



HURRICANE RESISTANT

MADE IN AMERICA 

HOLDS BACK HURRICANES. DANCES WITH LIGHT.

Anyone who's ever experienced a hurricane knows that hurricane force winds are powerful, but the real danger comes in the form of flying debris. That means, if you're designing a building to withstand a hurricane, it needs to be able to stand up to flying debris as well.

LightWise® Architectural Systems Hurricane-Resistant Glass Block Windows

- Withstands hurricane force winds
- Protects against flying debris
- No need for shutters

Protect your building and its occupants with LightWise Architectural Systems Hurricane-Resistant Glass Block Windows. They meet the large missile impact tests referenced in the International Building Code and Dade County Approval Protocols. Plus they're attractive, easy to install and offer the kind of privacy and light aesthetics you can only get with glass block.



Lightwise® Architectural Systems Hurricane-Resistant Glass Block Windows

Hurricane-Resistant Glass Block Windows

Lightwise Architectural Systems Hurricane-Resistant Glass Block Windows brighten any application with soft, natural light. They're ideal for use in commercial applications where beauty, light transmission and protection against hurricane force winds and debris is critical. The window has passed the large missile impact tests recognized by the International Building Code and Dade County and is approved for use in coastal areas.

Features and Benefits of the Window Include:

- Visually stunning, pre-fabricated panels that are easy to install
- No need for shutters
- Customizable to meet project needs
- Guaranteed to meet your performance requirements
- Useful for daylighting strategies and can contribute to LEED points
- Protects against flying debris and hurricane force winds
- Available with a range of visibility and privacy options
- Graffiti-resistant, damage-resistant and easy to clean
- Greater security than conventional windows
- Possibilities are limited only by your imagination

Glass Block Patterns Available



DECORA®
Pattern



VUE®
Pattern



ENDURA™
Pattern

Tests Passed/Code Approvals

- Meets large missile impact tests referenced in the International Building Code (IBC), in accordance with ASTM E-1886 and ASTM E-1996
- Tested to Dade County Approval Protocols TAS 201, 202, 203
- Window Size and Design Pressure Rating:
4' x 8' = 80 PSF Design Pressure



System Facts

Lightwise Architectural Systems Hurricane-Resistant Glass Block Windows consist of glass block framed by a 2-piece aluminum channel. Standard aluminum channel is mill finished, anodized clear or bronze. Powder coating is also available.

Lightwise Architectural Systems Hurricane-Resistant Glass Block Windows are available as pre-assembled windows for easy installation. They can be ordered in custom sizes in 8" increments up to 4' x 8' (with 80 PSF Design Pressure Rating).

Pittsburgh Corning has a sales and technical support team that is ready to help you design, engineer and specify glass block solutions. Please visit our website at Pittsburghcorning.com or call 800-871-9918 for assistance.



PITTSBURGH CORNING™

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HURRICANE RESISTANT WINDOWS / PANELS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Hurricane Resistant Glass Block Systems

1.2 RELATED SECTIONS

- A. Section 05 50 00 - Metal Fabrications: Steel channels, sills, lintels, and jambs.
- B. Section 07 90 00 - Joint Sealers.
- C. Section 09 90 00 – Paints and Coatings

1.3 REFERENCES

- A. ASTM E283 - 04 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure and Temperature Differences Across the Specimen.
- B. ASTM E330 -02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- C. ASTM E547 -00 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
- D. ASTM B209M -07 Standard Specification for Aluminum and Aluminum–Alloy Sheet and Plate.
- E. ASTM C920 -08 Standard Specification for Elastomeric Joint Sealants.
- F. ASTM E1886-05 and ASTM E 1996 –09 Impact and Cycle Tests
- G. Dade County Test Standards (Dade and Broward Counties):
 - Test Protocol TAS 201 – Large and Small Missile Impact Tests
 - Test Protocol TAS 202 – Air, Water, Structural Tests
 - Test Protocol TAS 203 – Cyclic Wind Pressure Loading Tests
- H. Notice of Acceptance Label (NOA) Issued by Miami-Dade County Product Control Division.
- I. Tested in accordance with AAMA/WDMA/CSA 101/1.S.2/A440-05

1.4 QUALITY ASSURANCE

- A. Manufacturer
 - 1. Minimum of 10 years specialized experience in the manufacture of windows.

B. Direct Representation

1. The manufacturer shall have available a direct representative with full knowledge and experience of the product and systems for technical assistance.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer's literature on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Written installation instructions.

C. Verification Samples:

1. Two glass block units of each type specified, showing size, design, and pattern of faces as required for project.
2. Representative samples of assembly as required for project.

D. Test Reports

1. Submittal of test reports from independent laboratories indicating conformance to regulatory requirements shall be made available if required by architect.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle panels in a manner which will prevent undue stress on component parts, sealants and structural members. Do not rack or torque, or cause load forces in an inappropriate manner.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Provide manufacturers limited 10-year warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Pittsburgh Corning Corporation, which is located at: 800 Presque Isle Drive, Pittsburgh, PA 15239-2724; Toll Free Tel: 800-545-5001; Tel: 724-327-6100; Fax: 724-387-3806; Email: request info; Web: www.pittsburghcorning.com.

2.2 SYSTEM DESCRIPTION

A. Design Requirements

1. Hurricane resistant system shall conform to the requirements specified for the particular items and shall be complete assemblies by a single manufacturer.

B. Performance Requirements

1. The system shall be Hurricane resistant to the threat level specified.

C. Basis for Design

1. Pittsburgh Corning LightWise® Architectural Hurricane Resistant Series

2.3 GLASS BLOCK

A Basis for Design: Pittsburgh Corning THICKSET® 90 Series

1. Patterns

- a. THICKSET® 90 VUE® glass block
- b. THICKSET® 90 DECORA® glass block
- c. THICKSET® 90 ENDURA® glass block

2. Physical Properties:

- a. Nominal Size; Face: 8 inches (203mm) by 8 inches (203mm) by 4 inches (100mm) thick with 3/4" thick faces
- b. Installed Weight 24 lb/sq. ft
- c. Thermal Conductance (U Value): 0.50 Btu/hr sq ft deg F
- d. Thermal Resistance (R Value): 2.00 deg F hr sq ft/Btu
- e. Visible Light Transmission: 38%-70% (dependent on pattern)
- f. Sound Transmission: STC 48, OITC 42
- g. Edge Coating: Polyvinyl Butyral (PVB)

2.4 ACCESSORIES

- A. Sealant (caulk): Non-staining; waterproof mastic; silicone type meeting the requirements of ASTM C920.
- B. Aluminum 2-piece Channel System: Alloy and thickness per prescribed hurricane condition, anodized or powder coated as required.
- C. Anchorage: Self-tapping screws and masonry anchors per prescribed hurricane condition and substrate.
- D. Shims: Plastic type shims as required.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Notify architect of unsatisfactory preparation before proceeding.
- C. Verify that channels for support at head, jambs and sills are properly installed.

3.2 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install Hurricane-Resistant Glass Block System in strict compliance with the manufacturers' specifications, sizing, anchorage charts and installation instructions including all materials, accessories, workmanship and cleaning.

3.4 CLEANING

- A. Remove excess sealant from glass surfaces immediately following application.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

PHYSICAL & DESIGN DATA

PITTSBURGH CORNING GLASS BLOCK PRODUCTS

Pattern	Nominal Size ¹ (Actual size is 1/4" less than nominal; mm shown is actual)	Weight (lb/ft ²) installed with mortar	Heat Transmission ² U Value (Btu/hr ft ² °F)	Thermal Resistance ² R Value (hr ft ² °F/Btu)	Visible Light Transmission ³ (%)	Shading Coef. ⁴	Sound Transmission S.T.C.	Solar Heat Gain Coefficient ⁵	
THICKSET® Block — Nominal Thickness = 4"; Actual Thickness = 3 7/8" (98mm)									
THICKSET® 60 Block— DECORA® & VUE®	8" x 8" (197mm)	25	0.51	1.96	VUE®=75 DECORA®=49	0.65	48	.66-.68 ⁵	
THICKSET® 90 Block— DECORA® & VUE®	8" x 8" (197mm)	30	0.51	1.96	VUE®=70 DECORA®=38	0.65	50	.66-.68 ⁵	
THICKSET® 90 Block— ENDURA™	8" x 8" (197mm)	30	0.51	1.96	38	0.65	50	.66-.68 ⁵	
Glass Block with "LX" Fibrous Glass Inserts — Nominal Thickness = 4"; Actual Thickness = 3 7/8" (98mm)									
DECORA®	6" x 6" (146mm) †	20	0.48	2.06	44	0.45 ⁴		.56	
"LX" Filter	8" x 8" (197mm)	20	0.48	2.06	44	0.45 ⁴	40	.56	
	12" x 12" (299mm) †	20	0.48	2.06	44	0.45 ⁴		.56	
VISTABRIK® Solid Glass Block — See Nominal/Actual Sizes Listed									
VISTABRIK® Solid Glass Block	8" x 8" x 3" Nominal 7 7/8" x 7 7/8" x 3" Actual (194mm x 194mm x 76mm)	40	0.87	1.15	90		53 (NRC=0.05)	.75-.78 ⁵	
	6" x 8" x 3" Nominal 5 5/8" x 7 7/8" x 3" Actual (143mm x 194mm x 76mm)	40	0.87	1.15	90			.75-.78 ⁵	
	4" x 8" x 3" Nominal 3 5/8" x 7 7/8" x 3" Actual (92mm x 194mm x 76mm)	40	0.87	1.15	90			.75-.78 ⁵	
STIPPLE Finish	8" x 8" x 3" Nominal 7 7/8" x 7 7/8" x 3" Actual (194mm x 194mm x 76mm) †	40	0.87	1.15	83		53 (NRC=0.05)	.75-.78 ⁵	
Energy Efficient Glass Block — See Nominal/Actual Sizes Listed									
DECORA®, DELPHI®, Ice Scapes®, and VUE®	8" x 8" x 3 1/2" Nominal 7 3/4" x 7 3/4" x 3 1/2" Actual (197mm x 197mm x 89mm)	40	.45	2.22	63 33 50 76			.32	
Standard Premiere Series Block — Nominal Thickness = 4"; Actual Thickness = 3 7/8" (98mm)									
SIGNATURE LINE	ARGUS®	6" x 6" (146mm)	20	0.51	1.96	55	0.65	37	.66-.68 ⁵
		8" x 8" (197mm)	20	0.51	1.96	55	0.65	39	.66-.68 ⁵
		12" x 12" (299mm)	20	0.51	1.96	55	0.65	35	.66-.68 ⁵
	DECORA®	6" x 6" (146mm)	20	0.51	1.96	75	0.65	37	.66-.68 ⁵
		8" x 8" (197mm)	20	0.51	1.96	75	0.65	39	.66-.68 ⁵
		12" x 12" (299mm)	20	0.51	1.96	75	0.65	35	.66-.68 ⁵
		4" x 8" (95 x 197mm)	20	0.51	1.96	75	0.65		.66-.68 ⁵
		6" x 8" (146 x 197mm)	20	0.51	1.96	75	0.65		.66-.68 ⁵
	ESSEX® AA	8" x 8" (197mm)	20	0.51	1.96	45	0.45	39	.66-.68 ⁵
	FOCUS™	8" x 8" (197mm)	20	0.51	1.96	92	0.65	39	.66-.68 ⁵
	IceScapes®	8" x 8" (197mm)	20	0.51	1.96	67	0.65	39	.66-.68 ⁵
		12" x 12" (299mm)	20	0.51	1.96	67	0.65	35	.66-.68 ⁵
		4" x 8" (95 x 197mm)	20	0.51	1.96	67	0.65		.66-.68 ⁵
		6" x 8" (146 x 197mm)	20	0.51	1.96	67	0.65		.66-.68 ⁵
	Opal Plain	8" x 8" (197mm)	20			19			
	Opal Silk	8" x 8" (197mm)	20			17			
SeaScapes™	8" x 8" (197mm) †	20	0.51	1.96	64	0.65	39	.66-.68 ⁵	
VUE®	6" x 6" (146mm)	20	0.51	1.96	91	0.65	37	.66-.68 ⁵	
	8" x 8" (197mm)	20	0.51	1.96	91	0.65	39	.66-.68 ⁵	
	12" x 12" (299mm)	20	0.51	1.96	91	0.65	35	.66-.68 ⁵	
	4" x 8" (95 x 197mm)	20	0.51	1.96	91	0.65		.66-.68 ⁵	
	6" x 8" (146 x 197mm)	20	0.51	1.96	91	0.65		.66-.68 ⁵	
1/8" FLAT SHEET GLASS COMPARISON (3mm)				1.04	0.96	90	1.00	28	

1 Size: Block are manufactured to a ± 1/16" (2mm) tolerance.

2 Heat Transmission/Thermal Transmission: Winter night values. To calculate instantaneous

heat gain through glass panels, see ASHRAE HANDBOOK OF FUNDAMENTALS, 2005, Section 31.3.

3 Light Transmission: Based on test results.

4 Shading Coefficient: Estimated figures based on accumulated data.

5 SHGC: Default values as interpreted from International Energy Conservation Code.

† MTO – Made to Order items subject to minimum order quantities and lead times.

Installed Panel Weight

Refer to Table on page 8 for weight of panels installed with mortar. Glass block panels installed with the ProVantage® Glass Block Installation System are up to 25% lighter per square foot than panels installed with mortar. Local building codes should be consulted for any limits on panel sizes or installation details.

Non-load Bearing

Glass block panels are non-load bearing; adequate provisions must be made for support of construction above these

panels. Panels are mortared at the sill, with jamb and head details designed to accommodate for building movement and lintel deflection. The compressive strength (for information purposes only) of all hollow glass block is 400 to 600 psi.; THICKSET® Series Glass Block is 2500 psi.; and VISTABRIK® Series is 80,000 psi.

Thermal Expansion Coefficient

The thermal expansion coefficient of glass block is $47 \times 10^{-7} / (^\circ\text{F})$.

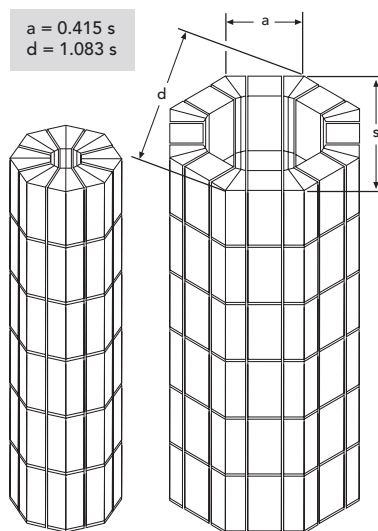
Detailed Drawings

Structural members illustrated on page 14 and other "detail" pages indicate general principles of construction. Member sizes should be determined by structural analysis to avoid excessive deflections. Maximum deflection for supports shall not exceed $L/600$.

FINISHING UNITS

PREMIERE SERIES

EndBlock™ Finishing Units		HEDRON® Corner Unit	TRIDRON 45° Block® Unit	ENCURVE® Finishing Unit	ARQUE® Block Unit
DECORA® & IceScapes® Patterns 8" High Premiere Series	DECORA® & IceScapes® Patterns 8" High Premiere Series	DECORA® & IceScapes® Patterns 8" High Premiere Series	DECORA® & IceScapes® Patterns 8" High Premiere Series	DECORA® & IceScapes® Patterns 8" Square Premiere Series	DECORA® & IceScapes® Patterns 8" High Premiere Series



Columns can be All-TRIDRON 45° Block® (left) or interspersed with 4" x 8" or 8" x 8" glass block.

NOTE: All mortar joints are 1/4".

Glass Block between TRIDRON 45° Block®

	a (in.)	s (in.)	d (in.)
None	4.75	11.45	12.40
1-4" x 8" x 4"	8.75	21.08	22.83
1-6" x 8" x 4"	10.75	25.90	28.05
1-8" x 8" x 4"	12.75	30.72	33.27
1-4" x 8" x 4" + 1-8" x 8" x 4"	16.75	40.36	43.71
2-8" x 8" x 4"	20.75	50.00	54.15
1-4" x 8" x 4" + 2-8" x 8" x 4"	24.75	59.64	64.59
3-8" x 8" x 4"	28.75	69.28	75.03

Maximum Panel Dimensions

	Premiere Series			Thinline® Series			VISTABRIK®		
	A (Sq.Ft.)	H (Ft.)	W (Ft.)	A (Sq.Ft.)	H (Ft.)	W (Ft.)	A (Sq.Ft.)	H (Ft.)	W (Ft.)
EXTERIOR*	144	20	25	100	10	15	100	10	10
INTERIOR	250	20	25	150	10	15	150	10	15

A = Area H = Height W = Width

* All exterior areas and dimensions are based on 20 psf design windload with 2.7 safety factor.

Mortar Mix and Estimating Tables

An optimum mortar mix for installing Pittsburgh Corning Glass Block is:

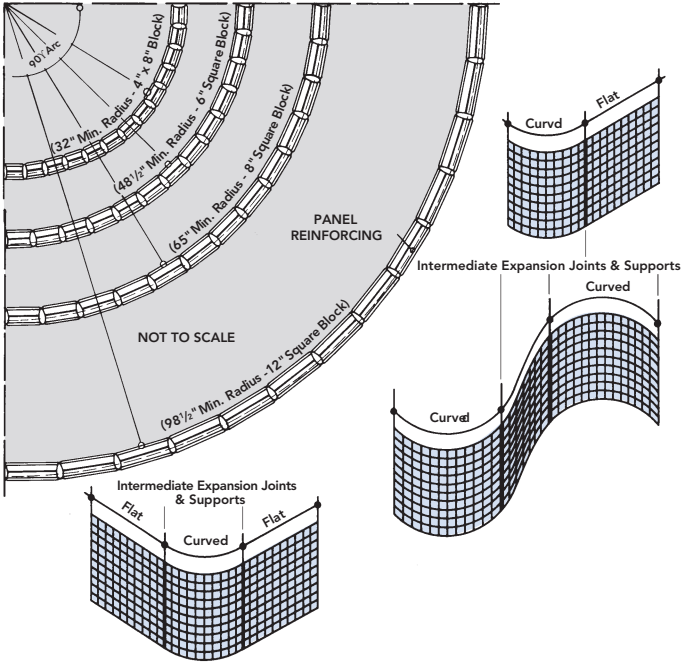
Portland Cement	Lime	Sand
1 Part	1/2 Part	3.4 Parts
1.0 cubic foot	0.5 cubic foot	3.4 cubic feet

Number of Block for 100 Sq. Ft. Panel

Block Sizes (Nominal)	6"	8"	12"	4" x 8"	6" x 8"
Number of Block	400	225	100	450	300

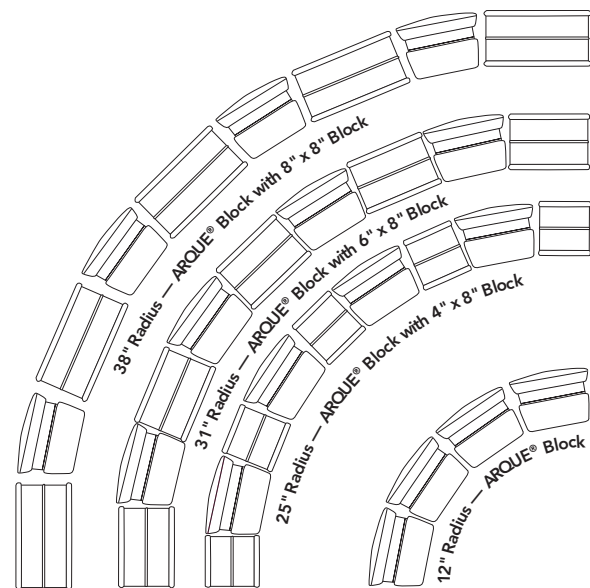
PHYSICAL & DESIGN DATA

INSIDE RADIUS MINIMUMS FOR CURVED PANEL CONSTRUCTION



RADIUS MINIMUMS FOR CURVED PANEL CONSTRUCTION				
Block Size	Inside Radius Inches	Number of Blocks in 90° Arc	Vertical Joint Thickness In Inches	
			Inside	Outside
4" x 8"	32	13	1/8	5/8
6" x 6"	48 1/2	13	1/8	5/8
8" x 8"	65	13	1/8	5/8
12" x 12"	98 1/2	13	1/8	5/8

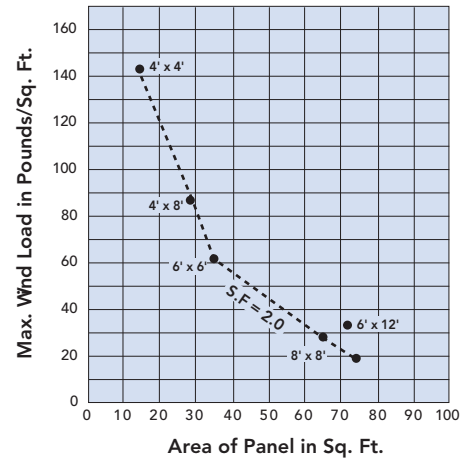
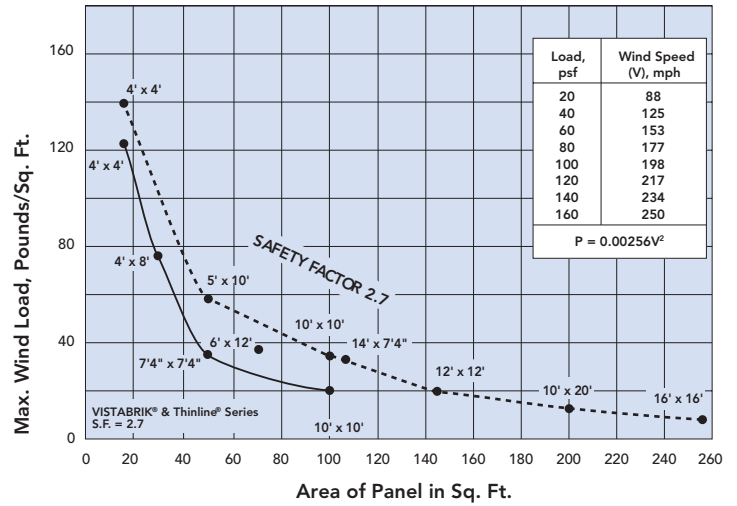
- NOTES:**
1. It is suggested that curved areas be separated from flat areas by intermediate expansion joints and supports, as indicated in these drawings.
 2. When straight, ladder-type reinforcing is used on curved walls, the innermost parallel wire may be cut periodically and/or bent to accommodate the curvature of the wall.



ARQUE® Block used along with other Pittsburgh Corning Block sizes, allows you to form consistent curves of various radii. Radii shown are to inside face of curve.

WIND LOAD RESISTANCE – MORTAR SYSTEM

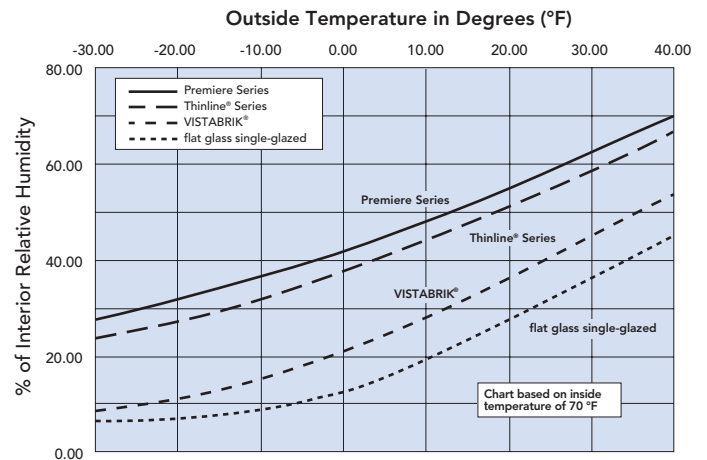
(Based on Standard Nominal 4" Thick Premiere Series Glass Block. Installed with mortar. Based on 2.7 Safety Factor)



WIND LOAD RESISTANCE – PROVANTAGE® SYSTEM

(Based on Standard Nominal 4" Thick Premiere Series Glass Block Installed with ProVantage® Silicone System). Based on 2.0 Safety Factor.

RESISTANCE TO SURFACE CONDENSATION



Example: At a relative humidity of 40%, an outside temperature of approximately -3 °F will cause condensation on Premiere Series Glass Block or approximately 3 °F above zero on Thinline® Series block. Under the same conditions, condensation will form on a single-glazed flat glass window at 34 °F above zero.

FIRE RATINGS & CODE INFORMATION

All sizes (exceptions listed below) of Premiere Series and Thinline® Series glass blocks have at least a 45 minute fire rating when used as a window assembly within a one hour fire-rated wall assembly. All THICKSET® 90 (thick-faced) and solid glass blocks have fire ratings of up to 90 minutes, and the THICKSET® 60 and ESSEX® AA Pattern glass blocks have fire ratings of up to 60 minutes, when used as window assemblies and where permitted by code.

Pittsburgh Corning Glass Block units that are not fire-rated:

- All 12" x 12" sizes
- All DELPHI®, pattern block
- All HEDRON® Corner block, TRIDRON 45° Block® units, EndBlock®, ENCURVE® and ARQUE® finishing units
- All paver units
- VISTABRIK® Corner Block

PANEL SIZES AND DIMENSION LIMITATIONS

Pittsburgh Corning Glass Block listed above have been tested and classified by Underwriters Laboratories® (UL®) for use as fire-rated window assemblies to panel sizes and dimension limitations listed below:

- With the exception of all 12" x 12" sizes, finishing blocks, corner blocks and the DELPHI® pattern block, all Premiere Series and Thinline® Series glass blocks in panels up to 120 square feet in masonry walls or 94 square feet in non-masonry walls are classified by Underwriters Laboratories, for use as 45-minute rated window assemblies.
- These panels are usually acceptable as window assemblies for use in fire separation walls that are rated one hour or less.
- THICKSET® 60 Block are listed for use as 45- or 60-minute fire rated window assemblies in panels up to 100 square feet.

- THICKSET® 90 Block and VISTABRIK® Solid Glass Block are all listed for use as 45-, 60- or 90-minute fire rated window assemblies in panels up to 100 square feet.
- Where permitted by building codes, glass block fire-rated window assemblies having a fire resistance rating of not less than 45 minutes may be used as "opening protectives". These assemblies shall not exceed 25% of the wall areas separating a tenancy from a corridor or a corridor from an enclosed vertical opening or one fire-rated area from another fire-rated area.
- **Exception:** Although glass block masonry systems have been tested as window assemblies (not wall assemblies), they may be used as one hour fire partitions as required for corridors in the enclosure of atriums only when sprinkler protection is provided on occupied sides.

45- AND 60-MINUTE RATED CONSTRUCTION

- All 45- and 60-minute rated Pittsburgh Corning Glass Block may be used in both masonry and non-masonry (steel or wood stud framing with gypsum board) walls.
- These rated glass block windows may be framed and anchored with either PC® Panel Anchor construction or channel-type restraints.
- The use of a fire retardant type sealant for head and jamb locations is required.
- Specifications and construction details for such panels are as per Pittsburgh Corning Corporation recommendations.
- Non-masonry, fire-rated steel stud with gypsum board wall assemblies must conform to UL® listed wall assembly #U465.

- Framing and support of the rated glass block window assembly shall be provided with double-studding at the jamb locations with height of supporting wall limited to no more than 3 feet.

90-MINUTE RATED CONSTRUCTION

- Where permitted by building codes, all 90-minute rated Pittsburgh Corning Glass Block may be used in masonry walls only.
- 90-minute rated glass block window assemblies must be framed and anchored with 1/4" thick steel (not aluminum) channel-type restraints or masonry chases. The use of panel anchor construction is not permitted.
- The use of a fire retardant type sealant for head and jamb locations is required.
- Specifications and construction details of such panels are as per Pittsburgh Corning Corporation recommendations.
- Twice the typical thickness (3/4" total) of expansion material is required at head and jamb locations.

45-MINUTE RATED CURVED CONSTRUCTION

- The glass blocks noted under 90-minute rating and those 8" x 8" x 4" sized glass block noted under 45-minute rating are classified for use in masonry walls as curved window assemblies, provided that the radius of the assembly is at least twice the opening width (i.e. chord length).

CODE COMPLIANCE

All of our fire-rated glass block products are listed in the Underwriters Laboratories current issue of the Fire Resistance Directory – Volume 3. A listing of our products can also be viewed on the Underwriters Laboratories Website at www.ul.com.

- U.L. Classification: R2556 (For Glass Block)
- U.L. Classification: R18572 (For Plastic Spacers)
- In accordance with NFPA 80, Chapter 14

CITY CODE APPROVALS

- New York City Materials and Equipment Acceptance MEA 406- 90-M. Vol.IV
- Los Angeles Research Report RR-24486
- Dade County Acceptance 07-0626.10
04-0301.01
04-0824.01
05-1107.02
08-0731.08
- State of Florida Approvals
FL 1363
FL 1366
FL 5357
FL 8039
FL 11669
- Texas Department of Insurance WIN #s 62, 63, 64, and 540

BUILDING CODE AND NATIONAL STANDARDS REFERENCES:

- International Building Code (IBC)
- International Residential Code (IRC)
- Canadian Standards Association (CSA) A371-94 "Masonry Construction for Buildings"
- Canadian Standards Association (CSA) S304.1-94 "Masonry Design for Buildings"
- TMS 402/ACI 530/ASCE 5 "Building Code Requirements and Specification for Masonry Structures"

Fire Ratings — Glass Block Assemblies

Premiere Series Glass Blocks, THICKSET® 60 Blocks, THICKSET® 90 Blocks and 3" thick VISTABRIK® Solid Glass Block units have been tested and classified by Underwriters Laboratories (UL®) for use in fire-rated window assemblies to panel sizes and dimension limitations as listed.

Product	Masonry Wall Construction					Non-Masonry Wall Construction			
	Panel Limitations		Fire Rating			Panel Limitations		Fire Rating	
	Max. Area/Panel	Max Ht. or Width	45 Min.	60 Min.	90 Min.	Max. Area/Panel	Max Ht. or Width	45 Min.	60 Min.
Thinline® Series**	120	12	X			94	10.75	X	
Premiere Series**	120	12	X			94	10.75	X	
THICKSET® 60 and ESSEX® AA Pattern**	100	10	X	X		94	10.75	X	X
THICKSET® 90	100	10	X	X	X*	94	10.75	X	X
VISTABRIK®	100	10	X	X	X*	94	10.75	X	X

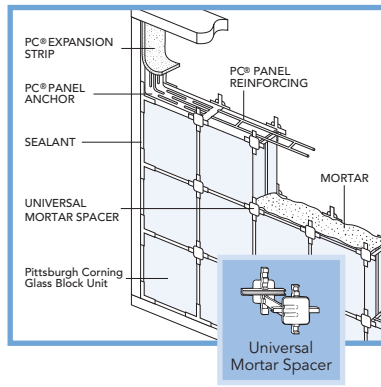
* 1/4" steel channel. 3/4" thick expansion material at head and jambs, and fire retardant sealant are required.

** Includes "LX" option.

ACCESSORIES

PANEL CONSTRUCTION USING UNIVERSAL MORTAR SPACERS

The all plastic Universal Mortar Spacer speeds construction, assures uniform placement and helps keep panel flush. Can now be used in fire-rated panels. Special spacers are available for the VISTABRIK® and ARQUE® Block.



PC® PANEL REINFORCING, PANEL ANCHORS & EXPANSION STRIPS

PC® Panel Reinforcing (top) — in panels — is embedded horizontally in the mortar joints between every other course.

PC® Panel Anchors (middle) are used to tie Pittsburgh Corning Glass Block panels into the surrounding framework when channels are not used. PC® Expansion Strips (bottom), made of white polyethylene, are inserted at the head and jams. The strips replace mortar at these locations to cushion the glass block and allow the panel to expand and contract freely.

OTHER ACCESSORIES

Additional materials — such as mortar, channels or framing, packing, sealants and asphalt emulsion are available from other manufacturers.

