TYPES OF SEALANTS

Situations vary widely from one construction project to the next, and sealants are formulated for those different applications. But all sealants sold for residential projects fall into one of the following categories:

OBJECTIVES:

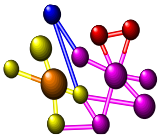
WHEN YOU HAVE COMPLETED THIS CHAPTER, you will be able to

- identify ten common types of sealants,
- describe the features and benefits of each type, and
- explain how to prepare for, apply, and clean up after each type properly.

Tripolymers Tripolymer sealants are among the most versatile and durable on the market. They adhere well to both porous and non-porous surfaces.

One of the biggest advantages to tripolymer sealants is that they usually require no surface preparation, even when the surfaces are wet, frozen, dirty, oily, or even greasy. They are also extremely flexible, and retain their flexibility over extended periods of time. They resist weather well, and are virtually impervious to ultraviolet light.

Tripolymer sealants are paintable, usually within 24 hours after they have been applied. Another important advantage of tripolymers is that they are truly mildewproof. Many other sealants contain additives that resist mildew, but migrate out within two to five years. By contrast, the mildew resistance in a tripolymer sealant is part of the compound, and will not diminish over time.



Tripolymer sealants are among the most versatile and durable on the market.

Tripolymer sealants are solvent-based. Warm the tubes if the temperature is below 40°F, to make the sealant flow more easily. They should not be applied to surfaces over 140°F. With a cyclic movement rating of ± 25%, tripolymers are an excellent choice for high-movement joints. They cure by solvent evaporation, leaving the sealant tack-free in two hours.

Do not use a tripolymer on traffic-bearing surfaces, or in situations where it will come into contact with acrylic glazing or extruded polystyrene sheathing. If you're using tripolymer sealants in areas where food will be stored or prepared, the sealant must cure fully before food is handled. This normally takes about 14 days.

When you're applying tripolymer sealants, use soapy water or Xylene as a tooling lubricant; use Xylene for cleanup. Because solvent is released as the sealant cures, always allow adequate ventilation.

Tripolymer sealants are toxic until cured, and may be harmful or fatal if swallowed. Avoid contact with eyes.

Geocel's Pro Flex is a tripolymer sealant. It is available in crystal clear, white and colors.

Copolymers In performance, copolymers run a close second to tripolymers. They adhere well to porous and non-porous surfaces, including those that are wet, frozen, dirty, and oily.

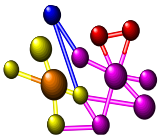
Like tripolymers, copolymer sealants are a good choice in situations where surface preparation is difficult; in fact, their adhesion actually improves with time. Both have a service life of 50 years.

There are three primary differences between copolymers and tripolymers: flexibility, service life and elasticity. With a cyclic movement rating of ± 12-1/2%, copolymers are less elastic than tripolymers.

The minimum bead size (1/4-inch x 1/4-inch) is the same for both, but copolymers can be used in larger joints than tripolymers—up to 1- x 1/2-

TRIPOLYMER SEALANTS: GEOCEL PRO FLEX®

- Appearance:	Crystal clear, white, and colors. Paintable after 24 hours.
- Temperature:	May be applied below freezing. Do not apply to surfaces over 140°F.
- Safety:	Adequate ventilation required; avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 1/2"
- Surface Prep:	None normally required.
- Tooling Lube:	Soapy water or Xylene®.
- Cleanup:	Xylene®.
- Curing:	Evaporative; tack-free in 2 hours.
- Adhesion:	Porous and non-porous surfaces, including asphalt. May be used on wet, frozen, dirty, oily, or greasy surfaces.
- Flexibility:	Excellent. (± 25% cyclic movement).
- Weathering:	Excellent. UV-stable.
- Service Life:	50 years.
- RECOMMEND:	High-movement joints; where surface prep is impractical or difficult; where long-term flexibility and UV-resistance are required.
- DO NOT USE:	Traffic-bearing surfaces; extruded polystyrene, acrylic or polycarbonate glazing, Lexan®.

