- No deck damage when removing Fasteners for re-roofing
- No potential burns
- Very rapid application
- Achieves maximum wind uplift resistance
- No external power source required

Limitations

- 3M™ Polyurethane Foam Insulation Adhesive CR-20 is not recommended for use with insulating board stock larger than 4' x 4'*
- 3M Adhesive CR-20 is not recommended for application when ambient or substrate temperatures are below 40°F
- 3M Adhesive CR-20 is not recommended for use during inclement weather
- 3M Adhesive CR-20 is not recommended for use on wet surfaces
- 3M Adhesive CR-20 is not recommended for use on any roof deck that shows signs of deterioration or loss of structural integrity
- 3M Adhesive CR-20 is not recommended for use on excessively dirty or grease laden surfaces
- 3M Adhesive CR-20 is not recommended for use after the expiration date

*As suggested per NRCA Membrane Roof Systems Manual: *Section 2-10 Polyisocyanurate Insulation*

Storage and Handling

The “A” and “B” containers should be stored between 45°F and 95°F. The shelf life, at these temperatures, is 18 months from the date of production.

The product temperature prior to application should be between 70°F and 90°F. The minimum ambient and surface temperature should be 40°F and rising.

3M™ Polyurethane Foam Insulation Adhesive

CR-20

Surface Preparation

Lightweight concrete, structural concrete, and plywood: These surfaces must be free of any debris, dirt, oil, grease, and water before applying 3M™ Polyurethane Foam Insulation Adhesive CR-20.

Built-ups (BUR) and Modifieds: Surfaces must be free of any debris, dirt, oil, grease, and water. Contact 3M for details.

Steel: The upper flange of the steel deck (bonding surface) surfaces must be free of any debris, dirt, oil, grease, and water. On new steel, the shop oil coating must be removed. The bonding surface must be free of any cleaner before applying 3M Adhesive CR-20.

Product Installation

The 3M™ Polyurethane Foam Insulation Adhesive CR-20 insulation adhesive is applied in rows placed a maximum of 12" OC.

Insulation boards are to be placed immediately on the wet adhesive *but not walked into place or compressed into the adhesive until the 3M Adhesive CR-20 has begun to thicken and started to develop its initial bond.*

The time involved in this process is contingent on the ambient as well as deck surface temperature. The chart below illustrates the approximate time required prior to walking in or adding ballast to the boards.

| Ambient / Deck Temperature | Time Before Walking In |
|----------------------------|------------------------|
| 40° - 60°F | 6 - 10 minutes |
| 60° - 80°F | 3 - 6 minutes |
| 80° - 100°F | 1 - 3 minutes |

After the adhesive has attained its initial bond strength the boards can be “walked-in” and will be compressed to the deck or substrate exhibiting minimal slippage or movement. The boards should be exposed to minimum traffic for at least 10-20 minutes (depending on temperature) after they have been “walked-in-place” to avoid breaking the freshly formed bond.

NOTE: Membranes can be applied once the adhesive has achieved sufficient bond strength to the immediate substrate to which it is adhered. It is recommended that the contractor inspect the installed insulation for proper adhesion and re-adhere any boards and/or corners that are not adequately attached.

NOTE: Boards that will not lay flat due to cupping, warping or crowning, or surface irregularities of the substrate, should have weights placed on the boards until the 3M Adhesive CR-20 has achieved adequate adhesion to hold the boards in place.

Application Equipment

| Insulation Adhesive | UPC | SKU |
|--|-------------------|----------------|
| 3M™ Polyurethane Foam Insulation Cylinder Spray Adhesive CR-20 Part A | 00-051111-07243-1 | 62-4964-8030-2 |
| 3M™ Polyurethane Foam Insulation Cylinder Spray Adhesive CR-20 Part B, includes 8 tips | 00-051111-07242-4 | 62-4963-8030-4 |
| 3M™ 2-component Spray Polyurethane Foam Spare Tips, includes 10 tips | 00-051111-07274-5 | 62-9884-9010-8 |
| 3M™ 2-component Spray Polyurethane Foam Applicator and Hose Assembly | 00-051111-07273-8 | 62-9884-9930-7 |

3M™ Polyurethane Foam Insulation Adhesive

CR-20

Cylinder Disposal Disposable cylinders should be disposed of in accordance with local, state and federal regulations. Consult MSDS for more information.

First Aid

Inhalation: Remove person to fresh air. Get immediate medical attention.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

Technical Information The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



Industrial Adhesives and Tapes Division

3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550 • 877-369-2923 (Fax)
www.3M.com/industrial



Recycled Paper
40% pre-consumer
10% post-consumer

3M is a trademark of 3M Company.
DensDeck is a registered trademark of Georgia-Pacific Corp.
SecureRock is a registered trademark of USG Corp.
Printed in U.S.A.
©3M 2009 (12/09)