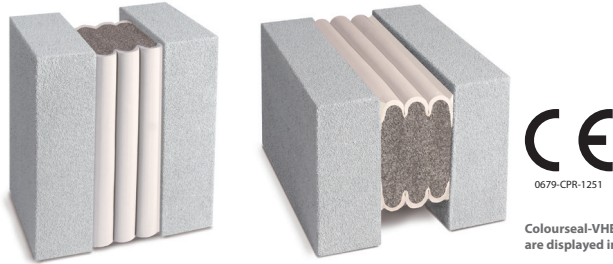




A SIKA COMPANY

PRODUCT DATA Colourseal-VHE

Vertical and Horizontal Watertight Movement Joint



Colourseal-VHE samples shown here are displayed in substrate mock-ups.

Product Description

Colourseal-VHE is a CE-marked, ETA-certified, double-sided silicone-faced movement joint which provides a watertight seal with 100% movement capability, thermal insulation, UV stability, and colour coordination with vertical or horizontal substrates. It performs these functions without invasive metal anchoring or complex field fabricated assemblies. In contrast to liquid-applied sealants, Colourseal-VHE is free of tensile stresses at the substrate bond line. Colourseal-VHE provides a cost effective, long term watertight seal.

Colourseal-VHE combines a factory applied, low modulus silicone with an open cell polyurethane foam infused with a water-based, fire-retardant, acrylic dispersion. The coloured silicone facing is factory adhered to the infused foam on two sides at a width greater than the maximum anticipated joint extension, and is then cured. When compressed, the silicone facing forms a bellows profile capable of accommodating +/-50% (total 100%) movement from the product's nominal size. The bellows fold, and unfold during movement virtually free of tensile stresses.

Colourseal-VHE is supplied pre-compressed to slightly less than its nominal size for ease of installation. To install sticks, clean the substrate walls. Apply the supplied epoxy adhesive to the substrates. After removing packing materials insert the Colourseal-VHE into the joint. After the Colourseal-VHE has expanded to fill the joint space and is adhered to the substrates, a field-applied silicone corner bead ensures a watertight seal at the substrate interface.

Features

- +/-50% Movement Capability
- Watertight seal
- UV Resistance
- Traffic-grade silicone surface
- Eliminates tensile stresses at bond line
- Very fast and simple installation
- No invasive anchoring
- No complex field-fabricated assemblies
- Available in industry-standard colours
- Supplied pre-compressed to less than nominal joint size
- Coated on two sides (opposing exposed surfaces)

Uses

- **Wide Range of Sizes** – For all joints from 12mm (1/2") to 200mm (8") in vertical or horizontal applications.
- **Trafficable** – For use in pedestrian or vehicular traffic applications.
- **Fire Resistance** – 90-minute for vertical applications (EI90); 45 minutes for horizontal applications (EI45).
- **Substrates** – masonry, precast concrete, brick, natural stone, metals, and most other substrates.
- **Inside Corners** – Colourseal-VHE is uniquely suited to filling movement joints at additions and particularly at inside corners. "Rubber-and-rail" alternatives cannot be properly installed at inside corners due to lack of access for drilling equipment. Colourseal-VHE uses no invasive anchoring and can be readily installed without violation of the substrates.
- **Transitions from Vertical joints to Horizontal joints** – Transitions from vertical to horizontal-plane joints in parapets, walls, split columns, etc. are critical to watertightness and can be properly addressed using Colourseal-VHE. Transitions into other products by EMSEAL for waterproofing joints in decks, as well as into roof-joints, etc., are readily possible — consult EMSEAL.
- **Parking and Traffic** – Colourseal-VHE is a traffic-grade silicone weather surface that permits it to be used in parking structures and locations, sidewalks, bridges and other applications where vehicles will transverse the movement joint. Optional metal coverplate is available — consult EMSEAL.
- **Varying Joint Sizes, Curves, Changes in Plane and Direction** – Joints vary in size due to construction tolerance buildup and because of substrate changes. Supplied to field-measurements, Colourseal-VHE accommodates joint size variations. It is pliable and can be conformed in the field to radius, and changes in plane and direction at soffits, and other architectural features.

