

COMMERCIAL CEMENT PLASTER 1™



Fiberglass Reinforced Portland Cement Plaster
Applied to Concrete or CMU

DS819

Commercial Cement Plaster 1 Specifications

DRYVIT SYSTEMS, INC.
MANUFACTURER'S SPECIFICATION
CSI MASTERFORMAT SECTION 09 24 23
COMMERCIAL CEMENT PLASTER 1™

PART I - GENERAL**1.01 SUMMARY:**

This document is intended to be used in preparing specifications for projects utilizing Commercial Cement Plaster 1 by Dryvit applied to concrete or CMU substrates. For complete product description and usage refer to:

- A. Dryvit Commercial Cement Plaster 1 Data Sheet, DS812
- B. Dryvit Commercial Cement Plaster 1 Installation Details, DS824
- C. Dryvit Commercial Cement Plaster Base™ – Sanded, DS817
- D. Dryvit Commercial Cement Plaster Base™ – Concentrate, DS818

1.02 RELATED SECTIONS

- A. Project Meetings - Section 01 31 19
- B. Concrete - Section 03 30 00
- C. Unit Masonry - Section 04 20 00
- D. Cold-Formed Metal Framing - Section 05 40 00
- E. Wood Framing - Section 06 11 00
- F. Flashing - Section 07 60 00
- G. Joint Protection - Section 07 90 00
- H. Gypsum Sheathing - Section 06 16 43
- I. High Performance Coatings – Section 09 96 00

1.03 REFERENCES

- A. International Building Codes (IBC and IRC)
- B. American Concrete Institute ACI 524R: Guide to Portland Cement Plastering
- C. Portland Cement Association: Portland Cement Plaster (Stucco) Manual
- D. ASTM A 526: Steel Sheet, Hot-Dip Galvanized, Commercial Quality
- E. ASTM C 150: Standard Specification for Portland Cement
- F. ASTM C 754: Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
- G. ASTM C 847: Standard Specification for Metal Lath
- H. ASTM C 897: Standard Specification for Aggregate for Job Mixed Portland Cement Based Plasters
- I. ASTM C 920: Standard Specification for Elastomeric Joint Sealants
- J. ASTM C 926: Standard Specification for Application of Portland Cement-Based Plaster
- K. ASTM C 1007: Standard Specification for Installation of Load Bearing (Transverse and axial) Steel Studs and Related Accessories.
- L. ASTM C 1063: Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
- M. ASTM C 1328: Standard Specification for Plastic (Stucco) Cement
- N. ASTM D 226: Standard Specification for Asphalt Saturated Organic Felt Used in Roofing and Waterproofing
- O. ASTM D 1784: Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
- P. ICC-ES AC11: Cementitious Exterior Wall Coatings

1.04 SUBMITTALS

- A. Submittal requirements by the contractor are to be indicated in the construction documents as required, including:
 - 1. Product literature, samples or mock up.
 - 2. Finish sample indicating color and texture for approval by architect/owner.

1.05 DESCRIPTION

- A. Commercial Cement Plaster 1 consists of Dryvit CCP Base - Sanded or Concentrate*, Dryvit acrylic primer and Dryvit acrylic coating or finish. CCP Base may be applied directly to the properly prepared concrete or CMU substrate or to metal lath and water-resistive barrier (as specified).

*Other approved scratch and brown coats may be acceptable. Consult Dryvit Systems, Inc. for specifics.

1. Design Requirements:
 - a. Substrates shall comply with local code requirements and practices for use under cement plaster and shall be:
 - 1) Poured in place or precast concrete
 - 2) CMU masonry
 - b. The roofing materials shall be loaded onto the roof and interior wallboard stocked in the building prior to the installation of the Commercial Cement Plaster 1.
 - c. Deflection of substrate systems shall not exceed $L/360$.
 - d. The slope of inclined surfaces shall not be less than 6:12 (27°) and the length shall not exceed 12 in (305 mm).
 - e. Slopes on windowsills projecting 4 in (102 mm) or less, shall not be less than 3:12.
 - f. Expansion joints:
 - 1) Design and location of expansion joints shall be determined by the project design professional and indicated on the contract documents. As a minimum, expansion joints in the Commercial Cement Plaster 1 are required at the following locations:
 - a) Where expansion joints occur in the substrate system.
 - b) Where building expansion joints occur.
 - c) At floor lines in wood frame construction.
 - d) Where Commercial Cement Plaster 1 abuts dissimilar materials.
 - e) Where the substrate changes.
 - f) Where significant structural movement occurs such as changes in roofline, building shape or structural system.
 - g. Control joints:
 - 1) Design and location of control joints shall be determined by the design professional in general accordance with ASTM C 1063 and indicated on the contract drawings. As a minimum, control joints shall be located at the following locations:
 - a) Corners of openings
 - b) Such that monolithic wall areas do not exceed 144 ft² (13.4 m²)
 - c) Length to width ratios of wall areas shall not exceed 2.5:1
 - d) Maximum spacing of control joints shall not exceed 18 ft (5.5 m)
 - h. Sealants
 - 1) Use, type and location of sealants is the responsibility of the project designer and shall be indicated on the contract documents.
 - 2) Refer to Section 07900
 - 3) Refer to Dryvit publication DS153 for a list of sealants that have been tested for compatibility with Dryvit products.
 - i. Vapor Retarders
 - 1) Use and location of vapor retarders within a wall assembly is the responsibility of the project designer and shall comply with local building code requirements. Type and location shall be noted on the contract documents. Vapor retarders may be inappropriate in certain areas and can result in condensation within the wall assembly when incorrectly used. Refer to Dryvit publication DS159 for additional information.
 - j. Flashing shall be provided at all roof-wall intersections, windows, doors, chimneys, decks, balconies, and other areas as necessary to prevent water penetration behind Commercial Cement Plaster 1.

