

DENVER FOAM®

OPEN CELL POLYURETHANE



TECHNICAL DATA SHEET

1. Product Name: **DENVER FOAM®**

2. Manufacturer: **Backer Rod Mfg. Inc.**
4244 N Broadway
Denver, CO 80216
Phone: 800-595-2950
Fax: 303-308-0393
Website: www.backerrod.com

3. Product Description:
Per ASTM C 1330 type O, **DENVER FOAM®** is a nongassing backer rod used as a backing for elastomeric and other applied caulking sealants. Denver Foam® controls the depth of the applied sealants and ensures cross sectional hour-glass configuration.

Specific Uses: For use in expansion/construction joints in concrete and pre-cast concrete walls, floors, partitions, bridge construction, parking decks, curtain walls, glazing, log home construction, highway construction, and pavement maintenance.

Both hot and cold applied sealants can be used with **DENVER FOAM®** per ASTM-D-5249-95.

Open cell **DENVER FOAM®** has an advantage allowing air to reach both sides of sealant offering a faster and more uniform cure. This is especially true for one part non-sag sealants. **DENVER FOAM®** can also be used in floor joints with self leveling sealants. Care should be taken in traffic areas where additional support is required.

4. Composition and Material:

DENVER FOAM® is continuous lengths of flexible, round, fabricated open cell polyurethane foam; yellow or black in color and available in a wide range of diameters listed in section 8 under packaging information.

DENVER FOAM® is also manufactured in half round shapes referred to as **DENVER FOAM HALF ROD**. Most commonly used in log home chinking applications, its unique design compresses securely into the joint while providing a flat chinking surface eliminating rounded backer rod telegraphing.

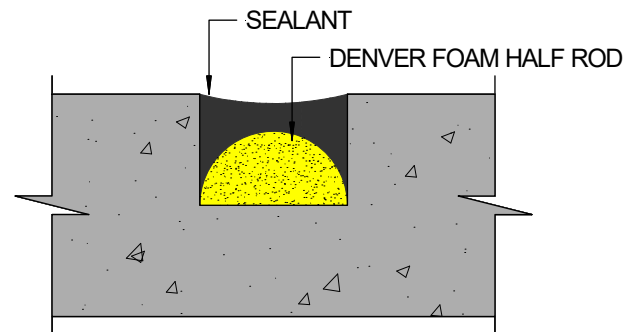
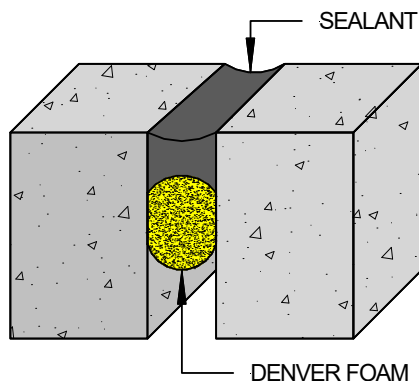
DENVER FOAM® HALF ROD can also be used in control joints with shallow depths where conventional round backer rod will not fit. Half Rod still allows for the proper sealant hour glass configuration and offers all of the advantages of traditional **DENVER FOAM®**. Please contact for packaging information.

5. Installation:

DENVER FOAM® should be installed in construction joints free from all contaminants, loose materials, and dry and free from frost. Install under minimum 25%, maximum 80% compression to offer a good tooling base. Systems can be installed without the fear of out-gassing associated with polyethylene closed cell backer rods.

6. Compatibility:

DENVER FOAM® is chemically inert and will resist oil, gasoline and most solvents. Material is odorless and will not stain. The open cell construction eliminates the out-gassing and cold flow problem associated with closed cell polyethylene backer rods.



1. Physical Properties:

Physical Properties		
Property	Value	ASTM Test Method
Density (Normal)	1.7 pcf	D 1622
Out-gassing	NONE	C 1253
Compression Recovery	>90	D 5249
Tensile Strength PSI	25 psi	D 1623
Temperature Range	-60° F to +500°F	D 5249
Auto Ignition	700° - 800° F	NA
Water Absorption	≤ 0.107 g/cm ³	C 1016 - Proc. B
Air Flow	90%	D 3574



The picture above details how “bales” are packaged into “Master Bags”