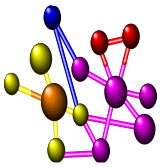


In terms of performance, copolymer sealants run a close second to tripolymers.

inch. That makes them a good choice for large joints where greater-than-average movement or stress is expected. Like tripolymers, copolymer sealants are UV-stable. They may be used in below-freezing temperatures, but should not be applied to surfaces over 140° F. They cure by evaporation, and are normally tack-free in two hours. Do not use copolymers on traffic bearing surfaces, as a heel bead in glazing, in food processing areas or on ashpalt. Use soapy water as a tooling lubricant and lacquer thinner to clean up surfaces and tools. Provide adequate ventilation when working with copolymers, and avoid contact with your eyes.

COPOLYMER SEALANTS: GEOCEL WATER SHIELD®

- Appearance:	Translucent clear, white, and colors. Paintable after 24 hours.
- Temperature:	May be applied below freezing. Do not apply to surfaces over 140°F.
- Safety:	Adequate ventilation required; avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1" x 1/2"; 2:1 width/depth ratio pref.
- Surface Prep:	None normally required.
- Tooling Lube:	Soapy water.
- Cleanup:	Lacquer thinner.
- Curing:	Evaporative; tack-free in 2 hours.
- Adhesion:	Porous and non-porous surfaces, including wet, frozen, dirty, oily, or greasy. Adhesion improves over time.
- Flexibility:	Good. (± 12-1/2% cyclic movement)
- Weathering:	Excellent. UV-stable.
- Service Life:	50 years.
- RECOMMEND:	Large joints; joints where movement or stressis expected; where surface prep is impractical or difficult.
- DO NOT USE:	Traffic-bearing surfaces; asphalt; in food processing areas; as a heel bead in glazing.



Silicone sealants are versatile and durable, but have some limitations compared to tripolymers.

Geocel's copolymer sealant is Water Shield ; it comes in translucent clear, white, and colors. It is paintable and stainable after 24 hours.

Silicone Silicone's primary claim to fame is its ability to perform in a variety of conditions. Like a copolymer sealant, silicone can be applied in large joints up to one-inch wide. Its effective service life matches tripolymers—approximately 50 years. Moreover, silicone sealants are highly UV-stable.

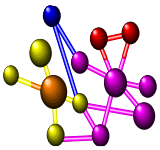
In other respects, however, silicone sealants are limited. They adhere well

SILICONE SEALANTS:

- Appearance:	Crystal clear, white, and colors. May not be paintable.
- Temperature:	May be applied below freezing.
- Safety:	Adequate ventilation required; avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 3/8"
- Surface Prep:	Substrates must be clean and dry; priming may be required over porous materials.
- Tooling Lube:	Soapy water.
- Cleanup:	Paint thinner.
- Curing:	Chemical; tack-free in 2 hours.
- Adhesion:	Excellent on non-porous surfaces; priming required on porous surfaces.
- Flexibility:	Excellent initially (± 25% cyclic movement); may decline over time.
- Weathering:	Excellent. UV-stable.
- Service Life:	50 years.
- RECOMMEND:	Non-porous substrates such as glass, metal (some silicones are corrosive to metal), or tile; exterior applications where painting is not required.
- DO NOT USE:	Traffic-bearing surfaces; asphalt; surfaces that cannot be adequately cleaned.

to non-porous surfaces, for example, but porous substrates must be primed before the sealant is applied. Moreover, silicones cannot be used at all on plastics, treated lumber, asphalt or traffic bearing surfaces.

Silicone sealants also require careful surface preparation. All surfaces must be thoroughly cleaned and dry before application. Because silicones cure by chemical reaction, their performance may be severely hampered in arid conditions. You must have adequate ventilation when working with silicone sealants; avoid contact with your eyes.



Polyurethanes offer exceptional weather resistance, and can be used in larger joints than other sealants.

With an cyclic movement rating of ± 25%, silicones are as elastic as tripolymers, but only for a limited time. The additives used to achieve that elasticity will migrate out eventually, reducing elasticity.

