Protectosil® CHEM-TRETE® 40 D

WATER REPELLENT
Product Data and Test Information

PRODUCT NAME
Protectosil® CHEM-TRETE® 40 D
High-performance water repellent for calcareous stone.

MANUFACTURER
Evonik Degussa Corporation
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1 (800) 828-0919
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www.protectosil.com

PROTECTOSIL PRODUCTS ARE MANUFACTURED AT THE EVONIK DEGUSSA CORPORATION THEODORE, ALABAMA, PLANT UNDER A QUALITY SYSTEM CERTIFIED TO ISO-9001 AND ISO-14001 REQUIREMENTS.

PRODUCT DESCRIPTION
A clear, penetrating, breathable water repellent and consolidant for use on exterior above-grade calcareous stone such as limestone and marble, brick masonry and natural stones. Penetrates the surface and bonds chemically to the substrate, resulting in permanent attachment of the water repellent molecule. Protectosil CHEM-TRETE 40 D is not a coating and as a result will not change the surface appearance of the substrate.

By reducing the amount of water that enters the substrate, Protectosil CHEM-TRETE 40 D reduces the intrusion of waterborne contaminants such as acid rain, dirt and pollutants. Also reduces the deteriorating effects of these contaminants, such as spalling, deicer scaling, efflorescence, subflorescence, leaching and staining.

APPROPRIATE APPLICATIONS
Makes limestone and marble water repellent, and acts as a surface consolidant.

For use on brick masonry, to protect against the ingress of wind-driven rain and to harden soft bricks.

Reduces the damage that salt burst has on natural stone.

Reduces the effects of mildew, efflorescence and stains on vertical concrete and masonry buildings.

For use on concrete that has a high percentage of limestone or coral aggregate, to consolidate and make water repellent.

ADVANTAGES
Protectosil CHEM-TRETE 40 D is a mixture of isobutyltri-
alkoxysilane and ethyl silicate in an alcohol carrier. The silane/silicate mixture is designed to penetrate deep into the substrate and impart a high degree of water repellency. The silicate allows the silane to chemically bond to substrates that have little or no natural silica. This provides the substrate with long-lasting water repellent protection.

Protectosil CHEM-TRETE 40 D also acts as a surface consolidant for binding loose or powdery surfaces. The ethyl silicate encapsulates the calcium carbonate in limestone and marble to form a denser material. Sandstone also is hardened when the silicate bonds with the quartz grains. By incorporating Protectosil CHEM-TRETE 40 D into your integrated design, you can earn vital Leadership in Energy & Environmental Design (LEED) credits for both new and existing construction projects.

The main benefits of the product are:

• Excellent resistance to water intrusion
• Excellent resistance to acid rain
• High resistance to wind-driven rain
• Consolidates
• Breathable system
• Deep penetration into the substrate
• No blushing, peeling or yellowing
• High resistance to alkali attack
• Reduced efflorescence
• Keeps substrate cleaner

LIMITATIONS
Will leave a residue on glass, metal and painted surfaces. These should be masked prior to application. May darken certain substrates; apply test patch before application. Not intended for below-grade waterproofing. Should not be applied if the surface temperature is below 20°F (-7°C) or above 100°F (40°C), if rain is expected within 2 hours following application, or if high winds or other conditions prevent proper application. If rain has preceded the application, the surface should be allowed to dry for at least 24 hours. Caution should be taken with specialty coated glass, asphaltic materials and plastic windows. Check compatibility before application.

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TECHNICAL DATA

**Protectosil CHEM-TRETE 40 D** is a clear, colorless liquid containing 40% isobutyltriethoxysilane and ethyl silicate in alcohol.

- **Color**: water white
- **Active Substance**: isobutyltriethoxysilane
- **Active Content**: 40% by weight
- **Solvent**: denatured ethyl alcohol
- **Flash Point**: 54°F
- **Density**: 7.0 lb/gal

TEST DATA

ASTM C 97
- “Absorption of Natural Building Stone”
  83% effective in reducing water absorption

ASTM C 88
- “Sulfate Soundness Test”
  No weight loss after treatment

Federal Specification SSW-110C
- “Breathability of Coatings”
  98.5% moisture vapor transmission

ASTM C 67
- “Testing Bricks for Absorption”
  92% effective in reducing water intrusion

INSTALLATION

Concrete must be allowed to cure for a minimum of 28 days. All repointing must be completed and allowed to cure for at least 3 days. Concrete repair and replacement must be completed prior to application of **Protectosil CHEM-TRETE 40 D**. Patching materials, caulking, sealing materials and traffic paint must be fully cured before applying **Protectosil CHEM-TRETE 40 D**.

All surfaces must be cleaned to remove all traces of dirt, dust, efflorescence, mold, salt, grease, oil, asphalt, laitance, curing compounds, paint, coatings and other foreign materials. Acceptable surface cleaning methods include shotblasting, sandblasting, waterblasting and using chemical cleaners. Check with your Protectosil representative to verify that surface preparation is adequate.

**Protectosil CHEM-TRETE 40 D** should be applied using low-pressure (15 to 25 psi) pumping equipment with a wet fan type spray nozzle. Alternate methods include using either a power roller with a 1" nap or a brush. Do not alter or dilute the material. Do not apply to a wet or damp substrate. A test patch should be applied to the substrate to verify coverage rate, desired results and application conditions.

On vertical surfaces, apply **Protectosil CHEM-TRETE 40 D** in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern. Coverage rates on limestone application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern. Coverage rates on limestone surfaces are between 75 and 125 ft²/gal. Multiple applications may be needed for denser consolidation. Surfaces such as polished marble may have higher coverage rates. For warranty qualification, your Protectosil representative can give an exact coverage rate for your particular project. Please refer to the "Protectosil CHEM-TRETE 40 D Application Instructions" for more detailed information.

