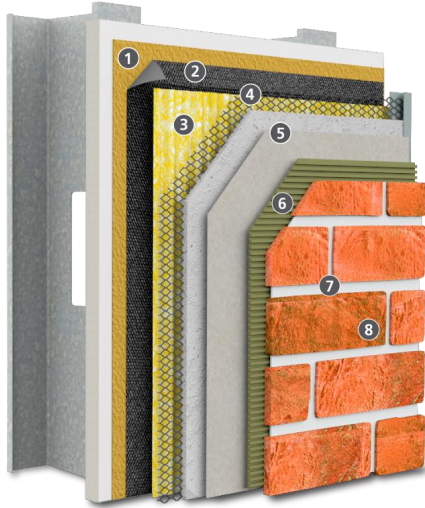


StoPowerwall® DrainScreen® MVES

Masonry Veneer Engineered portland cement stucco wall 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: choose among
	<ul style="list-style-type: none"> Sto Gold Coat® Sto AirSeal® StoGuard® VaporSeal® Sto GoldSeal™ STPE StoShield™ SA VP StoShield™ SA NP
2)	Water-resistive Barrier: code compliant paper or felt
3)	Drainage Mat: Sto DrainScreen®
4)	Metal Plaster Base: code compliant minimum 2.5 lb/yd ² (1.4 kg/m ²) self-furred galvanized steel diamond mesh metal lath or Structural SFCR Twin Track 2.5 self-furring welded wire lath
5)	Stucco Scratch and Brown Coat: ASTM C926 compliant stucco (as furnished or listed by Sto Corp.)
6)	Masonry Veneer Adhesive: StoColl Adhesive Mortar
7)	Masonry Veneer Grout: ANSI 118.7 compliant portland cement-based grout
8)	Masonry Veneer: thin brick, thin stone, ceramic tile, natural 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 Sto 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

Variety of masonry veneers – brick, stone, tile – that integrate seamlessly with Sto finishes

Advanced Cavity Wall Design

Impact and puncture resistant cladding

Fire resistant wall design

Continuous air and water-resistive barrier

Fully tested, building code compliant wall assembly

Benefits

Design versatility on a single compatible substrate

Reduced risk of water penetration

Withstands abuse, reduced maintenance

Occupant safety

Impedes water penetration, helps reduce energy costs

Peace of mind

Properties

Weight (not including sheathing and frame)

Assembly Thickness (from outside face of sheathing)

R-value (from outside face of sheathing)

Wind Load Resistance

Compliance

Construction Types and Fire Resistance

< 31 lb/ft² (152 kg/m²) with nominal 15 lb/ft² (73.2 kg/m²) masonry veneer

Nominal 2-in (51mm mm) with 5/8-in (16mm) thick masonry veneer

0.84 ft²•h•°F / Btu (0.148 m²•K / W)

+ 202 / - 144 psf ultimate loads achieved (+9.67 / - 6.89 kPa)

2018 and 2021 IBC, IRC, and IECC

- NFPA 285 tested for use on noncombustible construction
- ASTM E119 hourly rated assemblies

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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Limitations	
Minimum stucco thickness, 3/4-in (19mm), maximum stucco thickness 7/8-in (22mm), applied in two coats, scratch and brown coat	
Wind load resistance: + 202 / -144 psf (+9.66 / -6.89 kPa) ultimate loads achieved over steel studs with gypsum wallboard attached to interior. Wind loads achieved without sto DrainScreen component or masonry veneer. Consult ICC ESR-2323 and IAPMO 382 for other assemblies over steel and wood studs (assemblies have a safety factor of 3 applied). Ultimate wind load resistance depends on sheathing, sheathing attachment, lath attachment, and stiffness of supporting wall construction. Test any proposed assembly as needed and apply appropriate safety factor in accordance with local code requirements.	
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, <i>Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction</i> , for additional information.	
Do not use on roofs or roof-like surfaces, on surfaces subject to in-service water immersion, or below grade. Maintain clearance of minimum 4-in (102mm) above earth grade and minimum 2-in (51mm) clearance above pavers or sidewalks.	
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 different substrates, 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 ² (13.4m ²) 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, <i>Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction</i>)	
Adhered masonry veneer units are limited in thickness, size and weight by the IBC and IRC. Refer to Sto Tech Hotline No. 0821-M, <i>Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction</i> .	
Efflorescence is a normal occurrence in portland cement-based materials and can affect final appearance of finish products.	
Air and Water-Resistive Barrier, drainage mat, and base coat materials are not intended for prolonged weather exposure. Refer to component product bulletins for specific limitations involving exposure, use, handling and storage of component materials.	
Sustainable Design	
Air Quality and VOC Compliance	
Adhesive, air 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	
ASTM C926	StoPowerwall stucco and listed stuccos comply with ASTM C926 (as required by the IBC, IRC and most state codes)
ANSI 118.15	StoColl Adhesive Mortar complies with specification for <i>Improved Modified Dry-Set Cement Mortars</i>
ICC ESR-1233	Sto air & water-resistive barriers comply with 2018 and 2021 IBC, IRC and IECC
ASHRAE 90.1-2022 ¹	StoPowerwall DrainScreen MVES complies with Section 5, Building Envelope, air barrier requirements
ASTM E2178 ² , ASTM 2357 ³	Sto Gold Coat AWRB meets material and assembly air leakage resistance criteria
NFPA 285 ⁴	StoPowerwall DrainScreen MVES meets IBC criteria for use on noncombustible construction
ASTM E 119 ⁵	StoPowerwall DrainScreen MVES maintains the fire-resistance rating of hourly rated load bearing and non-load bearing concrete, concrete masonry, steel frame and wood frame base wall assemblies.

1. *Energy Standard for Buildings Except Low-Rise Residential Buildings*
2. *Standard Test Method for Air Permeance of Building Material*
3. *Standard Test Method for Determining Air Leakage of Air Barrier Assemblies*
4. *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components*
5. *Standard Test Methods for Fire Test of Building Construction and Materials*

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