2. Packaging Information

Packaging Information					
Linear Feet Per Unit/ (metric)					Master Bag/ Bale Breakdown
Color Code	Diameter	LFT Master Bag	LFT Mini Bag	LFT Super Bundle (8 per)	
Beige	3/8” (10mm)	3600’ (1097m)	200’ (61m)	28,800’ (8780m)	3/8” x 900’ Bale - 4 Bales = 3600’ Master Bag
Red	5/8” (16 mm)	2000’ (608m)	100’ (30m)	16,000’ (4878m)	5/8” x 500’ Bale – 4 Bales = 2000’ Master Bag
Orange	7/8” (22mm)	1050’ (318m)	100’ (30m)	8,400’ (2561m)	7/8” x 350’ Bale – 3 Bales = 1050’ Master Bag
Green	1-1/8” (29mm)	600’ (182m)	75’ (23m)	4,800’ (1463m)	1 1/8” x 300 Bale – 2 Bales = 600’ Master Bag
Yellow	1-1/2” (38mm)	350’ (106m)	40’ (12m)	2,800’ (854m)	1 1/2” x 350’ Bale - 1 Bale = 350’ Master Bag
Blue	2” (51mm)	200’ (61m)	25’ (8m)	1,600’ (488m)	2” x 200’ Bale - 1 Bale = 200’ Master Bag

DENVER FOAM® Master Bags are compressed into Super Bundles, 8 - 10 Master Bags per Super Bundle, for economical shipment and storage. Each individual size is color coded for identification. Super Bundles should be opened immediately upon receiving to ensure proper rebounding.

- Sleeved individual Master Bag 14” x 20” x 22” 8 lbs. ea
- Super Bundle 20” x 24” x 40” 85 lbs. ea



This picture clearly shows the two-stage compression packaging. The back row contains 10 full sized, uncompressed master bags approximately 17” in diameter by 31” tall. The middle row contains the same bags semi-compressed into a reinforced plastic sleeve about one half the original size. The compressed ‘Super Bundle’ in the foreground contains the 10 semi-compressed sleeved Master Bags further compressed to a size approximately 20” x 24” x 40”

3. Limitations

Whatever restriction the sealant manufacturer places on their product, the same will apply to **DENVER FOAM®**.

4. Availability and Cost

DENVER FOAM® is marketed nationally and internationally by select authorized distributors. For name, address and telephone number of your nearest distributor please contact us at: 800-595-2950 or sales@backerrod.com

5. Warranty

Unless otherwise agreed to in writing, **DENVER FOAM®** is sold without warranty, express or implied. Buyer must make their own determination as to the suitability of the product and application.

6. Technical Services

Please contact Backer Rod Mfg. Inc. for technical guidance, special project engineering designs and drawings.

PRODUCT INFORMATION SHEET

DENVER FOAM® POLYURETHANE FOAM BACKER ROD

IMPORTANT INFORMATION: Flexible polyurethane is an “article”, not a chemical, as defined in 29 CFR 1910.1200©. It does not require a Safety Data Sheet under OSHA’s Hazard Communication Standard. As a service to our customers, however, Backer Rod Mfg. Inc. has produced this Product Information Sheet.

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Date of Preparation: August 1, 2018
Product Name: Denver Foam® open cell polyurethane foam backer rod.
Other Names: Flexible polyurethane foam (FPF), prime foam, bonded foam, densified foam, HR foam, foam, and viscoelastic foam
Supplier Details: Backer Rod Mfg. Inc.
4244 N Broadway
Denver, CO 80216
800-595-2950
Fax: 303-308-0396
www.backerrod.com

SECTION 2 - PHYSICAL AND CHEMICAL CHARACTERISTICS

Since flexible polyurethane foam is a solid, physical characteristics such as boiling point, vapor pressure, vapor density evaporation rate, etc., do not apply.

Appearance: Cellular flexible material, canary yellow and/ or charcoal gray in color. May also be in various colors.
Density: 1.7 lbs per cubic foot
Solubility in Water: Insoluble
Stability & Reactivity: Stable. No hazardous polymerization will occur in normal use.
Prolonged exposure to temperatures in excess of 240°F may cause some loss of volatile components (e.g., flame retardants) through evaporation.
Unprotected polyurethane foam will discolor and degrade under prolonged exposure to UV light.
Solvent resistance will vary with solvent type.

SECTION 3 - FIRE HAZARD INFORMATION

Auto-Ignition Point: In excess of 600°F (ASTM D1929)

SECTION 3 - FIRE HAZARD INFORMATION CONTINUED

- Fire Hazard:** **WARNING:** Urethane Foam will burn if exposed to an open flame or other sufficient heat source. Do not expose urethane foam to open flames or any other direct or indirect high temperature ignition source such as burning operations, welding, space heaters, or naked lights
- Once ignited, urethane foam will burn rapidly, releasing great heat and consuming oxygen at a high rate. In an enclosed space the resulting deficiency of oxygen will present a danger of suffocation to the occupants. Hazardous gasses released by the burning foam can be incapacitation or fatal to human beings if inhaled in sufficient quantities.
- Once ignited, urethane foam is difficult to extinguish. Foam fires that appear to be extinguished may smolder and re-ignite. Always have fire officials determine whether a fire has been extinguished.
- Piles of foam dust can be readily ignited and present a potential fire hazard. High concentrations of foam dust in the air can be a potential explosion hazard if exposed to flames, sparks, or other ignition sources.
- Extinguishing Media:** Water, dry chemical, carbon dioxide
- Fire-fighting Protection:** Fire-fighting personnel must be equipped with a self-contained breathing apparatus (SCBA) and fire-fighting clothing.
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SECTION 4 - HEALTH HAZARDS