**Precautions**: **Protectosil CHEM-TRETE 40 D** is a flammable liquid and should be kept away from heat, sparks, open flame and other sources of ignition. **Protectosil CHEM-TRETE 40 D** containers should be kept closed when not in use and should be stored at temperatures between 0°F (-20°C) and 120°F (50°C), away from rain and standing water. When working in an enclosed area, an air respirator should be used. Please refer to the material safety data sheet for more detailed information.

AVAILABILITY

**Protectosil CHEM-TRETE 40 D** is available in 5- and 55-gallon drums to approved applicators, F.O.B. to various warehouses throughout the United States. Contact Evonik Degussa Corporation at 1 (800) 828-0919 for the sales representative in your area to get specific cost information.

TECHNICAL SERVICE

Technical service engineers and chemists are available to answer questions about product performance, application methods and compatibility with other building materials.

For more information, MSDS and the most updated product information, and to find your local representative, go to www.protectosil.com.

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Protectosil® CHEM-TRETE® 40 VOC

WATER REPELLENT
Product Data and Test Information

PRODUCT NAME
Protectosil® CHEM-TRETE® 40 VOC
High-performance, penetrating water repellent for concrete, masonry and stone.

MANUFACTURER
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CERTIFIED TO ISO-9001 AND ISO-14001 REQUIREMENTS.

PRODUCT DESCRIPTION
A clear, penetrating, breathable water repellent for use on exterior above-grade concrete, brick masonry, concrete masonry units and some natural stones. Penetrates the surface and bonds chemically to the substrate, resulting in permanent attachment of the water repellent molecule. Protectosil CHEM-TRETE 40 VOC is not a coating and as a result will not discolor or change the surface appearance in any way.

By reducing the amount of water entering the substrate, Protectosil CHEM-TRETE 40 VOC reduces the intrusion of waterborne contaminants such as salt and dirt, and reduces the deteriorating effects of these contaminants, such as rebar corrosion, spalling, scaling, efflorescence, leaching and staining.

APPROPRIATE APPLICATIONS
For use on concrete, to protect the reinforcing steel from corrosion due to the effects of water, deicing salts and other waterborne chemicals.

For use on brick masonry, to protect against the ingress of wind-driven rain.

For use on concrete pavement for highways, parking decks and airport runways, to reduce scaling due to deicer chemicals.

Reduces the effects of mildew, efflorescence and stains on vertical concrete and masonry buildings.

Imparts water repellency to a substrate for an extended time.

ADVANTAGES
Protectosil CHEM-TRETE 40 VOC is an isobutyltri-alkoxysilane in an alcohol carrier. The silane is designed to penetrate deep into the substrate and impart a high level of water and chloride ion screening. This provides the substrate with long-lasting protection. Because of the purity of Protectosil CHEM-TRETE 40 VOC, it will not leave a residue on nonporous substrates such as glass windows, metal frames and painted surfaces.

Protectosil CHEM-TRETE 40 VOC meets the volatile organic content regulations in numerous states. In addition, Protectosil CHEM-TRETE 40 VOC does not contain exempt solvents (such as 1,1,1 trichloroethane) that may be hazardous. For the proper VOC regulations in your specific location, contact your Protectosil representative.

The Protectosil CHEM-TRETE 40 VOC product line has an unprecedented track record in protecting concrete, masonry and natural stone structures from deterioration due to water and waterborne contaminants. Structures treated in the 1970s are still protected, and these results are documented by state, federal and private agencies. By incorporating Protectosil CHEM-TRETE 40 VOC into your integrated design, you can earn vital Leadership in Energy & Environmental Design (LEED) credits for both new and existing construction projects.

The main benefits of the product are:
- Excellent resistance to water intrusion
- Excellent resistance to chloride ion ingress
- High resistance to wind-driven rain
- Breathable system
- Deep penetration into the substrate
- No masking of windows necessary
- No blushing, peeling or yellowing
- High resistance to alkali attack
- Reduced efflorescence
- No change in surface appearance
- Keeps substrate cleaner

LIMITATIONS
Not intended for below-grade waterproofing. Should not be applied if the surface temperature is below 20°F (-7°C) or above 100°F (40°C), if rain is expected within 2 hours following application, or if high winds or other conditions prevent proper application. If rain has preceded the application, the surface should be allowed to dry for at least 24 hours. Caution should be taken with specialty coated glass, asphaltic materials and plastic windows. Check compatibility before application. Shrubbery and plant life should be protected from overspray.

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TECHNICAL DATA

Protectosil CHEM-TRETE 40 VOC is a clear, colorless liquid containing isobutyltrialkoxyxilane in alcohol.

- **Color**: water white
- **Active Substance**: isobutyltrialkoxyxilane
- **Active Content**: >50% by weight
- **Solvent**: denatured ethyl alcohol
- **Flash Point**: 54°F
- **Density**: 7.0 lb/gal
- **VOC**: 590 g/l

TEST DATA

NCHRP #244 (@200 ft²/gal)
- Series II: 86% reduction in water absorption
- Series II: 87% reduction in chloride absorption
- Series IV: 99% reduction in chloride absorption

ASTM C 672 "Deicer Scaling"
- 100 cycles-0+ rating
  (non-air-entrained concrete)

ASTM E303 "Skid Resistance"
- Dry surface: no change
- Wet surface: no change

Alberta DOT Penetrating Sealers Type 1b
- Initial water repellency: 84.3%
- After abrasion: 85.1%

ASTM E 514 "Water Permeance of Masonry"
- Untreated leakage: 5.51 l/hr (1.5 gal/hr)
- Treated leakage: 0.01 l/hr (0.0 gal/hr)
- Reduction in leakage: 100%

ASTM C67 Water Absorption of Brick
- 24 hours: 98% effective
- 5 days: 91% effective

ASTM D 1653 Water Vapor Transmission
- 75.8 g/ft²/24 hours, 100% breathable

INSTALLATION

Concrete must be allowed to cure for a minimum of 28 days. All repointing must be completed and allowed to cure for at least 3 days. Concrete repair and replacement must be completed prior to application of Protectosil CHEM-TRETE 40 VOC. Patching materials, caulking, sealing materials and traffic paint must be fully cured before applying Protectosil CHEM-TRETE 40 VOC.