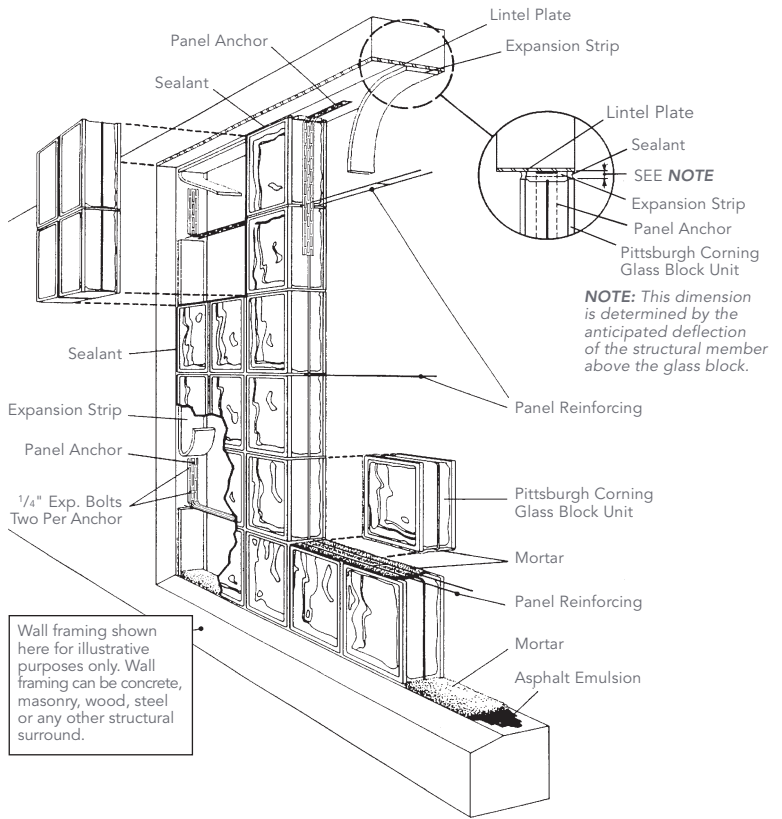
PROVANTAGE® INSTALLATION SYSTEM

Unlike previous systems using sealant and spacers, the new ProVantage® Installation System for use with Premiere Series glass blocks, can turn corners, make radius walls, build showers and is suitable for interior or exterior applications. The system utilizes spacers to align and hold the blocks in place for easy assembly. Sealant is used to bond the spacer and blocks together. The consistent, even-spaced joints are then finished with a special tile grout resulting in a clean, smooth professional look. For smaller straight wall panels, with 3-side support, sealant can be used in the joints to provide an all-glass look.



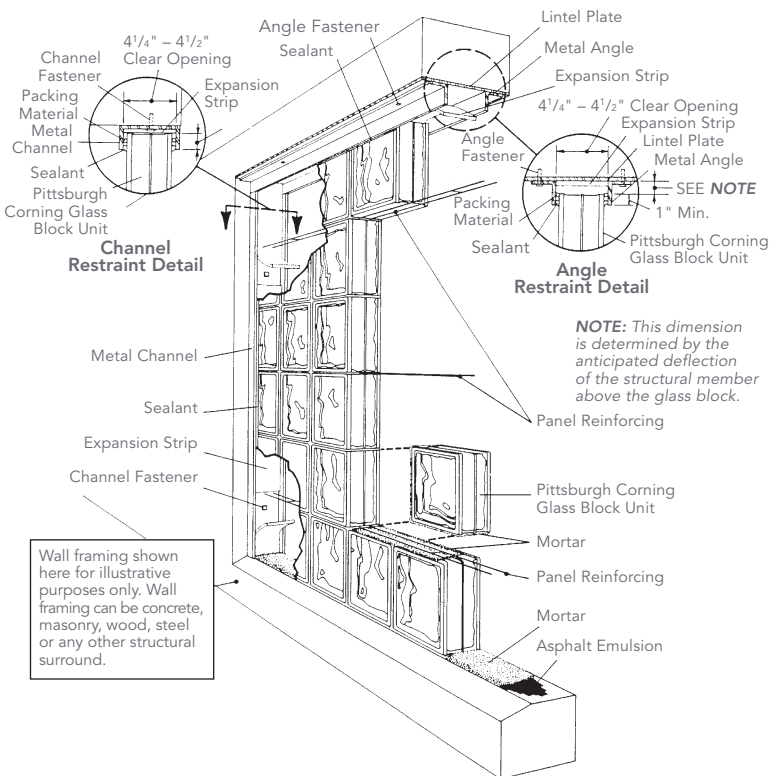
TYPICAL CONSTRUCTION DETAILS

PANEL ANCHOR CONSTRUCTION



NOTE: This dimension is determined by the anticipated deflection of the structural member above the glass block.

CHANNEL-TYPE RESTRAINT CONSTRUCTION



NOTE: This dimension is determined by the anticipated deflection of the structural member above the glass block.



> YKK AP
Anodized
Plus[®]

The anodized finish with proven advantages.



Entrances | Storefronts | Curtain Walls | Sun Controls | Windows | Balcony Doors

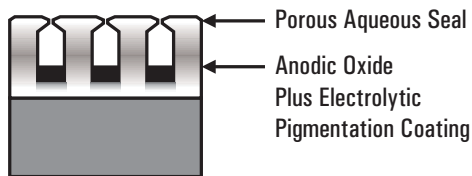


Quality
inspires[®]

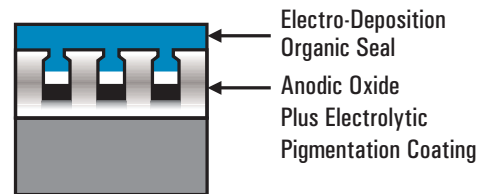
An Introduction to Anodized Plus®

Conventional Anodized Vs. YKK AP Anodized Plus®

AAMA 611 – Conventional Anodized Finish



AAMA 612 – YKK AP Anodized Plus® Finish



The synergistic effects of this new aluminum finish result in important advantages:

- *Increased resistance to chemical corrosion.*
- *Superior color and gloss retention.*
- *Enhanced protection of aluminum substrate.*

What is Anodized Plus? It is more innovation from YKK AP. Anodized Plus provides a unique protective seal on anodic finishes. Its anodic coating combined with an organic seal offers the dual benefits of enhanced durability and resistance to staining and degradation.

Conventional anodic coatings rely on hot water or steam sealing to close the porous anodic layer; however, it is not possible to close every pore using this process. YKK AP Anodized Plus replaces the conventional sealing process with a unique non-aqueous, electrodeposited organic seal that provides complete protection for the anodic oxide and the pigmentation coating.

YKK AP controls every step in the manufacturing process under one roof. To ensure the quality and the integrity of the aluminum alloy we cast our own aluminum logs for extrusion. Our method of electrolytic coloring by vertical immersion provides unmatched color consistency and eliminates the need for color range samples. The colors available are white, black, clear, champagne, medium and dark bronze.

YKK AP Anodized Plus meets all of the requirements for the newest standard for anodized finishes, AAMA 612. To ensure that the anodized finish on your next project meets your aesthetic requirements and stands up to chemicals commonly found on construction sites and harsh environments specify AAMA 612 — specify YKK AP Anodized Plus.



All YKK AP products are created in facilities that are models of energy efficiency and environmental responsibility. YKK AP's U.S. manufacturing plant in Dublin, Georgia, is ISO 14001 certified and has a 73% recycling rate. The plant:

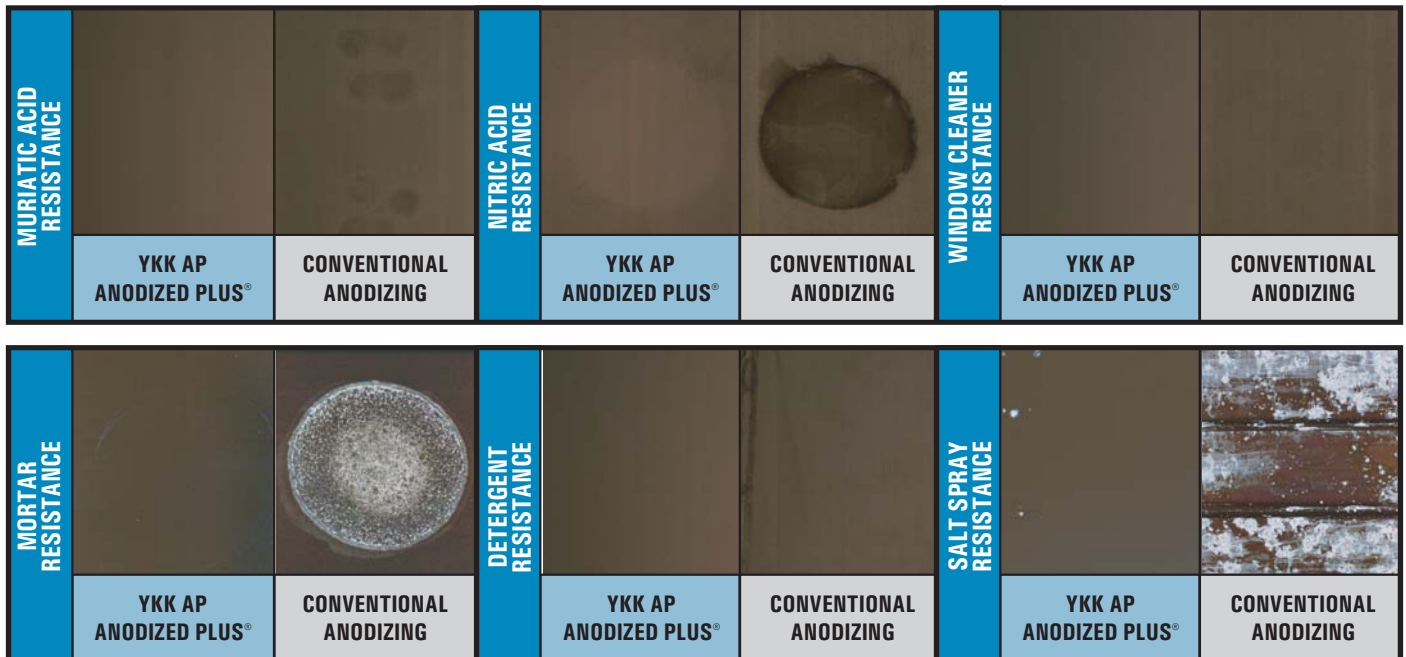
- Recycles 100% of aluminum waste on-site
- Has reduced the amount of other waste materials sent to the landfill by 40%
- Uses regenerative burners to save 50% on the melting/casting operation's fuel consumption
- Captures and burns 93% of all solvent emissions from the paint line
- Uses state-of-the-art techniques for waste water treatment

COMPARISON OF ANODIZED FINISH STANDARDS

TEST		PERFORMANCE		
		AAMA 612	AAMA 611	
			CLASS I	CLASS II
FINISH	Coating Thickness	0.7 mils (18 microns)	0.7 mils (18 microns)	0.4 mils (10 microns)
	Color Uniformity	Samples Shall Not Differ More Than 5 Delta E	Samples Shall Not Differ More Than 5 Delta E	
STRENGTH	Hardness	Minimum 3H Hardness	Michael Clark Abrasion Test	
	Muriatic Acid Resistance	No Blistering & No Visual Change in Appearance	No Test Specified	
	Mortar Resistance	No Blistering & No Visual Change in Appearance	No Test Specified	
	Nitric Acid Resistance	Maximum Change in Color of 5 Delta E	No Test Specified	
	Detergent Resistance	No Blistering & No Visual Change in Appearance	No Test Specified	
	Window Cleaner Resistance	No Blistering & No Visual Change in Appearance	No Test Specified	
DURABILITY	Craze Resistance	No Cracking Below a Metal Temperature of 82° C (180° F)	No Cracking Below a Metal Temperature of 82° C (180° F)	
	Humidity Resistance	Only a Few Small Blisters As Defined by ASTM D 714	No Test Specified	
	Salt Spray Resistance	Samples Exposed for 4,000 hrs ASTM D 1564	3,000 hrs ASTM B 117	1,000 hrs ASTM B 117
	Weathering	5-Year South Florida Exposure	5-Year South Florida Exposure	
	Gloss Retention	Shall Be a Minimum of 50% After 5 Years South Florida	No Test Specified	
	Erosion	Less Than 10% Film Thickness Lost After 5 Years South Florida	No Test Specified	
	Seal Test	Quality of Seal Determined Through Performance Tests Shown Above	Maximum Weight Loss of 40mg/cm ²	

An anodized finish that is tough enough to resist damage from construction site chemicals, harsh environments and now *Father Time*. YKK AP's **Anodized Plus®** material shipped from the Dublin Manufacturing Facility after August 1, 2005, will meet or exceed all of the requirements for AAMA 612 — the latest standard for anodized finishes.

Specify AAMA 612 — Specify YKK AP Anodized Plus®, Now With 10 Year Finish Warranty*



Anodizing is one of the most beautiful, unique and economical ways to finish architectural aluminum. The anodizing process enhances the intrinsic luster of aluminum and simply can not be duplicated with paint. Architects and designers desire the appearance of anodized finishes, but are concerned with the vulnerability of the finish to staining and degradation. In an attempt to improve the durability of anodized finishes manufacturers have increased the thickness of the oxide coating. But, this simply masks the problem and does not address the real issue. The inherent weakness of the conventional anodizing process is the inadequate seal of the anodic pores not the thickness of the oxide coating. Even the smallest openings in the seal leaves the anodized finish vulnerable to attack. In 1965 Honny Chemical developed a new sealing process that seals 100% of the pores 100% of the time; this is the sealing process used for YKK AP Anodized Plus®.

*YW3N finish is warranted for 5 years.

YKK AP America Inc.



YKK AP maintains a state-of-the-art ISO 14001 certified manufacturing facility in Dublin, Georgia.

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Fax: 713 939-0811

Orlando

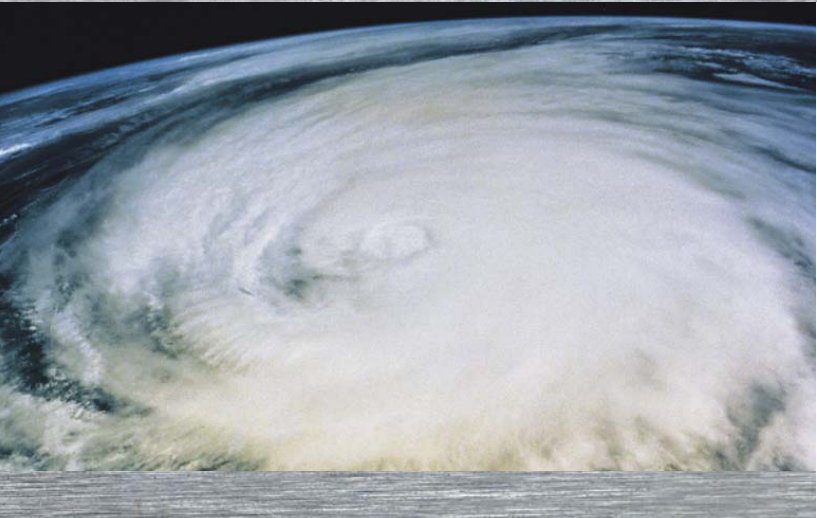
7608 Currency Drive
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> Quality
Protects

Glazing Systems for Hurricane Protection



Entrances | Storefronts | Curtain Walls | Sun Controls | Windows | Balcony Doors

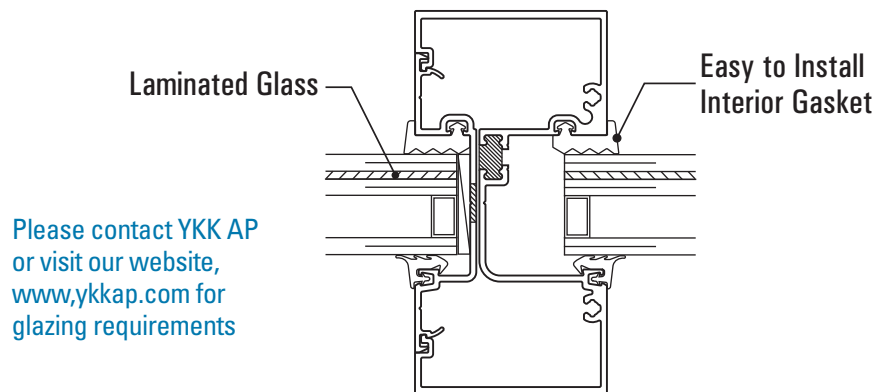


YKK AP's ProTek® Dry Glazing Option

A Glazing Option for Large Missile Applications

YKK AP is constantly developing new and innovative solutions to meet the requirements of their markets. To help lower the “installed costs” for large missile applications, our product development engineers looked for ways to eliminate the interior structural silicone seal that has been historically required. Testing of the YKK AP ProTek systems with an interior gasket and new laminated glass products clearly demonstrated their ability to meet the testing criteria of the International Building Code, and the “High Velocity Hurricane Zone” of the Florida Building Code.

YKK AP is pleased to introduce “Dry Glazed” versions of our popular YKK AP ProTek entrance and storefront systems. The design of the YKK AP ProTek systems make it possible to protect building envelopes from flying debris and the strong cyclical winds associated with hurricanes — without an interior structural silicone seal. A simple to install interior glazing gasket replaces the structural silicone to lower material cost, reduce glazing labor, and provide a tested and reliable solution that you can count on. Dry Glazed versions of the Model 35H entrance door and all three of our storefront systems have received Florida Product Approval for large missile applications.



YKK AP ProTek® Hurricane System Dry Glazing Benefits

- **Lower Labor Costs**
A simple push in gasket replaces the task of taping off the glass and frame, then applying and tooling the silicone.
- **Enhanced Reliability**
Dry Glazing does not rely on the proper application of the structural silicone.
- **Simple to Re-Glaze**
Replacing the glass in a dry glazed system is much less expensive as it is not necessary to cut out and clean off the old sealant prior to re-glazing.
- **Lower Material Costs**
Very little gasket is wasted while a significant portion of sealant is scraped (tooled) off and thrown away.
- **Improved Aesthetics**
A gasket provides a smooth and even seal against the glass and will not collect dust and dirt.
- **Single Source**
All gaskets are ordered and will ship together with the stock length material.

Our Dedication

YKK AP America Inc., the true industry leader in hurricane impact resistant glazing systems, is proud to offer a complete line of glazing systems that meet both Miami-Dade County (NOA) and Florida product approval. All of YKK AP's ProTek® systems are engineered and tested in accordance with ASTM E 1886 and ASTM E 1996 as well as the Florida Building Code "High Velocity Hurricane Zone" test requirements: TAS 201, TAS 202, and TAS 203. YKK AP's ProTek systems are designed to protect your building from flying debris, both large and small missile, and the fierce cyclical winds associated with hurricanes. We provide storefront systems for monolithic and insulating glazing applications. Our Model 35H hurricane impact resistant door is available with a wide variety of hardware options and has been tested and approved in sizes up to 8'-0" x 8'-0". Complete curtain wall and storefront systems are available for both monolithic and insulating glazing and may be glazed from either the exterior or interior of the building. YKK AP offers non-thermal and thermally broken operable and fixed

window systems as well as sliding glass doors in many configurations to meet your project requirements. Contact your local sales representative for additional information on the family of hurricane impact resistant systems and their available glazing options from YKK AP America Inc.

Hurricane Protection

The massive destruction of property and buildings from hurricanes has tragically emphasized the importance of hurricane-resistant building methods and codes. Experience has shown that structures built to certain minimum wind-borne debris and impact standards can successfully withstand a strong hurricane, while structures not built to certain minimum requirements are often severely damaged. Combined with other structural safety measures, the use of impact resistant glazing systems is critical to a building remaining intact during a hurricane. There were numerous examples of YKK AP's ProTek® hurricane-resistant glazing systems performing well following hurricanes Charley of 2004, and Katrina, Rita, and Wilma of 2005.

Saffir-Simpson Hurricane Scale

Category	Wind Speed	Result
1	74-95 mph	Some damage to building structures. Damage primarily to unanchored mobile homes, shrubbery and trees. Also, some coastal road flooding and minor pier damage.
2	96-110 mph	Some roofing material, door and window damage to buildings. Considerable damage to vegetation, mobile homes and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of center.
3	111-130 mph	Some structural damage to small residences and buildings with a minor amount of wall failures. Mobile homes are destroyed.
4	131-155 mph	Some wall failures with some complete roof structure failures on small residence. Major erosion of beach. Major damage to lower floors of structures near the shore.
5	155 > mph	Some complete building failures with small buildings blown over or away are likely. Nearly all windows in high rise buildings will be dislodged and become airborne.

Storefront & Entrance Systems

The YKK AP Protek® non-shuttered systems comply with impact and cycle requirements for **Large and Small Missile Impact** and meet or exceed the air, water, and structural requirements.



YHS 50 Framing System

- Design pressure: Up to +70/-90 psf
- Glazing: 9/16" monolithic

YHS 50 FI Framing System

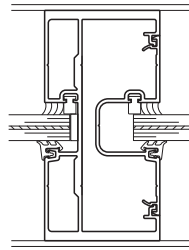
- Design pressure: Up to ±70 psf
- Glazing: 1-5/16" insulating

YHS 50 TU Framing System

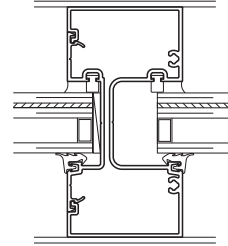
- Thermally broken using YKK AP ThermaBond Plus® technology
- Design pressure: Up to ±70 psf
- Spans: Up to 9'-0" tall
- Glazing: 1-5/16" insulating

Model 35H Entrance Doors

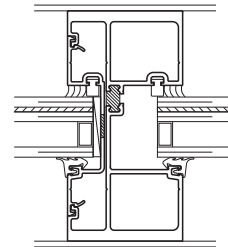
- Singles: 4'-0" x 8'-0"
- Pairs: 8'-0" x 8'-0"
- Transom frames: Up to 10'-0"
- Maximum security locking system (five point for pairs and three point for single doors) or optional exit devices



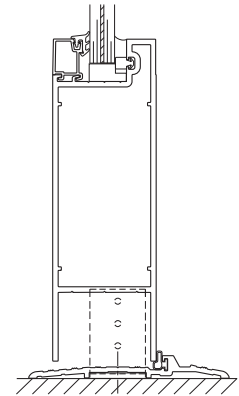
YHS 50



YHS 50 FI



YHS 50 TU



Model 35H Entrance Door
(Air Only Threshold)

Curtain Wall Systems

YKK AP offers three complete YKK AP Protek® curtain wall systems for non-shuttered applications. All three systems have been thoroughly tested and approved for **Large and Small Missile Impact** resistance, as well as **Large Missile Level E** for essential facilities.

YHC 300 OG

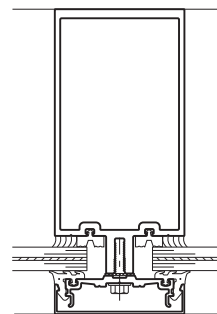
- Outside Glazed
- Single and multiple spans design pressure: Up to ±130 psf
- Linear spacing of verticals: Up to 5'-0" centerline to centerline
- Glazing: 9/16" monolithic and 1-5/16" insulating

YHC 300 SSG

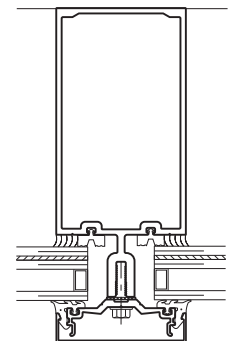
- Structural Silicone Glazed at Intermediate Verticals
- Single and multiple spans design pressure: Up to ±90 psf
- Linear spacing of verticals: Up to 4'-0" centerline to centerline
- Glazing: 9/16" monolithic and 1-5/16" insulating

YHC 300 IG

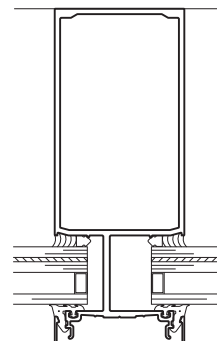
- Inside Glazed
- Single and multiple span design pressure: Up to ±120 psf for in
- Linear spacing of verticals: Up to 5'-0" centerline to centerline
- Glazing: 9/16" monolithic and 1-5/16" insulating



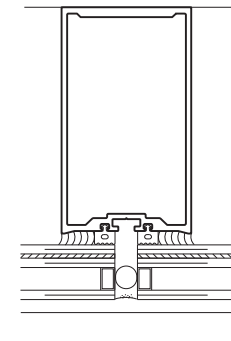
YHC 300 OG
MONOLITHIC GLAZING



YHC 300 OG
INSULATING GLAZING



YHC 300 IG
INSULATING GLAZING
(MONOLITHIC SYSTEM SIMILAR)



YHC 300 SSG
INSULATING GLAZING
(MONOLITHIC SYSTEM SIMILAR)

Please contact YKK AP for additional product information.

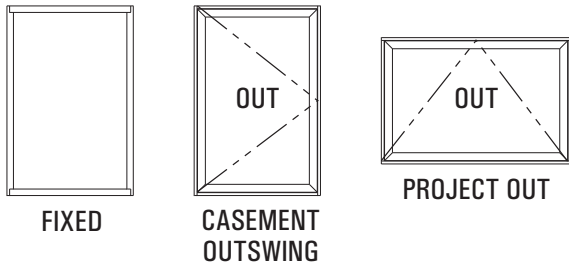
Window Systems & Sliding Doors

YKK AP offers three operable windows, one fixed window, and two sliding doors for non-shuttered applications. Each product has been thoroughly tested for both **Large and Small Missile Impact resistance**.

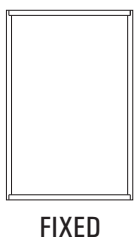
- 🌀 **YFW 400 TUH Thermally Broken Fixed Window**
 - Large and Small Missile: Up to +90/- 120 psf
 - Glazing: 1" insulating
- 🌀 **YOW 225 H Non-Thermal Operable & Fixed Windows**
 - Large and Small Missile: Up to ±65 psf for operable, up to +70/- 90 psf for fixed
 - Glazing: 9/16" monolithic
- 🌀 **YOW 225 TUH Thermally Broken Operable & Fixed Windows**
 - Large and Small Missile: Up to ±65 psf
 - Glazing: 1-3/16" insulating
- 🌀 **YVS 410 TUH Thermally Broken Single Hung Windows**
 - Large and Small Missile: Up to +80/- 120 psf
 - Glazing: 1-1/16" insulating
- 🌀 **YSD 600 TH Thermally Broken Architectural Sliding Doors**
 - Large and Small Missile: 4'-0" x 8'-0" panels, up to ±120 psf
 - Glazing: 1-3/16" insulating
- 🌀 **YSD 700 H Non-Thermal Heavy Commercial Sliding Doors**
 - Large and Small Missile: 5'-0" x 8'-0" panels, up to +100/- 120 psf
 - Glazing: 9/16" monolithic
 - Large and Small Missile: 5'-0" x 8'-0" panels, up to +100/- 120 psf
 - Glazing: 1-3/16" insulating



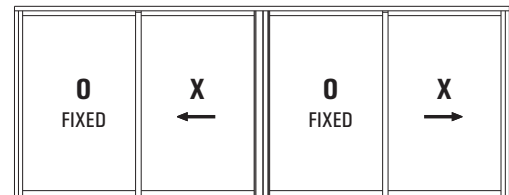
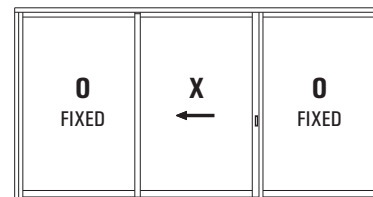
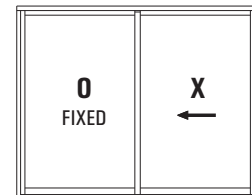
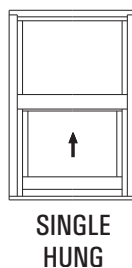
YOW 225 H / YOW 225 TUH



YFW 400 TUH



YVS 410 TUH



YSD 600 TH / YSD 700 H

YKK AP ProTek® Product Selection Guide

Systems		Frame Width	Frame Depth or Max Size	Water Infiltration (PSF)	Test Pressure (PSF)	Miami-Dade Product Approval	General Florida Approval	Florida Approval Dry Glazed
Entrances & Storefronts	Model 35H	3-1/2"	Maximum Door Size Single: 4'-0" x 8'-0" Pair: 8'-0" x 8'-0"	12	+70/-90	Yes	Yes	Yes
	YHS 50	2-1/2"	5"	12	+70/-90	Yes	Yes	Yes
	YHS 50 FI	2-1/2"	5"	12	±70	Yes	Yes	Yes
	YHS 50 TU	2-1/2"	5"	12	±70	Yes	Yes	Yes
Curtain Walls	YHC 300 OG	3"	7-1/16" & 7-3/4"	20	±130	Yes	Yes	Yes
	YHC 300 SSG	3"	7-1/16" & 7-3/4"	20	±90	Yes	Yes	Yes (Small Missile)
	YHC 300 IG	3"	7-1/16" & 7-13/16"	20	±90 Monolithic ±120 Insulating	Yes	Yes	Yes (Small Missile)
Windows	YOW 225 H	2-1/2"	Max. Size – Outswing Project: 5'-0" x 3'-0" Casement: 3'-0" x 5'-0" Fixed: 4'-0" x 7'-0"	12 Operable 15 Fixed	±65 Operable +80/-100 Fixed	Yes	Yes	No
	YOW 225 TUH	2-1/2"	Max. Size – Outswing Project: 5'-0" x 3'-0" Casement: 3'-0" x 5'-0" Fixed: 4'-0" x 7'-0"	12 Operable 15 Fixed	±65 Operable +80/-100 Fixed	Yes	Yes	No
	YFW 400 TUH	4"	Maximum Size Fixed: 4'-4" x 8'-0"	15	+90/-120 Fixed	No	Yes	No
	YVS 410 TUH	4"	Maximum Size Single Hung: 5'-0" x 3'-0" Double Hung: 3'-0" x 5'-0"	13	+80/-120 Operable +80/-120 Fixed	Yes	Yes	No
Sliding Doors	YSD 600 TH	6"	Maximum Size Panels to 4'-0" x 8'-0"	18	+100/-120	Yes	Yes	No
	YSD 700 H	7"	Maximum Size Panels to 5'-0" x 8'-0" Monolithic 8'-0" x 10'-0" Insulating	15 Monolithic 20 Insulating	+100/-120 Monolithic ±120 Insulating	Yes	Yes	No

All products listed meet the maximum allowable air infiltration levels when tested in accordance with ASTM E 283, TAS 202, or AAMA 101.
* When tested in accordance with ASTM E 330, and TAS 202.

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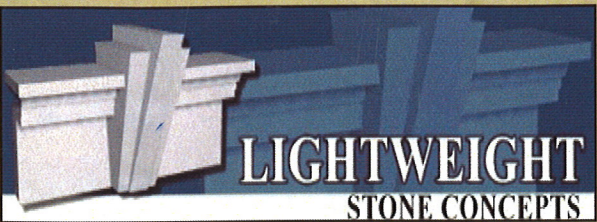
Austell, GA 30168

1-800-955-9551

www.ykkapprotects.com



Quality
inspires®



StoneCoat™

Cast Profiles



StoneCoat™
Panel Systems

GFRC

Cast Stone

FRP

GRG

Quarry Plaster
VersaPlaster



StoneCoat Cast Profiles are manufactured lightweight cast stone shapes. The StoneCoat cladding is cast a minimum 3/8" thick over an EPS core. This unique combination of construction technologies offers many advantages.

Less Is More

\$ StoneCoat Cast Profiles weigh roughly 10% of traditional cast stone and require less structure in the wall cavity. Typically L/360 is sufficient.

\$ StoneCoat Cast Profiles eliminate costly heavy gauge metal attachments and additional structure that is often required with traditional cast stone.

Faster To The Finish

\$ StoneCoat Cast Profiles avoid hard-mold production delays as EPS molds are created daily with wire cutting machines at LSC plants.

\$ StoneCoat Cast Profiles install in less time, with less equipment, and with less interference to the scheduling of other products on the project.