Silicones are normally tack-free in two hours. They are recommended for non-porous surfaces such as glass, metal, or tile, and in exterior applications where painting is not required. They should not be used on asphalt, or on any surfaces that cannot be thoroughly cleaned.

Silicone comes in clear, white, and colors. Soapy water is a good tooling lubricant; paint thinner may be used for cleanup.

Polyurethane Polyurethane is a high-performance exterior sealant that

was once used primarily in commerical and industrial applications. Now available in the residential market, it has become a popular choice around windows and doors, and where siding meets other materials.

Polyurethane is extremely tough and abrasion-resistant, and often the only sealant recommended for use on traffic-bearing surfaces. With a cyclic movement rating of ± 25%, it can be used in joints where high movement is expected. Its effective service life is 50 years. Polyurethane may also be used to seal joints up to 1-1/4 inches wide and 5/8-inch deep, as long as the depth does not exceed the width. While polyurethanes adhere best to porous surfaces such as concrete, they can be used on most common building materials (except some plastics) without priming. The substrate must be carefully prepared to ensure good bonding. All surfaces must be dry, frost-free, sound and free of dirt, oil, tar, loose particles, wax, rust and any other foreign contaminants.

Moreover, masonry must be thoroughly cleaned to expose sound, salt-free surfaces, by wire brushing or sandblasting if necessary. Clean glass to remove fingerprints, films or any other contamination. Metal surfaces must be free of rust, scale and protective coatings. When applying urethanes over aluminum that has a clear lacquer coating (for example, on windows) the lacquer must be removed, usually with MEK.

POLYURETHANE SEALANTS: GEOCEL SURETHANE®

- Appearance:	White and colors. Paintable after 24 hours.
- Temperature:	Apply only above 40°F.
- Safety:	Adequate ventilation required; avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1-1/4" x 5/8", depth not to exceed width.
- Surface Prep:	Substrates must be sound, clean and dry.
- Tooling Lube:	Mineral spirits.
- Cleanup:	Aromatic solvents.
- Curing:	Chemical (moisture or oxygen).
- Adhesion:	Best on porous surfaces; may not adhere to some plastics.
- Flexibility:	Excellent (± 25% cyclic movement) May decline as plasticizer dissipates.
- Weathering:	Excellent. UV-stable.
- Service Life:	50 years.
- RECOMMEND:	Where exceptional toughness is required; on traffic-bearing surfaces; where large joints are required.
- DO NOT USE:	Where substrates cannot be adequately prepared.

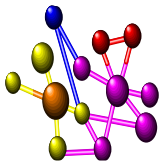
Polyurethanes should not be used on surfaces that cannot be adequately prepared. If you're not sure, field-test the sealant before continuing. It may be applied below 40°F as long as the substrate is free of frost.

When working with polyurethanes, tool each joint with mineral spirits immediately after you apply the bead, to ensure firm, full contact with the sides. Polyurethane sealants cure by chemical reaction—either with moisture or oxygen, depending on the product.

Polyurethanes are available in white and colors. They may be painted after 24 hours, and are UV-resistant. As with other high-performance, solvent-based sealants, polyurethanes should be used only in well-ventilated areas. Contact with eyes and skin should be avoided; polyurethanes may be harmful or fatal if swallowed.

Originally, polyurethane sealants were available only in two-part formulations that had to be mixed in the field. One-part formulations helped spur their entry into residential construction.

Geocel markets a unique polyurethane sealant. Surethane® (sold as SPEC 3100® in commercial / industrial markets) is an oxygen-cure sealant that contains no free isocynate compounds which may be environmentally hazardous.



Siliconized acrylic sealants are a good choice for many day-to-day interior applications.

Siliconized acrylics Silconized acrylic sealants are a popular compromise between high-performance (but relatively high-priced) sealants such as tripolymers and silicones, and low-end latex sealants.

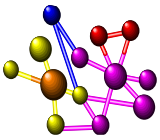
They do a good job in many interior and some exterior applications. Most siliconized acrylics have a cyclic movement rating of ± 12-1/2%, which is sufficient for most residential uses.