All surfaces must be cleaned to remove all traces of dirt, dust, efflorescence, mold, salt, grease, oil, asphalt, laitance, curing compounds, paint, coatings and other foreign materials. Acceptable surface cleaning methods include shotblasting, sandblasting, waterblasting, and using chemical cleaners. Check with your Protectosil representative to verify that surface preparation is adequate.

Protectosil CHEM-TRETE 40 VOC should be applied using low-pressure (15 to 25 psi) pumping equipment with a wet fan type spray nozzle. Alternate methods include using either a power roller with a 1" nap or a brush. Do not alter or dilute the material. Do not apply to a wet or damp substrate. A test patch should be applied to the substrate by a Protectosil representative to verify coverage rate and application conditions.

On vertical surfaces, apply Protectosil CHEM-TRETE 40 VOC in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern. On horizontal surfaces, the liquid material should pond on the surface for at least 5 seconds before being absorbed. Coverage rates on horizontal concrete surfaces are typically between 150 and 250 ft²/gal. Coverage rates on vertical surfaces depend on the type of material to be treated. Your Protectosil representative can give an exact coverage rate for your particular project. Please refer to the Protectosil CHEM-TRETE 40 VOC Application Instructions for more detailed information.

Precautions: Protectosil CHEM-TRETE 40 VOC is a flammable liquid and should be kept away from heat, sparks, open flame and other sources of ignition. Protectosil CHEM-TRETE 40 VOC containers should be kept closed when not in use and should be stored at temperatures between 0°F (-18°C) and 120°F (50°C), away from rain and standing water. When working in an enclosed area, an air respirator should be used. Please refer to the material safety data sheet for more detailed information.

AVAILABILITY

Protectosil CHEM-TRETE 40 VOC is available in 5- and 55-gallon drums to approved applicators, F.O.B. to various warehouses throughout the United States. Contact Evonik Degussa Corporation at 1 (800) 828-0919 for the sales representative in your area for specific cost information.

TECHNICAL SERVICE

Technical service engineers and chemists are available to answer questions about product performance, application methods and compatibility with other building materials.

For more information, MSDS and the most updated product information, and to find your local representative, go to www.protectosil.com.
DRY-TREAT 40SK™

DRY-TREAT 40SK™ is an impregnating, invisible and breathable sealer that protects porous tile, natural stone, brick, terracotta, paving and grout from damage caused by water and salts, plus helps to consolidate friable surfaces. Treated indoor and outdoor surfaces become easier to clean, maintain and keep looking good for longer. DRY-TREAT 40SK™ provides lasting protection for engineering concrete, terracotta tile, cast stone, paving, sandstone, limestone, brick and grout.

Typical Applications

Typical applications: DRY-TREAT 40SK™ is suitable for a wide variety of applications, including building facades, floors, walls, swimming pool surrounds, patios, garages, kitchen and public and private entertaining areas.

Benefits

DRY-TREAT 40SK™ is non film-forming; able to consolidate loose and friable surfaces; able to work without changing the appearance of the surface - keeps the original look; suitable for indoor and outdoor use; able to greatly reduce water uptake and minimize moss growth, freeze thaw spalling and efflorescence; an excellent chloride ion salt screen - ideal for marine and pool areas; highly water vapor permeable - able to breathe so there is no build-up of subsurface moisture, allowing it to dry out; deeply penetrating - protecting against weathering and wearing; very alkali resistant - won't breakdown in contact with cement based materials, and able to seal hairline cracks up to 0.3 mm (0.012 in.) and does not flake or peel.

Application rates:

Total application rate is approximately one liter per 0.5 to four sq. meters (five to 40 sq. feet per quart) depending on absorption.

Precautions

Do not take internally. Apply when surface temperature is between 5 - 35°C (40 - 95°F). Avoid moisture contact with the surface for six hours after application. Protect surrounding areas from over-spray. Keep away from drains, plants, water and soil. Use only in well-ventilated areas. Use a positive pressure respirator if ventilation is inadequate. Wear suitable solvent-resistant gloves, protective clothing, safety goggles and an organic vapor respirator during application. Avoid applying in windy conditions. Wash hands thoroughly.

Active Content

A 40 per cent active content in an organic VOC exempt solvent

Pack Size

One Gallon (3.79 L) and 5 Gallon (18.9 L) containers

Storage

Use product within 12 months of purchase. Keep container tightly sealed, in a cool well-ventilated place. It is recommended that this product is best used within 7 days of opening to avoid possible spoilage. Product is freeze-thaw stable.
How to Use:

1. ALWAYS TEST PRODUCT ON A SMALL AREA FIRST and allow a 24 hour cure time to determine the ease of application and desired results.
2. Ensure surfaces to be treated are dry, clean and free of residues.
3. Product is to be applied without thinning.
4. Generously saturate the surface with product using a low-pressure hand spray, a clean brush, or similar. Surface should have a mirror-like "wet" look for 3-5 seconds. Avoid contact with surrounding areas.
5. After 10 minutes, repeat Step 4. Total application rate is approximately one liter per 0.5 to four sq. meters (5 to 40 sq. feet per quart) depending on absorption.
6. Allow 10 minutes for product to penetrate surface then polish surface with a clean white dry cloth to remove excess product. Do not allow excess product to dry on the surface.
7. Clean equipment with organic solvent e.g. methylated spirits.
8. Sealer will not prevent surface etching, scuff marks or wear and may lighten or darken some surfaces. It is recommended that for sandstone or limestone in a salt water environment e.g. a pool coping, the entire coping should be dipped sealed with DRY-TREAT 40SK™ and a 14 days cure time allowed before the stone is put into service. Please note that the underside of the treated stone will become repellent and a special adhesive such as Davco SE-7 mixed with Davelastic or, Bostik Landscape Adhesive is recommended to fix the stone.
Advanced Application Guidelines

1. **TESTING DRY·TREAT 40SK™**
   DRY·TREAT 40SK™ must be allowed to cure for at least 3 weeks (and ideally 4 weeks) before undertaking water repellency, depth of penetration and strength testing.