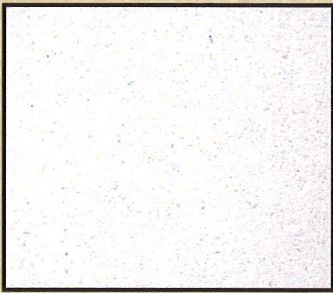
Beauty That Lasts

\$ StoneCoat Cast Profiles offer traditional cast stone finishes as well as polished and burnished finishes not available with other cast products.

\$ StoneCoat Cast Profiles are considered to be 75 year products (.1% degradation in the 300 cycle freeze-thaw test). Durability is exceptional at over 7300 PSI.



Standard Textures



Sand Finish



Acid Wash

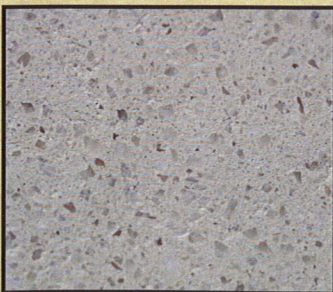


Light Sandblast

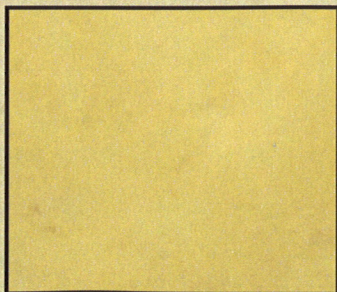


Medium Sandblast

Premium Textures



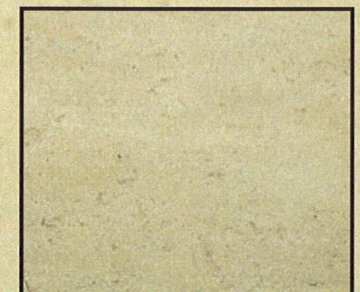
Exposed



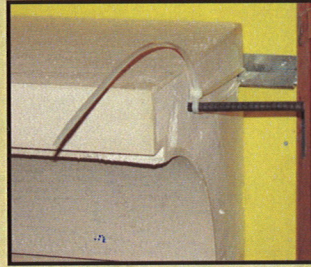
Polished



Burnished

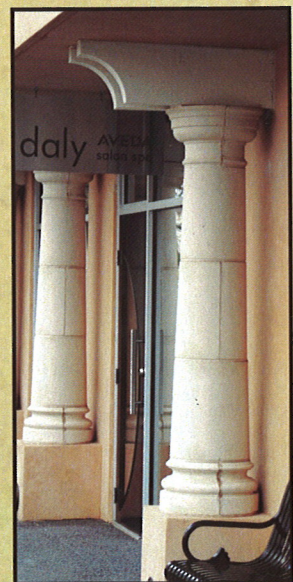
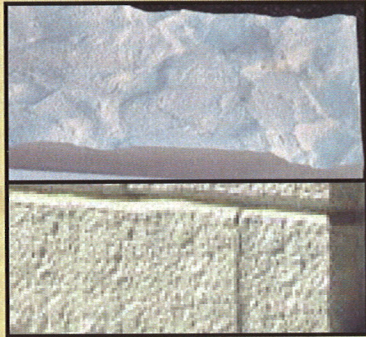
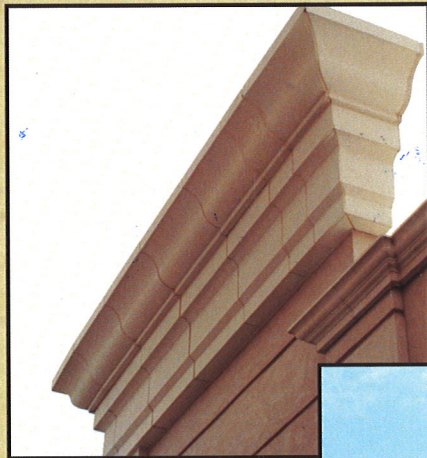


Aged



Tested

LSC StoneCoat Cast Profiles attachment methodologies have been tested both in the laboratory and in the field. Both mechanical and adhesive attachment methods well exceed hurricane wind-load requirements. Contact a LSC sales professional to discuss specific applications on your next project.



Lightweight Stone Concepts

4212 NE Expressway
Atlanta, GA 30340
770-722-8079

WWW.L-WSC.COM

Lightweight Stone Concepts

[PRODUCTS](#)[GALLERY](#)[ABOUT US](#)[CONTACT](#)

Products

StoneCoat Cast Profiles

StoneCoat is a highly engineered and tested concrete coating that is cast 1/2" thick over an EPS core to create a revolutionary lightweight cast stone product. StoneCoat Cast Profiles offer the aesthetic of limestone, cast stone, or GFRC at a significant cost savings. Because StoneCoat cast profiles are 10-15% the weight of cast stone, savings can be realized in reducing steel required in the wall cavity, connection details, and additional framing that is required by traditional cast stone and GFRC.



[Click here](#) to learn more about **StoneCoat Cast Profiles**.

StoneCoat Panel Systems

StoneCoat Panel Systems are composed of metal studs, sheathing, airweather barrier, wire lath and a 5/8" thick StoneCoat SPS coating. At 15% the weight of a 6" thick pre-cast panel, StoneCoat Panel Systems are a great alternative to traditional Pre-cast panels as large savings can be realized in the reduction of structural steel on the building. StoneCoat Panel Systems provide the durability and aesthetic of Pre-cast panels at a fraction of the overall construction cost.



[Click here](#) to learn more about **Panel Systems**.

Plaster Products

Lightweight Stone Concepts offers a variety of plaster products that can be hand applied to create a myriad of different finishes applied over most building claddings.

Quarry Plaster is designed to create a field applied quarried stone aesthetic in an endless array of colors and textures.

VersaPlaster is designed to create traditional plaster finishes from all areas of the globe.





Stucco Supreme is specifically formulated for use over AAC.

[Click here](#) to learn more about **Plaster Products**.

Architectural Pre-cast

Lightweight Stone Concepts offers traditional wet cast Architectural Pre-cast made to PCI standards by APA certified fabricators. We specialize in medium size pre-cast panels, fountains and security products. Our Pre-cast manufacturers also fabricate GFRC and StoneCoat allowing consistent color and texture between the 3 products.

We also have a full catalog of planters and fire places.

[Click here](#) to learn more about **Architectural Pre-cast**.



GFRC

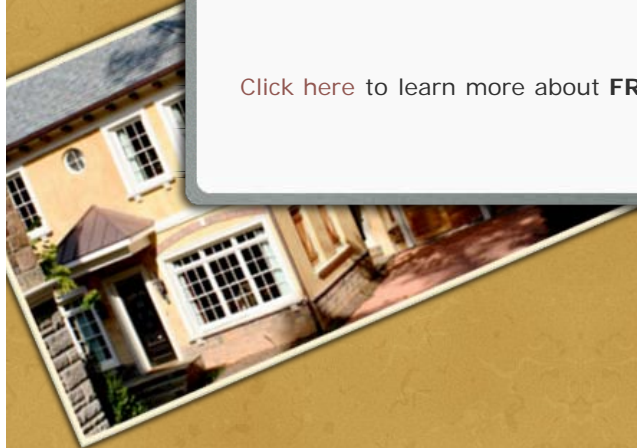
Glass Fibered Reinforced Concrete has an excellent track record in the construction industry providing a light weight and durable alternative to lime stone and cast stone. Lightweight Stone concepts is proud to offer a full range of GFRC products including integral engineered framed systems. GFRC is an excellent product for columns, cornices and panels where weight and durability is a concern.

[Click here](#) to learn more about **GFRC**.

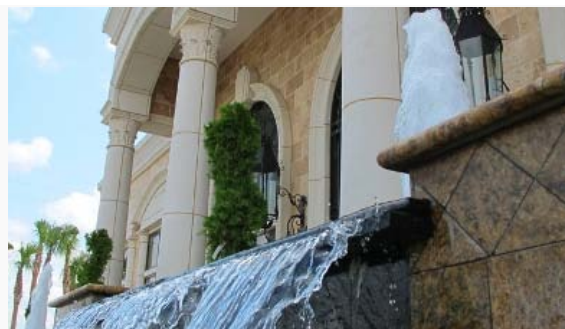


FRP

Lightweight Stone Concepts represents several leading manufacturers of FRP, HDP and PVC architectural building elements. These products are ideal for columns, domes and cornices where weight and size are a major issue. FRP is available in a paintable finish, precolored finish and a sandblast finish designed to mimic a light sand blast finish common to Architectural Pre-cast.



[Click here](#) to learn more about **FRP**.



DIVISION 4 – MASONRY

SECTION 04300 – CAST STONE-LIGHTWEIGHT

PART I – GENERAL

1.1 WORK INCLUDED

A. Provide and install all StoneCoat Cast Profiles elements for this project.

1.2 SUBMITTALS

1.2.1 Sample of LSC StoneCoat Cast Profiles: Submit sample(s) of StoneCoat Cast Profiles work, using materials as specified, indicating finish surfaces and color to be expected. Approved sample shall provide standard of quality for all precast concrete work on this project. Provide StoneCoat Cast Profiles elements for building into the sample panel to conform to requirements specified in this section.

1.3 SHOP DRAWINGS

1.3.1 Provide shop and setting drawings, indicating jointing, fabrication details, setting details, and location of pieces. Each stone shall be identified with a setting coordinate number, so indicated on the shop drawings.

1.3.2 Fabrication of StoneCoat Cast Profiles shall be in accordance with approved shop and setting drawings signed by architect or owner.

1.3.3 HANDLING AND STORAGE: StoneCoat Cast Profiles pieces shall be palletized and covered to protect the pieces while in transit. Upon arrival at the job site, StoneCoat Cast Profiles pieces shall be inspected prior to unloading and damaged or inferior stones returned to the manufacturer by the delivering vehicle.

1.3.4 STORAGE: Store StoneCoat Cast Profiles pieces on platforms to protect from contact with the soil, and covered to protect against the weather. Protect StoneCoat Cast Profiles pieces to prevent chipping, staining, and other damage until ready for application. Product should be stored on a flat surface.

1.4 Manufacturer:

Basis of specification:

Lightweight Stone Concepts

Contact: Greg Ganster 770-722-8079

Other approved Manufacturers:

Georgia Pre-cast Services

PART II – PRODUCTS

2.1 MATERIALS

- 2.1.1 Material composition: Lightweight Stone Concepts StoneCoat Cast Profiles is a unique blend of natural minerals, special bonding agents, and other proprietary ingredients, with Portland cement as a base element for strength cast over minimum 1# density EPS. Compressive strength minimum – 5500 PSI @ 28 days per ASTM C109.
- 2.1.2 LSC StoneCoat Cast Profiles shall be cast over minimum 1# density foam.
- 2.1.3 LSC StoneCoat Cast Profiles shall be lightweight (approximately 3.5 pounds per square foot in a 3/8” thick application), conforming to ASTM C331-81.
- 2.1.4 Color as selected by Architect
- 2.1.5 Finish to be:
- | | |
|--------------------|---------------------|
| 1. Light Sandblast | 2. Medium Sandblast |
| 3. Acid Wash | 4. Sanded |
| 5. Polished | 6. Burnished |
| 7. Exposed | 8. Aged |
- 2.1.6 All StoneCoat Cast Profiles pieces shall be shipped by the manufacturer/fabricator taking the necessary precautions to protect the stone while in transit. Upon arrival, all StoneCoat Cast Profiles pieces shall be inspected prior to unloading and damaged and inferior stones/pieces returned to manufacturer by returning vehicle. All StoneCoat Cast Profiles pieces shall be stored at the job site in such a manner as to protect it from chipping, staining and other damages until ready to use.

PART THREE – EXECUTION

- 3.1 SETTING – Per Architects recommendation. Adhesive attachments per manufacturers current installation instructions and detail and as detailed on plans.
- 3.1.1 All StoneCoat Cast Profiles pieces shall be set according to drawings.
- 3.1.2 A surface sealer can be applied post installation if required by architect.
- 3.1.3 All expansion and piece joints should be treated with sealant.
- 3.1.4 All StoneCoat Cast Profiles pieces shall be protected from splashing mortar or damage by other trades. Any foreign matter splashed on the stone should be removed immediately.

END OF SECTION

Lightweight Stone Concepts

StoneCoat

Physical Property Data

Water Demand	14%
ASTM C109	
Compressive Strength, psi	
1 Day Value	3485
7 Day Value	6655
14 Day Value	6815
28 Day Value	7360
ASTM C190	
Tensile Strength, psi	
7 Day Value	600
14 Day Value	720
ASTM C348	
Flexural Strength, psi	
7 Day Value	1550
14 Day Value	1750
EPS Adhesion - 14 Day Cure	
Dry, psi	18.20
% EPS failure	100
EPS Adhesion - 13 Day Dry, 1 Day Wet	
Wet, psi	15.15
% EPS failure	95
Freeze/Thaw Stability	
Ambient Cure, psi	15.19
% EPS failure	100
7 Cycles of F/T, psi	15.36
% EPS failure	100
Freeze/Thaw Ponding	
Evidence of Scaling	none
Water Absorption, g/in ²	
28 Day Value, 4"x4"x1/8"	0.16
300 Cycle Freeze Thaw Test	Pass

Material Safety Data Sheet

Date: June, 2007	Lightweight Stone Concepts	HMIS	
	P O Box 627	Health	1
	Dacula, Ga 30019	Flammability	0
	Phone 770-722-8079	Reactivity	0
	Fax 770-926-4103	Personal/ Protection	A

SECTION 1. IDENTIFICATION

Product Name: Stonecoat Cast Mix
Manufacturer: Lightweight Stone Concepts P O Box 627 Dacula, Ga 30019
DOT Classification: Non-hazardous

SECTION 2. COMPONENTS

Hazard Summary: as defined by OSHA Hazard Communication Standard, 29 CFR 1910, 1200

Hazardous Components:	CAS No. (mg/m3)	OSHA PEL (mg/m3)	ACGIH-TLV (mg/m3)	Cal/OSHA PEL (mg/m3)
Portland Cement	65997-15-1	5	5	5
Silica Sand	14808-60-7	10	0.1	0.1
Crystalline limestone (crushed)	01317-65-3	%SiO ₂ +2 5	(respirable) 5	5
lime	01305-62-0	5	5	5
polymer/admixtures	Trade Secrete	none	none	none

Trace Elements:

Trace amounts of naturally occurring, potentially harmful chemicals may be detected during chemical analysis. Examples would include trace amounts of magnesium oxide, potassium and sodium sulfate compounds, and trace metal compounds.

Other Recommended Limits:

NIOSH has recommended that the permissible exposure limit be .05 micrograms respirable free silica per cubic meter of air (0.5 mg/M³) averaged over a work shift of up to 10 hours per day, 40 hours per week. The NIOSH criteria for a Recommended Standard Occupational Exposure to Crystalline Silica should be consulted for more detailed information.

SECTION 3. PHYSICAL DATA

Appearance: Off-white powder aggregate. **Solubility in water:** Slight.
Odor: No distinct odor. **ph:** (in water) 10-12
Specific Gravity: (H₂O+1) 2.8 to 3.15
The following properties are not applicable to this product:
Vapor pressure, vapor density, evaporation rate, Boiling point and Melting point.

SECTION 4. FIRE AND EXPLOSION HAZARD DATA

Flash Point: None **Extinguishing Media:** Not combustible
Hazardous Combustion Products: None **Special Fire Fighting Procedures:** None
Unusual Fire and Explosion Hazards: None **Auto Ignition Temperature:** Not combustible

SECTION 5. REACTIVITY DATA

Stability: Stable
Incompatibility: It is compatible with most other materials, however, it contains Portland cement which is alkaline. As such, it is incompatible with acids, ammonium salts and aluminum metal. The product also contains silica, which will dissolve in hydrofluoric acid and produce a gas-silica tetrafluoride.
Conditions to avoid: Damp storage or unintentional contact with water or other liquids.
Hazardous decomposition: Will not occur. Adding water will start hydration and produce calcium hydroxide.
Hazardous Polymerization: Will not occur.

SECTION 6. HEALTH HAZARD ASSESSMENT

Carcinogenic Potential:

Carcinogenicity NTP: No
OSHA Regulated: Not as a carcinogen
IARC Monographs: Yes
Calif. Prop. 65: Yes

General: Classified as a nuisance dust by OSHA. Exposure can affect the skin, the eyes and mucous membranes. The product contains sili may be broken down to the respirable size range during shipping, handling or use, and thus may be inhaled. The international Agency for Research on Cancer (IARC) has evaluated in Volume 68, IRAC Monographs of the Evaluation of the Carcinogenic Risk to Humans, "Silica and Some Silicates..." (1997) that there is from occupational sources. The presence of crystalline silica which may result in exposures, requires the following warning pursuant to California Proposition 68: Warning: This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Routes of Exposure: Inhalation: Yes Ingestion: Yes
Skin: Yes Eyes: Yes

Acute Exposure: Can dry the skin and cause alkali burns. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include alveolar damage with pulmonary edema.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. Excessive inhalation of silica dust may result in respiratory disease, including silicosis, pneumoconiosis, pulmonary fibrosis and possibly cancer.

Signs and Symptoms of Exposure: Symptoms of excessive exposure include shortness of breath and reduced pulmonary function. This inhaled material gives no potential acute toxic hazard.

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

Emergency First Aid procedures:

Skin: Wash contaminated areas thoroughly with soap and water. If irritation persists or develops contact a physician. Wash clothing and decontaminate footwear before reuse.

Eyes: Rinse/ Flood eyes with clean water immediately and repeatedly for at least 15 minutes. Contact physician if irritation persists.

Ingestion: Consult a physician.

For Gross Inhalation: Immediately move subject to fresh air, give artificial respiration as needed.

Get prompt medical attention.

SECTION 7. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled: Ventilate area. Use dust control methods (vacuum) and place into covered container for disposal or use if not contaminated or wet.

Waste disposal method: Can be treated as a common waste for disposal in accordance with local, state and federal regulations.

SECTION 8. SPECIAL PROTECTION INFORMATION

TLV or Suggested Control Value: No TLV assigned to this mixture. Minimize exposure in accordance with good hygiene practice. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning--little heat is sensed.

Ventilation: Use only with adequate ventilation. You can provide local exhaust to control airborne dust levels to minimize exposure.

Respiratory Protection: Not normally required if good ventilation is maintained. Use of an appropriate OSHA, MSHS or NIOSH approved respirator in dusty environments is recommended.

Protective Clothing: The use of barrier creams or impervious gloves, long trousers, long-sleeved shirt and appropriate footwear recommended to avoid prolonged skin contact.

Eye Protection: Chemical tight splash goggles to avoid eye contact. (ANSI Z-87, 1 or approved equivalent) is recommended.

Other Protective Equipment: Provide means of rinsing eyes (eyewash station) in case of emergency. Provide source of water for washing.

SECTION 9. SPECIAL PRECAUTIONS

None

SECTION 10. OTHER INFORMATION

While the information in this Material Safety Data Sheet is believed to provide a useful summary of the hazards of our materials as they are commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. In particular, product users who have not had the benefit of proper training in the application of the product may be using the product in a manner that this sheet does not address or may be hazardous. The information herein is given in good faith but no warranty, expressed or implied, is made. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to crystalline silica contained in our products. Customers-users must comply with all applicable health and safety laws, regulations and orders covering crystalline silica.

Product Data Sheet

LSC Adhesive

LSC Adhesive is a polymer modified dry set mortar composed of lightweight aggregates, sand, dry resins and other proprietary chemicals used to adhere virtually all types of architectural elements to acceptable surfaces. Due to its light weight and flexible properties, LSC Adhesive installations provide higher resistance to cracking than normal mortars. LSC Adhesive is formulated to hold large units in place on vertical surfaces. LSC Adhesive also reduces unevenness caused by setting of the element when used on horizontal surfaces.

LSC Adhesive may not be used to adhere elements to asphalt, fiberglass, particle or luan board, plastic, glass, metal or other unsuitable surfaces. Do not apply if temperatures are below 40 degrees F within a 48 hour period. Do not bridge expansion joints.

Surface Preparation: Surfaces to receive LSC Adhesive must be clean and dry. Coatings, sealers, curing agents, and loose material must be removed prior to installation. All substrates must be secure and stable.

Mixing: Add LSC Adhesive to water and mix to a thick trowelable consistency. Mix at low speed to avoid entraining excess air into the material. Let the material slake for 15 minutes and remix prior to use. Do not add additional water to retemper material.

Application: Scratch in a small amount of material onto element to insure proper bond, then apply additional material with a suitable trowel. Set the element against the substrate with enough force to insure 100% contact and twist slightly. Ten Minutes after the element is set, do not adjust, move, or apply pressure. Remove excess material with water. Once mixed, adhesive can be used for up to 4 hours.

Cleaning: Immediately after use, clean with water. Protect other surfaces from contact with material.

Curing: Under normal conditions grouting may be performed after the adhesive has cured 24 – 48 hours.

Coverage: one 30 lb. bag covers approximately 40 -50 sq. ft. with a 1/2" by 1/2" notched trowel, and 70 – 80 sq. ft. with a 1/4" by 3/8" notched trowel.

Standards: LSC Adhesive conforms to ANSI A118.1, A118.4, A118.11, and ANSI A108.5.

Packaging: White or gray LSC Adhesive in 30 lb. bags.

Caution: This material contains Portland cement and silica. Avoid dusty conditions and breathing dust. Wear OSHA approved dust masks. Avoid all contact with skin and eyes. Wear gloves and eye protection.

Typical Performance Properties

Shear Strength	7 days	28 days
Quarry Tile	Min. 250 psi	520 psi
Quarry Tile To Plywood	Min. 250 psi	230 psi
Compressive Strength	7 days	3500 psi
Adjustability		15 min.
Open Time		60 min.
Initial Set		5 hr
Final Set		8 hr

Material Safety Data Sheet

I. Product Identification			
Product Name	TCM Adhesive	Manufacturers Name	Titan Chemical & Manufacturing, Inc 118 Pearl Industrial Ave. Hoschton, Ga. 30548 706-658-2805 Office

II. Hazardous Ingredients			
Material	CAS No.	OSHA PEL: mg/m3	ACGIH TLV mg/m3
Portland Cement	65977-15-1	5	10
Silica	14808-60-7	0.1	0.1
Clay	132-58-7	5	10
Vinyl	1216-01	5	10
Limestone	474-34-1	5	10
Perlite	93763-70-3	5	10

III. Health Hazard Data	
Routes of Hazard Exposure Determination	Basis for Determination
Inhalation	Contains Silica* *Prolonged inhalation of excessive silica dust may reduce lung function.
Effects of Acute Overexposure	No acute effects
Effects of Chronic Overexposure	Long term overexposure to high concentrations of this dust without the use of a dust mask may reduce respiratory function in some individuals.
Medical Conditions Aggravated by Exposure	Unknown
Eyes and Skin	No special precautions. Flush with water for 15 Minutes
Inhalation and Ingestion	No special precautions.

IV. Physical Data			
Boiling Point	N/A	pH	12
Vapor Pressure	N/A	Specific Gravity	2.8
Vapor Density	N/A	Melting Point	N/A
Solubility in Water	Negligible	Evaporation	N/A
Appearance and Odor	Grayish		

V. Fire and Explosion Data	
Flash Point - None	Special Fire Fighting Procedures - None
Flammable Limits in Air - N/A	Unusual Fire and Explosion Hazard - None
Auto Ignition Temperature - None	

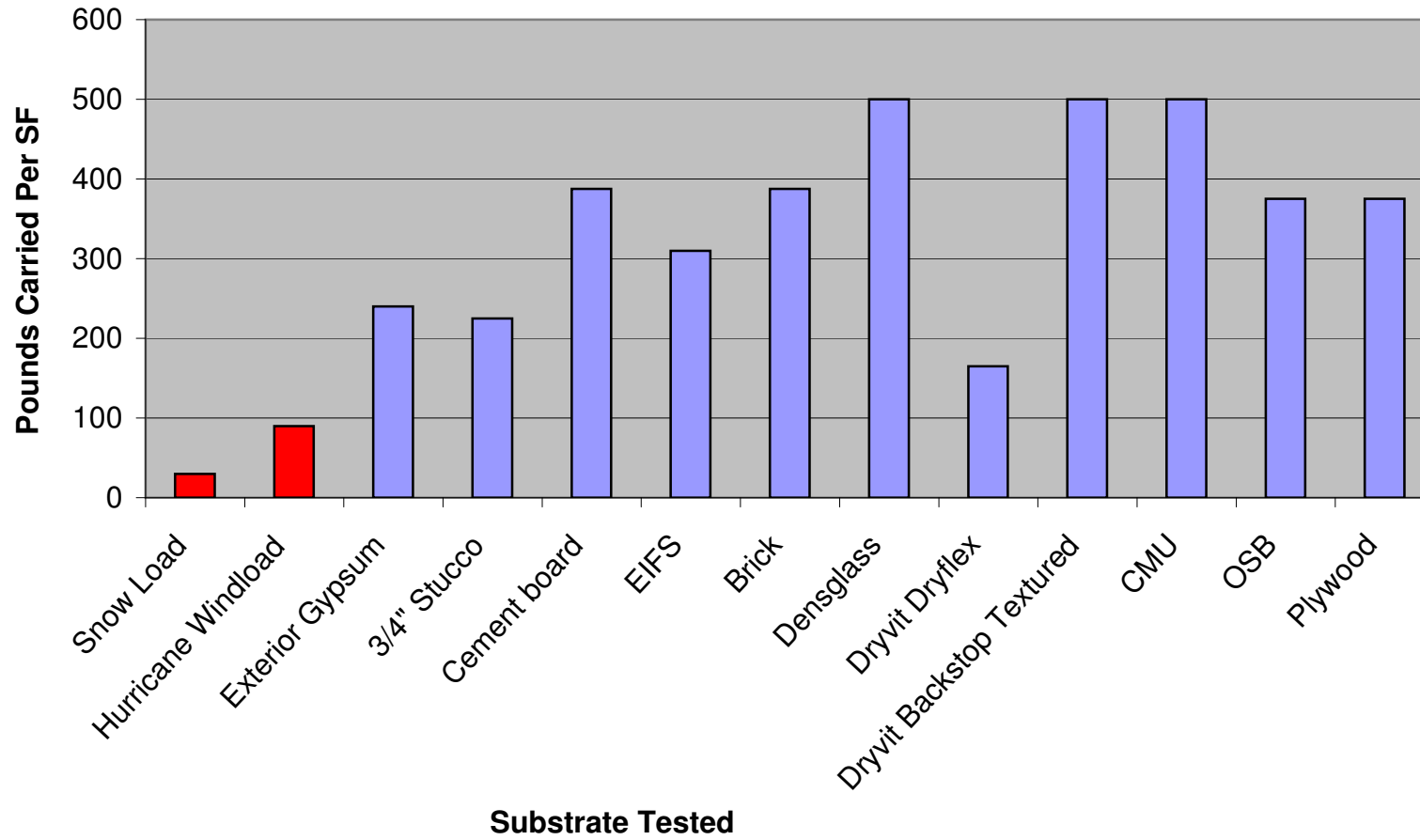
VI. Reactivity Data	
Conditions Contributing to Instability	Reacts with acids to liberate CO2
Conditions Contributing to Hazardous Polymerization	None
Hazardous Decomposition Products	None

VII. Disposal, Spill, or Leak Procedures	
Waste Disposal Method	Material is not classified as a hazardous waste under RCRA section 3001. Use normal solid waste disposal procedures which are in compliance with Federal, State, and Local Regulations
Spill or Leak Procedures	Material is not Classified as a toxic pollutant or a hazardous substance under Section 307 and 311 of the Clean Water Act. Accidental releases can be cleaned up by sweeping, vacuuming, or flushing with water.
Neutralizing Chemicals	None required.

VIII. Special Protection Information	
Ventilation	Use sufficient general area ventilation. Local Exhaust may be necessary where Threshold Limit Values (TLV's) are exceeded or dusty conditions exists.
Personal Protection Equipment	
Eyes	Recommended
Gloves	Recommended
Other	None
Respiratory Protection	For dusty conditions use a dust mask approved by NIOAH.

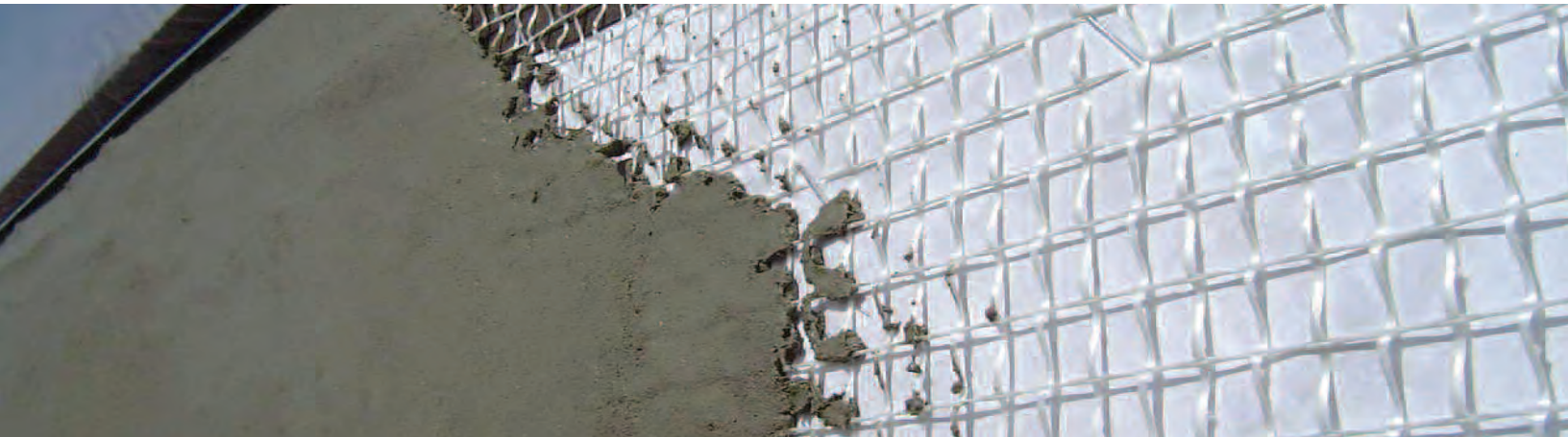
The information contained in this Material Safety Data Sheet is believed to be reliable. No guarantee is implied or expressed regarding the accuracy of this information of the use of the product since the conditions for use are beyond our control. Nothing contained herein should be construed as a recommendation to use this product in conflict with existing patents covering and material or its us

Windload Attachment Testing



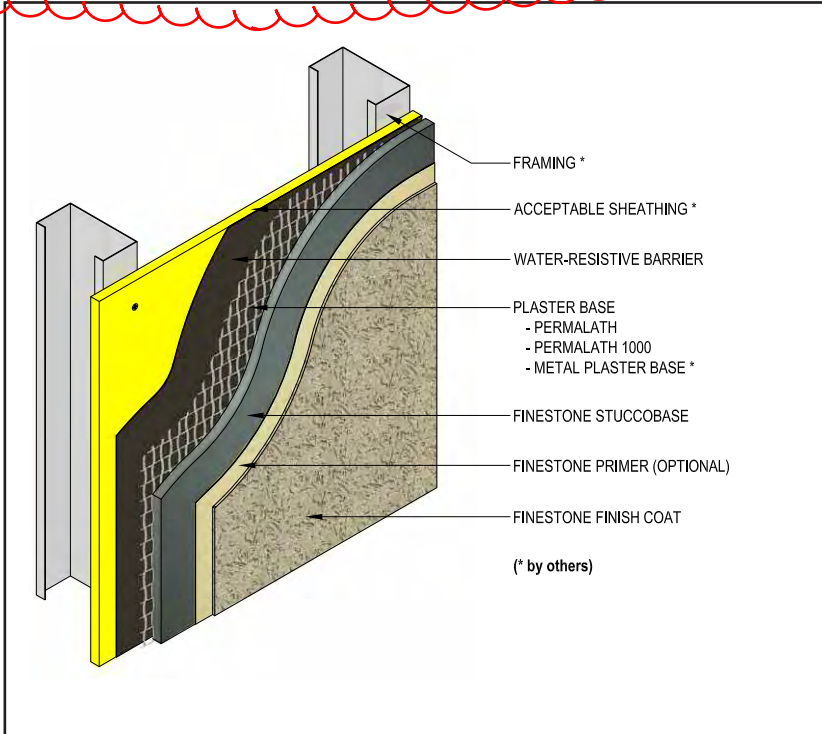
Finestone Stucco System

Cement Plaster Stucco



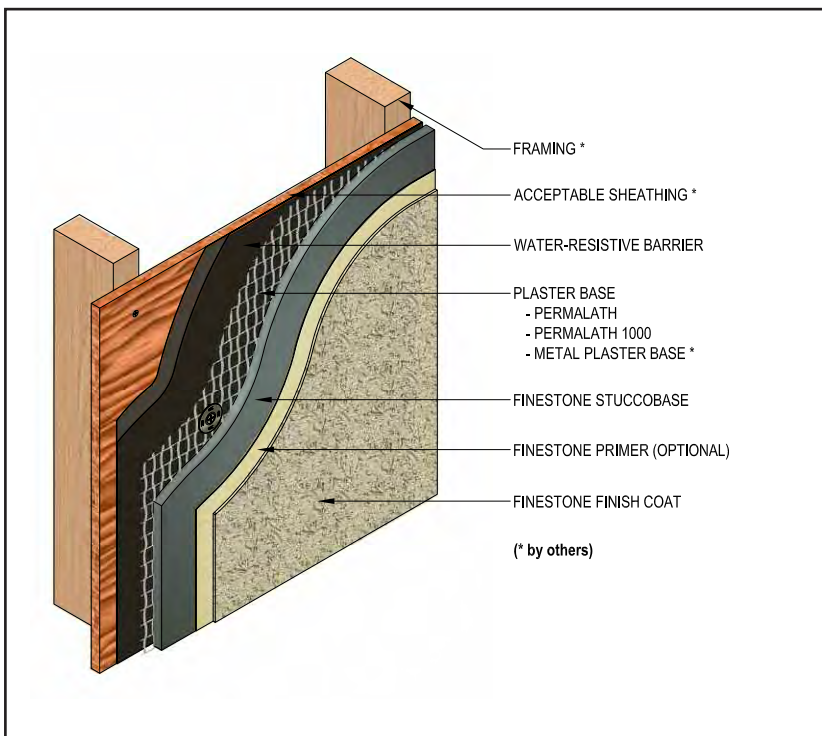
1. Typical Finestone Stucco System with Steel Framing
2. Typical Finestone Stucco System with Wood Framing
3. Typical Finestone Stucco System with CMU
4. Typical Finestone Stucco System with CMU and Plaster Base
5. Typical Finestone Stucco System with EPS Insulation Board
6. Typical Finestone Stucco System with Channeled EPS Insulation Board
7. Typical Surface Control Joint
8. Typical Expansion Joint
9. Typical Drainage at Floorline
10. Typical Clad Window Jamb
11. Typical Clad Window Head
12. Typical Clad Window Sill
13. Typical Primed Window Head
14. Typical Primed Window Jamb
15. Typical Primed Window Sill
16. Typical EPS Shape Application
17. Typical Termination at Soffit/Gable End
18. Typical Termination at Foundation
19. Typical Kick-out Flashing
20. Typical Termination at Deck
21. Typical Coping
22. Typical Corner Bead
23. Typical Downspout Application
24. Typical Pipe Penetration
25. Typical Light Fixture
26. Typical Dryer Vent

TYPICAL FINESTONE STUCCO SYSTEM WITH STEEL FRAMING



FSWS-01 0211

TYPICAL FINESTONE STUCCO SYSTEM WITH WOOD FRAMING



FSWS-02 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Basic requirements for water-resistive barrier:
 - One layer minimum No.15 felt on non-wood based sheathing.
 - Two layers minimum Grade D on wood based sheathing.
 - Finestone RA with one layer minimum Grade D as slip sheet on wood and non-wood based sheathing.
 - The use of PermaLath requires the use of a polymeric water-resistive barrier.
 - Comply with applicable local building code.
- Basic requirements for Plaster Base:
 - StuccoBase 3/8" to 1/2" thickness: PermaLath, or min. 1" 20 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.
 - StuccoBase min. 1/2" to nominal 7/8" thickness: PermaLath 1000 or min. 1 1/2" 17 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.

