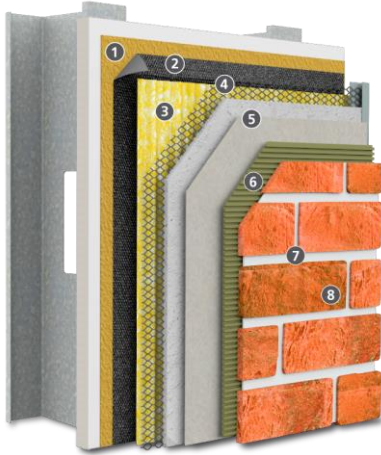


# StoPowerwall® DrainScreen® MVES

Masonry Veneer Engineered portland cement stucco wall system with advanced cavity wall design, and continuous air and water-resistive barrier



Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C1177, code compliant wood-based sheathing (plywood or OSB), code compliant concrete, concrete masonry, existing structurally sound, uncoated brick or other masonry wall construction.

1)	Air and Water-resistive Barrier: StoGuard - Sto Gold Coat®
2)	Water-resistive Barrier: Code compliant paper or felt
3)	Drainage Mat: Sto DrainScreen
4)	Lath: code compliant minimum 2.5 lb/yd <sup>2</sup> (1.4 kg/m <sup>2</sup> ) self-furred galvanized steel diamond mesh metal lath
5)	Stucco Scratch and Brown Coat: ASTM C926 compliant stucco (as furnished or listed by Sto Corp.)
6)	Masonry Veneer Adhesive: StoColl
7)	Masonry Veneer Grout: ANSI 118.7 compliant portland cement-based grout
8)	Masonry Veneer: thin brick, thin stone, ceramic tile, or cultured stone in conformance with applicable building code requirements

System Accessory: StoSeal STPE Sealant for use as an exterior weather seal around wall penetrations, at dynamic joints in wall construction, and as an interior air seal for air barrier continuity

## System Description

StoPowerwall DrainScreen MVES is a portland cement stucco wall system with Adhered Masonry Veneer (AMV) – thin brick, natural stone, ceramic tile, or manufactured stone. It combines the strength and durability of portland cement stucco with Sto high strength masonry veneer adhesive, and the moisture protection of Sto’s advanced cavity wall design with StoGuard® air and water-resistive barrier.

## Uses

StoPowerwall DrainScreen MVES can be used in residential or commercial wall construction where durability, superior aesthetics, and air and moisture control are essential in the climate extremes of North America.

Features	Benefits
Variety of masonry veneers – brick, stone, tile – that integrate seamlessly with Sto finishes	Design versatility on a single compatible substrate
Advanced Cavity Wall Design	Reduced risk of water penetration
Impact and puncture resistant cladding	Withstands abuse, reduced maintenance
Fire resistant wall design	Occupant safety
Continuous air and water-resistive barrier	Impedes water penetration, helps reduce energy costs
Fully tested, building code compliant wall assembly	Peace of mind

## Properties

Weight (not including sheathing and frame)	< 31 lb/ft <sup>2</sup> (152 kg/m <sup>2</sup> ) with nominal 15 lb/ft <sup>2</sup> (73.2 kg/m <sup>2</sup> ) masonry veneer
Assembly Thickness (from outside face of sheathing)	Nominal 2 inches (51mm mm) with 5/8 inch (16mm) thick masonry veneer
R-value (from outside face of sheathing)	0.84 ft <sup>2</sup> •h•°F / Btu (0.148 m <sup>2</sup> •K / W)
Wind Load Resistance (varies with stiffness of stud wall construction and sheathing / lath attachment)	Capable of achieving DP of: +65, -48 lb/ft <sup>2</sup> (+3.11, -2.29 kPa)
Code Compliance: StoGuard AMB: ICC-ESR 1233	IBC, IRC, IECC (2012, 2015, 2018)
Construction Types and Fire Resistance	<ul style="list-style-type: none"> <li>All Construction Types (I-V)</li> <li>ASTM E119 1-hourly ratings</li> </ul>

## Warranty

12 year Limited Warranty

## Maintenance

Requires periodic cleaning to maintain appearance, repair of cracks and impact damage if they occur. Sealants and other façade components must be maintained to prevent water infiltration.