   - **Achieving optimum water repellency and consolidation strength**
     DRY·TREAT 40SK™ undergoes 2 different types of curing. The specially designed sealing molecules migrate through the pores and find sites to bond by a process of chemical reaction, over 3 to 4 weeks! As more sealing molecules bond inside the pores, the material becomes more water-repellent. At the same time, the consolidating component of 40SK forms a network inside the treated material which helps to consolidate and strengthen it, to make it less friable and less prone to spalling. This consolidating network can take up to 4 weeks to fully form.

   - **Achieving maximum depth of penetration**
     The modified silane molecules in DRY·TREAT 40SK™ are hundreds of times smaller than the best modern competitor (fluoropolymer/siloxane) sealers, which cannot penetrate into the pore structure of most materials. It is important to apply the second coat of 40SK while the first coat is still wet to aid penetration. Once applied, the sealing molecules will continue to migrate deeper into the material and bond inside the pores, reaching optimum penetration in approximately 4 weeks.

2. **CAUTION**
   DRY·TREAT 40SK™ is designed for use on very porous surfaces in salt water environments, but can be used on more dense surfaces as a permanent super penetrating water repellent. When using DRY·TREAT 40SK™ on denser surface, extra care must be taken to remove all excess product from the surface after application. Excess DRY·TREAT 40SK™ on the surface will react over a few days/weeks and become a white glass which is impossible to remove chemically, and has to be ground away.

3. **Requirements of the DRY·TREAT 40SK™ 15 year performance warranty**
   Only Accredited Applicators with a class 3 license, which have been specifically trained to use DRY·TREAT 40SK™ are able to offer the 15 year performance warranty to their clients. Also, the warranty for DRY·TREAT 40SK™ only applies in salt water environments (such as around a salt water swimming pool), when the material is dip sealed with DRY·TREAT 40SK™ prior to being laid.

4. **Using a suitable adhesive**
   When a tile is dip sealed prior to being installed, it will become highly water repellent. This means that a standard water based adhesive may not adhere to the surface. A suitable polymer modified grout should be used which is designed to overcome the repellency of a penetrating sealer.

5. **Applying STAIN·PROOF™ over DRY·TREAT 40SK™**
   It is only necessary to use DRY·TREAT 40SK™ on surfaces which are regularly in contact with salt spray or salt water. If the client also wants these areas to be protected against oil based stains, it will be necessary to also apply STAIN·PROOF™, but only after the DRY·TREAT 40SK™ has cured for at least 2 weeks, or the consolidating structure of the DRY·TREAT 40SK™ may be dissolved.

6. **DRY·TREAT 40SK™ should NOT be applied over a previously sealed surface**
   Although DRY·TREAT 40SK™ can penetrate through other penetrating / impregnating sealers to some extent, it will not penetrate as much as it does on an unsealed surface, and will not be effective. The consolidator component especially will not penetrate enough. With DRY·TREAT 40SK™, achieving maximum penetration is crucial for protection, so it is necessary to grind previously sealed surfaces before applying DRY·TREAT 40SK™.

   Of course, penetrating / impregnating sealers should never be applied over a topical (coating) sealer.
Reference sites:

- Sandstone sea retaining wall, Point Piper, NSW, Australia
- The Entrance seawall, Wyong City Council, NSW, Australia
- Ku-ring-gi Chase National Park entrance gates, NSW, Australia
- Residence, Sargood St, Toorak, NSW, Australia
- Residence, Kendall Inlet Cabarita RD, NSW, Australia
- Residence, Fanshaw St, Auckland, New Zealand
STAIN-PROOF™

STAIN-PROOF Original™ is an impregnating, invisible and breathable sealer that protects exposed natural stone, tiles, pavers, concrete and grout from damage caused by water, salts and oil-based stains. Treated indoor and outdoor surfaces become easier to clean, maintain, and keep looking good for longer. STAIN-PROOF Original™ provides lasting protection for natural stone, concrete, terracotta tile, cast stone, paving, sandstone, limestone, brick and grout.

Typical Applications
STAIN-PROOF Original™ is suitable for a wide variety of applications, including building facades, floors, walls, swimming pool surrounds, patios, garages, kitchens and entertaining areas.

Benefits
STAIN-PROOF Original™ is able to repel stains, graffiti and food products making cleaning easier; non film-forming; able to work without changing the appearance of the surface - keeps the original look; suitable for indoor and outdoor use; able to greatly reduce water uptake and minimize moss growth, freeze thaw spalling and efflorescence; an excellent chloride ion salt screen - ideal for marine and pool areas; highly water vapor permeable, able to breathe so there is no build-up of subsurface moisture, allowing it to dry out; deeply penetrating protecting against weathering and wearing; very alkali resistant; won't break down in contact with cement based materials, able to seal hairline cracks up to 0.3 mm (0.012 in.) and does not flake or peel.

Warranty
A 15-YEAR PERFORMANCE WARRANTY is offered when product applied by an Accredited Applicator following our written instructions and surface is maintained regularly using our written maintenance system, as outlined in our warranty document. Spills should still be cleaned up immediately to minimize absorption.

Application rates:
Total application rate is approximately one liter per two to 25 sq. meters (20 to 250 sq. feet per quart) depending on absorption.