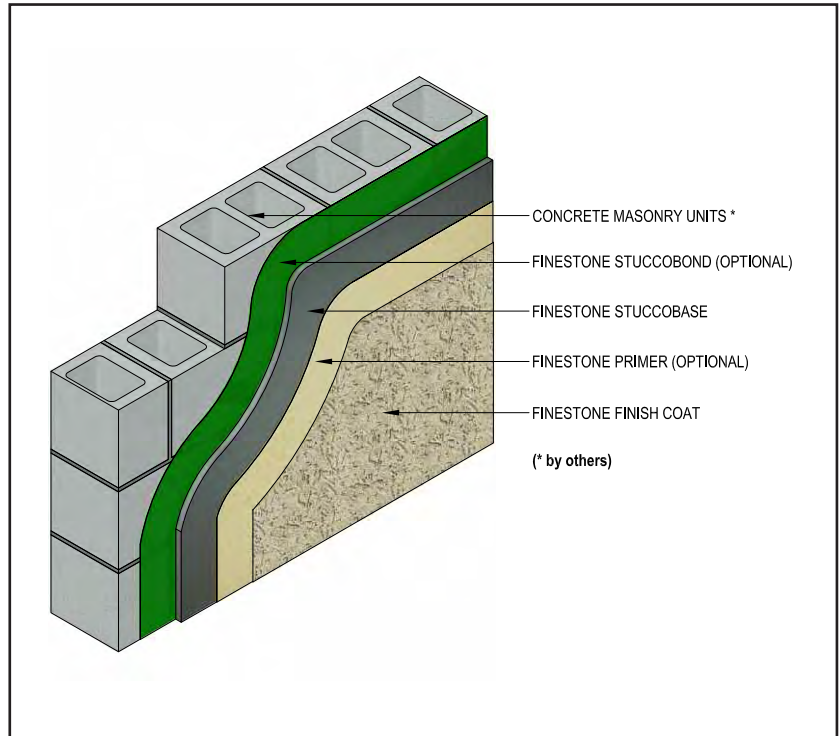
Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Basic requirements for water-resistive Barrier:
 - Two layers minimum Grade D on wood based sheathing.
 - One layer minimum No.15 felt on non-wood based sheathing.
 - Finestone RA with one layer minimum Grade D as slip sheet on wood and non-wood based sheathing.
 - The use of PermaLath requires the use of a polymeric water-resistive barrier.
 - Comply with applicable local building code.
- Basic requirements for Plaster Base:
 - StuccoBase 3/8" to 1/2" thickness: PermaLath, or min. 1" 20 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.
 - StuccoBase min. 1/2" to nominal 7/8" thickness: PermaLath 1000 or min. 1 1/2" 17 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.

TYPICAL FINESTONE STUCCO SYSTEM WITH CMU

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- StuccoBase min. 3/8" thickness to max. 5/8" thickness. Thicknesses greater than 5/8" require the use of PermaLath 1000 or acceptable metal plaster base.

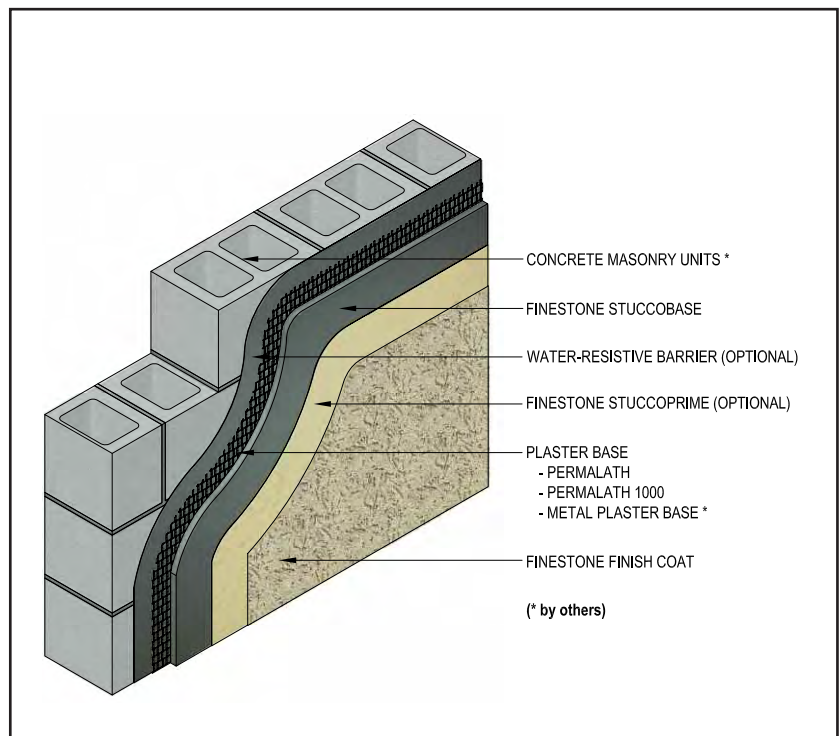


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TYPICAL FINESTONE STUCCO SYSTEM WITH CMU AND PLASTER BASE

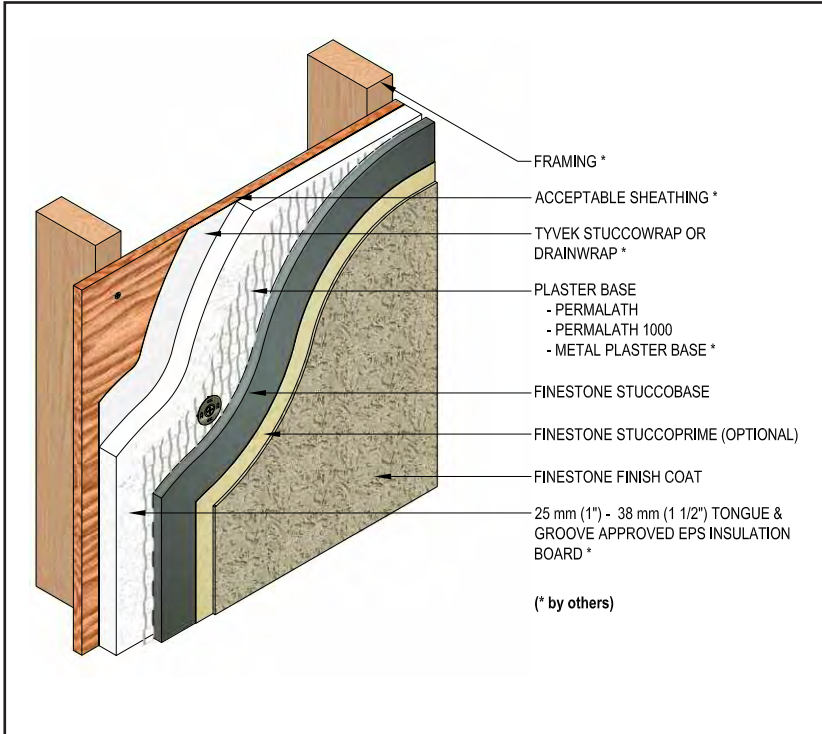
Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Basic requirements for Plaster Base:
 - StuccoBase 3/8" to 1/2" thickness: PermaLath, or min. 1" 20 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.
 - StuccoBase min. 1/2" to nominal 7/8" thickness: PermaLath 1000 or min. 1 1/2" 17 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.



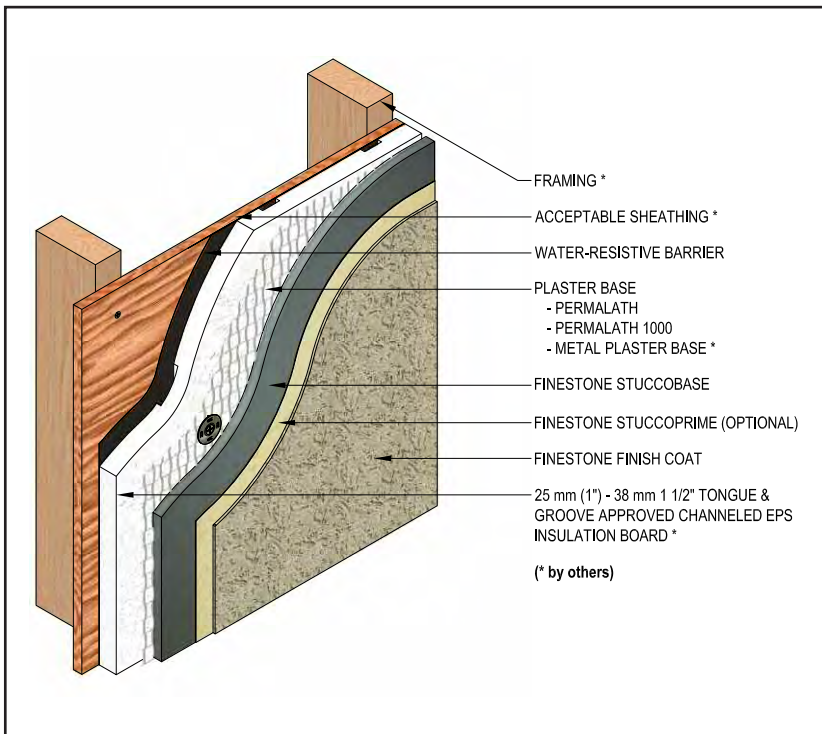
FSWS-04 0211

TYPICAL FINESTONE STUCCO SYSTEM WITH EPS INSULATION BOARD



FSWS-05 0211

TYPICAL FINESTONE STUCCO SYSTEM WITH CHanneled EPS INSULATION BOARD



FSWS-06 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Basic requirements for water-resistive barrier:
 - One layer Tyvek StuccoWrap or DrainWrap.
 - Finestone RA and grooved EPS insulation board.
 - The use of PermaLath requires the use of a polymeric water-resistive barrier.
 - Comply with applicable local building code.
- Basic requirements for Plaster Base:
 - StuccoBase 3/8" to 1/2" thickness: PermaLath, or min. 1" 20 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.
 - StuccoBase min. 1/2" to nominal 7/8" thickness: PermaLath 1000 or min. 1 1/2" 17 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.

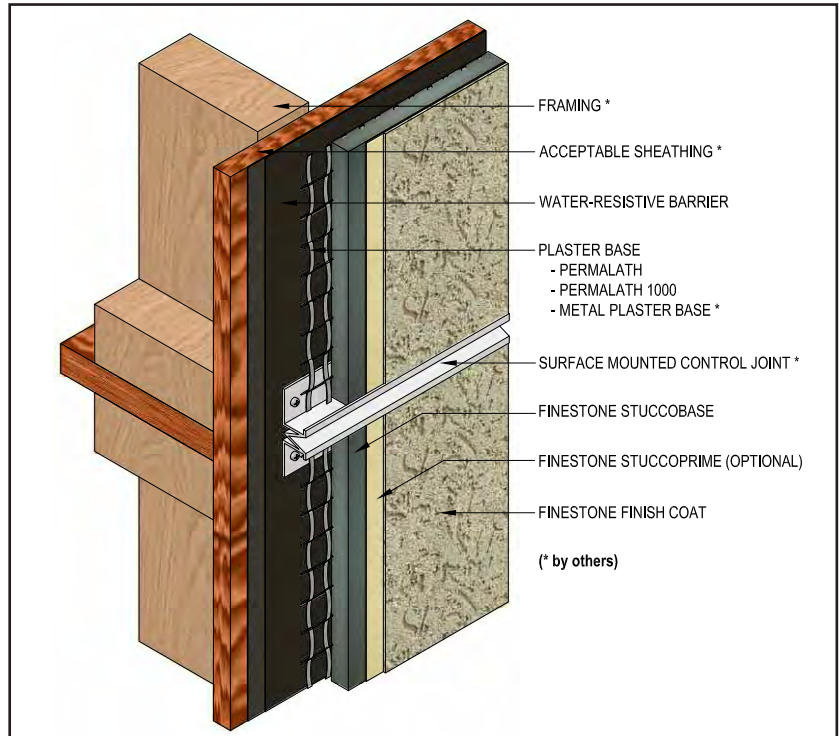
Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Basic requirements for water-resistive Barrier:
 - One layer 60 Min. Grade D paper or equivalent.
 - Finestone RA.
 - Comply with applicable local building code.
- Basic requirements for Plaster Base:
 - StuccoBase 3/8" to 1/2" thickness: PermaLath, or min. 1" 20 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.
 - StuccoBase min. 1/2" to nominal 7/8" thickness: PermaLath 1000 or min. 1 1/2" 17 ga. wire, min. 2.5 lb/sq.yd. metal lath or acceptable alternative.
- EPS channels on insulation board are a minimum 1/4" wide x 1/8" deep x 12" o.c.

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Provide control joints at a maximum 144 sq.ft. and placement as determined by the design professional.
- Install per requirements of ASTM C1063.
- Lath must be broken at the joint accessory.

TYPICAL SURFACE CONTROL JOINT

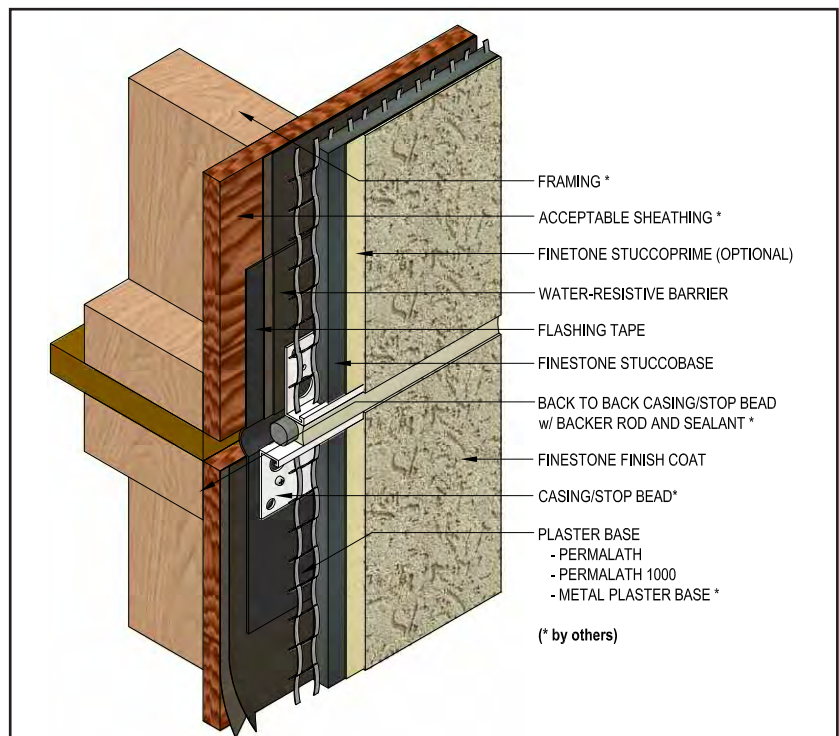


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Notes:

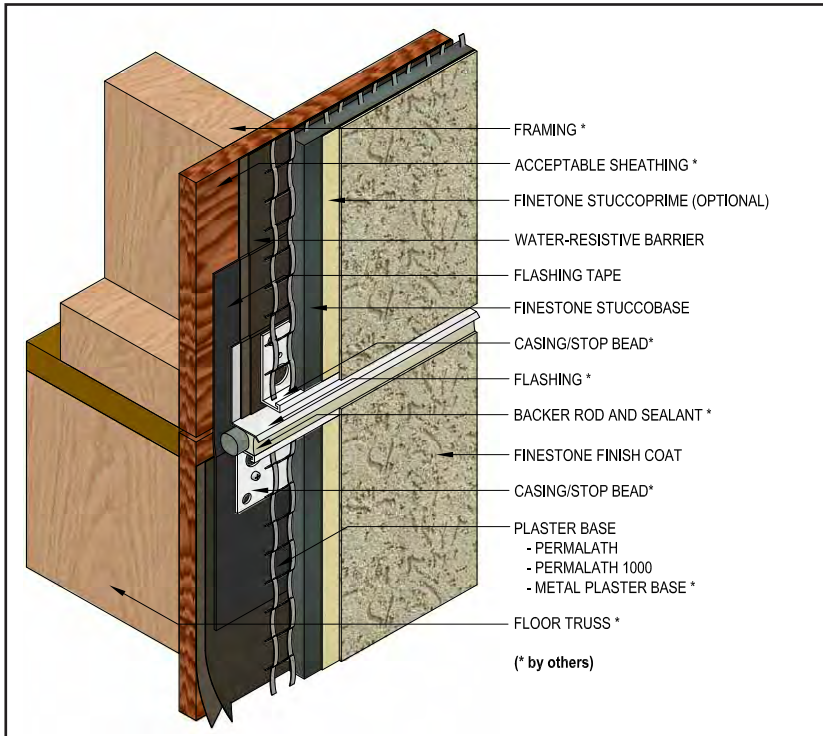
- Verify all materials are installed in accordance with installation instructions and applicable code.
- Install expansion joints in the system at all changes in substrate, through existing expansion joints, and where movement is anticipated. It is the sole responsibility of the design professional to determine specific expansion joint location, placement and design.
- Install per requirements of ASTM C1063.
- Lath must be broken at the joint accessory.
- If using Finestone RA, replace WS Wrap with WS Flash.

TYPICAL EXPANSION JOINT



FSWS-08 0211

TYPICAL DRAINAGE AT FLOORLINE

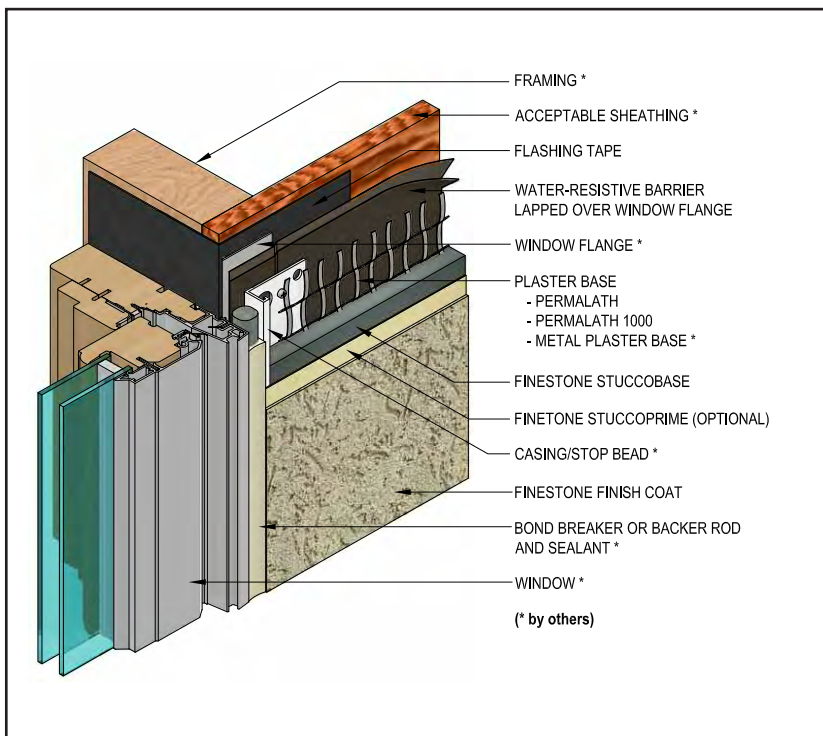


FSWS-09 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Water-resistive barrier shall be installed over flashing.
- Water-resistive barrier shall be installed up and behind flashing before terminating.
- Install per requirements of ASTM C1063.
- Lath must be broken at the joint accessory.
- It is recommended that a means for drainage is provided at every floor.

TYPICAL CLAD WINDOW - JAMB



FSWS-10 0211

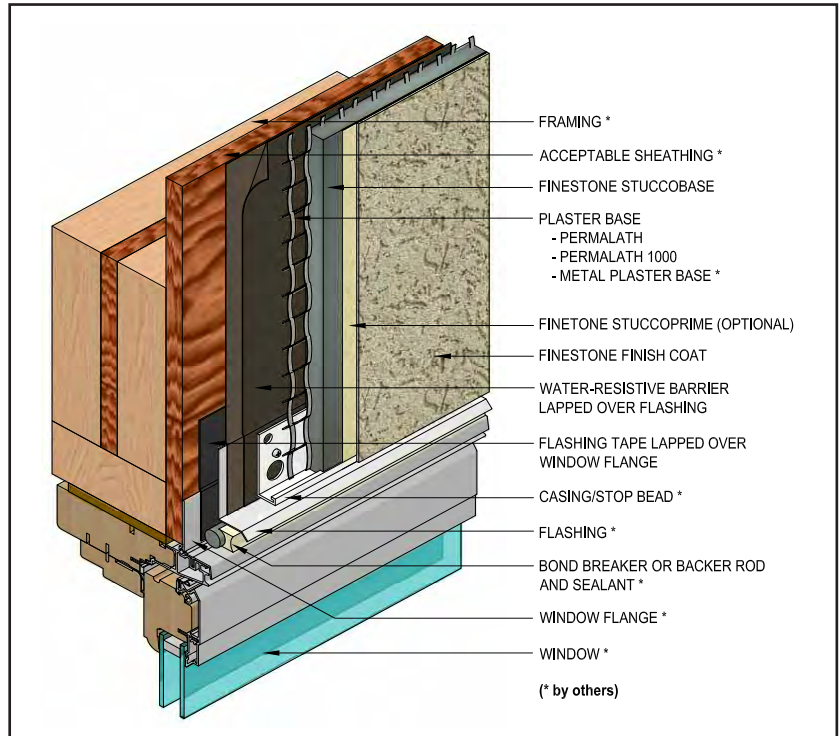
Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Ensure water-resistive barrier is properly applied into the rough openings in accordance with application guidelines. See *Secondary Moisture Protection Barrier Guidelines for Finestone Stucco Wall System* technical bulletin.

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Ensure water-resistive barrier is properly applied over the head flashing. See *Secondary Moisture Protection Barrier Guidelines for Finestone Stucco Wall System* technical bulletin.
- Provide end-dams at flashing terminations.
- If using Finestone RA, replace WS Wrap with WS Flash.

TYPICAL CLAD WINDOW - HEAD

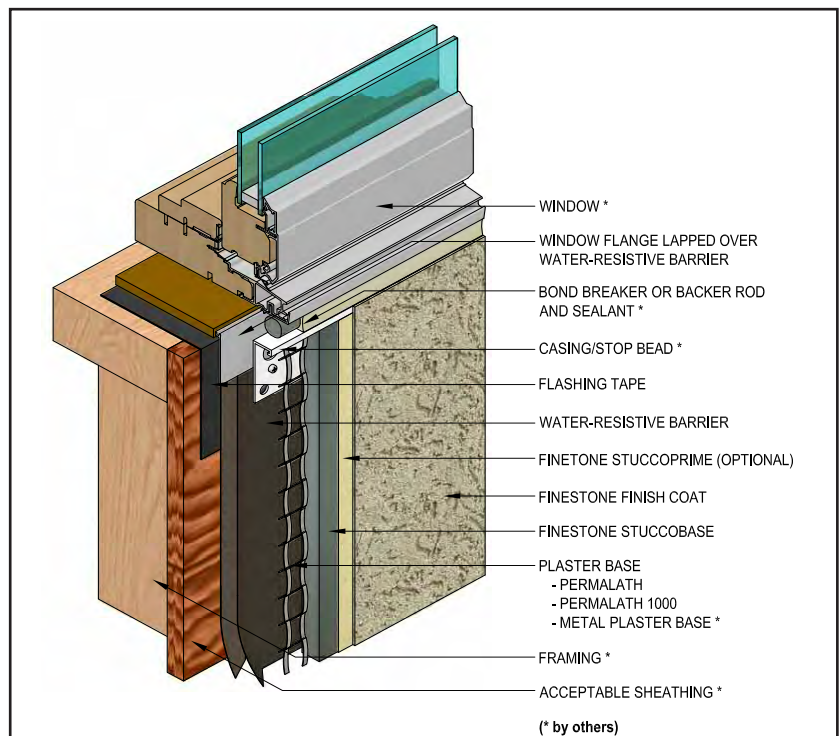


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Notes:

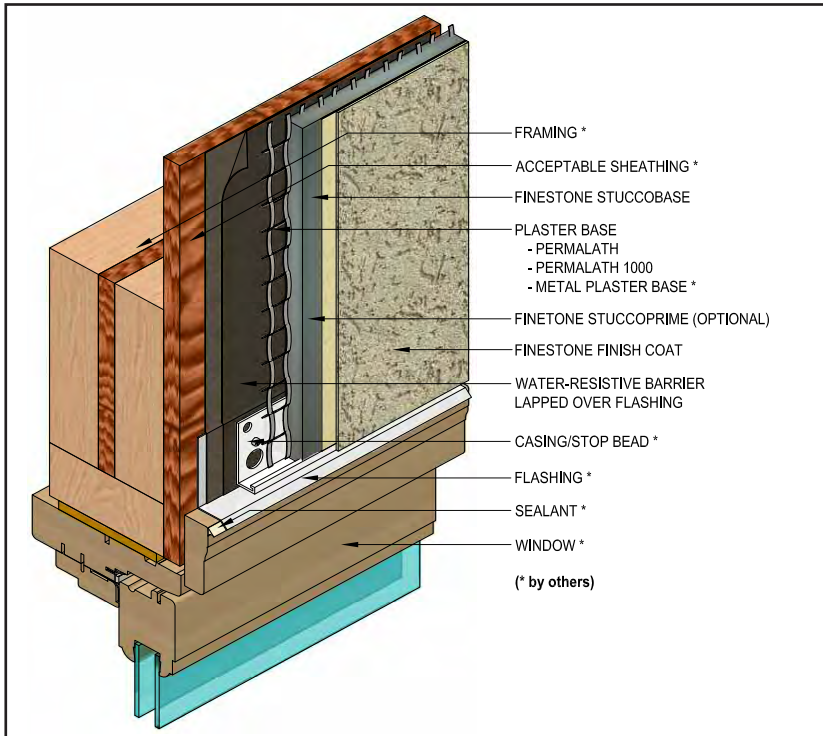
- Verify all materials are installed in accordance with installation instructions and applicable code.
- Ensure water-resistive barrier is properly applied into the rough openings in accordance with application guidelines. See *Secondary Moisture Protection Barrier Guidelines for Finestone Stucco Wall System* technical bulletin.
- If using Finestone RA, replace WS Wrap with WS Flash.

TYPICAL CLAD WINDOW - SILL



FSWS-12 0211

TYPICAL PRIMED WINDOW - HEAD

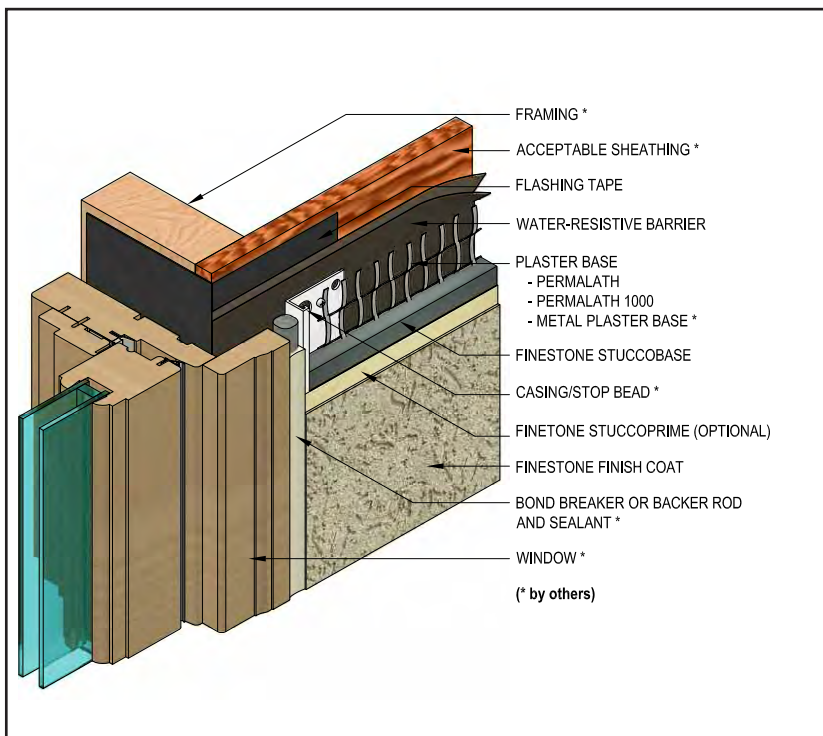


FSWS-13 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Ensure water-resistive barrier is properly applied over the head flashing.
- Provide end-dams at flashing terminations.

