COLORSEAL™

U. S. Patent No. 5,130,176

TECH DATA

Manufacturer:

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Product Description

- **COLORSEAL** combines factory-applied low-modulus silicone, acrylic-impregnated expanding foam sealant and closed-cell (EVA) foam into a unified binary sealant system.

- The expanding foam laminations are EMSEAL's's GREYFLEX™ – open-cell polyurethane foam impregnated with a water-based, stabilized, polymer-modified acrylic.

- The silicone external and color weather facing is factory-applied to the foam while it is partially pre-compressed. The silicone is then cured and when finally compressed, a bellows is formed in the coating. The bellows virtually eliminates tensile stresses at the silicone/substrate interface.

- Puncturing of the silicone facing does not affect seal integrity (ASTM 1105-90).

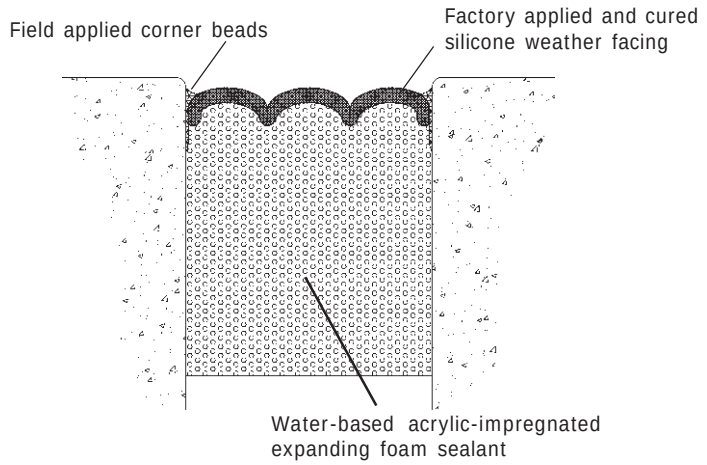
- **COLORSEAL** is supplied precompressed to less than the joint size. It is packaged in shrink-wrapped lengths called sticks, with a self-adhesive on one side. After insertion, it expands to fill and seal the joint.

- Sealing against the substrate is achieved through a combination of the pressure-sensitive adhesive impregnation, and 2 ½ pounds of backpressure per square inch of the expanding foam in conjunction with a field applied cornerbead.

Uses

- **Facades: COLORSEAL** is used in vertical and horizontal joints in building facades, soffits etc. of precast concrete, brick, natural stone, metal and most other substrates.

FIGURE 1: COLORSEAL in Typical Installation
(substrates may vary).



COLORSEAL with silicone corner beads in a typical installation. Corner beads shown may be dispensed with in certain applications.

- **EIFS: COLORSEAL** is uniquely suited to properly sealing both new and retrofit expansion joints in Exterior Insulation and Finish Systems. These potentially weak substrates benefit from the minimal tension at joint interface; effects of air-pressure differential are reduced by virtue of **COLORSEAL's** depth and density; elimination of the moisture-trap area commonly created between wet sealants and backer rods; it thermally insulates the EIFS cladding at joints.

- **Panelized Systems:** As in EIFS, **COLORSEAL** is ideally suited to sealing many other panelized cladding systems that rely on "barrier-wall" sealing principles including metal cladding, window-wall systems, skylights, precast panels, etc.

- **Horizontal Deck Joints** (See "HORIZONTAL COLORSEAL" Tech Data Sheet.

- **Seismic & High Movement Joints:** Reduced compression of the expanding foam backing, a field-applied corner-bead, and the silicone "bellows" acting as the sealing element means ***SEISMIC* COLORSEAL** is capable of movements up to ±50% (total 100%) of joint size at mean temperature. (See "***SEISMIC* COLORSEAL**" Tech Data).

Advantages

- A binary seal – the combined unified primary and secondary seal confers redundancy.

- Features the UV resistance, durability and impermeability of silicone.

- Virtually eliminates tensile stresses at bond line and adverse effects of movement occurring before field applied silicone cures.