Precautions
Do not take internally. Apply when surface temperature is between 5 - 35°C (40 - 95°F). Avoid moisture contact with the surface for six hours after application. Protect surrounding areas from overspray. Keep away from drains, plants, water and soil. Use only in well-ventilated areas. Use a positive pressure respirator if ventilation is inadequate. Wear suitable solvent-resistant gloves, protective clothing, safety goggles and an organic vapor respirator during application. Avoid applying in windy conditions. Wash hands thoroughly.

Active Content
50 per cent active content in alcohol

Pack Size
- One Quart (946 mL)
- 1 Gallon (3.79 L)
- 5 Gallons (18.9 L) containers

Storage
Use product within 12 months of purchase. Keep container tightly sealed, in a cool well-ventilated place. It is recommended that this product is best used within seven days from opening to avoid possible spoilage. Product is freeze-thaw stable.
How to Use:

1. ALWAYS TEST PRODUCT ON A SMALL AREA FIRST and allow a 24 hour cure time to determine the ease of application and desired results.
2. Ensure surfaces to be treated are dry, clean and free of residues.
3. Product is to be applied without thinning.
4. Generously saturate the surface with product using a low-pressure hand spray, a clean brush, or similar. Surface should have a mirror-like wet look for 3-5 seconds. Avoid contact with surrounding areas.
5. When the surface becomes touch dry, or a minimum of 10 minutes, repeat Step 4. Total application rate is approximately one liter per two to 25 sq. meters (20 to 250 sq. feet per quart) depending on absorption.
6. When the surface becomes touch dry, or a minimum of 10 minutes, to allow the product to penetrate into the surface, polish surface with a clean white dry cloth to remove excess product. If you have waited too long and the product has begun to cure and has become more difficult to remove, moistening the cloth with STAIN-PROOF Original™ should ease polishing.
7. Use an organic solvent e.g. methylated spirits to clean equipment. Once cured, this product is food contact safe.
8. Sealer will not prevent surface etching, scuff marks or wear and may lighten or darken some surfaces. STAIN-PROOF Original™ will make the maintenance and cleaning of a treated surface much easier. Once cured, this product is food contact safe.

Countertop Surface Care

Even once impregnated, natural stone still needs to be correctly cared for. Dry-Treat has created a new Countertop Care Sheet, a simple guide to caring for natural stone countertops which can be printed off and given to customers.

Test Reports

- Resistance to salt attack tests on pavers - BEMAC Laboratories
- Staining liquid tests to ISO 10545-14 - Eureka Tiles
- Coefficient of friction of wet surfaces - BEMAC Laboratories
Advanced Application Guidelines

1. TESTING STAIN-PROOF™. STAIN-PROOF™ must be allowed to cure for at least 3 weeks before undertaking testing.

   • Achieving optimum stain repellence.
     
   a. STAIN-PROOF’s specially designed sealing molecules migrate through the pores and find sites to bond by a process of chemical reaction, over 3 to 4 weeks! As more STAIN-PROOF™ molecules bond inside the pores, the material becomes more oil and water-repellent. After 24 hours of cure time, the product will show only adequate stain repellency and zero penetration, but after 3 weeks cure time the results will be significantly better.

   • Achieving maximum depth of penetration.

     b. The modified silane molecules in STAIN-PROOF™ are hundreds of times smaller than the best modern competitor (fluorocarbon /siloxane) sealers, which cannot penetrate into the pores of dense materials, such as polished granites. After 3 weeks of cure time, typical penetration of STAIN-PROOF™ into Kashmir white granite is 8 to 13 millimeters.

2. APPLYING STAIN-PROOF™ ON DENSE / POLISHED SURFACES.

   STAIN-PROOF should be applied to smooth surfaces with a lamb’s wool applicator or cloth, so the sealer is wiped over the surface. Spraying is not recommended for polished surfaces. Drying time between coats should be maximized – approximately 15 minutes.

3. APPLYING STAIN-PROOF™ ON HIGHLY POROUS SURFACES.

   Highly porous surfaces, such as sandstone and soft varieties of limestone should ideally be pre-sealed with a light spray of STAIN-PROOF™, at least 8 hours before applying the 2 main coats. Apply sufficient product so the surface looks shiny / mirror wet for at least 3-5 seconds after each coat.
Reference sites:

AUSTRALIA

- Rundle Street Mall, Adelaide,
- World Square Mall, Melbourne,
- Noosa Shopping Centre, Noosa,
- Residence, 37 Venetta St, Sylvania, NSW
- Residence, 7a Sydenham Road, Doubleview, WA
- Residence, 33 Stone Street, Armadale, WA
- Apartments, 110 Hay Street, Subiaco, WA
- MCF Foot bridge, Vic
- Federation Square, Vic
- Collins Street Mall, Vic
- Victoria National Art Gallery, Vic
- Queen Victoria Building, NSW
- Tourism College, Manly, NSW
- The ?an, Kings Cross, NSW
- North Sydney Olympic Pool, NSW
- Noosa Shopping Centre, Qld

THE REST OF THE WORLD

- Benetton Super Stores, Vienna & Graz, Austria
- Lady Peels House, London, UK
- Residence, 54 Cathcart Road, Chelsea, UK
- Shopping Centre, Luxbuild, Kuala Lumpur
- Ascot Hotel, New Zealand
- USA Embassy, Sofia, Bulgaria
- USA Napier Valley Winery, CA
- Chase Bank, San Antonio, TX
- First City Tower, Houston, TX
- Wescates Court, Brentwood, TN
- Alpine Elementary School, CO
- Legacy Elementary School, Fredrick, CO
- CR 6541, Kirkland, NM
- West Walnut, Rogers, Carlton Dunes Drive, Amelia Island, FL
- Via Sienna, Winter Park, FL
- Ardsley Drive, Orlando, FL
- South Orange Ave, Orlando, FL
- Katrina Cove, Longwood, FL
- Legion Drive, Winter Park, FL
- Amberwood, Fayetteville, AR
- East Central, Bentonville, AR
- Mayfair Drive, Bella Vista, AR
- Twin Peaks Charter Academy, Main St, Longmont, CO
- King George Drive, Orlando, FL
- Pembroke Ct, Castle Rock, CO
- Fredrick Ave, Lake Mary, FL
- North East Ave, The Heritage, Fayetteville, AR
- Eastwood, Fayetteville, AR
- Candlewood Drive, Fayetteville, AR
- Ave of the Stars, East City, Los Angeles, CA
- Teton Run, Orlando, FL
- Aloma Ave, Winter Park, FL
- Merlion Park, Singapore
THOROSEAL®
WATERPROOF CEMENT-BASED COATING