The range of uses for siliconized acrylics is more limited than for many high-performance sealants, partly because the range of joint sizes is more restricted—from 1/4-inch x 1/4-inch through 1/2-inch x 3/4-inch. Also, the maximum joint depth is only 1/2 inch, which means that foam backer rod may be needed in many applications. In shallow joints, bond breaker material may also be needed to keep the sealant from adhering to the back of the joint.

Siliconized acrylics may not be used on traffic-bearing surfaces, but they

SILICONIZED ACRYLIC SEALANTS: GEOCEL DURASEAL™ ADHESIVE SEALANT, STAIN MATCH™, PROFESSIONAL 920™

- Appearance:	Translucent clear, white, and colors. Paintable and stainable after 2 hours.
- Temperature:	Do not apply below 40°F.
- Safety:	Avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 3/4"
- Surface Prep:	Substrates must be clean and dry; allow cleaning solvents to dry thoroughly before applying sealant.
- Tooling Lube:	Soapy water.
- Cleanup:	Water.
- Curing:	Evaporative; tack-free in 1 hour.
- Adhesion:	Porous and non-porous surfaces.
- Flexibility:	Good. (± 12-1/2% cyclic movement).
- Weathering:	Waterproof. Stain Match and Professional 920 are UV-stable. DuraSeal is mildew-resistant.
- Service Life:	25 years.
- RECOMMEND:	DuraSeal—In kitchens and baths, where adhesion is important. Stain Match—On wood siding, to match Olympic® solid color stains. Professional 920—Exterior materials that will be painted or stained.
- DO NOT USE:	Traffic-bearing surfaces.



Acrylic latex sealants offer limited performance, but are easy to work with and inexpensive.

are paintable, typically within 30 minutes. They cure by water evaporation, and typically have a service life of 25 years. Because they are water-based, they can be cleaned up easily with soap and water; the trade-off is that they cannot be used when the temperature is below 40°F. Silconized acrylics adhere well to both porous and non-porous surfaces—as long as those surfaces are clean and dry. If you use solvents to clean the surface, be sure and let it dry thoroughly before applying sealant. Soapy water makes an excellent tooling lubricant.

Geocel markets three siliconized acrylic seal-ants. DuraSeal Adhesive Sealant comes in translucent clear, white and colors. It is mildew-resistant, and is intended primarily for use in kitchens and bathrooms.

Stain Match is pigmented to match popular Olympic® solid stain colors. Professional 920 comes in white. It is formulated specifically to meet the performance requirements of architectural specifications ASTM C 920 and TT-S-00230C, for use on government and commercial projects. Stain Match and Professional 920 are intended for exterior uses, and contain additives to resist oxidation and UV degradation.

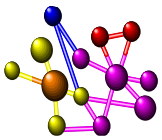
Acrylic latex Acrylic latex is the next step down from the silicone family of sealants. They don't adhere as well as higher-grade sealants, and they are less flexible; their service life is 15 years.

ACRYLIC LATEX SEALANTS

- Appearance:	Translucent clear, white, and colors.
- Temperature:	Do not apply below 40°F. Must cure before the temperature falls below freezing.
- Safety:	Avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 1/2"
- Surface Prep:	Surfaces must be clean and dry.
- Tooling Lube:	Water.
- Cleanup:	Soap and water.
- Curing:	Evaporative; paintable in 30 minutes to 1 hour.
- Adhesion:	Fair. Porous and non-porous surfaces.
- Flexibility:	Good, including at low temperatures.
- Weathering:	Good. UV-stable.
- Service Life:	5 to 10 years.
- RECOMMEND:	As a low-cost sealant where paintability is required.
- DO NOT USE:	Traffic-bearing surfaces.

On the plus side, water-based acrylic latex sealants are easy to clean up. They are reasonably UV-stable and often relatively inexpensive.

Moreover, acrylic latex sealants may be painted within 30 minutes to one hour after they are applied. They are available in translucent clear, white and colors. Because they are water-based, they should not be applied in temperatures below 40°F. In fact, they must cure fully before the temperature falls below freezing.