Colourseal-VHE Sizing				
Nominal Material Size at Mean T°		Depth of Seal	Orientation*	
12mm**	(1/2 in)	70mm (2 3/4 in)	Vertical/Horizontal	
19**	(3/4)	70 (2 3/4)	Vertical/Horizontal	
25**	(1)	70 (2 3/4)	Vertical/Horizontal	
30**	(1 1/4)	70 (2 3/4)	Vertical/Horizontal	
40	(1 1/2)	70 (2 3/4)	Vertical/Horizontal	
45	(1 3/4)	70 (2 3/4)	Vertical/Horizontal	
50	(2)	70 (2 3/4)	Vertical/Horizontal	
55	(2 1/4)	70 (2 3/4)	Vertical/Horizontal	
65	(2 1/2)	70 (2 3/4)	Vertical/Horizontal	
70	(2 3/4)	75 (3)	Vertical/Horizontal	
75	(3)	90 (3 1/2)	Vertical/Horizontal*	
85	(3 1/4)	95 (3 3/4)	Vertical/Horizontal*	
90	(3 1/2)	95 (3 3/4)	Vertical/Horizontal*	
95	(3 3/4)	105 (4 1/4)	Vertical/Horizontal*	
100	(4)	115 (4 1/2)	Vertical/Horizontal*	
110	(4 1/4)	115 (4 1/2)	Vertical/Horizontal*	
115	(4 1/2)	125 (5)	Vertical/Horizontal*	
120	(4 3/4)	135 (5 1/4)	Vertical/Horizontal*	
125	(5)	140 (5 1/2)	Vertical/Horizontal*	
135	(5 1/4)	145 (5 3/4)	Vertical/Horizontal*	
140	(5 1/2)	145 (5 3/4)	Vertical/Horizontal*	
145	(5 3/4)	145 (5 3/4)	Vertical/Horizontal*	
150	(6)	150 (6)	Vertical/Horizontal*	
165	(6 1/2)	165 (6 1/2)	Vertical/Horizontal*	
175	(7)	175 (7)	Vertical/Horizontal*	
190	(7 1/2)	190 (7 1/2)	Vertical/Horizontal*	
200	(8)	200 (8)	Vertical/Horizontal*	

*For movement joint openings 90mm (3-1/2") and greater, that are subject to pedestrian or vehicular traffic, require a metal cover plate.

** SIZES 12mm (1/2") to 30mm (1 1/4") built with a single silicone bellow surface on both sides.

Installation Overview

IMPORTANT: This instruction-summary is generic. Refer to Install Data and, if applicable, to job-specific instructions of an EMSEAL technician.

- Store at room temperature. Expansion is quicker when warm, slower when cold.
- Ensure nominal size of material matches joint size adjusted from mean temperature.
- Mix the construction-grade epoxy and apply to clean and primed substrate faces.
- Remove shrink-wrap packaging and hardboard. Wipe factory applied release agent off silicone facing using damp, clean, lint-free rag.
- Insert material into joint with at least a 1/4" (6mm) recess.
- Allow material to expand against other joint face. Wedge larger sizes in place while it expands.)
- Apply thin bead of silicone sealant along edge of bellows at end where the material will join with next length.
- At joins blend silicone into the silicone bellows to create a consistent finished appearance being sure not to restrict the folds of the bellows.
- Once material has expanded across the joint, gun and tool fillet bead of supplied liquid silicone at the substrate-to-bellows join.

Colourseal-VHE Sizing Performance and Physical Properties		
Property	Value	Test Method
R-Value	2.15 per 25mm (1-inch) depth of as-installed nominal joint size compression	ASTM C518-04
STC Rating (Sound Transmission Class)	STC 54 (in a STC 56 wall)	ASTM E90-09
OITC Rating (Outdoor Indoor Transmission Class)	OITC 38 (in a OITC 38 wall)	ASTM E90-09
Air Permeability ABAA air leakage limit for materials — not to exceed .02 L/(s·m ²) @75 DP(Pa)	ABAA Compliant 0.0078 L/(s·m ²) @75 DP(Pa) 0.0118 L/(s·m ²) @ 250 DP(Pa)	ASTM E283-04
Water Penetration	No water penetration after consecutive 15 minute soak durations under pressures of: 500 ΔP(Pa), 65 mph equivalent wind driven rain 1000 ΔP(Pa), 92 mph equivalent wind driven rain 5000 ΔP(Pa), 205 mph equivalent wind driven rain	ASTM E331-00
Wind Loading Hurricane Standard Miami-Dade County, (FL) = 150 mph	-0.1mm Net Deflection of Span @ +2730 ΔP(Pa), 150 mph equivalent +0.1mm Net Deflection of Span @ -2730 ΔP(Pa), 150 mph equivalent -0.6mm Net Deflection of Span @ +4854 ΔP(Pa), 200 mph equivalent +0.5mm Net Deflection of Span @ -4854 ΔP(Pa), 200 mph equivalent	ASTM E330
Temperature Stability, Bleeding, Staining and Recovery Under Field Conditions Material will not bleed or stain after withstanding 65°C (150°F) for 3 hours while compressed down to the minimum of movement capability (-50% of nominal material size). After cooling to room temperature, 20°C (68°F), the material will self-expand to the maximum of movement capability (+50% of nominal material size) within 24 hours.		

