

Stucco is a time-proven wall cladding. However, there are many different variations, application techniques, curing and coloring conditions that the design professional must consider when specifying these systems.

This guideline specification is intended for use by the design/construction professional and any user of Master Wall products to assist in developing project specifications and to provide guidance on the application of the Master Wall One Coat Stucco System (OCS) to sound supporting construction.

<b>System Description</b>	<b>Warranty Term</b>	<b>Comments</b>
Highly Acrylic Modified Stucco (option 1)	10 year labor/material type	Extreme performance one coat stucco with leveling base coat and reinforcing mesh, primer and Acrylic Finish
Highly Acrylic Modified Stucco (option 2)	10 year labor/material type	Extreme performance one coat stucco with primer and Elastomeric Acrylic Finish

## **PART 1 GENERAL**

### **1.01 SECTION INCLUDES**

- A. Materials and installation of one coat stucco system.

### **1.02 RELATED SECTIONS**

- A. Provide all materials, labor, and equipment to install the Field Applied and/or Panelized Master Wall Inc. One Coat Stucco System (OCS).
- B. Related Sections:
  1. Concrete 03300
  2. Unit Masonry 04200
  3. Light Gauge Steel Framing 05400
  4. Sheathing 06100
  5. Sheet Metal Flashing and Trim 07620
  6. Sealants 07900
  7. Doors and Windows 08000

### **1.03 REFERENCED DOCUMENTS**

- A. ASTM Standards:
  1. C 847 Standard Specification for Metal Lath
  2. C 897 Aggregates for Job Mixed Portland Cement-Based Plaster
  3. C 926 Standard Specification for Application of Portland cement-Based Plaster
  4. C 1032 Standard Specification for Woven Wire Plaster Base
  5. C 1063 Installation of Lathing and furring for Portland Cement-Based Plaster

### **1.04 TERMS/DEFINITIONS**

- A. Accessories – The closure trims, control joints metal reinforcement and mechanical fasteners used in the installation of stucco.
- B. Applicator – The contractor that applies the OCS.
- C. Building Expansion Joint – A joint through the entire building structure designed to accommodate structural movement.
- D. Control Joint – a joint in the OCS designed to reduce and control thermal and shrinkage cracking.



- E. Designer – The person or firm that is responsible to create the plans and specifications for the entire project.
- F. Finish Coat – An acrylic based, factory mixed decorative and protective coating that is applied to the base coat.
- G. Mechanical Fastener – Corrosion-resistant fastener intended for use with stucco.
- H. Metal Reinforcement – Various forms of metal used to reinforce and support the stucco.
- I. OCS – One Coat Stucco, a cementitious material consisting of Portland cement, fibers and proprietary components.
- J. Sheathing – A substrate in a sheet form.
- K. Substrate – The material to which the OCS is attached.
- L. Trims – Specially manufactured products designed to terminate the OCS.

#### **1.05 DESIGN REQUIREMENTS**

##### **A. Structural**

- 1. Design for maximum allowable system deflection, normal to the plane of the wall, of L/360.
- 2. Design for wind load in conformance with code requirements. Also consult applicable code compliance report.

##### **B. Moisture Control**

- 1. Prevent the accumulation of water into or behind the OCS, either by condensation or leakage into the wall construction, in the design and detailing of the wall assembly.
  - a. Provide corrosion resistant flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall.
  - b. Wall System Design – design wall to eliminate vapor condensation within the wall assembly.
  - c. Weather Resistant Barrier – Provide a barrier over framed construction consisting of a minimum of two-layers asphalt felt meeting ASTM D-226, Type 1, Grade D or building code-approved alternate. Verify requirements with local building code authority.
  - d. Protect sills of rough openings with water resistant barrier or “peel and stick” type membranes recognized by local codes. Where casing bead is used back-to-back at expansion joints back joints with barrier membrane. Refer to Master Wall details.