TYPICAL PRIMED WINDOW - JAMB



FSWS-14 0211

Notes:

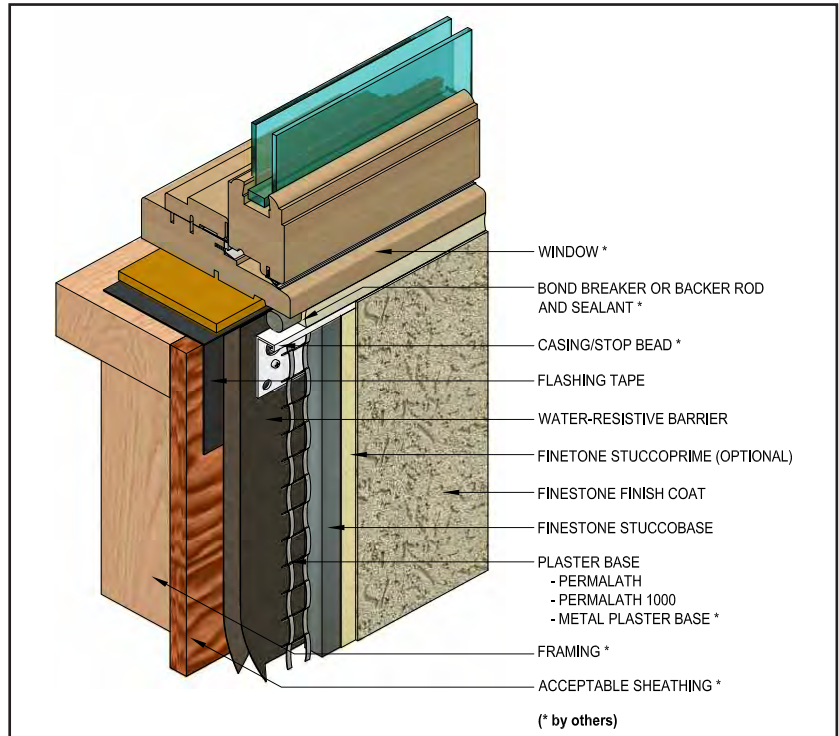
- Verify all materials are installed in accordance with installation instructions and applicable code.
- Ensure water-resistive barrier is properly applied into the rough openings.
- If using Finestone RA, replace WS Wrap with WS Flash.

HARDWALL SYSTEM

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Ensure water-resistive barrier is properly applied into the rough openings.
- If using Finestone RA, replace WS Wrap with WS Flash.

TYPICAL PRIMED WINDOW - SILL

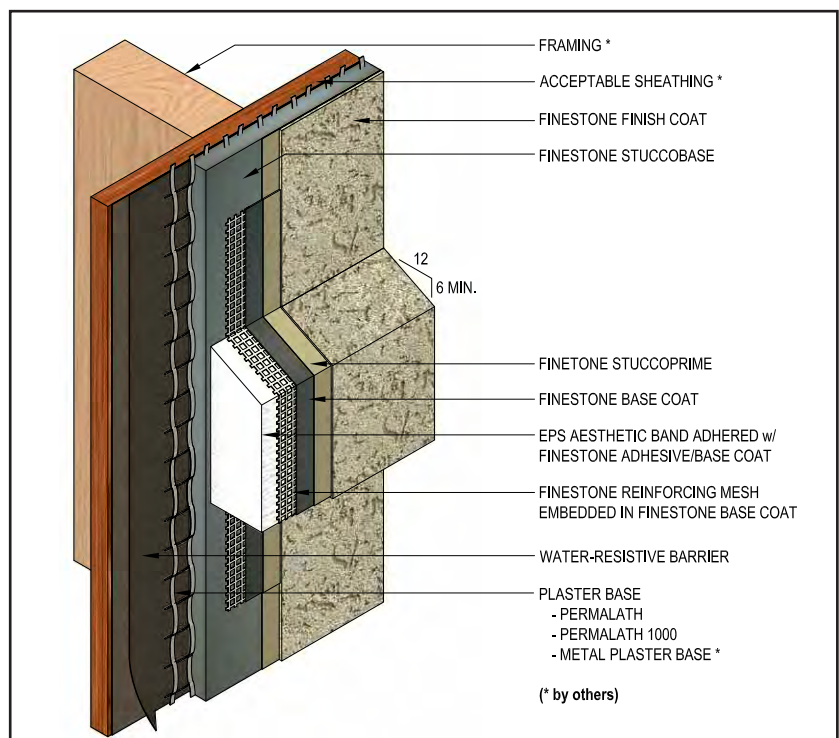


FSWS-15 0211

Notes:

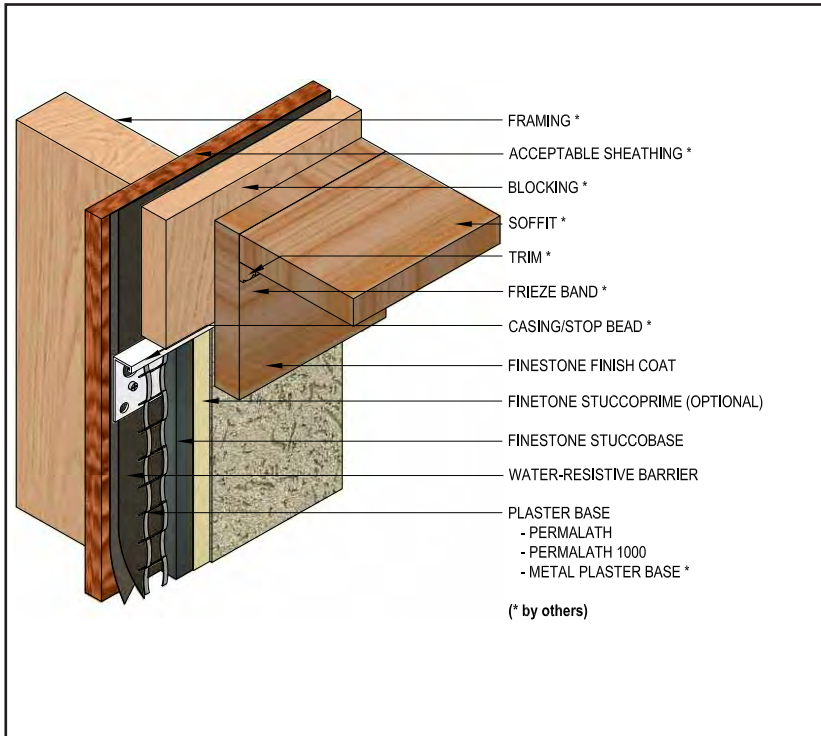
- Verify all materials are installed in accordance with installation instructions and applicable code.
- Overlap reinforced base coat onto StuccoBase a minimum of 76 mm (3").
- On horizontal projections greater than one inch maintain a minimum 6:12 slope.

TYPICAL EPS SHAPE APPLICATION



FSWS-16 0211

TYPICAL TERMINATION AT SOFFIT/GABLE END

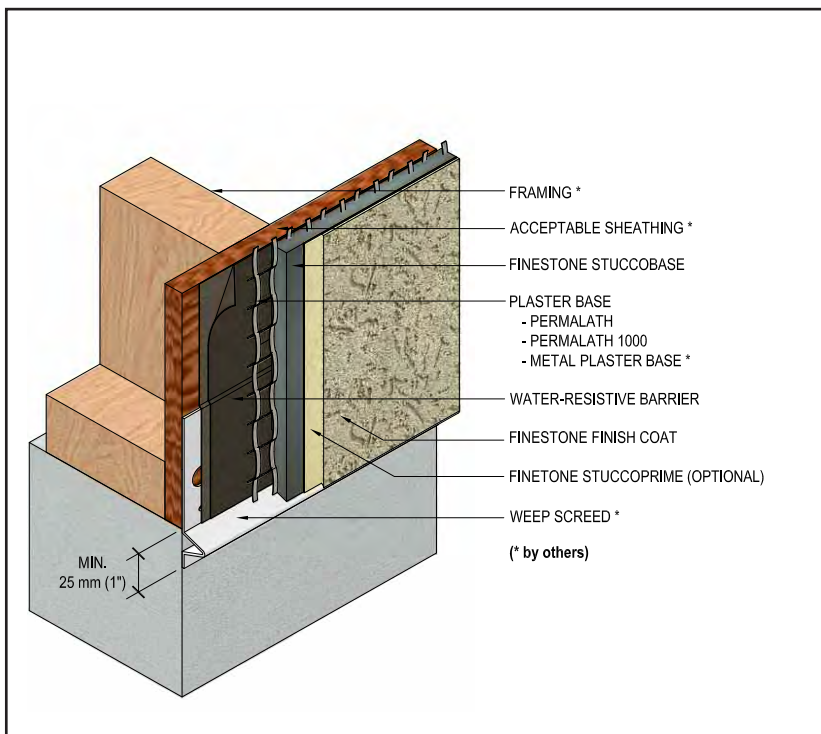


FSWS-17 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.

TYPICAL TERMINATION AT FOUNDATION



FSWS-18 0211

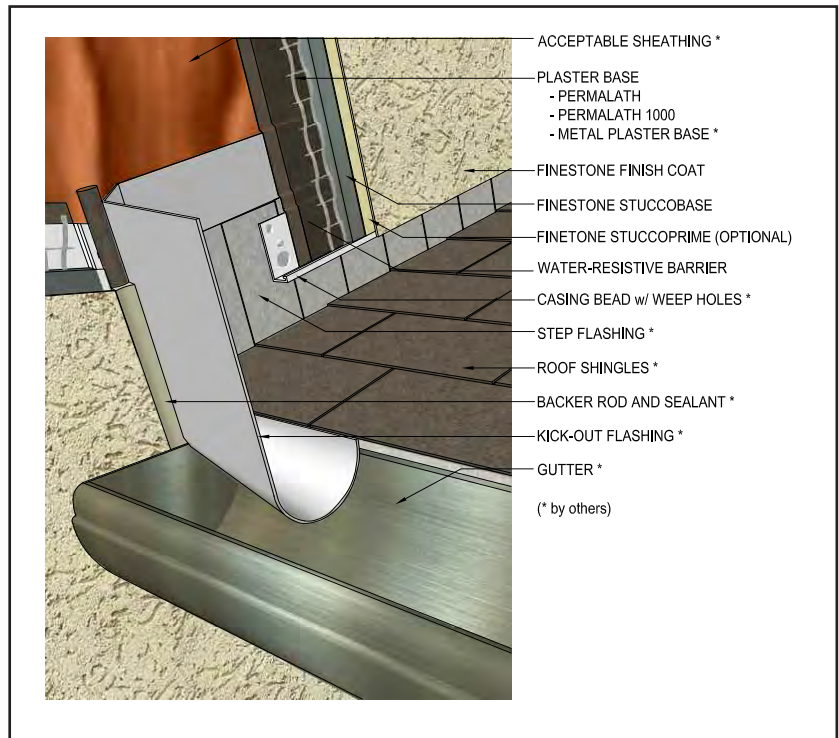
Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Per ASTM C1063 terminate the stucco wall system a minimum of 102 mm (4") above raw earth and 51 mm (2") above paved surface.
- Water-resistive barrier shall be installed over weep screed flange.

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Terminate Stucco Wall System a minimum of 50 mm (2") above roof.
- Ensure step flashing is a minimum 50 mm (2") behind Finestone Stucco System.
- Kick-out flashing a minimum 100 mm (4") in height.
- Kick-out flashing shall be angled a minimum 100° with seams sealed or soldered.
- Ensure a means for drainage is provided at system termination at roof.

TYPICAL KICK-OUT FLASHING

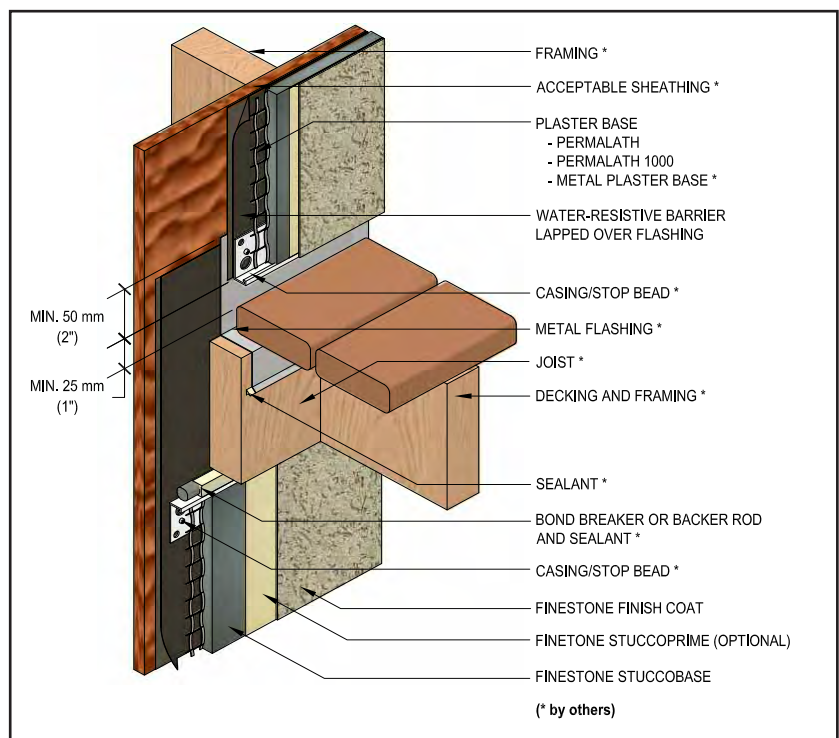


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Notes:

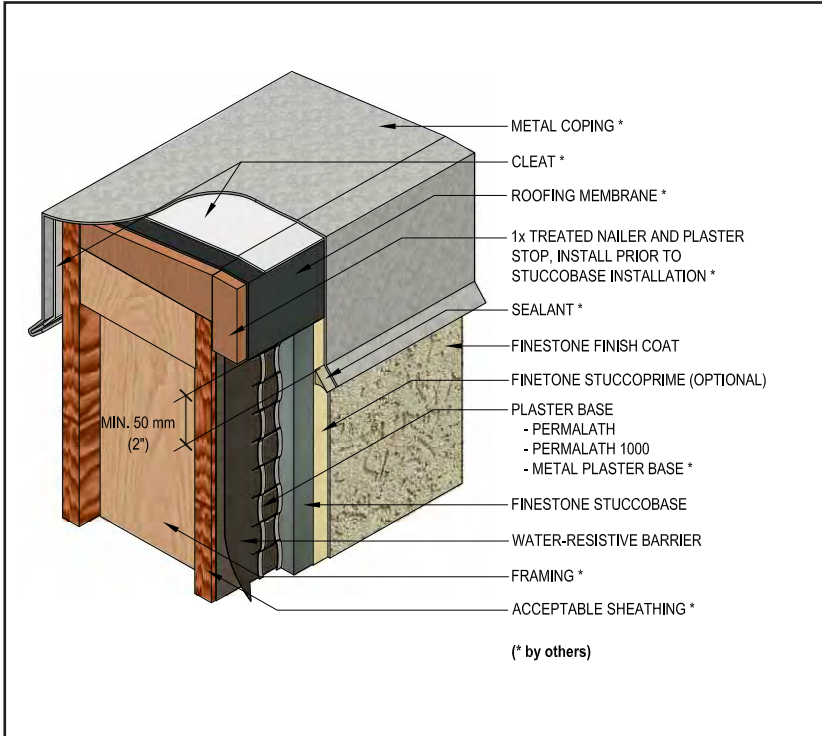
- Verify all materials are installed in accordance with installation instructions and applicable code.
- Water-resistive barrier shall be installed over flashing.
- Water-resistive barrier shall be installed up and behind metal flashing before terminating.

TYPICAL TERMINATION AT DECK



FSWS-20 0211

TYPICAL COPING

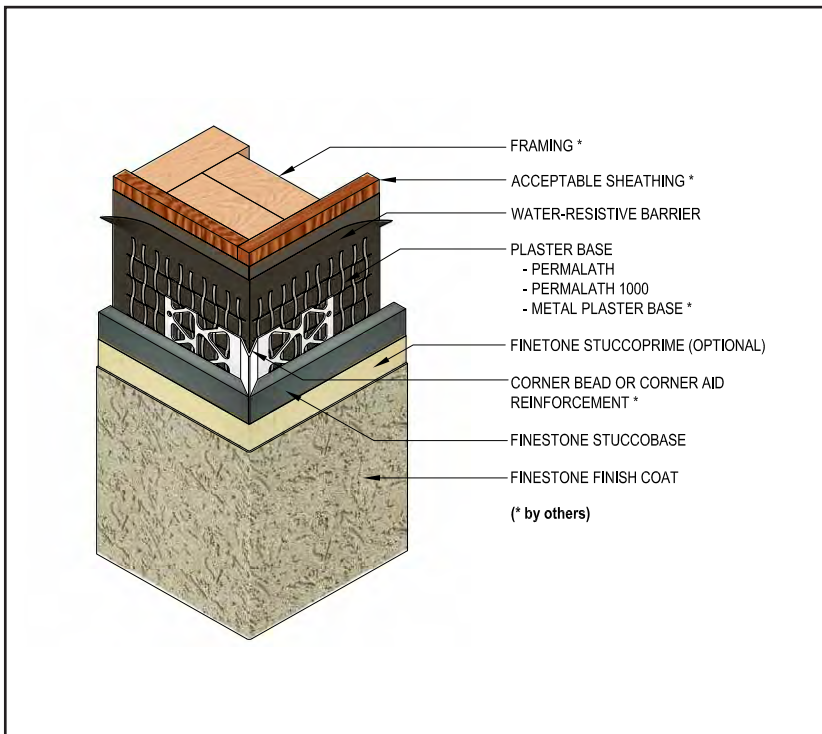


FSWS-21 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Extend coping a minimum of 51 mm (2") on to face of Finestone Stucco System and seal drip edge.
- Water-resistive barrier shall be installed up and over the top and extended down the other side.

TYPICAL CORNER BEAD



FSWS-22 0211

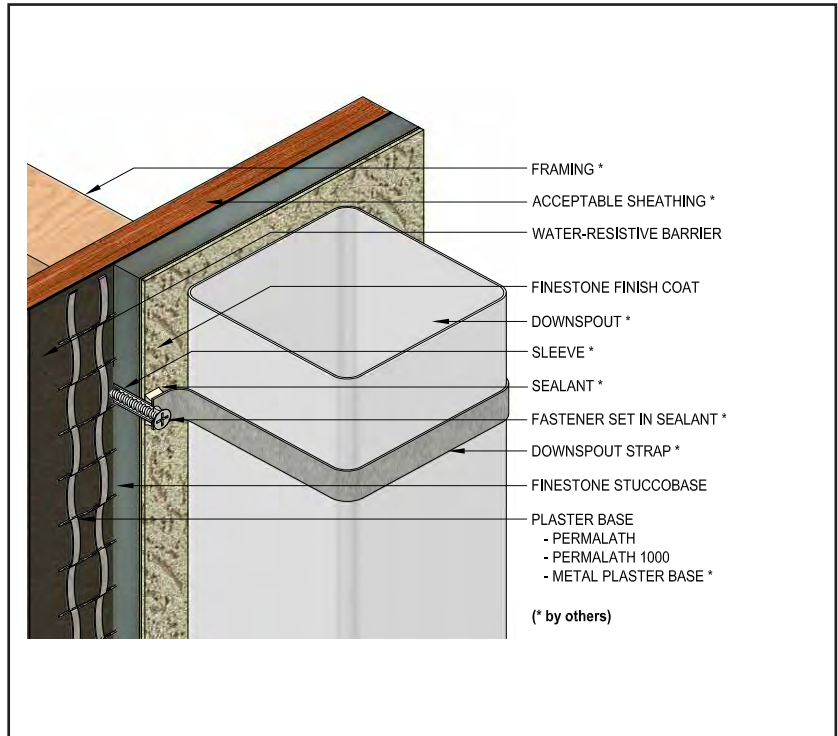
Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Attach corner bead over plaster base.
- Water-resistive barrier shall be installed continuous around corner a minimum of 305 mm (12").
- Corner bead shall be filled solid with StuccoBase.

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Properly seal all penetrations through the stucco wall system.

TYPICAL DOWNSPOUT APPLICATION

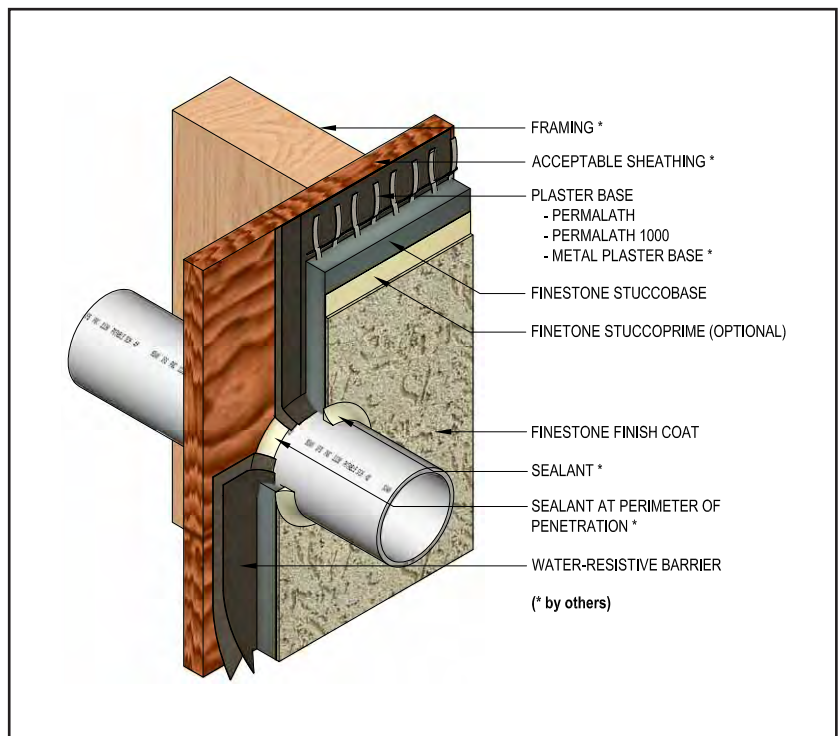


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Notes:

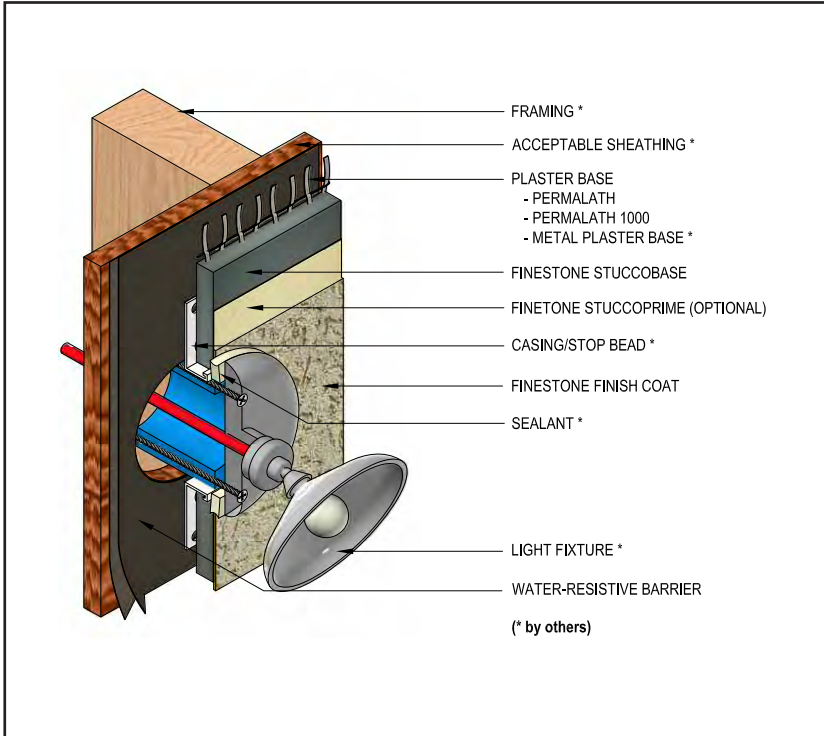
- Verify all materials are installed in accordance with installation instructions and applicable code.
- Properly seal all penetrations through the stucco wall system.

TYPICAL PIPE PENETRATION



FSWS-24 0211

TYPICAL LIGHT FIXTURE

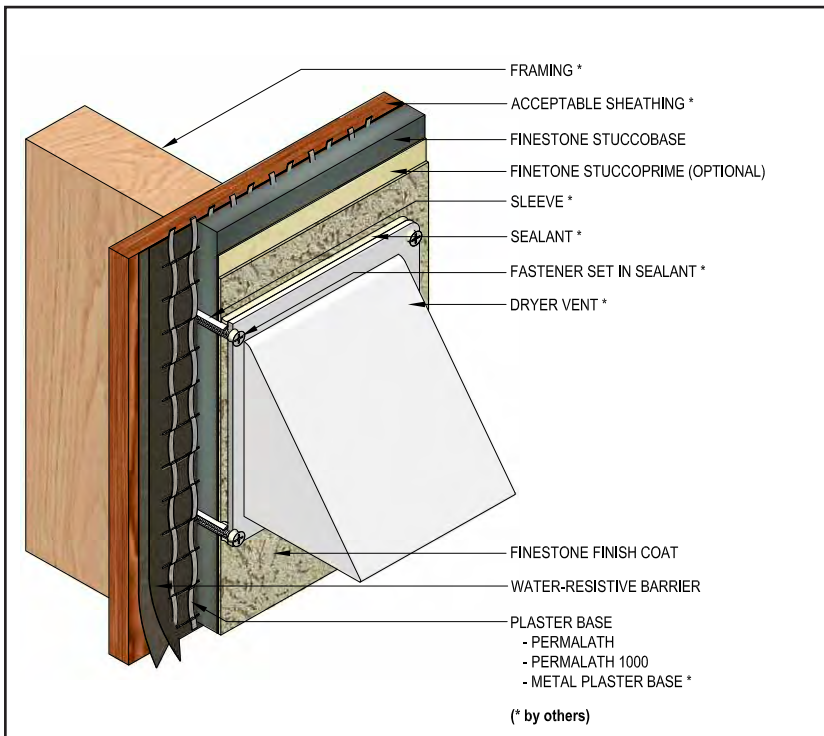


FSWS-25 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Properly seal all penetrations through the stucco wall system.

TYPICAL DRYER VENT



FSWS-26 0211

Notes:

- Verify all materials are installed in accordance with installation instructions and applicable code.
- Properly seal all penetrations through the stucco wall system.

NOTES

Note

BASF Wall Systems is an operating unit of BASF Corporation (herein referred to as "BASF Wall Systems")

Residential Policy

Apply wall systems in accordance with local building codes in force at the time of construction. On one and two-family residential framed construction, BASF Wall Systems requires that the wall system selected be one that includes provisions for moisture drainage.

Disclaimer

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Section 09220**STUCCO SYSTEMS**

2- and 3- Coat Impact-Resistant Stucco Systems

INTRODUCTION

This specification has been assembled to enable the design professional to select or delete sections to suit the project requirements and is intended to be used in conjunction with Finestone typical details, bulletins, etc.

Air seals at any joints/gaps between adjoining components (penetrations, etc.) are of primary importance to maintain continuity of the air barrier system and must be considered by the design professional in the overall wall assembly design.

This specification is intended for applications on the following substrates: PermaBase brand cement board (or other ASTM C1325 Type A Exterior approved cement boards), Fiberock AquaTough Sheathing, e²XP_{TM} by National Gypsum, GlasRoc® and GlasRoc® Type X by Certainteed, Dens-Glass Gold sheathing (ASTM C1177), gypsum sheathing (ASTM C79/C1396), Exposure 1 or exterior plywood sheathing (Grade C-D or better), Exposure 1 OSB.

TECHNICAL INFORMATION

Consult our Technical Services Department for specific recommendations concerning all other applications. Consult the Finestone website, www.finestone.basf.com, for additional information about products and systems and for updated literature.

PART 1 - GENERAL**1.01 SECTION INCLUDES**

- A.** Refer to all drawings and other sections of this specification to determine the type and extent of work therein affecting the work of this section, whether or not such work is specifically mentioned herein.
- B.** System Description: Composite wall system consisting of FINESTONE Stuccobase™/ Stuccobase™ Premix and FINESTONE Finish Coat.
- C.** Finestone products are listed in this specification to establish a standard of quality. Any substitutions to this specification shall be submitted to and receive approval from the Architect at least 10 days before bidding. Proof of equality shall be borne by the submitter.
- D.** The system type shall be Finestone Stucco Systems as manufactured by BASF Wall Systems, Jacksonville, Florida.

1.02 RELATED SECTIONS

- A.** Section 03300 Concrete
- B.** Section 04200 Masonry
- C.** Section 05400 Cold-formed metal framing: Light gauge load-bearing metal framing
- D.** Section 06100 Rough carpentry: Wood framing
- E.** Section 07260 Building Paper
- F.** Section 07900 Sealants
- G.** Section 08000 Doors and windows
- H.** Section 09100 Metal support systems
- I.** Section 09110 Non-load-bearing wall framing: Non-load-bearing metal framing systems
- J.** Section 09250 Exterior Gypsum substrates
- K.** Section 09206 Metal Lath

STUCCO SYSTEMS

1.03 REFERENCES

- A.** ASTM C150-99a Standard Specification for Portland Cement
- B.** ASTM C926-98a Standard Specification for Application of Portland Cement-Based Plaster
- C.** ASTM C1063-99 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
- D.** ASTM C847-95 Standard Specification for Metal Lath.
- E.** ASTM C933-96a Standard Specification for Welded Wire Lath.
- F.** ASTM C1032-96 Standard Specification for Woven Wire Plaster Base
- G.** ICC-ES AC11 Cementitious Exterior Wall Coatings
- H.** ESR-1064 ICC Evaluation Service, Inc., ES Report™

1.04 SUBMITTALS

- A.** Submit manufacturer's product brochures with product specifications and installation requirements for each component of the Stucco Systems.
- B.** Samples:
 - 1.** Submit an 18.8 cm x 18.8 cm (7" x 7") sample for each finish color and texture specified.
 - 2.** Each sample shall be prepared using the same tools and techniques as required for the actual application.
 - 3.** An approved sample shall be available and maintained at the job site.
- C.** Shop drawings:
 - 1.** The applicator shall prepare and submit schedules and complete shop drawings to the Architect for approval.
 - 2.** The drawings shall show all details, sizes, types, finishes, anchorage and sealant joints and other items as required or specified so that a proper evaluation can be made of the proposed materials and construction.

1.05 QUALITY ASSURANCE

- A.** The Stucco Systems Applicator shall provide satisfactory evidence of his qualifications to apply the Stucco Systems.
- B.** Design and Detailing a Stucco System:
 - 1.** General
 - a.** The system shall be installed in strict accordance with current recommended published details and product specifications from the system's manufacturer.
 - b.** Sealants and backer rod as required at dissimilar materials and expansion joints within the Stucco System shall provide a complete watertight system.
 - c.** The use of dark colors must be considered in relation to wall surface temperature as a function of local climate conditions.
 - d.** Minimum slope for all projections shall be 1:2 with a maximum length of 30.5 cm (12") [e.g. 15 cm in 30.5cm (6" in 12")], unless other manufacturer-approved detailing is shown on the construction documents.
 - 2.** Substrate Systems
 - a.** Deflection of the substrate systems shall not exceed L/360.
 - b.** Acceptable substrates are PermaBase Cement-Board and other cement-boards conforming with ASTM C1325 (Type A-exterior) , poured concrete/unit masonry, Fiberock Aqua-Tough Sheathing, Dens-Glass Gold sheathing (ASTM C1177), gypsum sheathing (ASTM C1396), Exposure I or exterior plywood (Grade C-D or better), or Exposure I OSB.
 - c.** Application over substrates of poured concrete/unit masonry to a maximum thickness of 5/8" may be installed without the use of metal lath in accordance with ASTM C-926.
 - d.** Painted and otherwise coated surfaces of brick, unit masonry, stucco and concrete shall be inspected and prepared as approved by BASF Wall Systems before application. Paint on surface consolidants or primers shall not be used to bond Stucco Systems to painted surfaces.
 - e.** Other substrates shall be approved by the system's manufacturer in writing prior to the application.
 - f.** The applicator shall verify that the proposed substrate is acceptable prior to the Stucco Systems installation.
 - g.** The substrate systems shall be engineered with regard to structural performance by others.