2. Performance Requirements: As a minimum, Dryvit Commercial Cement Plaster 1 products shall meet:
- a. ASTM C 1328: Standard Specification for Plastic (Stucco) Cement

Finish Testing			
Test	Test Method	Criteria	Results¹
Surface Burning Characteristics	ASTM E 84	ICC and ANSI/EIMA 99-A-2001 Flame Spread <25 Smoke Developed <450	Passed
Flexibility ²	ASTM D 522 Method B	No ICC or ANSI/EIMA Criteria	Passed: 1.5" diameter @ 73 °F
Water Vapor Transmission	ASTM E 96 Procedure B	ICC: Vapor Permeable No ANSI/EIMA Criteria	40 Perms
Accelerated Weathering	ASTM G 154 Cycle 1 (QUV)	ANSI/EIMA 99-A-2001 2000 hours: No deleterious effects ³	5000 hours: No deleterious effects ³
	ASTM G 155 Cycle 1 (Xenon Arc)	ICC: 2000 hours: No deleterious effects ³	2000 hours: No deleterious effects ³
Chalk Rating	ASTM D 4214 after ASTM G 154 Cycle 1	No ICC or ANSI/EIMA Criteria	Chalk rating: 8 after 5000 hours QUV
Instrumentally Measured Color Difference ⁴ (includes yellowing)	ASTM D 2244 CIELAB, 10° Observer after ASTM G 154 Cycle 1	No ICC or ANSI/EIMA Criteria	Color change: 0.51 Delta E after 5000 hours QUV
Freeze-Thaw Resistance	ASTM E 2485 (formerly EIMA 101.01)	ANSI/EIMA 99-A-2001 60 cycles: No deleterious effects ³	90 cycles: No deleterious effects ³
	ASTM E 2485 ICC – ES Proc. (AC212)	ICC: 10 cycles No deleterious effect ³	10 cycles: No deleterious effects ³
Mildew Resistance	ASTM D 3273	ANSI/EIMA 99-A-2001 28 days: No growth	60 days: No growth
Salt Spray Resistance	ASTM B 117	ICC and ANSI/EIMA 99-A-2001 300 hours: No deleterious effects ³	1000 hours: No deleterious effects ³
Water Resistance	ASTM D 2247	ICC and ANSI/EIMA 99-A-2001 14 days: No deleterious effects ³	42 days: No deleterious effects ³
Abrasion Resistance	ASTM D 968 Method A Falling Sand	ANSI/EIMA 99-A-2001 528 quarts (500 liters): No deleterious effects ³	1057 quarts (1000 liters): No deleterious effects ³
	ASTM D 4060 Taber Abrasion (1 kg load)	No ICC or ANSI/EIMA Criteria	1000 cycles: .83 mg mass loss
Adhesion to Concrete	ASTM D 4541	ICC and ANSI/EIMA 99-A-2001: 15 psi minimum	>200 psi
Tensile Bond	ASTM C 297/E 2134 (formerly EIMA 101.03)	ICC and ANSI/EIMA 99-A-2001: 15 psi minimum	>25 psi

1. Testing referenced is based on Quarzputz Pastel Base.

2. Finish applied over aluminum panels, bent on cylindrical mandrels as described in ASTM D 522 Method B. Lower diameter indicates higher flexibility.

3. No cracking, checking, rusting, crazing, erosion, blistering, peeling, or delamination when viewed under 5x magnification.

4. Delta E is total color difference, including yellowing, lightening, darkening, changes in red, blue, and green color values. Finish exposed to 5,000 hours of QUV prior to evaluating Delta E.

1.06 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: Shall be Dryvit Systems, Inc. or approved suppliers. All materials shall be obtained from Dryvit Systems, Inc. or its authorized distributors.
2. Plastering Contractor:
 - a. Shall be knowledgeable in the proper installation of exterior lathing and cement plaster products.
 - b. Shall have qualified and properly trained people to perform work.
 - c. Shall be licensed, bonded and insured.
 - d. Shall have experience in application of cement plaster products on projects of comparable scope.