Colourseal-VHE Test Results

Feature	Test Result	Standard
Resistance to Fire	EI90 -- Vertical applications EI45 -- Horizontal applications	EN 1366-4
Reaction to Fire	Class E	EN ISO 11925-2: 2013 EN 13823
Movement	100% (+/- 50%)	EN 1366-4
Water and Air Permeability	No leakage up to 1200 Pa of pressure	NF EN 12154 NF EN 12155
Acoustic	Rs.w (C ; Ctr): ≥ 46 (-1 ; -3)	NF EN 10140-2 (2013) NF EN 12999-1 (2014)

CAD & Guide Specs

Guide specifications and CAD details are available online at emseal.com or by email.

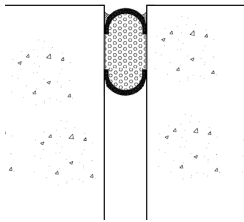
Warranty

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

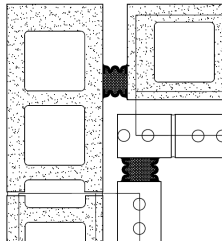
Availability & Price

A CE marked movement joint, Colourseal-VHE is available to European and other markets requiring CE marking. It is not available in North America. Product range is continually being updated, and accordingly EMSEAL reserves the right to modify or withdraw any product without prior notice.

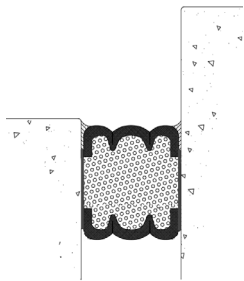
Various Applications for Colourseal-VHE



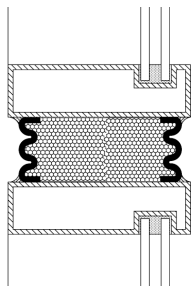
Sizes from 12mm (1/2-inch) to 30mm (1 1/4-inch) are manufactured with a single bellow silicone face. Larger sizes up to 200mm (8-inches) are manufactured with multiple bellows.



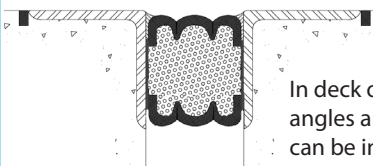
Colourseal-VHE is an excellent, simple sealing solution at inside corner conditions where it is impossible to install mechanically fastened 'strip-seal' systems. In cavity-wall conditions, installation of Colourseal-VHE in the structural backup maintains integrity of thermal insulation as well as the air barrier while preventing passage of cavity moisture into the structure.



Non-invasive anchoring makes Colourseal-VHE a great choice for all applications including deck-to-wall.



Colourseal-VHE is uniquely suited to sealing structural joints in curtainwalls. Non-invasive anchoring means that mullions are not violated by screwing through them as occurs with "strip-seal" systems.

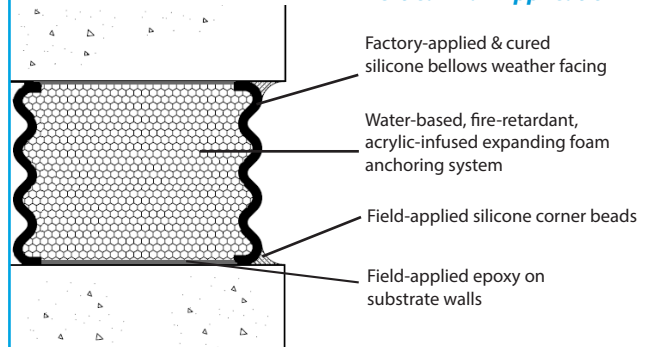


In deck or road locations, where metal angles already exist, Colourseal-VHE can be installed into the existing angles.

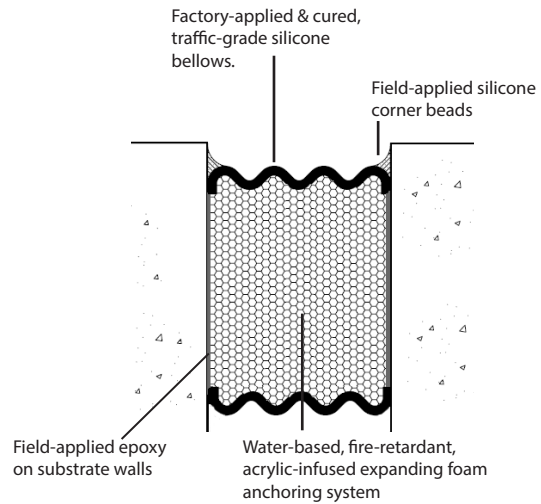
Colourseal-VHE in Typical Installation

(Substrates may vary.)

Vertical Wall Application



Horizontal Deck or Driveway Application



IMPORTANT: It is critical in ensuring building and wall system performance, and when comparing pre-compressed foam sealant materials, to use performance data from materials as would be supplied to the jobsite. R-Values, temperature resistance and other properties of uncompressed foam or "foam-core" are irrelevant as materials are not installed uncompressed. Properties and performance results are derived from tests conducted on materials at compression levels and configurations of the as-supplied product. Furthermore they are tested to the same standards of typical systems into which they will be installed.

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