For a durable waterproof barrier on interior or exterior concrete and masonry

Features and Benefits:
- Waterproofs and protects building interiors from dampness, moisture, or seepage.
- Ideal for interior or exterior, above or below grade; vertical, overhead and non-traffic bearing surfaces.
- Locks water out or holds it in by actually becoming part of the wall.
- Fills and seals pores and voids to correct surface irregularities.
- NSF approved (white or gray products), use in potable water tanks.
- Resistant to mold and mildew.
- Compatible with a wide range of architectural coatings and textured finishes.
- Available in white or gray.
- Comes in dry powder form; must add Acryl® 60 to mixture.
- Cleans up with soap and water immediately after use.

Warranty:
- Against defective product. Two Coats Necessary. Must NOT be applied to painted surfaces.
- Full warranty details at ThoroProducts.com.

Recommended for:
- Cast-in-Place Concrete
- Pre-cast Concrete
- Brick
- Common Block
- Stucco
- Unglazed Terra Cotta
- Porous Stone
- Gunite
- Other Masonry Substrates

Must add ACYRL® 60 for peak product performance.
- Improves adhesion, bonding, and curing.
- Adds flexural strength, overall durability, and resistance to freeze/thaw.

Yield per 50-pound bag:
- Base coat: 225 square feet at 1/16 inch dry-film thickness
- OR Top coat: 450 square feet at 1/32 inch dry-film thickness
- Coverage will vary depending on surface texture and porosity.

Ship weight is gross U.S. pounds

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Color</th>
<th>Single Unit Net Wt.</th>
<th>Single Unit UPC Code</th>
<th>Unit Ship Weight</th>
<th>Units per Pallet</th>
<th>Pallet Ship Weight</th>
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<tr>
<td>T4002</td>
<td>White</td>
<td>50 lb. Sack</td>
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</tr>
</tbody>
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* Satisfactory results depend on selection of suitable product for intended use and compliance with instructions for surface preparation and application.*
THOROSEAL®
WATERPROOF CEMENT-BASED COATING

Thoroseal® is a cement based, micro-porous (breathing), seamless coating used to fill, seal, waterproof and protect a variety of substrates including cast-in-place and pre-cast concrete, brick, common building and split-faced block, stucco, unglazed terra cotta, porous stone, shotcrete, gunite and other masonry substrates. It may be used on interior or exterior, above or below grade applications on new construction or in renovation and restoration projects. Thoroseal® is highly resistant to standing water or wind driven rain and is intended for use on vertical, overhead and non-traffic bearing horizontal surfaces.

Thoroseal® is also an ideal alternative to mechanical finishing or rubbing of concrete. The two coat application of Thoroseal® will add a significant degree of protection from the deleterious effects of carbonation on steel reinforced concrete. Two coats of Thoroseal® (40 miles) is equivalent to 3/4” of new concrete cover as a barrier to carbon dioxide gas. Thoroseal® has also been shown to act as a barrier to the infiltration of radon gas and can be used on below ground structures as a barrier coating in conjunction with radon abatement systems.

Clean & Prepare Surface
All surfaces to be coated must be clean and structurally sound. Chip, sand or shotblast, wet blast or high pressure water wash (4,000 - 10,000 psi) to remove all foreign matter, dust, dirt, paints, oils, grease, coatings, latex or any other surface contaminants. All static cracks or breaks, voids or honeycombing larger than 1/32” should be cut out and repaired with WATERPLUG® or a THORITE®/ACRYL® 60 mixture. Form ties and other metal fragments must be removed and patched with a THORITE®/ACRYL® 60 mixture. If any doubt exists about the suitability of a substrate to receive Thoroseal®, then a bond test should be carried out. Consult the Thoroseal® technical bulletin for further details. On block or masonry substrates, relieve excess water pressure in the substrate by tapping in weep holes at the base before applying Thoroseal®.

Mixing
Thoroseal® powder may be mixed by hand or by using a power mixer fitted with a mixing paddle. Power mixing is always preferable. Mix the Thoroseal® powder using a solution consisting of ACRYL® 60 diluted with water, usually 1 part ACRYL® 60 to 3 parts clean water. For improved curing, better physical properties and improved bonding capability in extreme environments or on dense or questionable surfaces, reduce the dilution ratio to 1:2 or 1:1. A 50 lb. (22.7 kg) bag of Thoroseal® requires approximately 6-8 quarts of mixing liquid. Mix the material until a consistency of smooth, heavy batter is achieved. Allow the mixed Thoroseal®/ACRYL® 60 to rest undisturbed for a minimum of 10 minutes to fully wet out all the powder. Remix the wet material and then apply to the substrate. When removing, a small amount of mixing solution may be added for better workability.