##### **C. Grade Condition**

- 1. Keep OCS a minimum of 6” (152 mm) above grade in framed construction.

##### **D. Expansion Joints**

- 1. Provide expansion joints where directed by the design professional. Common locations include the following:
  - A. Where building movement is anticipated.
  - B. At dissimilar substrates.
  - C. At floor lines in certain wood framed constructions.
  - D. Where the stucco meets dissimilar materials.
- 2. Expansion joint design depends upon the anticipated movement. Master Wall suggests the following minimum sizes, subject to design acceptance: Windows/Doors – 3/8” (9.5 mm), Building Expansion/Dissimilar Substrates & Materials – 1/2” (13 mm), Floor Line (shrinkage) – 3/4” (19 mm).



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- E. Control Joints
  - 1. Provide control joints where directed by the design professional. Common locations include the following:
    - A. To limit cracking in the system at a maximum area of 144 ft<sup>2</sup> (13.4 m<sup>2</sup>).
    - B. Length to width ratio should not be more than 2.5:1.
    - C. Off the corners of window/door heads or jamb.
    - D. At dissimilar substrates.
  - 2. Increase joint requirements where thicker stucco or special structural conditions exist.
  - 3. Typically control joints are tied to the metal lath, which is cut to make two discontinuous slabs.
  - 4. When OCS is bonded to a solid substrate such as concrete or masonry the control joint requirements may be revised. Control joints may be aligned with any control joints in the plaster base.
- F. Provide appropriate sealant at stucco terminations using a sealant designed for cement/stucco use (sealant trades, Section 07920).
- G. Indicate location of joints, accessories and accessory type on architectural drawings.
- H. Fire Protection
  - 1. Refer to manufacturer's applicable code compliance report for other limitations and fire-resistive assemblies that may apply.
- I. Solid Substrates
  - 1. Provide surface plane tolerance not to exceed ¼ inch in 10 feet (6.4 mm in 3.05 m).
  - 2. Concrete—prevent the use of form oil, curing compounds or other bond breakers that inhibit bond to the surface or provide for their removal.
  - 3. Concrete Masonry—provide open texture concrete masonry units with flush joints.
  - 4. Brick – soft to medium fired, porous to provide acceptable bond for stucco.

**1.06 PERFORMANCE REQUIREMENTS**

A. System Performance

The OCS shall conform to the following minimum standards:

ASTM Standard	Description	Results
C67	Freeze/Thaw	Pass ICBO ACII Criteria
C109	Compressive Strength	3000 psi
E84	Surface Burning	Flame Spread=0, Smoke Developed=0
E119	Fire Rating	One Hour
E330	Transverse Load	+/- 150 psf Ultimate. Allowable varies by Code
G26	Accelerated Weathering	Pass 2000 Hours

**1.07 SUBMITTALS**

- A. The Applicator shall submit a list of completed projects of like size and complexity.
- B. The Applicator shall submit a certificate of training indicating that they have been given instructions on the proper installation of the OCS.
- C. The Applicator shall submit Manufacturer's current literature, brochures, specifications, and details.
- D. The Applicator shall submit sufficient samples of each finish texture and color selected. The samples shall be prepared with the same tools and techniques required for the actual project. Color and texture should be approved based on the job site mock-up samples.
- E. The Applicator shall provide any shop drawings that may be applicable to the project for approval by the project architect.



**1.08 DELIVERY, STORAGE AND HANDLING**

- A. Deliver all materials in original unopened packages with labels intact. Verify all quantities, colors, and textures against bill of lading.
- B. Store all materials protected from direct exposure to weather conditions and at temperatures not less than 40° F (5° C) or greater than 110° F (43° C).
- C. Material safety data sheets (MSDS) shall be supplied for the components of the OCS and be available at the job site.