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## Design Guidance and Limitations

Fire resistance rated assemblies: refer to IBC and IRC for fire-resistance rated stucco wall assemblies. Also refer to ICC-ESR 2323 and IAPMO UES Report 382. StoPowerwall DrainScreen MVES does not detract from the hourly rating of listed assemblies.

Wind load resistance: design for maximum allowable deflection of L/360, or stiffer when required by veneer manufacturer, local building code, or design professional. Maximum allowable stud spacing / minimum stud gauge: 16 inches (406mm) on center / 18 gauge. Capable of achieving design pressures of: +65, -48 lb/ft<sup>2</sup> (+3.11 to -2.29 kPa). Ultimate wind load resistance depends on sheathing, sheathing attachment, lath attachment, and stiffness of supporting wall construction. Test assembly as needed to verify conformance with local code requirements.

Moisture Control: design and detail air/moisture barrier as a continuous assembly, incorporate flashing and coping to shed water and prevent water entry into wall construction, select compatible wall assembly components at material interfaces and to seal penetrations. For more information refer to Sto Detail Booklet, and Sto Tech Hotlines: TH-0403-BSc, *Critical Detail Checklist for Wall Assemblies*, and TH 0603-BSc, *Moisture Control Principles for Design and Construction of Wall Assemblies*.

Recommended for moist and marine climate zones, and where a ¼ or 3/8 inch (6 or 10mm) drainage cavity is required by the applicable building code.

For use on vertical above grade walls only, up to 6-stories or 72 ft (22m) in height, whichever is less, except for manufactured stone and natural stone. Refer to Sto Tech Hotline No. 0821-M, *Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction*, for additional information.

Not for use below grade, sloped or horizontal surfaces, or on roofs or roof-like surfaces. Refer to Sto Detail Booklet.

Joints: provide expansion joints where they exist in the supporting wall construction, at control joints or cold joints in the supporting wall construction, at changes in support construction (e.g., masonry to frame wall), at junctures with dissimilar construction, at floor and ceiling lines in multi-story wall construction, at changes in building height and other areas of stress concentration, and within areas of not greater than 144 ft<sup>2</sup> (13.4m<sup>2</sup>) with length or height not more than 12 ft (3.6m) for ceramic tile, and not more than 18 ft (5.5m) for brick or stone, with length/height or height/length ratio not greater than 2-1/2 to 1. Dark colored veneer units may require closer spacing due to increased thermal movement. Consult with design professional. Do not bridge expansion joints, control joints, or cold joints in wall construction with adhered masonry veneer. Refer to Sto Detail Booklet.

Mortar Joints: must be grouted except where permitted for manufactured stone (refer to Sto Tech Hotline No. 0821-M, *Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction*)

Adhered masonry veneer units are limited in thickness, size and weight by the IBC and IRC. Refer to Sto Tech Hotline No. 0821-M, *Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction*.

Efflorescence is a normal occurrence in portland cement-based materials and can affect final appearance of finish products. To minimize risk of efflorescence follow best construction practices to prevent water entry into walls through proper design detailing, and the proper use of flashing, copings, and sealant. Refer to Sto Detail booklet.

Air and water-resistive barrier materials are not intended for prolonged weather exposure. Allow 180 days maximum between application of air and water-resistive barrier and other wall system components. Refer to specific component product bulletins and packaging for other limitations that may apply involving use, handling and storage of component materials.

## Sustainable Design

### Air Quality and VOC Compliance

Adhesive, air and water-resistive barrier joint treatments and coatings meet SCAQMD (Rule 1113) VOC standard for Building Envelope Coating: less than 50 g/L

### LEED Credit Eligibility

System has high potential for LEED and other sustainability program credits based on use of continuous air and water-resistive barrier and VOC compliance

## Regulatory Compliance and Standards Testing

ICC ESR No. 1233	Sto Gold Coat AMB complies with 2012, 2015, 2018 IBC, IRC and IECC
ICC ERS 2323, IAPMO UES 308	See listings for fire and wind load rated assemblies
ASTM E2178, E2357	Sto Gold Coat AMB meets air leakage requirements as a material and as an assembly
ASTM C926	StoPowerwall Stucco and Sto listed stucco products conform with prescriptive mix ratios of ASTM C926
ASHRAE 90.1-2016	System complies with Section 5, Building Envelope, air barrier requirements
ASTM E 119	System meets requirements for hourly ratings over listed fire-resistance-rated wall assemblies

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