Latex and butyl sealants are viable choices only when longevity is not important and cost is the primary consideration.

Latex Latex sealants are yet another step down, with a service life of only five to 10 years. However, they are easy to apply and clean up, and inexpensive.

Latex sealants come in white and colors and are paintable within 30 minutes to one hour after they are applied. They should not be used in permanently damp conditions or in exterior application, where durability or moisture-resistance are necessary. All surfaces must be clean and dry before application.

Latex does offer fair adhesion, but poor flexibility. Like acrylic latex sealants, they cure by water evaporation and are tack-free in 30 minutes

Butyl Butyl is a low cost, solvent-based sealant with a service life of five to

LATEX SEALANTS

- Appearance:	White and colors.
- Temperature:	Do not apply below 40°F. Must cure before the temperature falls below freezing.
- Safety:	Avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 1/2"
- Surface Prep:	Surfaces must be clean and dry.
- Tooling Lube:	Water.
- Cleanup:	Soap and water.
- Curing:	Evaporative; paintable in 30 minutes to 1 hour.
- Adhesion:	Fair. Porous and non-porous surfaces.
- Flexibility:	Poor.
- Weathering:	Interior only. Avoid permanently damp locations.
- Service Life:	15 years.
- RECOMMEND:	Where price and ease of use are primary considerations.
- DO NOT USE:	In exerior applications, or where durability and moisture resistance are required.

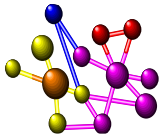
BUTYL SEALANTS

- Appearance:	White and colors.
- Temperature:	Do not apply below 40°F.
- Safety:	Avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 1/2"
- Surface Prep:	Surfaces must be clean and dry.
- Tooling Lube:	Mineral oil.
- Cleanup:	Paint thinner.
- Curing:	Evaporative; paintable 1 week after application.
- Adhesion:	Good. Porous and non-porous surfaces.
- Flexibility:	Good; may remain permanently tacky.
- Weathering:	Waterproof. Poor UV resistance.
- Service Life:	5 to 10 years.
- RECOMMEND:	Where price is a primary consideration.
- DO NOT USE:	Where long-range performance or ease of use are important.

10 years. It adheres well, is reasonaly flexible, and extremely waterresistant. As a result, butyl sealants are often used to keep water out of the lap joints between siding and trim, or to seal chimney flashing and gutter fittings. They are not recommended for use in any joint larger than 1/4-inch x 3/8-inch.

The same adhesive qualities that keep butyl sealants in place also make them difficult to work with. They are extremely stringy and tacky, and may remain so even after they cure. When you apply them, use mineral oil as a tooling lubricant. Paint thinner is good for cleanup.

Butyl sealants should not be applied in temperatures below 40°F. and all surfaces must be clean and dry. Their UV-resistance is poor, and they should not be used when you're looking for long-range perform-



Expanding foam sealants are used to fill gaps too large for gun-grade sealants.

ance—or a product that is easy to use.

Expanding foam sealants Expanding Polyurethane foam sealants are designed to fill large holes, cracks and voids while insulating at the same time. Their insulation value is around R-4.5 per inch, and are used to fill pipe penetrations, around window and door frames, and other gaps. Service life ranges from 10 to 20 years.

Expanding foam sealants require careful preparation: All surfaces should be clean and free of dust, dirt, or oil. Deep, dry cavities should be moistened (not soaked) before applying the sealant. Foam sealants expand as they cure, and reach a firm resiliency within eight hours. Freshly dispensed foam will collapse if disturbed within the first 20 minutes.

Foam sealants should always be applied with adequate ventilation or respiratory protection. Wear gloves and safety glasses, and promptly remove any foam from your skin or clothing with Geocel Foam Cleaner, acetone, or paint thinner before it dries. Also, be careful how you apply the foam; its solvent may damage paint and painted metal siding.