**1.09 JOB CONDITIONS**

- A. Ambient air temperatures shall be 40° F (5° C) or greater and rising at the time of installation of the Master Wall Inc. products and shall remain at 40° F (5° C) or greater for at least 24 hours after application.
- B. Provide supplemental heat and protection as required when the temperature and conditions are not in accordance with installation requirements. Sufficient ventilation and time shall be provided to ensure that materials have sufficiently dried prior to removing supplemental heat.
- C. Adequate protection shall be provided to prevent weather conditions (humidity, temperature, and precipitation) from having an affect on the curing or drying time of **Master Wall Inc.** materials.
- D. Adjacent materials and the OCS shall be protected during installation and while curing from weather and shall be protected from site damage.
- E. Coordinate installation of the OCS with related work specified in other sections to ensure that the wall assembly is protected to prevent water from getting behind the system. The cap flashing shall be installed as soon as possible after the finish coat has been applied. When this is not possible, temporary protection shall be provided immediately in this area.
- F. All sealants shall be installed in a timely manner. Protect open joints from water intrusion during construction with backer rod, or temporary covering, until permanently sealed.
- G. Sufficient manpower and equipment shall be employed to ensure a continuous operation, free of cold joints, scaffolding lines, and texture variations, etc.
- H. Solid substrates shall be allowed to cure long enough to support the stucco work. Minimum 28 days for concrete and masonry units.

**1.10 REPAIR AND MAINTENANCE**

- A. Refer to Master Wall Inc. specific repair and maintenance procedures.

**1.11 LIMITED MATERIALS WARRANTY**

- A. A Limited Materials Warranty shall be issued upon the receipt of a properly completed warranty request form.



## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. **Master Wall Inc.**
- B. Provide one coat stucco system from single source manufacturer.

### **2.02 BONDING AGENT**

- A. **BA57**-water based acrylic resin bonding agent for brush or roller application to prepared masonry surfaces.

### **2.03 MOISTURE BARRIER** *(supplied by others)*

- A. Minimum 14-lb/100 ft<sup>2</sup> (0.683 kg/m<sup>2</sup>) vapor permeable asphalt saturated felt in compliance with ASTM D 226.
- B. Other weather barrier meeting the local building code criteria.

### **2.04 LATH** *(supplied by others; select one depending on type construction)*

- A. Minimum No. 20 gauge 1 inch (25 mm) self-furred galvanized steel woven wire fabric in compliance with ASTM C 1032.
- B. Minimum 1.75 lb./yd<sup>2</sup> (0.98 kg/m<sup>2</sup>) or 2.5 lb./yd<sup>2</sup> (1.4 kg/m<sup>2</sup>) self-furred galvanized steel diamond mesh metal lath in compliance with ASTM C 847.

### **2.05 MECHANICAL FASTENERS** *(by others)*

- A. Appropriate non-corroding fasteners, depending on the type framing or substrate:
  - 1. Wood Framing—minimum 11 gauge, 7/16 inch (11 mm) diameter head galvanized roofing nails with minimum ¾ inch (19mm) penetration into studs or minimum #8 Type S wafer head fully threaded corrosion resistant screws with minimum ¾ inch (19 mm) penetration into studs.
  - 2. Steel Framing—minimum #8 Type S or S-12 wafer head fully threaded corrosion resistant screws with minimum 3/8-inch (9.5 mm) penetration into studs.
  - 3. Concrete or Masonry—minimum # 8 wafer head fully threaded corrosion resistant screws for masonry with minimum 1 inch (25 mm) penetration into substrate.
- B. Tie Wire—18 gauge galvanized and annealed low-carbon steel in compliance with ASTM A 641 with Class I coating.

### **2.06 ACCESSORIES** *(by others)*

- A. Weep screed, casing bead, corner bead, cornerite, corner lath, expansion and control joint accessories. All accessories shall meet the requirements of ASTM C 1063 and its referenced documents:
  - 1. PVC plastic in compliance with ASTM D 1784, cell classification 13244C.
  - 2. Zinc in compliance with ASTM B 69.
  - 3. Galvanized metal in compliance with ASTM A 653 with G60 coating.
- B. All accessories shall have perforated or expanded flanges and shall be designed with grounds for the specified thickness of stucco.