Application
Thoroseal® may be applied by spray, tampico fiber brush or broom. Spray application is recommended for large projects generally using a plasterer’s type spray gun, a diaphragm type or rotor-stator type pump. The substrate must be completely dampened before application starts to prevent surface drag on the material and eliminate flash setting. Apply the material on the substrate filling all pores and voids. It is essential that the first coat is well brushed into the substrate even if the application is by spray-gun. The first coat should be applied at 2 lbs. per sq. yard (225 sq. ft./50 lb. bag at 25 mls dry film thickness). Finish the coat with smooth horizontal strokes. Allow the material 24 hours to cure before applying second coat. The second coat should be applied at 1 lb. per sq. yard (450 sq. ft./50 lb. bag at 15 mls dry film thickness). On block or masonry walls, allow 5-7 days before applying the second coat to eliminate joint read through. After the second coat has hardened, plug any weep holes using WATERPLUG® and then coat with Thoroseal®. For specific application guidelines, call 1 (216) 839-7171 or go to www.thoroproducts.com

Limitations
Do not apply Thoroseal® to surfaces that have not been properly cleaned or are unsound. Do not apply Thoroseal® in rain or when rain is expected before initial set has taken place. Do not apply Thoroseal® to frozen or frost filled surfaces or when the temperature is below 40°F (4.4°C) or is expected to fall below 40°F (4.4°C) within 24 hours. For additional limitations, call 1 (216) 839-7171 or go to www.thoroproducts.com
Product Information
Silicone Sealants

**Dow Corning® 795 Silicone Building Sealant**

Neutral, one-part silicone sealant

**APPLICATIONS**
- Structural and nonstructural glazing
- Structural attachment of many panel systems
- Panel stiffener applications
- Weather sealing of most common construction materials including glass, aluminum, steel, painted metal, EIFS, granite and other stone, concrete, brick and plastics

**TYPICAL PROPERTIES**
Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

<table>
<thead>
<tr>
<th>Test</th>
<th>Property</th>
<th>Unit</th>
<th>Result</th>
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</thead>
<tbody>
<tr>
<td>As Supplied</td>
<td>Tack-Free Time, 50% RH</td>
<td>hours</td>
<td>3</td>
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<tr>
<td>ASTM C 679</td>
<td>Curing Time at 25°C (77°F) and 50% RH</td>
<td>days</td>
<td>7-14</td>
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<tr>
<td></td>
<td>Full Adhesion</td>
<td>days</td>
<td>14-21</td>
</tr>
<tr>
<td>ASTM C 639</td>
<td>Flow, Sag or Slump</td>
<td>inches (mm)</td>
<td>0.1 (2.54)</td>
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<tr>
<td></td>
<td>Working Time</td>
<td>minutes</td>
<td>20-30</td>
</tr>
<tr>
<td></td>
<td>VOC Content¹</td>
<td>g/L</td>
<td>28</td>
</tr>
<tr>
<td>As Cured-After 21 days at 25°C (77°F) and 50% RH</td>
<td>Points</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>ASTM D 2240</td>
<td>Durometer Hardness, Shore A</td>
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<td></td>
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<tr>
<td>ASTM C 794</td>
<td>Peel Strength</td>
<td>lb/in (kg/cm)</td>
<td>32 (5.7)</td>
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<tr>
<td>ASTM C 1135</td>
<td>Tension Adhesion Strength</td>
<td>psi (MPa)</td>
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</tr>
<tr>
<td></td>
<td>At 25% extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>At 50% extension</td>
<td>psi (MPa)</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>percent</td>
<td>0 (0.414)</td>
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<tr>
<td>ASTM C 719</td>
<td>Joint Movement Capability</td>
<td>None</td>
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<tr>
<td>ASTM C 1248</td>
<td>Staining (granite, marble, limestone, brick and concrete)</td>
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<tr>
<td>As Cured-After 21 days at 25°C (77°F) and 50% RH followed by 10,000 hours in a QUV weatherometer, ASTM G 53</td>
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<tr>
<td>ASTM C 1135</td>
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<td>psi (MPa)</td>
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<td></td>
<td>At 25% extension</td>
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<tr>
<td></td>
<td>At 50% extension</td>
<td>psi (MPa)</td>
<td>50 (0.345)</td>
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</table>

¹Based on South Coast Air Quality Management District of California. Maximum VOC is listed both inclusive and exclusive of water and exempt compounds. For a VOC data sheet for a specific sealant color, please send your request to product.inquiry@dowcorning.com.

**DESCRIPTION**
*Dow Corning® 795 Silicone Building Sealant* is a one-part, neutral-cure, architectural-grade sealant that easily extrudes in any weather and cures quickly at room temperature.

This cold-applied, non-sagging silicone material cures to a medium-modulus silicone rubber upon exposure to atmospheric moisture. The cured sealant is durable and flexible enough to accommodate ±50 percent movement of original joint dimension.

**FEATURES**
- Suitable for most new construction and remedial sealing applications
- Versatile – high performance structural glazing and weather sealing from a single product
- Available in 13 standard colors; custom colors also available

**BENEFITS**
- Excellent weatherability – virtually unaffected by sunlight, rain, snow, ozone and temperature extremes of -40°F (-40°C) to 300°F (149°C)
- Excellent imprimed adhesion to a wide variety of construction materials and building components, including anodized, alodined, most coated and many Kynar®-painted aluminums²
- Ease of application – ready to use as supplied
- Ease of use – all-temperature gunnability, easy tooling and low-odor cure byproduct
- Meets global standards (Americas, Asia and Europe)

**COMPOSITION**
- One-part, neutral-cure, RTV silicone sealant

¹Kynar is a trademark of Atofina Chemicals Inc.
²Contact your local Dow Corning Sales Application Engineer for specifics.
when installed in a properly designed weather seal joint. In a properly designed structurally glazed joint, the sealant is strong enough to support glass and other panel materials under high wind load.

APPROVALS/SPECIFICATIONS

Dow Corning 79S Silicone Building Sealant meets the requirements of:

- Federal Specification TT-S 001 543A (COM-NBS) Class A for silicone building sealants
- Federal Specification TT-S-00230C (COM-NBS) Class A for one-component building sealants
- ASTM Specification C 920 Type S, Grade NS, Class 50, Use NT, G, A and O
- ASTM Specification C 1184 for structural silicone sealants
- Canadian Specification CAN2-19.13-M82

COLORS

Dow Corning 79S Silicone Building Sealant is available in 13 colors: white, limestone, champagne, natural stone, gray, black, bronze, sandstone, adobe tan, dusty rose, rustic brick, blue spruce, and charcoal. Custom colors may be ordered to match virtually any substrate.