3. System Joints
 - a. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, where substrates change and where structural movement is anticipated. Control joints are recommended at a minimum of every 13 m² (144 ft²) of wall surface area and where specified by the design professional. The maximum uncontrolled length or width is 5.5 lineal meters (18 lineal feet) and a maximum uncontrolled length to ratio of 2 1/2: 1. It is the sole responsibility of the project design team, including the architect, engineer, etc., to ultimately determine specific expansion and control joint placement, width and design.
 - b. Reference construction documents for specific locations.
4. Coordination with Other Trades
Architect shall evaluate adjacent materials such as windows, doors, etc. for conformance to manufacturer's details. Adjacent trades shall provide scaled shop drawings for review.

1.06 DESIGN RESPONSIBILITY

- A. It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for its intended use. The designer selected by the purchaser shall be responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings and the like. BASF Wall Systems has prepared guidelines in the form of specifications, typical application details, and product bulletins to facilitate the design process only. BASF Wall Systems is not liable for any errors or omissions in design, detail, structural capability, attachment details, shop drawings or the like, whether based upon the information provided by BASF Wall Systems or otherwise, or for any changes which the purchasers, specifiers, designers or their appointed representatives may make to BASF Wall Systems published comments.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver to the job site all materials in unopened, undamaged containers, clearly marked and identified with the system manufacturer's name and description of contents.
- B. Store materials inside, or under cover and off the ground and keep them dry, protected from the weather, direct sun light, surface contamination, damaging temperatures, damage from construction traffic and other causes.
- C. Stack insulation board flat, a minimum of 30.5 cm (12") above the ground, and protected from the sun.
- D. Store pail materials in temperatures not less than 4°C (40°F) or more than 43°C (110°F).

1.08 PROJECT/SITE CONDITIONS

- A. Existing Conditions
The contractor shall refer to Section 01010 for project requirements and this contractor's responsibility thereunder.
- B. Environmental Requirements
The contractor under this section shall verify site conditions to assure that the requirements of storage of materials and installation procedures conform to the system manufacturer's current product storage and application requirements as applicable to warranty conditions.
- C. Protection of Work
 1. Protect surrounding areas and surfaces during the application of the system.
 2. The system shall be protected when work ceases for the day or when an area is completed so that water will not infiltrate behind the system.

1.09 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Stucco Systems with related work of other sections
- B. Coordinate and schedule installation of trim, flashing, and joint sealers to prevent water infiltration behind the system.
- C. Coordinate and schedule installation of windows, doors, A/C units, air seals etc.

1.10 WARRANTY

- A. [Provide a Finestone five-year materials warranty for Finestone Stucco Systems installations.]

PART 2 PRODUCTS

2.01 MANUFACTURERS

All components of the Finestone Stucco Systems shall be obtained from the system manufacturer or through an authorized distributor.

STUCCO SYSTEMS

2.02 MATERIALS

- A.** Insulation Board: expanded polystyrene not to exceed 1.5 lb density tongue and groove. Thickness of EPS shall not exceed 1 1/2"
1. Nominal 1.5 pcf aged expanded polystyrene.
 2. Flamespread and smoke development shall be 25 and 450 or less respectively per ASTM E84.
 3. Maximum size 61 cm x 2.44 m x 10 cm (2' x 8' x 1.5").
 4. Tongue and groove with 9.5 mm (3/8") high tongues and compatible grooves.]
- B.** Finestone StuccoBond™ substrate bonding agent: an acrylic-based, non-reemulsifiable bonding agent.]
- C.** Metal Lath or Woven/Welded Wire: (See also, *Finestone Lath & Trim Accessories* system support bulletin)
1. Stucco System 2: 3/8"–1/2" thick stucco
Minimum No. 20 gauge, 25.4 mm (1") galvanized steel, woven wire fabric is required. Other laths shall comply with ASTM C933-80 (welded) and ASTM C1032-86 (woven). The lath is self-furred or furred when applied over all substrates except unbacked polystyrene.
- OR -
- Expanded Metal Lath: The lath shall comply with ASTM C847-93. Furring and self-furring requirements shall be as set forth for wire-fabric lath. Minimum weight is 1.36 kg/m² (2.5 lb/yd²). Other acceptable welded laths shall comply with ASTM C933-80 and other acceptable woven laths shall comply with ASTM C1032-86.
2. Stucco System 3: 3/4"–7/8" thick stucco
Metal Lath or Woven/Welded Wire: (See also, *Finestone Lath & Trim Accessories* system support bulletin) [Minimum No. 17 gauge, 25.4 mm (1") galvanized steel, woven wire fabric is required. Other laths shall comply with ASTM C933-80 (welded) and ASTM C1032-86 (woven). The lath is self-furred or furred when applied over all substrates except un-backed polystyrene.]
- OR -
- Expanded metal lath: The lath shall comply with ASTM C847-93. Furring and self-furring requirements shall be as set forth for wire-fabric lath. Minimum weight is 1.85 kg/m² (3.4 lb/yd²) Other acceptable welded laths shall comply with ASTM C933-80 and other acceptable woven laths shall comply with ASTM C1032-86.
- D.** Plaster Sand: Must be clean and free from deleterious amounts of loam, clay, silt, soluble salts and organic matter. Sampling and testing must comply with ASTM C897. Plaster sand must be graded within the following limits:

Percent retained by weight

Retained on	± 2 Percent	
	Min.	Max.
U.S. Standard Sieve		
No. 4	-	0
No. 8	0	10
No. 16	10	40
No. 30	30	65
No. 50	70	90
No. 100	95	100

E. Water: clean and potable without foreign matter.

F. FINESTONE STUCCOBASE™

1. FINESTONE STUCCOBASE™: Factory-blended stucco mixture of Portland cement, reinforcing fibers, and proprietary ingredients; supplied by BASF Wall Systems for scratch and brown coats.]

-OR-

1. FINESTONE STUCCOBASE™ PREMIX: Factory-blended stucco mixture of Portland cement, reinforcing fibers, sand, and proprietary ingredients; supplied by BASF Wall Systems for scratch and brown coats.]

G. Finestone EPS insulation adhesive/base coat

1. ADHESIVE/BASE COAT (A/BC) Base Coat: 100% acrylic base coat, field-mixed with Portland cement; manufactured by BASF Wall Systems]
2. A/BC 1-STEP: Dry-mix base coat containing Portland cement; manufactured by BASF Wall Systems]

H. Finestone Reinforcing Mesh: MIL-Y-1140G; Balanced, open weave glass fiber reinforcing mesh; twisted multi-end strands treated for compatibility with Finestone System components.

1. STANDARD MESH: standard weight, 4 oz.]
2. INTERMEDIATE 6: standard/medium weight, 6 oz.]

- [3. INTERMEDIATE 12: intermediate weight, 12 oz.]
- [4. STRONG 15: heavy weight, 15 oz. used only in combination with Flexguard 4 or Intermediate 6.]
- [5. HI-IMPACT 20: heavy weight, 20 oz. used only in combination with Flexguard 4 or Intermediate 6.]
- [I. Finestone STUCCO PRIME: 100% acrylic-based primer; color [] to closely match the selected Finestone Finish coat color; manufactured by BASF Wall Systems]
- J. PEBBLETEX 100% acrylic resin finish: air cured, compatible with Base Coat; Finish color factory-mixed; color [] as selected; Finish texture [NATURAL SWIRL] [LIMESTONE] [FINETEX] [CLS 1.5] [MOJAVE] [ENCAUSTO VERONA] [METALLIC] [MICAMIST] [FINEMIST] [CORONAMIST] [MICALUX] as scheduled.]
- OR -
- [AGGRELASTIC, 100% acrylic resin elastomeric finish]
- [K. MAXIMUM A/S: Factory mixed additive, for maximum resistance to soiling. Siloxane polymer (silicone) is added. Silicone polymers reduce mildew and algae growth, stay cleaner, and are hydrophobic.]
- [L. X-L: Factory mixed mildew protection additive]
- Note: Maximum A/S and X-L factory mixed additives may only be added to standard Pebbletex Finishes, Aggrelastic Finishes and standard Finestone coating products and are not intended for use in Finestone Specialty Finishes.**
- [M. BASF Wall System's ANTICOGLAZE™: 100% acrylic-based stain or glaze which produces beautiful aesthetics with varied degrees of mottling, coloration and glaze, based upon the combination of application technique, the color of the ANTICOGLAZE™ itself and the color of the finish it is applied to; distributor tinted color []].
- Note: Check specific product bulletins for complete application instructions and for the use of Finestone coatings for priming sealant joint and priming of the Base Coat in certain applications.**

2.03 ACCESSORIES

- A. Secondary Moisture Protection Barrier: A secondary weather barrier must be installed over sheathed substrates and wrapped into rough openings prior to installation of the Finestone Stucco Systems. (Not required on unit masonry/non-insulated concrete substrates surfaces to receive the Finestone Stucco Systems).
 - 1. Acceptable Secondary Moisture Protection Barriers include polymeric weather resistive barriers such as Tyvek® StuccoWrap and acceptable equals that comply with and are recognized by local building codes. Grade D 60 minute paper and other code approved asphalt saturated building papers are also acceptable. Finestone trowel/roller applied weather barriers (FINESTOP or FINESTOP-RA) can be used provided a subsequent layer of a polymeric weather resistive barrier such as Tyvek Stuccowrap or equal is applied over the FINESTOP or FINESTOP-RA.
 - 2. Install the Secondary Moisture Protection Barrier over the substrate and according to manufacturer's specifications and applicable building code requirements.
 - 3. The Secondary Moisture Protection Barrier shall be free of any damage such as holes or breaks, and must be applied to all surfaces to receive the Finestone StuccoBase™.
 - 4. Wrap the Secondary Moisture Protection Barrier into rough openings (doors, windows, etc.) in accordance with Finestone's *Secondary Moisture Protection Barrier Guidelines for Finestone Stucco Systems* (bulletin #1025649) to increase the level of moisture protection to the building frame and interior.
 - 5. Coordinate work with other trades to assure proper sequencing, detailing and installation of materials.
 - 6. Finestone FLASHING PRIMER: water-based primer for use prior to application of FLASHING TAPE on all approved surfaces.
 - 7. FLASHING TAPE: 20mil thick, self-sealing, self-healing rubberized asphalt laminated to a polyethylene film.
- B. Trim: Casing bead, corner bead, expansion joint and weep screed accessories shall meet the requirements of ASTM C1063. Accessories shall be: vinyl, meeting ASTM D1784; galvanized, meeting ASTM A525 and ASTM A526; or zinc, meeting ASTM B69. Zinc accessories are recommended where highly humid or salt-laden service conditions exist. Refer to Finestone's *Accepted Stucco Systems Lath and Trim Accessories* (bulletin #1025659) for additional information.
 - 1. Foundation weep screed: Beveled edge designed to terminate finish system and drain internal moisture.
 - 2. Casing bead: Square edge style.
 - 3. Corner bead: Small radius nose style.
 - 4. Control joints: W-shaped accordion profile style.
 - 5. Expansion joints: [Two piece type slip-joint design] or [pair of casing beads spaced for application of sealant bead]

STUCCO SYSTEMS

PART 3 EXECUTION

3.01 EXAMINATION

- A.** Verify project site conditions under provisions of Section [01039] [].
- B.** Walls
- 1.** Substrates
 - a.** Acceptable substrates: PermaBase Cement-Board and other cement-boards conforming with ASTM C1325 (Type A-exterior) , poured concrete/unit masonry, Fiberock Aqua-Tough Sheathing, Dens-Glass Gold sheathing (ASTM C1177), gypsum sheathing (ASTM C1396), Exposure I or exterior plywood, or Exposure I OSB. Consult BASF Wall Systems Technical Service Department for all other applications.
 - b.** Wall sheathings must be securely fastened per applicable building code requirements and manufacturers recommendations.
 - c.** Verify concrete/unit masonry is free of dust, dirt, grease, oils, laitance, efflorescence, biological residue, existing paint or coatings, curing compounds, form release agents, or any other contaminants which might affect the bond of FINESTONE STUCCOBASE™. Masonry walls should be properly cured to full load bearing capacity, laid true, and with joints tooled. Properly prepared concrete will have an open texture similar to fine grit sandpaper.
 - d.** Examine surfaces to receive system and verify that substrate and adjacent materials are dry, clean, and sound. Verify substrate surface is flat, free of fins or planar irregularities greater than 6 mm in 3 m (1/4" in 10').
 - 2.** Flashings
 - a.** Heads, jambs and sills of all openings must be flashed with a minimum 230 mm (9") strip of secondary moisture barrier prior to window/door, HVAC, etc. installation.
 - b.** Windows and openings shall be flashed according to design and building code requirements.
 - c.** Individual windows that are ganged to make multiple units require continuous head flashing and/or the joints between the units must be fully sealed.
 - 3.** Utilities
The system must be properly terminated (back-wrapped, sealed, flashed) at all lighting fixtures, electrical outlets, hose bibs, dryer vents, etc. Refer to Finestone Stucco Systems Typical Details.
 - 4.** Decks
Wood decks must be properly flashed prior to system application. For proper application, refer to Finestone Stucco Systems Typical Details. The system must be terminated a minimum of 25 mm (1") above all decks, patios, sidewalks, etc.
 - 5.** Secondary moisture barrier
Verify that the secondary moisture barrier is installed over the substrate per applicable building code requirements, manufacturer's specifications and Finestone's Secondary Moisture Protection Barrier Guidelines for Finestone Stucco Systems prior to application of the Finestone Stucco Systems.
 - 6.** Roof
Verify that all roof flashings have been installed in accordance with the guidelines set by the Asphalt Roofing Manufacturers Association (ARMA).
 - 7.** Kick-out flashing
Kick-out flashing must be installed where required. The kick-out flashing must be leak-proof and angled (min 100°) to allow for proper drainage and water diversion. Refer to Finestone Stucco Systems Typical Details.
- C.** Unsatisfactory conditions shall be reported to the general contractor and/or builder and/or architect and/or owner. Do not proceed until all unsatisfactory conditions have been corrected.

3.02 MIXING

General: No additives are permitted unless specified in product mixing instructions. Close containers when not in use. Prepare in a container that is clean and free of foreign substances. Do not use a container which has contained or been cleaned with a petroleum-based product. Clean tools with soap and water immediately after use.

- A.** Finestone base coat: FINESTONE STUCCOBASE™
- 1.** Use mixer which is clean and free of foreign substances.
 - 2.** Add 18.9–22.7 liters (5–6 gallons) of clean potable water to mixer per one bag of Finestone StuccoBase.

3. Add one bag of Finestone STUCCOBASE.
 4. Add one half 45.4–54.4 kg (100–120 lbs) of the required plaster sand (ASTM C144 or ASTM C897).
 5. Mix for 3–4 minutes at normal mixing speed while adding the remainder 45.4–54.4 kg (100–120 lbs) of the plaster sand. Allow material to set for 2–4 minutes, then remix adding water to achieve desired consistency.
- Note: Continuous mixing may cause excessive air entrainment.**
- B.** Finestone base coat: FINESTONE STUCCOBASE™ PREMIX
1. Use mixer which is clean and free of foreign substances.
 2. Add 7.6–9.5 liters (2–2.5 gallons) of clean potable water to mixer.
 3. Slowly add one bag of FINESTONE STUCCOBASE™ PREMIX.
 4. Mix for one minute at normal mixing speed. Allow material to set for 2–4 minutes with mixing blades at rest. Then re-mix, adding water to achieve desired consistency. Desired consistency varies with type of application (trowel or gun), Substrate (paper-backed lath or block) and whether the stucco is applied to a wall or a ceiling.
- Note: Continuous mixing may cause excessive air entrainment.**
- [C.]** Finestone Base Coat/Adhesive
1. ADHESIVE/BASE COAT (A/BC)
 - a. Mix base coat with a paddle and drill until thoroughly blended, before adding Portland cement.
 - b. Mix one part (by weight) Portland cement with one part base coat. Add Portland cement in small increments, thoroughly mixing to a homogeneous consistency after each additional increment.
 - c. Clean, potable water may be added to adjust workability.
 2. A/BC 1-STEP Base Coat
 - a. Mix and prepare each bag in a 19-liter (5-gallon) pail.
 - b. Fill the container with approximately 5.6-liters (1.5-gallons) of clean, potable water.
 - c. Add A/BC 1-STEP Base Coat in small increments, mixing after each additional increment.
 - d. Mix A/BC 1-STEP Base Coat and water with a mixer to a homogeneous consistency.
 - e. Additional A/BC 1-STEP Base Coat or water may be added to adjust workability.]
- D.** Finestone [PEBBLETEx] [AGGRELASTIC] [STUCCO PRIME]
1. Thoroughly mix the factory-prepared material with a clean paddle and drill until thoroughly blended.
 2. A small amount of clean, potable water may be added to adjust workability.
 3. Additives are not permitted.
 4. Close container when not in use.
 5. Clean tools with soap and water immediately after use.

3.03 APPLICATION

General: Apply Finestone Stucco Systems materials in accordance with Specifications.

- [A.]** Apply STUCCOBOND substrate bonding agent as per Specifications to areas that will receive StuccoBase mixture within 12 hours.]
- B.** Secondary Moisture Protection Barrier (Not required on unit masonry/non-insulated concrete substrates surfaces to receive the Finestone StuccoBase™).
1. Install according to the Secondary Moisture Protection Barrier manufacturer's specifications and applicable building code requirements.
 2. The Secondary Moisture Protection Barrier shall be free of any damage such as holes or breaks, and must be applied to all surfaces to receive the Finestone Stucco Systems.
 3. Wrap the Secondary Moisture Protection Barrier into rough openings (doors, windows, etc.) in accordance with Finestone's *Secondary Moisture Protection Barrier Guidelines for Finestone Stucco Systems* (bulletin #1025649) to increase the level of moisture protection to the building frame and interior.
 4. Coordinate work with other trades to assure proper sequencing, detailing and installation of materials.
- [5.]** Expanded polystyrene insulation board (Optional)
The expanded polystyrene insulation board (2' x 8' nominal 1.5 PCF density, tongue and groove) shall be placed horizontally with the tongue facing upward and temporarily held in place with galvanized staples, roofing nails or (metal framing) self tapping screws.]
- C.** Trim junction
1. When two pieces of trim abut:

STUCCO SYSTEMS

- a. Set intersection of trim in a minimum 100 mm (4") bed of acceptable trim sealant.
 - b. Allow 3–5 mm (1/8"–3/16") gap between the abutting trim pieces. Do not overlap trim.
 - c. Attach the trim in accordance with manufacturer's specifications. True expansion joints must be fastened to the structural substrate.
2. When two or more pieces of trim intersect:
 - a. The vertical trim piece shall be continuous with all horizontal pieces.
 - b. Miter all corners at intersections of trim.
 - c. Set intersection of trim in a minimum 100 mm (4") bed of acceptable trim sealant.
 - d. Allow 3–5 mm (1/8"–3/16") gap between the intersecting trim pieces. Do not overlap the trim.
 - e. Attach the trim in accordance with manufacturers' specifications.

NOTE: Control joints are recommended at a minimum of every 13.4 m² (144 ft²) and as specified by the design professional. The maximum uncontrolled length or width is 5.5 lineal meters (18 lineal feet) and a maximum uncontrolled length to width ratio of 2 1/2:1. It is the sole responsibility of the project design team, including the architect, engineer, etc., to ultimately determine specific expansion and control joint placement, width and design.
 3. Application over open framing:
 - a. The weather-resistive membrane is placed over open wood or steel framing spaced a maximum of 610 mm (24") on center. Wall bracing, in accordance with the applicable code, shall be installed. Square wall corners and parapet corners, metal corner reinforcement are optional. The expanded polystyrene insulation board [610 mm x 2438 mm (2' x 8') tongue-and-groove] shall be placed horizontally with the tongue facing upward and temporarily held in place with galvanized staples or roofing nails. Self-tapping screws shall be used to temporarily fasten the board to metal framing. Vertical butt joints shall be staggered a minimum of one framing space from the adjacent courses and occur directly over framing.
 - b. The lath shall be applied tightly over the insulation board and shall be fastened through the board to wood framing with minimum 50 mm long (2"), No. 11 gauge [3.75 mm (0.148") shaft diameter, 11.1 mm (0.438") head diameter], galvanized roofing nails or No. 16 gauge [1.59 mm (0.0625") shaft diameter] galvanized staples spaced a maximum of 152.4 mm (6") on center with a minimum 25.4 mm (1") penetration into the wood framing. Staples shall have a minimum 13 mm (1/2") crown width. Stapling shall be utilized only in wood species having a minimum specific gravity of 0.42. The lath shall be fastened to all steel framing members [minimum No. 20 gauge, 0.912 mm (0.0359") thick] using No. 8-18, S-12, pan-head, self-tapping screws spaced a maximum of 15 cm (6") on center to all framing. The screws shall penetrate framing at least 6.35 mm (1/4"). The wire lath shall be applied with minimum 25.4 mm (1") end laps.
- D. Lath:**
- Woven/Welded Wire
1. Wire or lath shall be applied with minimum 25 mm (1") end laps and side laps.
 2. Furring crimps shall occur at maximum 152 mm (6") intervals each way. Furring crimps shall provide a minimum 2 mm (1/8") clearance from the substrate after installation.
- OR -
- Expanded Metal lath
1. The metal lath shall be applied with minimum 13 mm (1/2") side laps and 25 mm (1") end laps.
 2. When end laps occur between supports, lace or wire ties the ends of the sheets with 1.2 mm (0.0475") galvanized annealed steel wire.
 3. Refer to ASTM C1063 for additional information.
 4. Corrosion-resistant fasteners for lath attachment shall penetrate a minimum of 25 mm (1") into wood framing.
 5. Apply the Finestone Stucco Systems over steel framing [minimum No. 20 gauge, 0.912 mm (0.0359") thick]. Lath is secured to framing using No.8-18, S-12, pan-head, self-tapping screws spaced a maximum of 152.4 mm (6 inches) vertical on center to studs.
- E. FINESTONE STUCCOBASE™/STUCCOBASE™ PREMIX Base Coat: Stucco Systems 2 Application (3/8"–1/2" thickness)**
1. Following surface preparation and installation of the lath and accessories apply the FINESTONE STUCCOBASE™/STUCCOBASE™ PREMIX mixture to the approved substrate by hand troweling or machine spraying to a thickness of 3/8" to 1/2", completely embedding the lath.
 2. Use rod and darby to level the applied base coat without exposing the lath.

3. After initial set begins and surface has sufficiently hardened, use sponge or hard rubber float as required to fill voids, holes or imperfections, leaving the surface ready to receive Finestone Finish.
 4. At subcontractor's option, the double back method of application, whereby the first and second coats are applied and cured as one system, may be used. If this system is used, the second coat (brown) should be applied as soon as the first coat is rigid.
 5. Damp cure for at least 48 hours by lightly and evenly fogging the surface with water at least twice a day. Direct sunlight, hot temperatures, low humidity and windy conditions may make additional fogging necessary.
 6. Allow FINESTONE STUCCOBASE™/STUCCOBASE™ PREMIX to cure a minimum of 6 days prior to application of EPS insulation board shapes or primer and Finish Coat application.
- OR -
- E. FINESTONE STUCCOBASE™/STUCCOBASE™ PREMIX Base Coat: Stucco Systems 3 Application (3/4"–7/8" thickness)**
1. Total thickness of base coats must meet code requirements for fire rated construction.
 2. Nominal plaster Base Coat thickness:
 - a. First coat "scratch": 3/8"–1/2"
 - b. Second coat "brown": 3/8"–1/2"
 3. Apply FINESTONE STUCCOBASE™/STUCCOBASE™ PREMIX mixture to the approved substrate by hand troweling or machine spraying with sufficient force to develop full adhesion between FINESTONE STUCCOBASE™/STUCCOBASE™ PREMIX mixture and the substrate.
 4. Apply first coat to completely embed lath. Cross rake slightly to provide key for second brown coat. Coat must be uniform in thickness. Ensure the first coat is properly "scratched" and sufficiently rigid to resist cracking prior to application and leveling of the second or "brown" coat.
 5. Apply second brown coat to provide the required total thickness. Trowel FINESTONE STUCCOBASE™/STUCCOBASE™ PREMIX into trim to seat trim. The lath shall be fully embedded in the coating and shall be completely covered. Coat must be uniform in thickness. Rod off to desired thickness, leveled with screeds, to provide a true, flat plane. Follow this by wood floating or darbying the surface.
 6. After surface has sufficiently hardened, use sponge or hard rubber float as required to fill voids, holes or imperfections, leaving the surface ready to receive Finestone Finish.
 7. Damp cure for at least 48 hours by lightly and evenly fogging the surface with water a least twice a day. Direct sunlight, hot temperatures, low humidity and wind may make additional fogging necessary.
 8. Allow Base Coat to cure a minimum of 6 days prior to application of EPS insulation board shapes or primer and Finish Coat application.
- [F. Finestone STUCCO PRIME:**
1. Apply STUCCO PRIME to the STUCCOBASE™ or "brown" coat with a sprayer, 10 mm (3/8") nap roller, or good-quality latex paint brush at a rate of approximately 3.6–6.1 m² per liter (150–250 ft² per gallon).
 2. STUCCO PRIME shall be dry to the touch before proceeding with the Finestone Finish Coat application.

Note: STUCCO PRIME is required for NATURAL SWIRL Finish, and can also enhance color uniformity and performance, and ease Finish Coat application of other Finishes and as such is recommended on stucco substrates.]
- G. Finestone Finish Coat**
- [1. PEBBLETEX 100% acrylic resin finish: air cured, compatible with Base Coat; Finish color factory-mixed; color [] as selected; Finish texture [NATURAL SWIRL] [LIMESTONE] [FINETEX] [CLS 1.5] [MOJAVE] [ENCAUSTO VERONA] [METALLIC] [MICAMIST] [FINEMIST] [CORONAMIST] [MICALUX] as scheduled.]**
- OR -
- [AGGRELASTIC, 100% acrylic resin elastomeric finish]**
- a. Apply Finish directly to the stucco brown coat with a clean, stainless steel trowel.

NOTE: 1. Certain colors may require the use of Finestone STUCCO PRIME over the stucco brown coat prior to application of Finish.]

2. In order to minimize the possibility of base coat read-through with color #1 Max White in NATURAL SWIRL, we recommend the use of STUCCO PRIME. Base Coat read-through with NATURAL SWIRL Finish in Max White is very applicator dependent. A color sample must be approved prior to product shipment. Also, slight color or texture variations may occur. Over time, and depending on its exposure, ENCAUSTO VERONA's appearance will achieve a soft,

STUCCO SYSTEMS

weathered patina. ENCAUSTO VERONA Finish will not hide imperfections in the base coat surface. Dark colors will show marks from scratching. Built-up applications of ENCAUSTO VERONA or FINETEX are not recommended as craze cracking can result.

- b. Apply and level Finish during the same operation to minimum obtainable thickness consistent with uniform coverage.
 - c. Maintain a wet edge on Finish by applying and texturing continually over the wall surface.
 - d. Work Finish to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area.
 - e. Float Finish to achieve final texture.]
- [2. FINEMIST] [MICAMIST] [MICALUX] Finish Coat
- a. Apply FINEPRIME to substrate in accordance with current Finestone FINEPRIME product bulletin. FINEPRIME shall be of corresponding color for selected [FINEMIST] [MICAMIST] [MICALUX] Finish color. Allow FINEPRIME to dry to the touch before proceeding to [FINEMIST] [MICAMIST] [MICALUX] Finish application.
 - b. Apply a tight coat of Finish with a clean, stainless steel trowel.
 - c. Maintain a wet edge on Finish by applying and leveling continually over the wall surface.
 - d. Work Finish to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area. Allow first coat to set until surface is completely dry prior to applying a second coat of Finish.
 - e. For a smooth appearance, use a stainless steel trowel and apply the second coat of Finish. Achieve final texture using circular motions.
 - f. For a textured appearance, apply the second coat of Finish using a spray gun and hopper.
 - g. Double-back to achieve final texture.
 - h. Total thickness of Finish shall be approximately 1.6 mm (1/16").
- [3. CORONAMIST Finish
- a. Apply FINEPRIME to substrate in accordance with current Finestone FINEPRIME product bulletin. FINEPRIME shall be of corresponding color for selected CORONAMIST Finish color. Allow FINEPRIME to dry to the touch before proceeding to CORONAMIST Finish application.
 - b. Apply a coat of CORONAMIST Finish using a spray gun and hopper, maintaining a wet edge. Work to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area.
 - c. Allow first coat of CORONAMIST Finish to set until surface is completely dry prior to applying a second coat of CORONAMIST Finish.
 - d. Apply a second coat of CORONAMIST Finish using a spray gun and hopper; double back to achieve final texture.
 - e. Thickness of CORONAMIST Finish may vary between 1.6 mm (1/16") and 3.2 mm (1/8"), depending upon texture.
- Note: Spraying of CORONAMIST Finish should be by the same mechanics and in the same manner and direction on a particular elevation or project whenever possible, to maintain a uniform appearance. Maintain consistent air pressure to minimize texture variations. Stator or rotor design pumps are not recommended.]**

[H. BASF Wall System's ANTICOGLAZE™:

- 1. Apply BASF Wall System's ANTICOGLAZE™ in accordance with recommendations contained in current product literature.]

3.05 CLEANING

- A. Clean work under provisions of Section [01700] [].
- B. Clean adjacent surfaces and remove excess material, droppings, and debris.

3.06 PROTECTION

Protect base coat from rain, snow and frost for 48–72 hours following application.

SCHEDULES

FINESTONE FINISH COAT

FINISH	LOCATION
A. NATURAL SWIRL	_____
B. LIMESTONE	_____
C. FINETEX	_____
D. CLS 1.5	_____
E. MOJAVE	_____
F. MICAMIST	_____
G. FINEMIST	_____
H. CORONAMIST	_____
I. METALLIC	_____
J. ENCAUSTO VERONA	_____
K. MICALUX™	_____
L. ANTICOGLAZE™	_____

END OF SECTION

NOTE

BASF Wall Systems is an operating unit of BASF Construction Chemicals, LLC. (herein after referred to as "BASF Wall Systems")

TECHNICAL SUPPORT

For further details, specifications, questions, specific recommendations, or the most recent product information, please consult the BASF Wall Systems Technical Services Department: Toll-free 800-221-9255 or our website, www.finestone.basf.com

DISCLAIMER

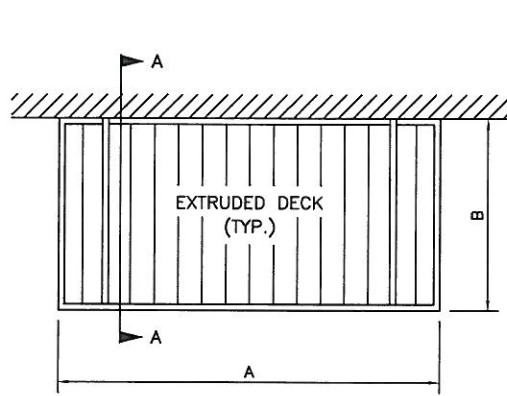
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RESIDENTIAL POLICY

On one- and two-family residential framed construction, FINESTONE requires that the wall system selected be one that includes provisions for moisture drainage. The choices include Pebbletex D line of drainage EIFS, FINESTONE Stucco Systems and Finescreen Cement Board Stucco Systems. There are no exceptions to this policy. Under no circumstances will FINESTONE warrant the use of any other system on this type of construction without expressed written authorization from FINESTONE. [Residential construction using EIFS on masonry (CMU) or poured concrete does not require the additional water management provisions described above.] Consult FINESTONE Technical Service Department for specific recommendations concerning all other applications.