- Exposure Limits:** None Established
- Acute Toxicity:** LD50 (Oral) >5000 mg/kg (rat)
LD50 (Dermal) No data available
LC50 (Inhalation) No data available
- Note:** Foam is not known to be a skin irritant.
Foam dust can cause eye irritation.
Foam dust generated from such operations as continuous grinding or buffering can create nuisance particulates, which can cause irritation to the respiratory tract or even cause lung infections, airway obstructions and fibrosis. OSHA has established PEL values of 15 mg/m³ or respirable dust (8-hour TWA) for such particulates.
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SECTION 5 - HANDLING AND STORAGE

Keep foam away from sparks, naked lights, open flames, exposed electrical elements, or other ignition sources. Smoking should be forbidden in areas where material is stored or processed. Maintain adequate sprinkler protection where large volumes of foam are kept (e.g. warehouse, fabrication areas and storage rooms). Check for compliance with insurance regulations, local building codes or other legal requirements.

Never use foam as an exposed interior wall or ceiling finish

Maintain sufficient aisle space to permit access for fire-fighting equipment and personnel to all foam storage areas.

SECTION 5 - HANDLING AND STORAGE CONTINUED

Do not allow cutting or foam scrap to accumulate

Be aware that terms sometimes used to describe polyurethane foam, like “fire-retardant” and “flame resistant”, do not mean fire safety under all conditions. Flammability ratings from small-scale laboratory tests are not to be taken as an indication of the materials behavior under actual fire conditions.

SECTION 6 - PERSONAL PROTECTION AND EXPOSURE CONTROLS

Protective Equipment: Unless exposure to foam dust is anticipated, dust masks, goggles, and gloves are not required. Long sleeves are recommended if arms are repeatedly rubbed against foam.

Ventilation: Mechanical ventilation should be considered in operations that generate abnormal quantities of foam dust, or where thermal decomposition of the foam occurs (e.g. hot-wire cutting, heat sealing, hot stamping and flame laminating).

SECTION 7 - EMERGENCY AND FIRST AID PROCEDURES

Skin: Wash off any foam dust.

Eyes: Flush thoroughly with water.

Ingestion: None necessary

Inhalation: Consult physician if coughing, discomfort, or obstruction of air passage occurs.

The information presented here is offered for your consideration, investigation and verification. The information is presented in good faith and was obtained from sources Backer Rod Mfg. Inc. believes to be reliable. Backer Rod Mfg. Inc., however, makes no representation as to the completeness and accuracy. Backer Rod Mfg. Inc. makes no warranty, express or implied, with respect to the information contained herein.

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DENVER FOAM[®]

Engineering & Technical Bulletin

Open Cell Polyurethane Backer Rod

HOT POUR TESTED TO + 500°F

Date: October 25, 2004

Manufacturer - Backer Rod Mfg. Inc., 4244 N. Broadway, Denver, CO 80216

Trade Name - DENVER FOAM[®]

Prescribed Tests - ASTM D 5249 – 95
U.S. Dept. of Commerce National Institute of Standards

Description - Denver Foam[®] is a backer rod serving as a backing for elastomeric, **hot applied** and other applied caulking sealants. Denver Foam[®] controls the depth and amount of sealant required.

Specific Uses - For use in expansion/construction joints in concrete and pre-cast concrete walls, floors, partitions bridge construction, parking decks, curtain walls, glazing, log home construction, **highway construction, and pavement maintenance.**

Recommendation - **WIDE TEMPERATURE RANGE:** Denver Foam[®] can be used successfully at temperatures of -70° (-57°C) up to intermittent temperatures of 500°F (260°C). **Denver Foam[®] is an excellent hot pour sealant backer rod.** Tested under ASTM 5249-95 at +500°F, Denver Foam[®] showed no signs of deterioration and actually expanded in the joint. Cross linked (hot type) backer rods shrink and break down at approximately 180°F.

Denver Foam[®] is chemically inert and will resist oil, gasoline, jet fuel and most solvents. Material is odorless and will not stain. The open cell construction eliminates the out-gassing problems associated with closed cell cross linked (hot type) backer rods. **Denver Foam[®] is 100% non out-gassing.**

Easy installation: Denver Foam[®] can be compressed as much as 80% of its original diameter. This allows the applicator to use fewer sizes in varying and/or twisting joint widths.

“Setting Standards for the Industry”

Backer Rod Mfg. Inc.

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