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TABLE 1: TYPICAL PHYSICAL PROPERTIES & TESTING

Property / Test	Value	Test Method
Colors	**Standard:** Precast white, black, grey, limestone, natural stone, bronze, sandstone, adobe tan, dusty rose, rustic brick, blue spruce, charcoal	
Durometer Hardness	**Silicone Coating: Shore A, 15 pts.**	**ASTM D2240**
Staining	None	ASTM C510
Weatherometer	**Xenon Arc Weatherometer 2000 hrs–No visible deterioration**	**ASTM G26-77**
Intentional Damage Primary Surface	Xenon Arc Weatherometer 2000 hrs.–No performance change.	ASTM G26-77
Primary Surface Weathering	**Atlas Weatherometer 6000 hrs–Minimal hardness change**	**ASTM G26-77**
Temperature Range		
High Permanent	185°F (85°C)	ASTM C711
Low Permanent	-40°F (-40°C)	
Tensile Strength	**21 psi min; 145 kPa**	**ASTM D3574**
Thermal Conductivity	0.34 Btu. in/hr. ft^2 °F (0.05 W/m.°C)	ASTM C518
Rate of Air Leakage Through Curtain Walls	**Passed**	**ASTM E283**
Water Penetration of Curtain Walls by Uniform Static Air Pressure Diff.	Up to 20.88 PSF--Passed	ASTM E331
Structural Performance of Curtain Walls by Uniform Air Pressure Diff. (Gust Loads)	**+62.66 PSF, -56.39 PSF—Passed**	**ASTM E330**

Advantages cont...

- Reduces installation labor and materials, ex: priming; need for accurate positioning of a backer-rod; site mixing and tooling; etc; and less reliant on meticulous substrate-preparation.
- Seal integrity maintained even if silicone facing punctured.
- Mechanically anchored by back-pressure inherent in the permanently elastic open-cell foam as well as adhered to the substrate by the pressure sensitive adhesive impregnation.
- Eleven colors (see list in table above, or contact EMSEAL).
- Supplied precompressed to less than joint size--no field compression required.
- Standard sizes from 1/2" (12mm) to 8" (200mm). For other sizes, consult EMSEAL Technical Services.
- Joint movement capacity ± 25% (50% total) of mean temperature joint size.

Installation

- Store indoors at room temperature. Expansion is quicker when warm, slower when cold.
- Ensure material nominal size ordered matches field-measured, mean-temperature joint size.
- Remove shrink-wrap packaging, hardboard, and self-adhesive release paper.
- Cut 45° miter where material will be joined and wipe silicone onto miter face.
- Insert material into joint and adhere to one side. Material expands to seal joint. (Wedge larger-sized material in place while it expands).
- Install corner beads where specified.

Warranty

Standard or project-specific warranties are available from EMSEAL on request.

Technical Services

For detail and project review, and recommendations for the proper use of EMSEAL products, consult manufacturer and local representatives.

Availability & Price

EMSEAL products are available throughout the United States and Canada. Prices are available from local representatives or direct from the manufacturer. The EMSEAL product range is continually being updated. Accordingly, we reserve the right to modify or withdraw any product without prior notice.

TABLE 2: COLORSEAL SIZING

Joint Size at Mean T°F		Depth of Seal	
1/2"	**(12mm)**	**1-1/2"**	**(40mm)**
3/4"	(20mm)	1-1/2"	(40mm)
I"	**(25mm)**	**1-3/4"**	**(40mm)**
1-1/4"	(30mm)	2-1/4"	(55mm)
1-1/2"	**(40mm)**	**2-3/8"**	**(60mm)**
1-3/4"	(45mm)	2-3/8"	(60mm)
2"	**(50mm)**	**2-1/2"**	**(65mm)**
2-1/4"	(55mm)	2-1/2"	(65mm)
2-1/2"	**(65mm)**	**2-3/4"**	**(70mm)**
2-3/4"	(70mm)	3"	(75mm)
3"	**(75mm)**	**3-1 /2"**	**(90mm)**
3-1/2"	(90mm)	3-3/4"	(95mm)
4"	**(100mm)**	**4-3/4"**	**(120mm)**
5"	(125mm)	5-1/2"	(140mm)
6"	**(150mm)**	**6"**	**(150mm)**
7"	(175mm)	7"	(175mm)
8"	**(200mm)**	**8"**	**(200mm)**

- Select nominal material size to correspond to joint size at mean temperature.
- Material is supplied in shrink-wrapped sticks of 6.56 ft. (2 m).

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