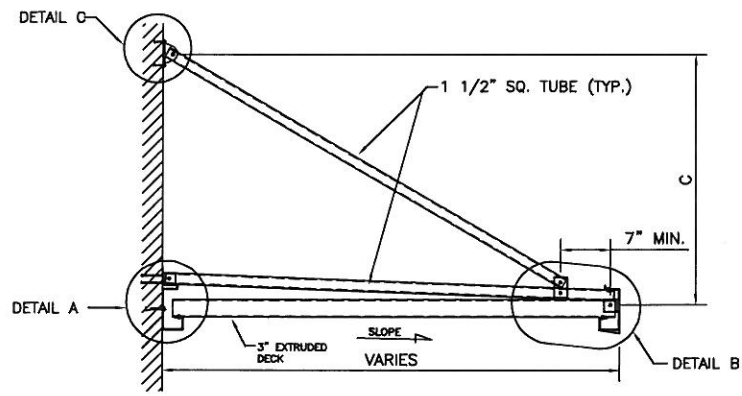
BASF Wall Systems

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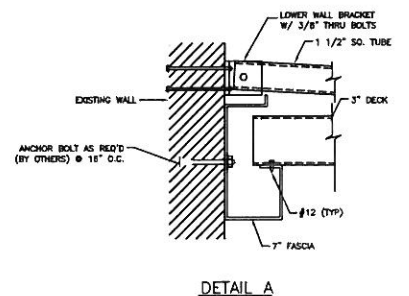


CANOPY PLAN

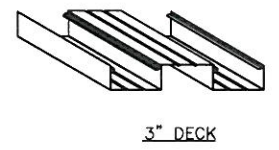
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 C = _____



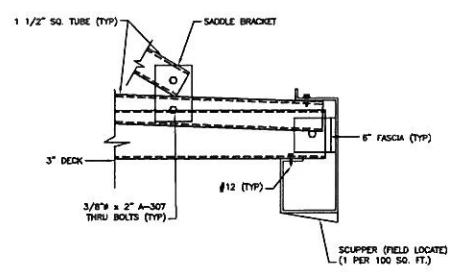
SECTION A-A



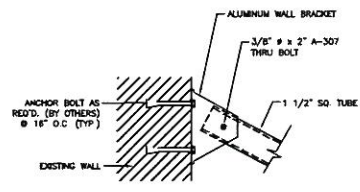
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3\"/>



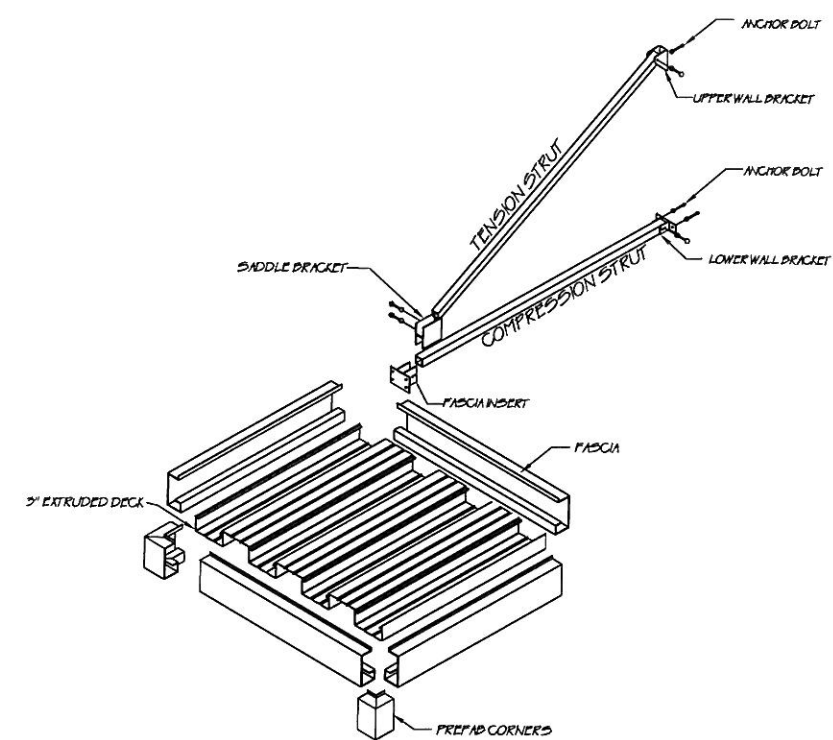
DETAIL B



DETAIL C

GENERAL NOTES:

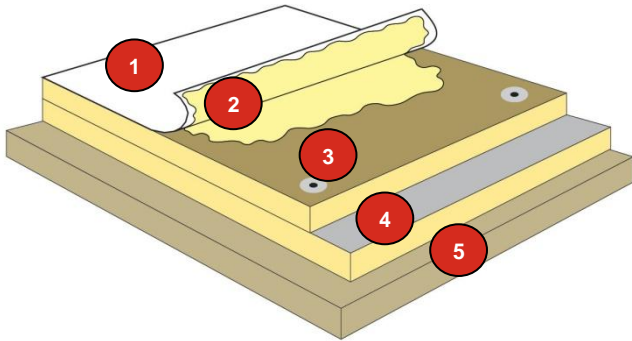
- 1) COMPONENT MATERIAL
 - ROOF PANEL: 3" x 6" x .060 DECK EXTRUDED ALUMINUM 6063-T6 ALLOY
 FINISH: WHITE BRONZE CLEAR ANODIZED
 - FASCIA: 6" x 3" x .080" EXTRUDED ALUMINUM 6063-T6 ALLOY
 FINISH: WHITE BRONZE CLEAR ANODIZED
 - HANGERS: 1 1/2" SQUARE TUBE EXTRUDED ALUMINUM TUBE 6063-T6
 FINISH: WHITE BRONZE CLEAR ANODIZED
 - FASTENER: FOR ALL PANELS AND TRIM CONNECTIONS USE #12 x 3/4" SS, HEX HEAD CADMIUM PLATED. PANEL TO BEAM CONNECTIONS TO BE #12 x 3/4" TEK WITH NEOPRENE WASHERS. BOLTS GREATER THAN 1/4" TO BE ASTM A-307 STEEL OR EQUAL; GALVANIZED.
- 2) CHECK TO ENSURE DIMENSIONS SHOWN ARE CORRECT WITH FIELD MEASUREMENTS. ONE SET OF APPROVED SHOP DRAWINGS MUST BE RETURNED TO BALLEW'S BUILDING PRODUCTS GROUP PRIOR TO RELEASE OF CANOPY FOR FABRICATION.
- 3) ROOF PANELS MUST BE PITCHED 1/4" PER FOOT MINIMUM.
- 4) FASCIA TO BE DRAINED AT ANY POINT. A 1 1/4" HOLE IN BOTTOM OF FASCIA GUTTER WILL DRAIN APPROXIMATELY 100 SQUARE FEET OF ROOF DRAINAGE AREA.
- 5) THE STRUCTURE IS NOT DESIGNED TO BE ENCLOSED IN ANY WAY. THE STRUCTURE HAS NOT BEEN DESIGNED TO RESIST LATERAL LOADS WHICH WOULD BE IMPOSED BY WIND LOADS ON ENCLOSURE WALL.
- 6) DISSIMILAR METALS MUST BE SEPARATED BY PAINTING WITH BITUMINOUS PAINT OR OTHER ACCEPTABLE COATING OR NEOPRENE GASKET MATERIAL TO PREVENT GALVANIC ACTION.
- 7) IT IS THE RESPONSIBILITY OF OTHERS TO CHECK THE ADEQUACY OF THE EXISTING BUILDING WALLS TO ASSURE THAT IT WILL RESIST IMPOSED LOADS.
- 8) SNOW DRIFT AND/OR SLIDING SNOW LOADS HAVE NOT BEEN TAKEN INTO CONSIDERATION. IF THERE IS ANY CHANCE OF SNOW DRIFT AND/OR SLIDING SNOW LOADS ON THE CANOPY, CUSTOMER WILL HAVE TO PROVIDE REQUIRED INFORMATION (BUILDING DIMENSIONS) TO BALLEW'S BUILDING PRODUCTS AND RETURN DRAWINGS FOR QUOTE AND REDESIGN.



WALL HUNG CANOPY



73 ROSS ROAD
 P.O. BOX 22834
 SAVANNAH, GEORGIA 31403
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1. Firestone UltraPly™ TPO Membrane
2. Fully Adhered with Bonding Adhesive
3. Mechanically Attached or Adhered Cover Board (Optional)
4. Mechanically Attached or Adhered Insulation
5. Wood Deck

Consult Firestone Technical Specifications, Guides and Details at www.firestonebpc.com

Slope Requirement

Positive slope required for warranty.⁵

Construction Type

New construction, complete tear-off, or recover with any wet or damaged materials removed prior to installation.

Building Height Limitation

Firestone UltraPly™ TPO Adhered Systems are limited to buildings 250' (76.2 m) or less.

Use of Air Barrier

An air barrier is required for projects with large wall openings greater than 10% of the total wall area.

Base Tie-Ins

Must be attached to substrates which provide a minimum of 200 lbf (1 kN) in any direction.

Increased Wind Speed and Codes

Any wind speed coverage exceeding 55 mph (88 km/h) or projects with codes requirements must be reviewed by a Firestone Roof Systems Advisor.

Deck Requirement

- Minimum 1/2" Plywood
- Minimum 7/16" OSB

Fastener Type

- Firestone All Purpose Fastener
- Firestone Heavy Duty Fastener
- Firestone HailGard™ Fastener (with HailGard Composite Board or OSB only)

Insulation Adhesive*

- Firestone I.S.O. Twin Pack™ Insulation Adhesive
- Firestone I.S.O. Spray™ S Insulation Adhesive
- Firestone I.S.O. Fix™ II Insulation Adhesive
- Firestone I.S.O. Stick™ Insulation Adhesive

*Note: Max. 4' x 4' boards must be used when attaching insulation with adhesives.

Adhesive Attachment

- Bead Spacing: F: 12", P: 6", C: 4"
- Full Application (I.S.O. Spray S Insulation Adhesive)

Membrane Requirement

- UltraPly TPO, Minimum 0.060"
- ReflexEON™ TPO, Minimum 0.060"
- UltraPly Platinum™ TPO, 0.080"
- ReflexEON Platinum™ TPO, 0.080"

Seaming Requirement

Firestone 1.5" Single Weld System (use robot welder) OR 5" Firestone WideWeld™ System. Joint covers are required at all joints and at angle changes 1:12 or greater.

Firestone Membrane Adhesive

- UltraPly Bonding Adhesive
- Single-Ply LVOC Bonding Adhesive
- Single-Ply LVOC Bonding Adhesive 1168

Edge Metal System

- Firestone EdgeGard™ System
- Firestone AnchorGard™ System
- Firestone Coping System

Insulation Fastener and Insulation Plate Attachment Rates – Field Rates for Standard 55 mph Wind Speed

Insulation (Top Layer)	4' x 8'	Coverboard (Optional)	4' x 8'
1.0" to 1.4" Firestone ISO 95+™ GL or RESISTA™ Insulation	16	Firestone ISOGARD™ HD Cover Board	16
1.5" to 1.9" Firestone ISO 95+ GL or RESISTA Insulation	16	1/4" SECUROCK® Gypsum-Fiber or DensDeck® / (Prime)	16 16/(16)
2.0" to 4.0" Firestone ISO 95+ GL or RESISTA Insulation	16	1/2" SECUROCK Gypsum-Fiber or DensDeck / (Prime)	16 16/(16)
Firestone HailGard™ Composite Board	16	5/8" SECUROCK Gypsum-Fiber or DensDeck / (Prime)	16 16/(16)
Firestone ISOGARD™ HD Composite Board	16		

Detail Description

Wall Terminations:	Firestone Termination Bar with AP Sealant applied along the caulk lip. Surface mounted or inserted counter flashing may also be used in accordance with current Firestone 30 year details.
Curb & Wall Flashings:	Curbs, walls, and expansion joints must be anchored with appropriate base tie-in detail, using HD Seam Plates and HD Fasteners. Curbs and walls must be flashed using a minimum 0.060" UltraPly TPO Membrane, or UltraPly TPO 18" Curb Flashing, per Firestone 30 year details. Flashings may be sealed with welded details only. Details may include UltraPly TPO Coated Metal.
Corners:	UltraPly TPO Inside/Outside Corners, per current Firestone 30 year details.
Roof Edges/Parapets:	Firestone AnchorGard™ or EdgeGard™ Fascia or Drain Bar systems. ANSI/SPRI ES-1 rated edge metal may also be used / Firestone Coping System or UltraPly TPO Coated Metal. Complete per Firestone 30 year details.
Penetrations:	Flash with UltraPly Pipe Flashing (weldable), UltraPly TPO Penetration Pocket, or UltraPly TPO Unsupported Flashing, per current Firestone 30 year details.

Notes:

1. Only Firestone brand products are covered in a Red Shield warranty.
2. Refer to the Firestone Technical Database at www.firestonebpc.com for additional information regarding UltraPly TPO Roof Systems.
3. Refer to the Firestone RoofGenuity™ tool to create roof assemblies with high-performance Firestone products at www.RoofGenuity.com.
4. DensDeck is a registered trademark of Georgia-Pacific Gypsum LLC.
5. It is the installing contractor's responsibility to follow applicable building codes.
6. SECUROCK is a registered trademark of USG Corporation.



Finish Chart / Features

Dark Bronze

Product Details

Looking for a more modern style of gooseneck? The Mid Century design of the Universal Gooseneck with its sleek shade may be the answer! Select from more than a dozen finish colors for this beautiful fixture which will dress up any doorway or garage wall with modern style. Two dozen gooseneck arms are available to give your light just the right projection you need. Adding a wire cage will protect your bulb as well as giving just a hint of vintage vibe.

Shade Sizes:

10" Shade: W 10" x H 7" | Guard and Glass Not Available

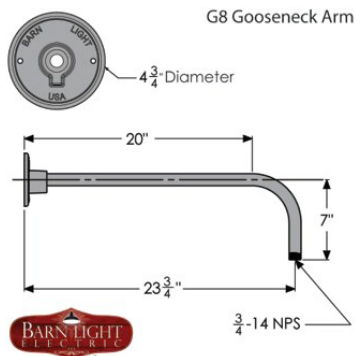
12" Shade: W 12" x H 7"

14" Shade: W 14" x H 7 ½"

16" Shade: W 16" x H 8 ½"

Additional Information:

- **Finish:** Multiple (See Finish Options)
- **Mounting:** Multiple (See Gooseneck Options)
- **Backplate Dimensions:** 4 ¾" Diameter
- **Max Wattage Per Socket:** 200w Standard Incandescent (Bulb Not Included)
- **Note:** Max wattage is 100w Standard Incandescent with cast guard addition.
- **Number of Sockets:** 1
- **Use:** CSA Listed for Wet Locations



DURAWELD METALWORKS "SAVANNAH" FABRICATED ARCHITECTURAL FENCE

ALUMINUM, TWO RAIL, SPEARTOP PICKETS, PYRAMID POST CAPS

SPECIFICATIONS:

For fence up to and including 54" high, measured from bottom of mounting plate to top of spear

POSTS: 2" x 2" x 1/8" wall - Alloy 6063 T52

POST MOUNTS: 4" x 4" x 1/4" square plates - Alloy 6063 T52 - Four 5/16" countersunk holes per plate

PICKETS: 3/4" x 3/4" x .093" wall - Alloy 6063 T52

SPEAR TOPS: Triad style, bronze-colored UV resistant polypropylene, press-on, with tapered socket

POST TOPS: MARINE GRADE - Cast aluminum, pyramid style caps, with alloy documentation provided

TOP RAIL: 1-3/4" x 1-3/4" x 1/8" wall - Alloy 6063 T5

BOTTOM RAIL: 1-3/4" x 1-3/4" x 1/8" wall - Alloy 6063 T5

PANEL WIDTH: Not to exceed 5'- 0", Center to Center of Posts

ASSEMBLY SCREWS: #12 Phillips pan head or hex head, self-drilling, 410 stainless steel

CONSTRUCTION:

PANELS SHALL BE CONSTRUCTED AS FOLLOWS:

Top rail and bottom rail shall be punched 13/16" square, to accept pickets.

Centers of pickets shall not exceed 4-1/2", without prior approval

Pickets shall be welded to rails on bottom side only, to eliminate exposed welds

Bottoms of pickets shall not protrude below bottom of lower rail channel

One post shall be welded to upper and lower rail of each panel

Each post shall have one 4" x 4" mounting plate welded to bottom

Each post shall have one MARINE GRADE, pyramid style cap welded to top

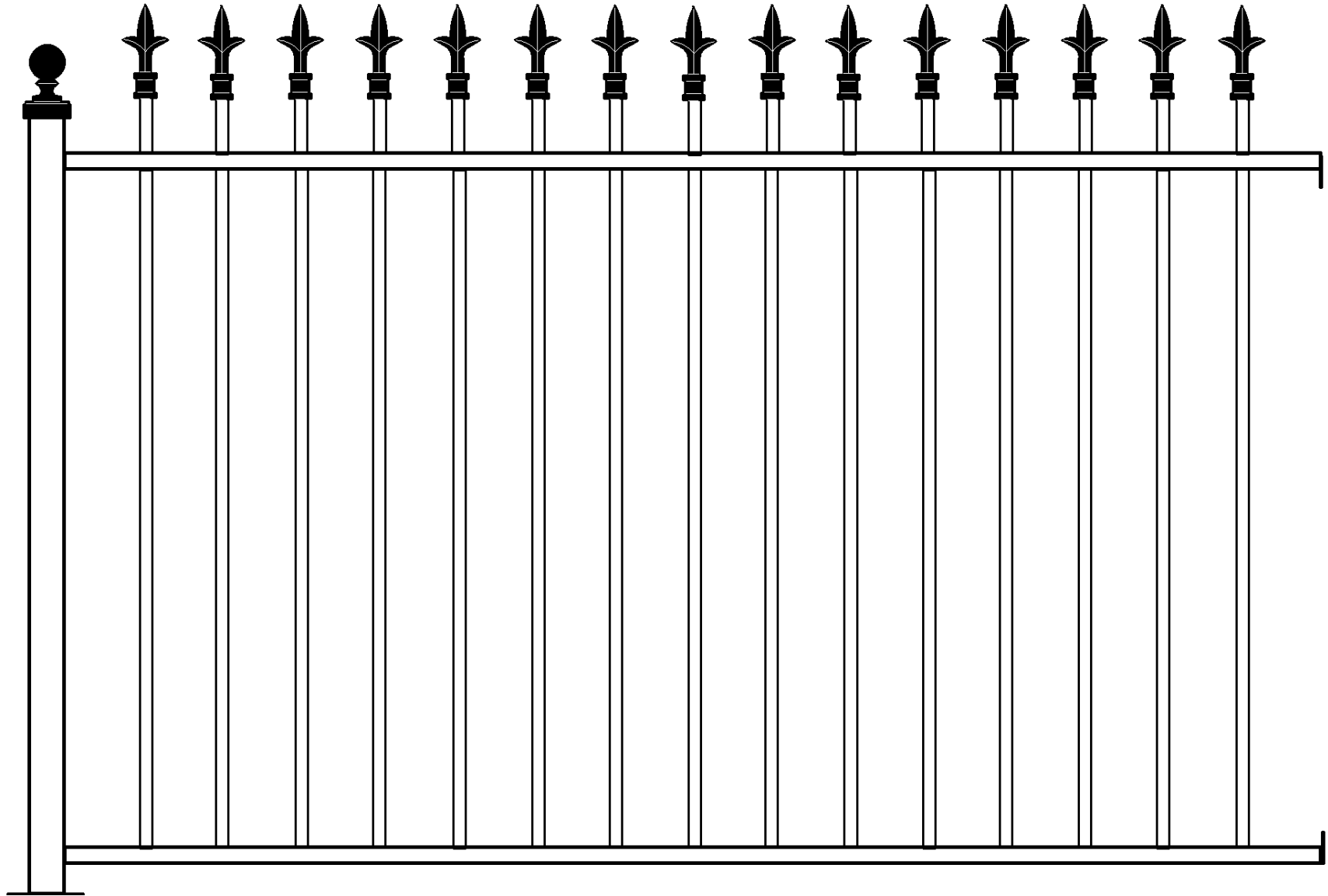
Opposite end of panel shall have 1/8" thick screw tabs welded to each rail

Screw tabs shall be 1-1/2" x 1-1/2" X 1/8", with one 3/16" hole per tab

All aluminum material shall be properly prepared for powder - coating, following recommendations of powder manufacturer, Tiger-Drylac

Powder-coat shall be Tiger-Drylac series 38

Spear-tops shall not be painted or coated



**DURAWELD
METALWORKS**

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Suite 102-319
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(904) 810 - 1000
www.dumpstergates.com

08/02/2013

Rev. 0
NTS

SAVANNAH B

ALUMINUM FABRICATED FENCE
BALL POST CAP - TRIAD SPEAR TOPS

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PONTE VEDRA BEACH, FL 32082
904.810.1000



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www.duraweldmetalworks.com

DUMPSTER ENCLOSURE GATES • MECHANICAL ENCLOSURES • EQUIPMENT AND PERSONNEL GATES • METAL SPECIALTIES

SPECIFICATIONS FOR BAHAMA 300 SERIES ENCLOSURE GATES

FRAME: ALUMINUM TUBE ALLOY 6063 T52, 3" SQ. ON MAIN GATES, 2" SQ. ON WALK GATES
1/4" WALL ON HINGE LEGS OF FRAME
1/8" WALL ON BALANCE OF FRAME

INFILL PANELS: DURAWELD METALWORKS VENTED BACK,
RIGID ALUMINUM LOUVER SECTIONS - ALLOY 6063 T6 - WELDED TO FRAME

POSTS: ALUMINUM TUBE ALLOY 6063 T52 - 1/4" WALL WELDED CAPS ON TOP

WALL MOUNTS WHEN REQUIRED: ALUMINUM ALLOY T 6061 - 1/2" THICK, 6" x 8" MIN. HINGES SHALL BE PRE-WELDED TO PLATES, PLATES SHALL BE PRE-PUNCHED FOR ANCHORS

HINGES: ALUMINUM BARSTOCK ALLOY 6061 T6511
MACHINED AND PRESS FIT WITH 3/4" 303 STAINLESS STEEL PIN AND BALL
DRILL AND TAP FOR GREASE FITTING

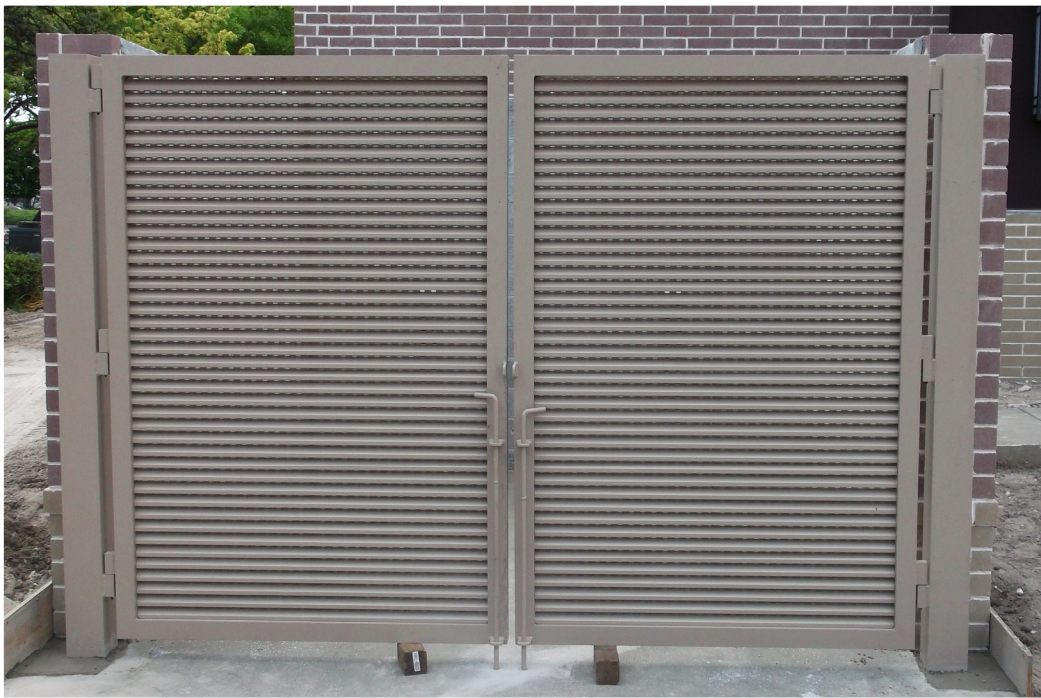
CANE BOLT DROP RODS: 3/4" T6061 ALUMINUM ROUND BAR
SUPPLIED WITH WELDED STOP AND 2" x 2" x 1/2" GUIDES

PAD EYES: SUPPLIED WITH TWO - 2" x 2" x 1/2", WELDED TO GATE FRAMES, DRILLED TO ACCEPT PADLOCK

FIELD HARDWARE: 440 STAINLESS STEEL TEK SCREWS - # 14 X 1/14, WHEN REQUIRED

ALL BUTT JOINTS SHALL BE GROUND FLUSH AND SANDED, 100 GRIT

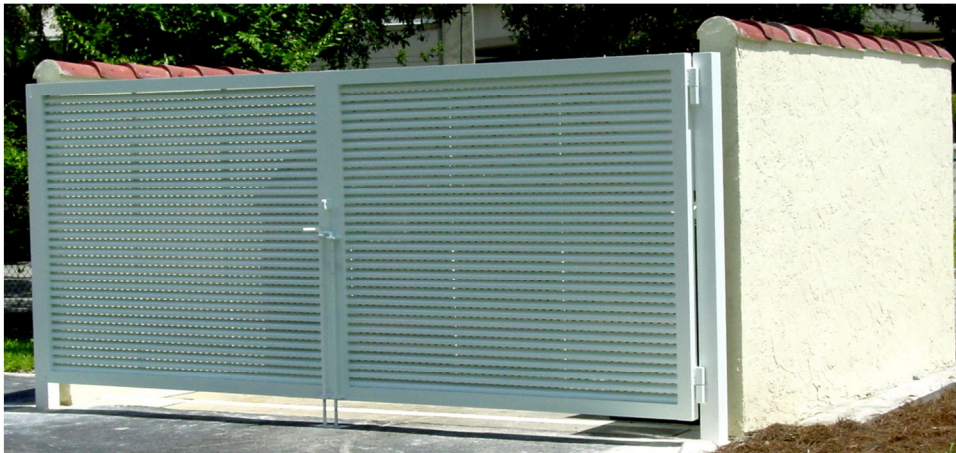
FINISH: GRIT BLAST, ETCH, PRIME, POLYESTER POWDER COAT-
USE TIGER DRYLAC SHIELD SYSTEM, TYPE 38



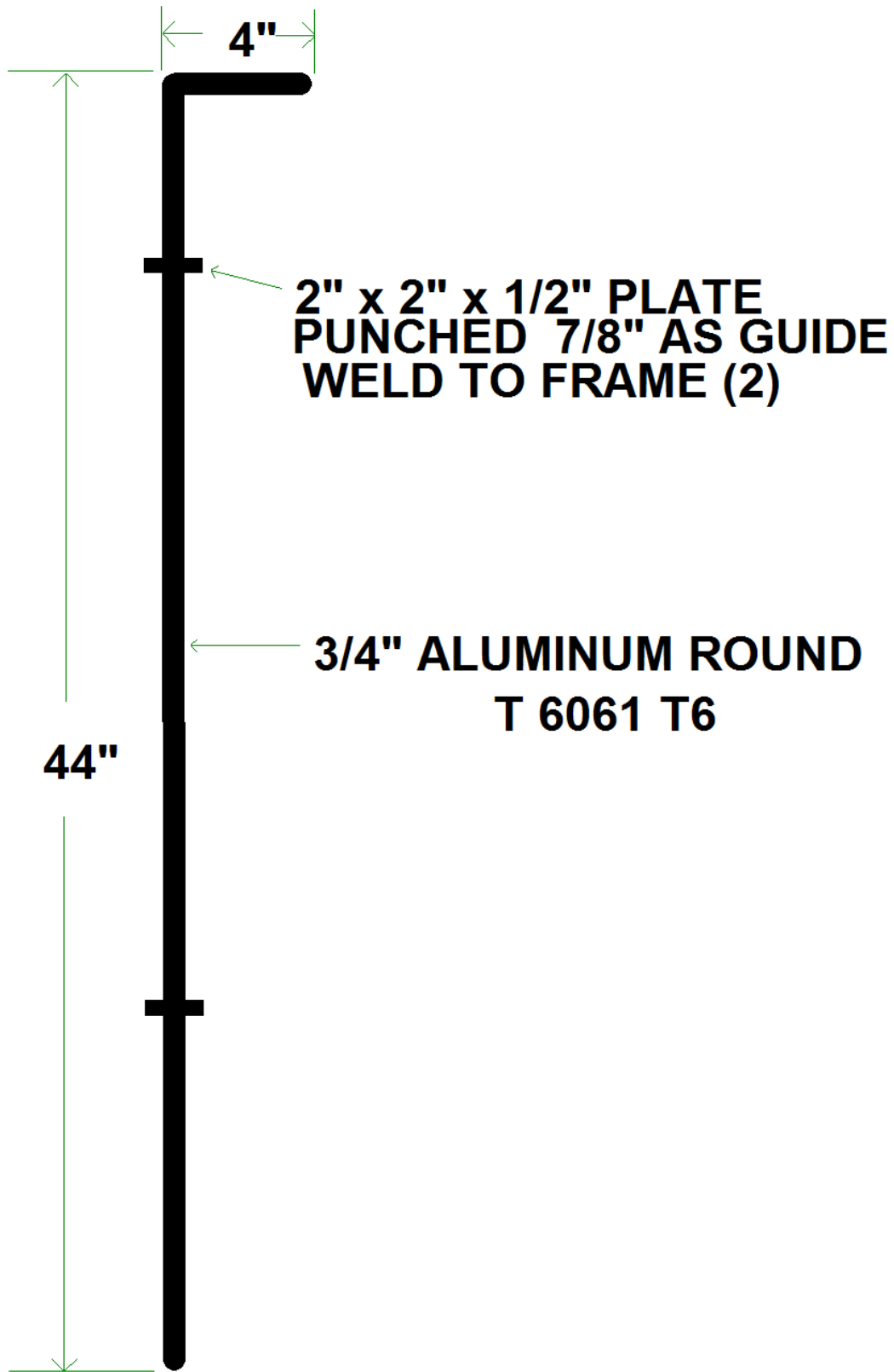
**DURAWELD
METALWORKS**

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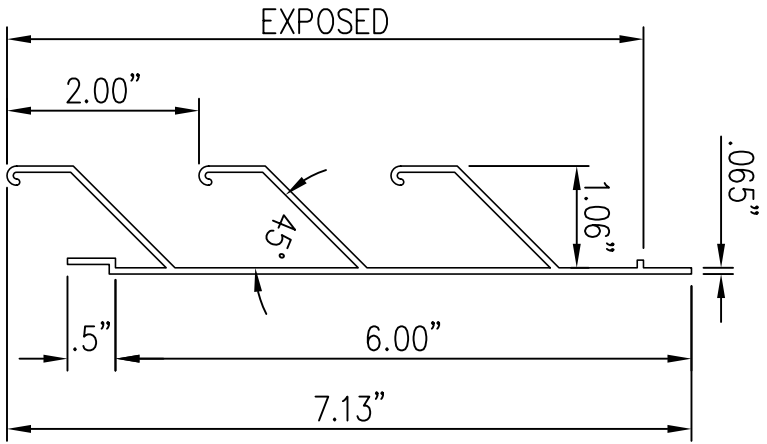
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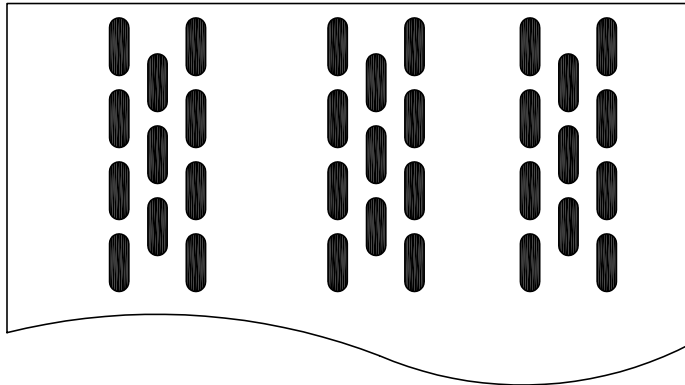
4/3/2013