HOW TO USE

Please consult the Dow Corning Americas Technical Manual, Form No. 62-1112, for detailed information on state-of-the-art application methods and joint design. Please contact your local Dow Corning Sales Application Engineer for specific advice.

Preparation

Clean all joints, removing all foreign matter and contaminants such as grease, oil, dust, water, frost, surface dirt, old sealants or glazing compounds and protective coatings.

Application Method

Install backing material or joint filler, setting blocks, spacer shims and tapes. Mask areas adjacent to joints to ensure neat sealant lines. Primer is generally not required on non-porous surfaces, but may be necessary for optimal sealing of certain porous surfaces. A test placement is always recommended. Apply Dow Corning 79S Silicone Building Sealant in a continuous operation using positive pressure. (The sealant can be applied using many types of air-operated guns and most types of bulk dispensing equipment.) Before a skin forms (typically within 15 minutes), tool the sealant with light pressure to spread the sealant against the backing material and joint surfaces. Remove masking tape as soon as the bead is tooled.

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE DOW CORNING WEBSITE AT DOWCORNING.COM, OR FROM YOUR DOW CORNING SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CORNING CUSTOMER SERVICE.

USABLE LIFE AND STORAGE

When stored at or below 27°C (80°F), Dow Corning 79S Silicone Building Sealant has a shelf life of 12 months from the date of manufacture. Refer to product packaging for “Use By Date.”

PACKAGING INFORMATION

Dow Corning 79S Silicone Building Sealant is supplied in 10.3-fl oz (305-mL) disposable plastic cartridges that fit ordinary caulking guns, 20-fl oz (590-mL) sausages and 2- and 4.5-gal (7.5- and 7-L) bulk containers.

LIMITATIONS

Dow Corning 79S Silicone Building Sealant should not be used:

- In structural applications without prior review and approval by your local Dow Corning Sales Application Engineer
- In below-grade applications
- When surface temperatures exceed 50°C (122°F) during installation
- On surfaces that are continuously immersed in water
- On building materials that bleed oils, plasticizers or solvents that may affect adhesion
- On frost-laden or wet surfaces
- In totally confined joints (the sealant requires atmospheric moisture for cure)
- If the sealant is intended to be painted (paints do not typically adhere to most silicone sealants)
- To surfaces in direct contact with food or other food-grade applications

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.
HEALTH AND ENVIRONMENTAL INFORMATION
To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our Web site, dowcorning.com or consult your local Dow Corning representative.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY
The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer’s tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning’s sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.
Denver Foam® is an open cell polyurethane backer rod serving as a backing for elastomeric and other applied caulking sealants.

Denver Foam® controls the amount of sealant required and depth of the installation. Also, it forms the correct hour glass shape of sealant, assuring the contractor and owner the best adhesion and cohesion configuration possible.

Specific Uses:

For use in expansion/construction joints in concrete and precast concrete walls, floors, partitions, bridge construction, parking decks, curtain walls, glazing, log home construction, highway construction, and pavement maintenance.

New highway construction and pavement maintenance can be installed with Denver Foam®. Denver Foam® can withstand the temperature of hot pour sealant in maintenance work. Denver Foam® is an open cell backer rod allowing air to reach both sides of sealant, assuring you the required complete cure.

Most of these joints are saw cut and approximately 3/8" wide. The design depth keeps the sealant below traffic contact and vacuum lift created by fast moving vehicles.

Limitations:

Whatever restriction the Sealant Manufacturer places on his product, the same will apply to Denver Foam®.

Composition and Materials:

Denver Foam® is continuous lengths of flexible, round, fabricated open cell polyurethane. It is yellow in color and available in a wide range of diameters.

Packaging:

Both Mini Bags and Master Bags are compressed into Super Bundles for shipping. Each individual size is color coded for identification, storage and ease of distribution to customer.

Technical Data:

Denver Foam® is chemically inert and resists oil, gasoline and most solvents. The 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. The sealant also has the benefits of a 2-sided cure.

Select a Denver Foam® size large enough to absorb the pressure during sealant tooling. Denver Foam® open cell structure allows the installer to stretch the rod if the joint narrows (90% elongation). There are no gas cells to rupture. Good joint designs will shed water. However, open cell structure (polyurethane) does not absorb any more moisture than closed cell (polyethylene). The open cell gives you approximately 4 times more surface area per linear foot. If moisture enters the joint, it has more surface area to cling to. It is not, I repeat, it is not absorbed. The geotechnical branch of the United States Corps of Engineers saturated the open cell structure of Denver Foam® with an underwater curable sealant. Denver Foam® was the vehicle used to carry the sealant to repair a crack in a dam below water level without lowering the water. Denver Foam® held the sealant in position, allowing the sealant to set up, seal and repair the crack.
Physical Properties:

- Density: 1.7 lbs/ft³ ASTM D 1622
- Tensile: 25 lbs/sq inch ASTM D 1623
- Moisture Absorption: .024% by volume ASTM C 509
- Out Gassing: None Open Cell
- Temperature Service Range: -60°F to +500°F
- U.S. Department of Commerce National Institute of Standards
- Auto Ignition: 700-800°F
- Elongation: 90% ASTM D 3574
- Air Flow: 90% ASTM D 3574
- Compression set 5% or less (after 80% compression for 30 days) ASTM D 3574

English
Download a copy of the latest Denver Foam Data Sheet (128k PDF)
Download a copy of the latest Denver Foam MSDS Sheet (12k PDF)

Español
Descargue una copia del más último Denver Foam Datos Tecnicos (48k PDF)
Descargue una copia del más último Denver Foam MSDS (22k PDF)