You can apply expanding foam as long as the surface temperature of the substrate material is between 23°F and 95° F. The temperature of the can, however, should be between 70°F

EXPANDING FOAM SEALANTS: GEOCEL EXPANDING FOAM SEALANT, MINIMAL EXPANDING FOAM SEALANT

- Appearance:	Semi-rigid foam.
- Temperature:	Substrate—23°F to 95°F. Can—70°F to 80°F optimal.
- Safety:	Adequate ventilation or respiratory protection required. Wear gloves and safety glasses; avoid eye contact. See manufacturer's instructions.
- Surface Prep:	Surfaces should be clean. Moisten deep, dry cavities before application.
- Application:	Expanding Foam—Fill 35% of cavity. Minimal Expanding Foam—Fill 50% of cavity. Foam will expand to fill cavity. Do not disturb freshly dispensed foam or it will collapse.
- Cleanup:	Paint thinner.
- Curing:	Cures to firm resiliency in 8 hours.
- Adhesion:	Porous and non-porous surfaces, including asphalt. May be used on wet, frozen, dirty, oily, or greasy surfaces.
- R-value:	Expanding: R-4.5 / inch; Expanding: R-3.8 / inch.
- Weathering:	Should be painted or stained after curing, to prevent UV degradation.
- Service Life:	10 to 20 years.
- RECOMMEND:	To prevent air infiltration through large holes, gaps around window and door frames, and other building penetrations.

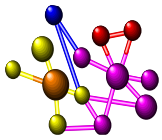
and 80°F. When you use expanding foam outside in areas open to the elements, paint or stain it to protect it from moisture and UV exposure.

BRUSHABLE SEALANTS: GEOCEL PRO FLEX MULTIPURPOSE / ROOF SEAL SEALANT®, ULTIMA SEALANT®

- Appearance:	Crystal clear. Paintable after 24 hours.
- Temperature:	May be applied below freezing. Do not apply to surfaces over 140°F.
- Safety:	Adequate ventilation required; avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 1/2"
- Surface Prep:	None normally required. Will adhere to dirty, oily substrates.
- Application:	Apply with brush, trowel, or putty knife no more than 1/16" thick. Tool sealant into seams and cracks. Multiple coats may be applied.
- Cleanup:	Xylol.
- Curing:	Evaporative; tack-free in 2 hours.
- Adhesion:	Porous and non-porous surfaces, including asphalt. May be used on wet, frozen, dirty, oily, or greasy surfaces.
- Flexibility:	Excellent. (over 600% elongation).
- Weathering:	Excellent. UV-stable.
- Service Life:	50 years.
- RECOMMEND:	Roofs and flashing, including asphalt, wood, slate, or metal surfaces, chimney caps.
- DO NOT USE:	Chimneys, traffic-bearing surfaces; on extruded polystyrene or acrylic glazing.

Geocel Expanding Foam Sealant will expand to approximately three times its volume when first applied; as a result, fill the cavity only 35% full when applying the foam. It is used to seal many types of cavities, including pipe penetrations and electrical conduit penetrations.

Minimal Expanding Foam Geocel's Minimal Expanding Foam Sealant expands to twice its applied volume, which allows the user to fill the cavity 50% full. Although Minimal Expanding Foam may be used wherever other foams are used, it is formulated primarily for door and window openings, where standard foam may bow out the jambs and causes the sash to bind.



Brushable sealants are used to protect exterior surfaces.

Brushable sealants Brushable sealants are designed to protect surfaces rather than fill gaps. Brushable tripolymer and copolymer sealants share many benefits and limitations with their gun-grade counterparts: They offer excellent adhesion and elasticity, long-term UV resistance, and paintability.

They may not be used on traffic-bearing surfaces, extruded polystyrene, acrylic glazing, or in food processing areas until the sealant is fully cured (about