## 2.07 JOB MIXED INGREDIENTS

- A. Water: Clear, clean and potable without any foreign matter in the solution that may affect the color and setting qualities of the cement, adhesive, base or finish coat.
- B. Sand: Clean, well graded sand free of deleterious materials in compliance with ASTM C 897.
- C. Cement: Type I or I-II Portland cement meeting ASTM C-150.
- D. Stucco Admixture
  - 1. **Stucco Ad Liquid**—water based acrylic resin admixture for Master Wall One Coat Stucco.

## 2.08 STUCCO (select one)

- A. **Master Wall One Coat Stucco**—factory proportioned, fiber reinforced (or non-fibered) Portland cement based stucco for trowel or pump application, field mixed with graded sand (ASTM C 897) and water.
- B. **Master Wall Ready One Coat Stucco**— factory proportioned, fiber reinforced (or non-fibered) Portland cement based stucco for trowel or pump application, field mixed with water.

## 2.09 LEVELING BASE COAT AND MESH (Option 1)

- A. Leveling Base Coat
  - 1. **Foam & Mesh (F&M) Adhesive**: An acrylic-based product mixed one-to-one by weight with Portland.
  - 2. **Master Wall Bagged Base Coat (MBB)**: A polymer based cementitious product mixed with water.
  - 3. **F & M Plus**: A high-build acrylic-based product mixed one-to-one by weight with Portland cement.
- B. Reinforcing Mesh:
  - 1. **Standard Mesh** – nominal 4.5-oz./sq. yd. open weave glass fiber fabric, treated for alkaline resistance and compatibility with Master Wall Base Coats, and conforming to ASTM D-76, D-579, D-5035, and MIL-Y-1140.

## 2.10 PRIMER

- A. **Master Wall Primecoat**: acrylic-based tinted primer.

## 2.11 FINISH COAT

- A. **Superior Finish** (Option 1): Master Wall Inc.'s Superior Finishes are acrylic-based wall coatings available in a variety of colors and textures. The following textures are available:
  - 1. Perfect - riled texture
  - 2. Spray – sand type texture
  - 3. R-Coarse – coarse riled texture
  - 4. Desert Sand – coarse sand texture
  - 5. Refinish – Fine texture used to create numerous finishes
  - 6. Superior Stone and Aggrestone Finish – clear acrylic matrix filled with colored ceramic beads
- B. **Superior Elastomeric Plus Finish** (Option 2): Master Wall Inc.'s Superior Finishes using elastomeric polymers to bridge minor cracking. The following textures are available:
  - 1. Perfect - riled texture
  - 2. Spray – sand type texture
  - 3. R-Coarse – coarse riled texture
  - 4. Desert Sand – coarse sand texture
  - 5. Refinish – Fine texture used to create numerous finishes