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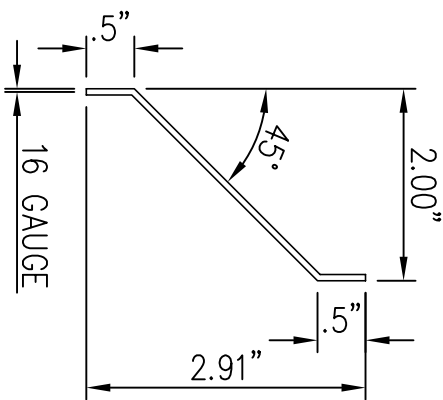
CANE BOLT DETAIL



LOUVER BLADE FOR ALL BAHAMA MODELS



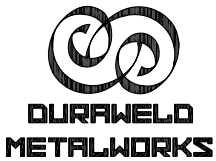
PARTIAL REAR VIEW



LOUVER DETAILS
ALL OPEN BACK LOUVER MODELS

LOUVER BLADE DETAILS

SCALE: 6" = 1'-0"

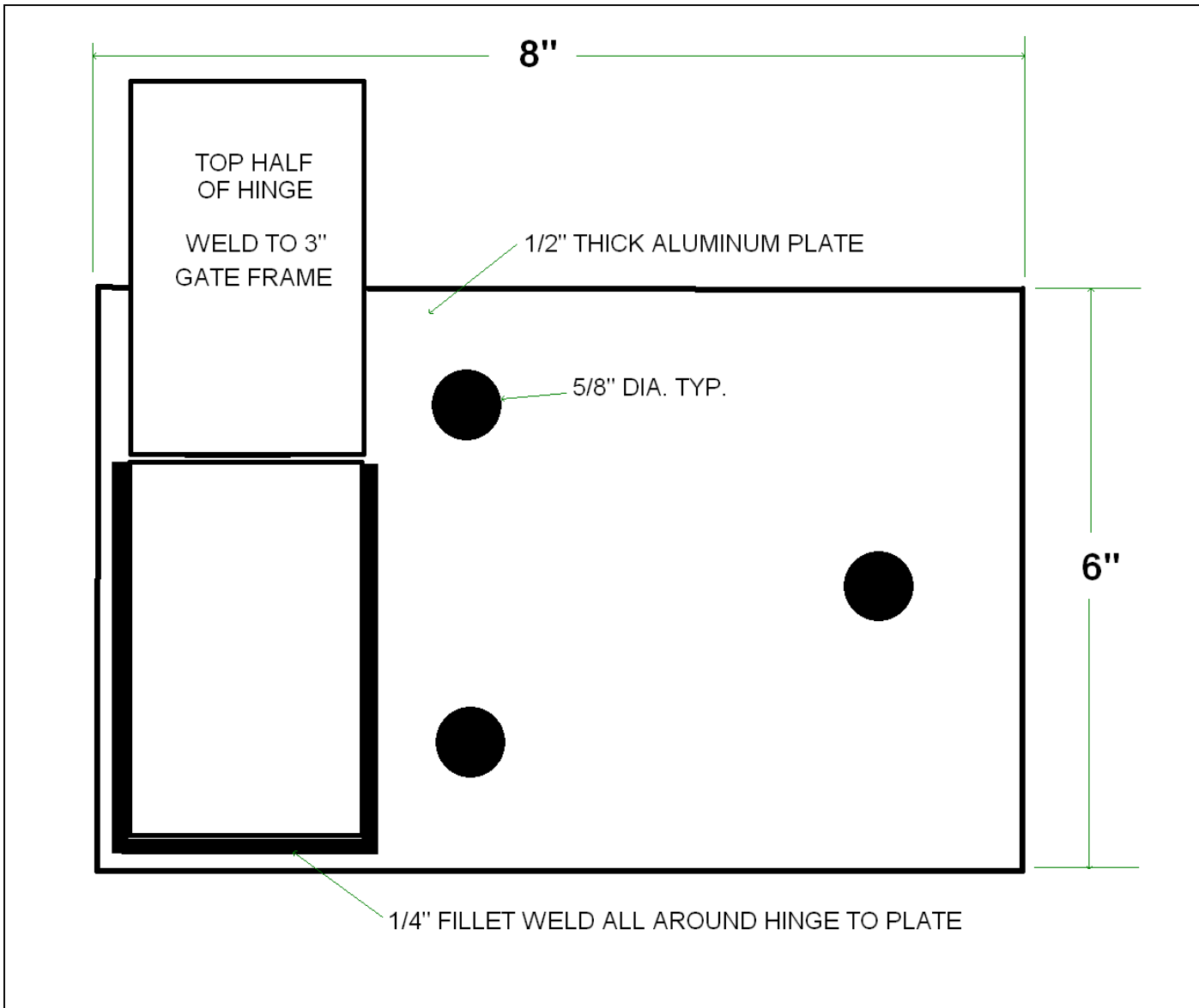


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Date	07-14-09
Scale	6" = 1'-0"
Sheet #	D4

CUSTOMER NAME
PONTE VEDRA, FL

LOUVER BLADE DETAILS



**DURAWELD
METALWORKS**

Wall Mount Detail



series 38

AAMA 2604-05

super durable powder coatings
volume 1

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TIGER Drylac Ha Noi Warehouse

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TIGER Drylac® Series 38 – Exterior or Interior

A highly weather and UV resistant powder coating based on Super Durable TGIC Polyester

Features	Superior Gloss and Color Retention Excellent Weather Resistance Good Mechanical Properties Superior Chalking Resistance Very Smooth Flow Excellent Edge Coverage Good Storage Stability
-----------------	---

Typical Applications	Architectural Applications Land Management Facilities Cell Phone Towers Construction Industry Lighting Fixtures Park Furniture Playground Equipment Garage Doors Stadium Seating Fencing	Oil & Gas Industry Renewable Energy Industry Defense Industry Automotive Equipment Marine Applications Agricultural Equipment Sports Equipment Recreational Vehicles Lawn and Garden Equipment Railing
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Standard Series 38	Smooth Matte (20±5*) Smooth Matte Satin (30±5*) Smooth Semi Gloss (60±5) Smooth Glossy (85±5*) <small>Gloss level according to Gardner 60° ASTM D523</small>
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Custom Colors	Any other color or finish is available as a custom color with a 220-lb. minimum order. Due to pigmentation a small percentage of colors in the yellow, orange, red and purple range offer only limited UV stability. UV stability of custom color products in that color range must be verified by our production laboratories on a case by case basis.
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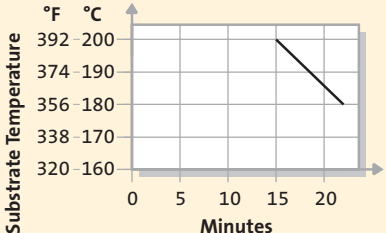
Standard Packaging	44 lbs/20 kg carton or 5 lbs/2.5 kg Minipack
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Specific Gravity	1.2 – 1.8 g/cm ³ depending on pigmentation
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Theoretical Coverage	Depending on pigmentation and processing conditions. 1 lb coats approx. 50 sq. ft. at 3 mils avg. 1 kg coats approx. 10 sq. m. at 75 microns avg.
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Processing	Electrostatic and Tribo/Airstatic Spraying, manual or automatic.
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Dry Storage Stability	6 months at no more than 77° F/25° C
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Cure Parameter	 <table><thead><tr><th>Minutes</th><th>Substrate Temperature (°F)</th><th>Substrate Temperature (°C)</th></tr></thead><tbody><tr><td>0</td><td>392</td><td>200</td></tr><tr><td>20</td><td>356</td><td>180</td></tr></tbody></table>	Minutes	Substrate Temperature (°F)	Substrate Temperature (°C)	0	392	200	20	356	180
Minutes	Substrate Temperature (°F)	Substrate Temperature (°C)								
0	392	200								
20	356	180								

Note	A reasonable degree of loss of gloss and color variation due to long-term UV exposure can be expected.
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On the cover:
Raymond James Stadium, Tampa, FL
Lanikea Tower Honolulu, HI (Hanson Architectural Systems Inc.)
Street Lighting Fixture

TIGER SHIELD System

for superior corrosion protection (recommended for marine environments and coastal regions)

Product Description

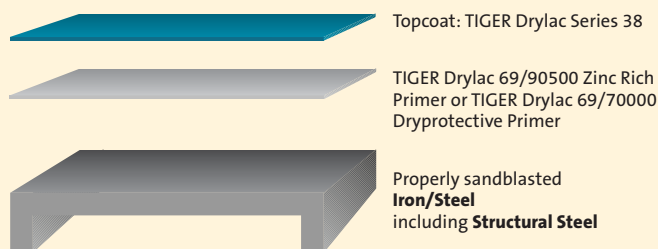
The TIGER Drylac SHIELD System is a two-coat process combining optimum corrosion protection with highest weatherability.

The basis for the excellent corrosion resistance is either TIGER Drylac Zinc Rich Primer 69/90500, TIGER Drylac Dryprotective Primer 69/70000 or TIGER Drylac 09/73841 Out-gassing Forgiving Primer. This two coat system warrants an optimum non-porous film as well as excellent UV protection through the use of high quality polyester powder coatings.

Processing

Electrostatic and Tribo/Airstatic spraying, manual or automatic. All primers must be applied over a clean dry substrate, free of any contaminants and oxidation. Note: Time elapsed between application of TIGER Drylac 69/90500 Dryzinc Primer and topcoating with TIGER Drylac Series 38 Polyester must not exceed 12 hours max.

Steel/Iron



Aluminum

Under normal conditions a single coat of Series 38 powder coating is sufficient. In highly corrosive environments, as is found in coastal regions or industrial atmospheres, a 2-coat system comprised of TIGER Drylac Dryprotective 69/70000 plus a topcoat of Series 38 can be beneficial. Both products are engineered to complement each other and offer an excellent corrosion barrier. For objects exposed to extreme conditions, especially where there is a possibility of filiform corrosion, Chromate Conversion coatings or Chrome Phosphating has been proven to be an excellent pretreatment choice.

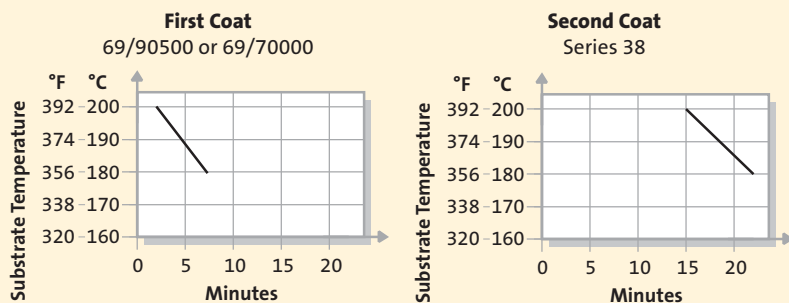
Cast Aluminum and Cast Steel

For porous substrates that are prone to out-gassing we offer a Out-gassing Forgiving Primer — TIGER Drylac OGF Primer 09/73841. For technical information and specific curing parameters please see our datasheet number 1304 online at www.tiger-coatings.us (download area, data sheets).

Cure Parameters

TIGER Drylac Zinc Rich and Dryprotective Primer

In general, we recommend only partial rather than full cure for the first coat.



Specific Gravity

TIGER Drylac Series 38: 1.2–1.8 g/cm³ depending on pigmentation.

TIGER Drylac 69/90500 Zinc Rich Primer: 2.72 ± 0.1g/cm³

TIGER Drylac 69/70000 Dryprotective Primer: 1.52 ± 0.1g/cm³

Theoretic Coverage

Depending on pigmentation and processing conditions and a specific gravity of 1.5, 1 lb coats approximately 50 sq. ft. at 3 mils avg. 1 kg coats approximately 10 sq. m. at 75 microns avg.

Test Results on Aluminum:

Corrosion Resistance Humidity Resistance 3000 hrs.—ASTM D 2247	Formation of blisters not to exceed “few” blisters size #8 as shown in Figure 4.0 ASTM D 714	No blistering
Salt Spray Resistance 3000 hours—ASTM B 117	Minimum rating of 7 on scribe or cut edges, and a minimum blister rating of 8 within the test specimen field, in accordance with the Table 1 and Table 2 Reference modification of ASTM D 1654	No blistering, no undercutting

Test Results on Steel:

Salt Spray Resistance* ASTM 117-90	Undercutting	Blisters	Adhesion
1000 hour	0	m0 / g0	Gt0
2000 hour	0–1	m0 / g0	Gt0
3000 hour	2–3	m2 / g1	Gt0

*Tested on a 2-coat system of Series 38 and TIGER Drylac® 69/90500 Zinc Rich Primer (substrate: steel—sandblasted)

Mechanical Properties:

Test	Results for basecoat alone 69/90500	Two-Coat System TIGER Drylac 69/90500 + TIGER Drylac Series 38
Film Thickness	2.4-2.6 mils/60±5µm	2.4-2.6 mils/60±5µm (Primer) 2.4-2.6 mils/60±5µm (Topcoat) Minimum requirement for a non-porous film!
Cross Hatch Adhesion ISO 2409 / ASTM D 3359	pass 100%	pass 100%
Mandrel Bending Test ISO 1519 / ASTM D 522	5/32 in. /4 mm (3/16 in./5 mm)	3/8 in./10 mm
Impact test 1/10 in. Distortion ISO 6272 / STM D 2794-90	up to 40 in./lbs. (up to 20 in./lbs.)	up to 40 in./lbs. (up to 20 in./lbs.)
Cupping ISO 1520	5/16 in./8 mm (3/16 in./5 mm)	5/16 in./8 mm (3/16 in./5 mm)

Data in “()” reflects properties valid for TIGER Drylac 69/70000 Dryprotective.

TIGER Drylac™ Series 38 Super Durable Polyester Powder Coatings

Our Super Durable Polyester powder coatings are designed and engineered to be a single coat finishing system, with the exception of applications within extremely harsh environments, such as coastal or heavy industry regions (see TIGER Shield information in this brochure).

AAMA 2604-05 Compliant

All products featured in this brochure comply with the American Architectural Manufacturers Association's specification AAMA 2604-05

Bureau of Land Management Standard Environmental Colors

The BLM Standard Environmental Colors were developed by the US Government to assist with color selection to minimize the visual contrast of facilities in the landscape.

TIGER Drylac offers BLM colors in an environmentally friendly, long wearing, highly weather and UV resistant Super Durable powder coating formulation.

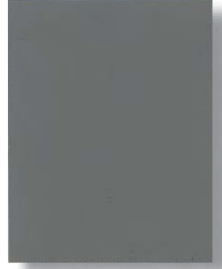
TIGER Drylac™ Smooth Glossy RAL Colors available in Series 38:

RAL 1001 • 38/15001	RAL 6007 • 38/50007	RAL 7010 • 38/70014	RAL 8001 • 38/60005
RAL 1002 • 38/20002	RAL 6008 • 38/50008	RAL 7011 • 38/70011	RAL 8002 • 38/60002
RAL 1013 • 38/10013	RAL 6009 • 38/50009	RAL 7012 • 38/70012	RAL 8003 • 38/60003
RAL 1014 • 38/15014	RAL 6010 • 38/50031	RAL 7013 • 38/70013	RAL 8004 • 38/60004
RAL 1015 • 38/15015	RAL 6011 • 38/50011	RAL 7015 • 38/70015	RAL 8007 • 38/60007
RAL 1016 • 38/20016	RAL 6012 • 38/50012	RAL 7016 • 38/70016	RAL 8008 • 38/60008
RAL 1019 • 38/15019	RAL 6013 • 38/50013	RAL 7021 • 38/70021	RAL 8011 • 38/60011
RAL 1020 • 38/20020	RAL 6016 • 38/50016	RAL 7022 • 38/70022	RAL 8012 • 38/60012
RAL 1023 • 38/20023	RAL 6017 • 38/50017	RAL 7023 • 38/70023	RAL 8014 • 38/60010
RAL 1024 • 38/20024	RAL 6018 • 38/50018	RAL 7024 • 38/70024	RAL 8016 • 38/60016
RAL 3012 • 38/30012	RAL 6019 • 38/50019	RAL 7026 • 38/70026	RAL 8017 • 38/60017
RAL 5004 • 38/40004	RAL 6020 • 38/50020	RAL 7030 • 38/70027	RAL 8019 • 38/60019
RAL 5007 • 38/40007	RAL 6021 • 38/50021	RAL 7031 • 38/70031	RAL 8022 • 38/60022
RAL 5008 • 38/40008	RAL 6022 • 38/50022	RAL 7032 • 38/70001	RAL 8023 • 38/60023
RAL 5011 • 38/40011	RAL 6026 • 38/50026	RAL 7033 • 38/70033	RAL 8024 • 38/60024
RAL 5013 • 38/40013	RAL 6027 • 38/50027	RAL 7035 • 38/70035	RAL 8025 • 38/60025
RAL 5017 • 38/40017	RAL 6028 • 38/50028	RAL 7036 • 38/70036	RAL 8028 • 38/60028
RAL 5018 • 38/40020	RAL 6029 • 38/50029	RAL 7037 • 38/70037	RAL 9001 • 38/10001
RAL 5019 • 38/40019	RAL 6032 • 38/50032	RAL 7038 • 38/70038	RAL 9002 • 38/10002
RAL 5020 • 38/40018	RAL 6033 • 38/50033	RAL 7039 • 38/70039	RAL 9003 • 38/10003
RAL 5021 • 38/40021	RAL 6034 • 38/50034	RAL 7040 • 38/70046	RAL 9004 • 38/80004
RAL 6000 • 38/50000	RAL 7000 • 38/70000	RAL 7042 • 38/70042	RAL 9005 • 38/80010
RAL 6001 • 38/50005	RAL 7002 • 38/70007	RAL 7043 • 38/70043	RAL 9010 • 38/10004
RAL 6003 • 38/50003	RAL 7004 • 38/70004	RAL 7044 • 38/70044	RAL 9016 • 38/10010
RAL 6004 • 38/50004	RAL 7005 • 38/70005	RAL 7045 • 38/70045	RAL 9017 • 38/80017
RAL 6005 • 38/50002	RAL 7006 • 38/70006	RAL 7046 • 38/70002	RAL 9018 • 38/10018
RAL 6006 • 38/50006	RAL 7009 • 38/70009	RAL 7047 • 38/70047	

Please refer to our RAL Exterior brochure for a display of RAL colors to go with above listed Series 38 product numbers. Gloss levels for RAL colors are 85±5.

To eliminate possible errors in finish and sheen, please specify the TIGER Drylac product number along with the RAL number.

Primer



TIGER Drylac 69/70000
Dry Protector Primer 3±2



TIGER Drylac 69/90500
Zinc Rich Primer 70±5



TIGER Drylac 09/73841
Out-gassing Forgiving Primer 70±5

Architectural Matte, Satin and Semi Gloss



TIGER Drylac® 38/10130
Seashell White 30±5*



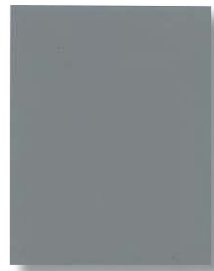
TIGER Drylac® 38/70070
Taupe 30±5*



TIGER Drylac® 38/60014
Medium Bronze 30±5*



TIGER Drylac® 38/30028
Brick Red 20±5*



TIGER Drylac® 38/70049
Silver Grey 30±5*



TIGER Drylac® 38/10070
Bone White 30±5*



TIGER Drylac® 38/15002
Sierra Tan 30±5*



TIGER Drylac® 38/60080
Statuary Bronze 30±5*



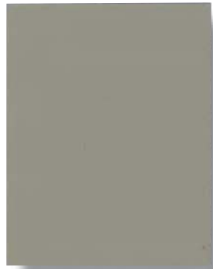
TIGER Drylac® 38/60006
Aged Copper 20±5*



TIGER Drylac® 38/40025
Interstate Blue 20±5*



TIGER Drylac® 38/70048
Sky Grey 30±5*



TIGER Drylac® 38/70025
Ash Grey 30±5*



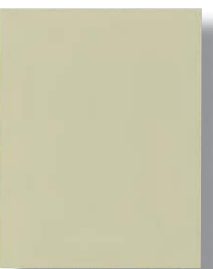
TIGER Drylac® 38/60090
Dark Anodized Bronze 20±5*



TIGER Drylac® 38/50080
Ivy Green 30±5*



TIGER Drylac® 38/40051
Military Blue 30±5*



TIGER Drylac® 38/15003
Almond 30±5*



TIGER Drylac® 38/70019
Slate Grey 30±5*



TIGER Drylac® 38/30033
Boysenberry 20±5*



TIGER Drylac® 38/50037
Classic Green 30±5*



TIGER Drylac® 38/80020
Jet Black 30±5*



TIGER Drylac® 38/15012
Sandstone 30±5*



TIGER Drylac® 38/60018
Koko Brown 30±5*



TIGER Drylac® 38/30041
Redwood 30±5*



TIGER Drylac® 38/50110
Hartford Green 30±5*



TIGER Drylac 38/81009
Railing Black Semi Gloss 60±5*

*Gloss level according to Gardner 60° ASTM D523. Paper and ink limitations of color samples as well as influence from heat and light account for differences from actual powder coatings.

Glossy

Metallic



TIGER Drylac® 38/00001
Clear 90+*



TIGER Drylac® 38/15009
Crème 305 85±5*



TIGER Drylac® 38/50039
Highland 305 85±5*



TIGER Drylac® 38/70061
Grey Classic 314 85±5*



TIGER Drylac® 38/90003
Argento 301 Metallic



TIGER Drylac® 38/10007
Bianco 302 85±5*



TIGER Drylac® 38/15007
Crème 303 85±5*



TIGER Drylac® 38/50040
Highland 306 85±5*



TIGER Drylac® 38/80002
Carbon 301 85±5*



TIGER Drylac® 38/90010
Marine Silver



TIGER Drylac® 38/10090
Extrusion White 85±5*



TIGER Drylac® 38/15005
Crème 301 85±5*



TIGER Drylac® 38/50041
Highland 307 85±5*



TIGER Drylac® 38/90007
Argento 305 Metallic



TIGER Drylac® 38/70032
Grey Classic 303 85±5*



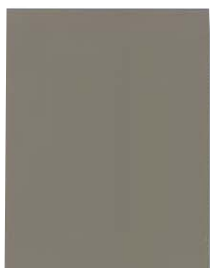
TIGER Drylac® 38/60026
Marrone 306 85±5*



TIGER Drylac® 38/40033
Azzurro 307 85±5*



TIGER Drylac® 38/90011
Argento 308 Metallic



TIGER Drylac® 38/70056
Grey Classic 310 85±5*



TIGER Drylac® 38/60039
Marrone 308 85±5*



TIGER Drylac® 38/70054
Grey Classic 308 85±5*



TIGER Drylac® 38/90015
Pearl Dark Grey Metallic

Bureau of Land Management Standard Environmental Colors



TIGER Drylac[®] 38/90016
Argento 312 Metallic



TIGER Drylac[®] 38/50043
Highland 301 Metallic



TIGER Drylac[®] 38/15021
Champagne 304 Metallic



TIGER Drylac 38/16500
BLM Carlsbad Canyon Brown 55±5



TIGER Drylac 38/60400
BLM Sudan Brown 65±5



TIGER Drylac[®] 38/90018
Argento 314 Metallic



TIGER Drylac[®] 38/40127
Pearl Night Blue Metallic



TIGER Drylac[®] 38/20013
Deore 301 Metallic



TIGER Drylac 38/50500
BLM Covert Green 55±5



TIGER Drylac 38/50400
BLM Beetle 65±5



TIGER Drylac[®] 38/60060
Medium Bronze Metallic*



TIGER Drylac[®] 38/20014
Deore 302 Metallic



TIGER Drylac[®] 38/15020
Champagne 303 Metallic



TIGER Drylac 38/71700
BLM Shadow Gray 60±5



TIGER Drylac 38/53000
BLM Yuma Green 60±5



TIGER Drylac[®] 38/60064
Pearl Copper Metallic



TIGER Drylac[®] 38/15018
Champagne 302 Metallic



TIGER Drylac[®] 38/90009
Argento 307 Metallic



TIGER Drylac 38/51400
BLM Juniper Green 60±5



TIGER Drylac 38/60500
BLM Carob Brown 60±5



TIGER Drylac[®] 38/50035
Seafoam Green Metallic



TIGER Drylac[®] 38/15017
Champagne 301 Metallic



TIGER Drylac[®] 38/91020
Anodized Silver



TIGER Drylac 38/52600
BLM Shale Green 60±5

*Gloss level according to Gardner 60° ASTM D523. Paper and ink limitations of color samples as well as influence from heat and light account for differences from actual powder coatings.



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Dimensional Data

Figure 1. Cooling and gas/electric - 3-5 tons standard efficiency, 3 tons high efficiency

Notes:

1. All dimensions are in inches/millimeters.
2. 1/2 NPT Gas Connection = (Y_C Models only); 2" Electrical Connection: Single Point Power When Heat Installed (T_C Models only.)

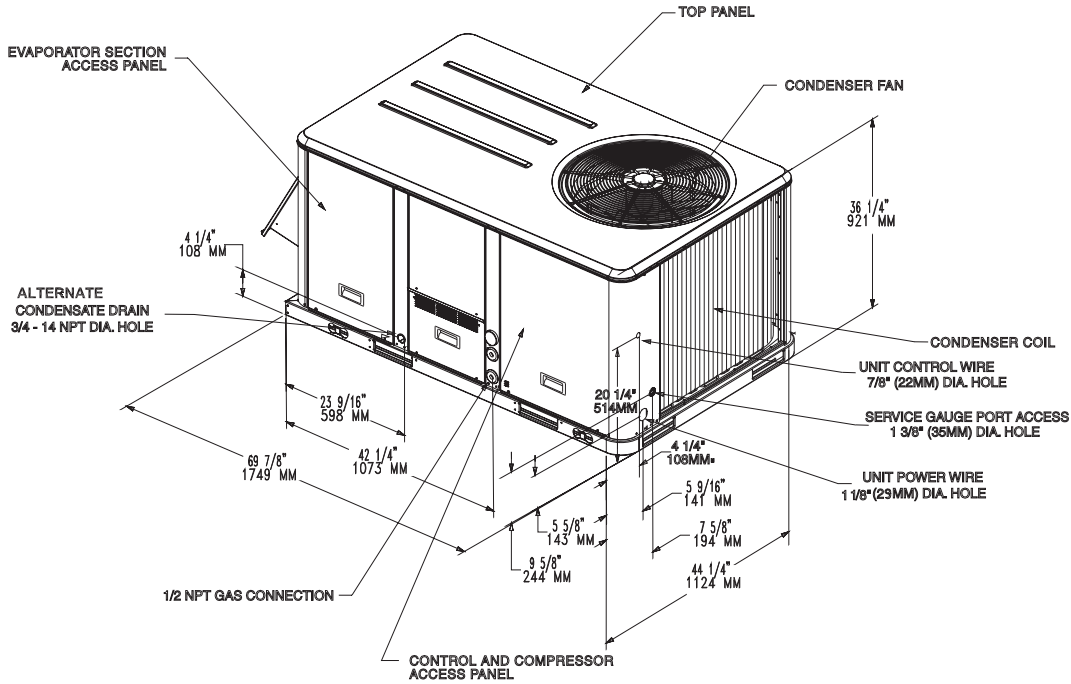


Figure 2. Cooling and gas/electric - 3-5 tons standard efficiency, 3 tons high efficiency downflow airflow supply/return - through-the-base utilities

Note: All dimensions are in inches/millimeters.

Note: All dimensions are in inches/millimeters.

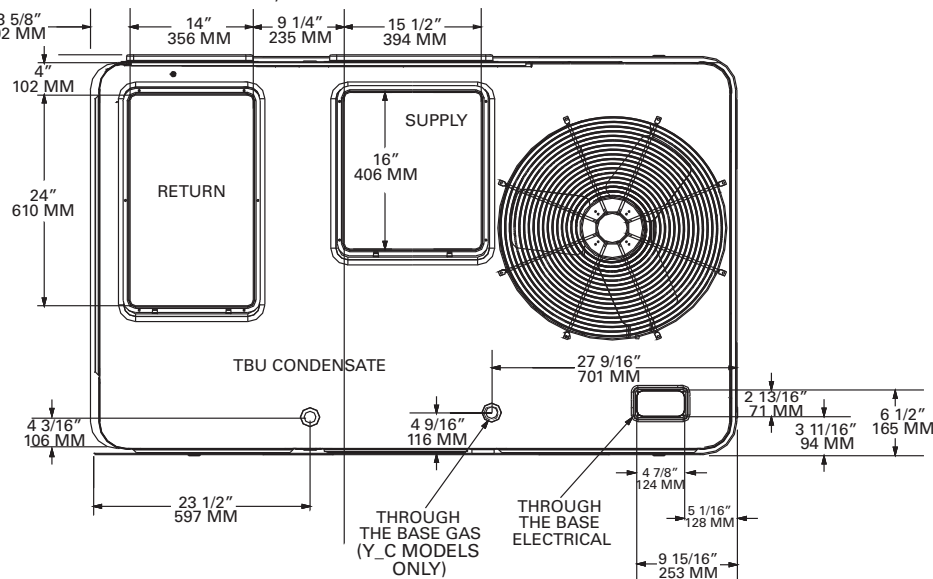


Figure 5. Cooling and gas/electric - 3-5 tons standard efficiency, 3 tons high efficiency - roof curb

Note: All dimensions are in inches/millimeters.

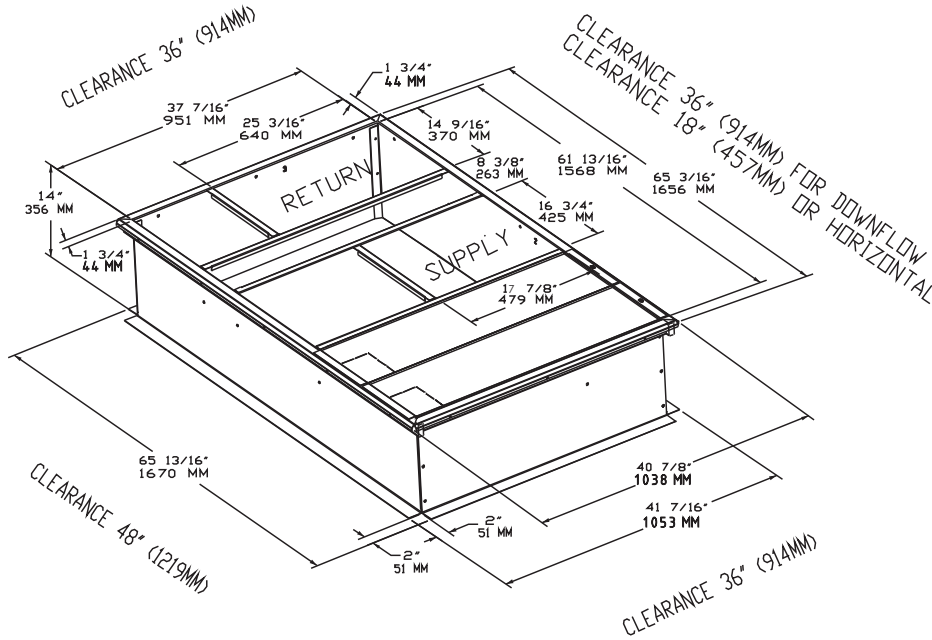


Figure 6. Cooling and gas/electric - 3-5 tons standard efficiency; 3 tons high efficiency downflow duct connections - field fabricated

Note: All dimensions are in inches/millimeters.