BRUSHABLE SEALANTS: GEOCEL WATER SHIELD® BRUSHABLE ELASTOMERIC SEALANT

- Appearance:	Crystal clear. Paintable after 24 hours.
- Temperature:	May be applied below freezing. Do not apply to surfaces over 140°F.
- Safety:	Adequate ventilation required; avoid eye contact. See manufacturer's instructions.
- Joint Design:	1/4" x 1/4" to 1/2" x 1/2"
- Surface Prep:	None normally required. Will adhere to dirty, oily substrates.
- Application:	Apply with brush, trowel, or putty knife no more than 1/16" thick. Tool sealant into seams and cracks. Multiple coats may be applied.
- Cleanup:	Xylol.
- Curing:	Evaporative; tack-free in 2 hours.
- Adhesion:	Porous and non-porous surfaces, including asphalt. May be used on wet, frozen, dirty, oily, or greasy surfaces.
- Flexibility:	Excellent. (over 600% elongation).
- Weathering:	Excellent. UV-stable.
- Service Life:	50 years.
- RECOMMEND:	Roofs and flashing, including asphalt, wood, slate, or metal surfaces, chimney caps.
- DO NOT USE:	Chimneys, traffic-bearing surfaces; on extruded polystyrene or acrylic glazing.

14 days after application). They cure by solvent evaporation.

All surfaces should be clean and dry, although moderate dampness will not interfere with adhesion. Oily or dirty surfaces should be wiped with a solvent and allowed to dry thoroughly before the sealant is applied. Apply the sealant with a brush, trowel or putty knife. Each coat must be no more than 1/16-inch thick, or it may crack or split during the curing process. If you need a thicker total coating, apply several thin coats and allow 24 hours between applications.

Geocel makes four brushable sealants. Pro Flex® Multipurpose Sealer, Pro Flex® Roof Seal, Ultima Premium Elastic Sealer are tripolymer sealants, and Watershield® Brushable is a copolymer sealant.

The tripolymers are designed for a wide variety of applications. They can be used to coat and rustproof all metal surfaces on roofs—for example, flashings, vent pipes, chimney caps, gutters, duct work, HVAC equipment, and fasteners. They may also be used to seal and waterproof concrete, brick, block or stone surfaces, and to repair small areas on slate, tile, asphalt-fiberglass, asphalt, or wood shingle roofs.

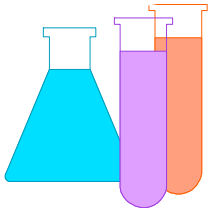
They adhere to all construction materials, including damp, oily or dirty surfaces. They will withstand water immediately after application. They are paintable, mildewproof and easy to apply at any temperature.

Water Shield® Brushable Elastomeric Sealant, the copolymer sealant, may be used on a variety of materials, excluding asphalt or bituminous surfaces. It is not UV stable unless it is painted, and is mildew-resistant but not mildewproof.

Copolymer sealants are more flexible than standard roof coatings, with an elongation factor of 1,000% versus 600%.

All four Geocel brushable sealants are surface sealants that do not penetrate the substrate; as a result, they may darken wood or alter the appearance of other materials. All are available in quarts, gallons, and five-gallon pails.

SUMMARY



- Tripolymer sealants are among the most versatile and durable on the market. They require little or no surface preparation, and offer exceptional weatherability and elasticity.

- Copolymer sealants are a close second to tripolymers; they are somewhat less flexible, but can be used to fill larger joints.

- Silicone sealants are durable and versatile, but do not adhere as well to some substrates as tripolymers and copolymers.

- Polyurethanes are more difficult to work with than some sealants, but

are exceptionally tough and durable. They may also be used in larger joints than any other sealant.

- Siliconized acrylic sealants are a good basic choice for residential applications where cost vs. quality is an issue.
- Acrylic latex sealants are easy to work with, but their performance characteristics are at the low end of the quality scale.
- Latex sealants are a viable choice only when ease of use—and, more important, cost—are primary considerations.
- Butyl sealants offer reasonable longevity, but are very difficult to work with.

EXERCISES

1. Make a list of the sealants stocked at your local store, then identify each as tripolymer, copolymer, silicone, polyurethane, siliconized acrylic, acrylic latex, latex, or butyl.
2. Identify the types of sealants that may be used to fill a joint that is 1" wide and 1/2" deep.
3. Identify the types of sealants that may be used on frozen surfaces.
4. Identify the types of sealants that may be used when long-term resistance to mildew is a primary consideration.
5. Identify the types of sealants that may be tooled using soapy water as a lubricant.