## 2.12 MIXING

- A. **BA57 & Stucco Ad Liquid:** Shake sealed container or mix before use to a homogeneous consistency.
- B. **Acrylic Modified Master Wall One Coat Stucco:** Mix 200 lbs. (90 kg) of sand to an 80 lb (36 kg) bag of Master Wall One Coat Stucco. Add pre-blended dry mix to 5 gallons (19 L) *Stucco Ad Liquid* and up to 1 gallon (3.8 L) of clean potable water. Mix with paddle type mortar mixer to a uniform consistency. Avoid retempering. Keep mix ratio consistent and mix each batch separately. Do not exceed maximum amount of water in mix ratio.
- C. **Acrylic Modified Master Wall Ready One Coat Stucco:** Each bag of Ready OCS is mixed with 1-1/2 gallons (5.7 L) of *Stucco Ad Liquid* and small amounts of clean, potable water. Using a clean mixer, first add 1/2 to 2/3 the water/*Stucco Ad Liquid* mix required, 1 bag Ready OCS, then the rest of the water to achieve the desired workability. Mix materials for 3 to 5 minutes after all materials are in the mixer. Total water/*Stucco Ad Liquid* content can vary between 1 to 1.5 gallons (3.8-5.7 L).
- D. **Superior and Superior Elastomeric Plus Finishes:** Mix the finish coat with a Wind-lock B-MTW using a 1/2", 400-500 RPM drill motor. Small amounts of water can be added for workability. Mix until reaching a uniform consistency. (It is important that the same amount of water be added to each pail to ensure a consistent color.)
- E. Additives shall not be added to Master Wall Inc.'s materials unless written approval has been received from Master Wall Inc.
- F. Mix only as much material as can readily be used.
- G. Do not use anti-freeze compounds or other additives.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Prior to installation of the OCS, the contractor shall verify that the substrate and water barrier:
  1. Is of a type listed in this specification.
  2. Is installed to shed water in accordance with this specification.
  3. Is flat within 6.4 mm (1/4 in) in a 3 m (10 ft) radius.
  4. Is sound, dry, connections are tight, has no surface voids, projections or other conditions that may interfere with the OCS installation or performance.
- B. Prior to the installation of the OCS, the architect or general contractor shall insure that all needed flashings and other waterproofing details have been completed, if such completion is required prior to the coatings application. Additionally, the Contractor shall ensure that:
  1. Metal roof flashing has been installed in accordance with Asphalt Roofing Manufacturers Association (ARMA) Standards.
  2. Openings are flashed in accordance with the OCS Installation Details or as otherwise necessary to prevent water penetration.
  3. Chimneys, Balconies, and Decks have been properly flashed.
  4. Windows, Doors, etc. are installed and flashed per manufacturer's requirements and the OCS Installation Details.
- C. Prior to the installation of the OCS, the contractor shall notify the general contractor, and/or architect, and/or owner of all discrepancies.



**3.02 PREPARATION**

A. The OCS materials shall be protected by permanent or temporary means from inclement weather and other sources of damage prior to, during, and following application until completely dry.

B. Protect adjoining work and property during OCS installation.

C. The substrate shall be prepared as to be free of foreign materials, such as, oil, dust, dirt, form release agents, efflorescence, paint, wax, water repellents, moisture, frost and any other condition that inhibit adhesion.

**3.03 INSTALLATION**

A. The system shall be installed in accordance with the current Master Wall Inc. OCS Application Instructions.

B. The overall minimum stucco scratch and brown coat thickness shall be sufficient to fully embed the reinforcing mesh.

C. Sealant shall not be applied directly to textured finishes.

**3.04 FIELD QUALITY CONTROL**

A. The contractor shall be responsible for the proper application of the OCS materials.

B. Master Wall Inc. assumes no responsibility for on-site inspections or application of its products.

C. If required, the contractor shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures, workmanship and as to the specific products used.

D. If required, the sealant contractor shall certify in writing that the sealant application is in accordance with the sealant manufacturer's and Master Wall Inc.'s recommendations.

**3.05 CLEANING**

A. All excess OCS materials shall be removed from the job site by the contractor in accordance with contract provisions and as required by applicable law.

B. All surrounding areas, where the OCS has been installed, shall be left free of debris and foreign substances resulting from the contractor's work.

**3.06 PROTECTION**

A. The OCS shall be protected from inclement weather and other sources of damage until dry and permanent protection in the form of flashings, sealants, etc. are installed.

End of Specification

**Disclaimer**

This Specification is published for general informational purposes only and is not intended to imply that these are the only materials, procedures, or methods, which are available or suitable. Materials, procedures, or methods may vary according to the particular circumstances, local building code requirements, design conditions, or statutory and regulatory requirements. While the information in this specification is believed to be accurate and reliable, it is presented without guarantee or responsibility on the part of Master Wall Inc.