B. Mock-Up

1. The contractor shall, before the project commences, provide the owner/architect with a mock-up for approval.
2. The mock-up shall be of suitable size as required to accurately represent each color and texture to be utilized on the project.

3. The mock-up shall be prepared with the same products, tools, equipment and techniques required for the actual applications. The finish used shall be from the same batch as that being used for the project.
4. The approved mock-up shall be available and maintained at the job site.

1.07 DELIVERY, STORAGE AND HANDLING

- A. All Commercial Cement Plaster 2 materials shall be delivered to the job site in the original, unopened packages with labels intact. Questionable materials shall not be used.
- B. Materials shall be stored at the job site, and at all times, in a cool, dry location, out of direct sunlight, protected from weather and other sources of damage. Minimum storage temperature shall be as follows:
 1. DPR, PMR™, HDP™, Weatherlastic® and E™ Finishes, Color Prime™, Primus®, Genesis® and NCB™: 40 °F (4 °C).
- C. For other products, refer to specific product data sheets.
- D. Protect all products from weather and direct sunlight.
- E. Maximum storage temperature shall not exceed 100 °F (38 °C). **NOTE: Minimize exposure of materials to temperatures over 90 °F (32 °C). Finishes exposed to temperatures over 110 °F (43 °C) for even short periods may exhibit skinning, increased viscosity and should be inspected prior to use.**

1.08 PROJECT CONDITIONS

- A. Application of wet materials shall not take place during inclement weather unless appropriate protection is provided. Protect materials from inclement weather until they are dry.
- B. Dryvit CCP Base shall not be applied when wall or ambient temperatures are below 40 °F (4 °C).
- C. At the time of Dryvit product application, the air and wall surface temperatures shall be from 40 °F (4 °C) minimum to 100 °F (38 °C) maximum for the following products:
 1. DPR, PMR, HDP, Weatherlastic and E Finishes™, Color Prime, Primus, Genesis and NCB.
 2. For other products, refer to specific product data sheets.
- D. These temperatures shall be maintained with adequate air ventilation and circulation for a minimum of 24 hours (48 hours for Weatherlastic Finishes, Ameristone, TerraNeo and Limestone) thereafter, or until the products are completely dry. Refer to published product data sheets for more specific information.
- E. CCP Base shall be completely dry and properly cured for a minimum of 7 days prior to primer application.
- F. If necessary, tenting, heating and ventilation may be utilized to maintain required conditions. Heaters shall be vented to the outside.
- G. Protect the Commercial Cement Plaster 2 materials from uneven and excessive evaporation in dry, warm, or windy weather. Always work the shady side of the wall. Refer to section 3.03.B and 3.03C for CCP Base curing requirements.

1.09 SEQUENCING AND SCHEDULING

- A. Installation of the Commercial Cement Plaster 1 shall be coordinated with other construction trades.

1.10 WARRANTY

- A. Dryvit Systems, Inc. shall provide a limited warranty against defective material upon written request. Dryvit shall make no other warranties, expressed or implied. Dryvit does not warrant workmanship. Full details are available from Dryvit Systems, Inc.

1.11 DESIGN RESPONSIBILITY

- A. It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for their 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. Dryvit has prepared guidelines in the form of specifications, installation details, and product data sheets to facilitate the design process only. Dryvit 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 prepared by Dryvit or otherwise, or for any changes which purchasers, specifiers, designers, or their appointed representatives may make to Dryvit's published comments.

1.12 MAINTENANCE

- A. All Dryvit products are designed to require minimal maintenance. However, as with all building products, depending on location, some cleaning and minimal maintenance may be required. See Dryvit publication DS152 on Cleaning and Recoating.
- B. Sealants and flashings shall be inspected by the owner or their agent on a regular basis and repairs made as necessary to maintain a watertight building enclosure.

PART II - PRODUCTS**2.01 MANUFACTURER:**

A. All components of Commercial Cement Plaster 1 shall be obtained from Dryvit or its authorized distributors.

2.02 MATERIALS

A. Paper Backed Metal Lath (by others): Specific type to be selected by designer based on specific project requirements. Paper backing or other slip sheet is required when installed over Backstop® NT™ liquid air/water resistive barrier.

1. Self-Furring Diamond Mesh metal lath shall be galvanized, minimum 2.5 lbs/sq yd (1.4 kg/m²) or 3.4 lbs/yd² (1.9 kg/m²) and comply with ASTM C 847.
2. Self furring welded wire lath, minimum 16 gauge, shall be galvanized with openings not exceeding 2 in x 2 in (51 mm x 51 mm), and comply with ASTM C 933.
3. 3/8 in (9.5 mm) galvanized rib lath shall comply with ASTM C 847.
4. Self furring woven wire lath, minimum 17 gauge, shall be galvanized with openings not exceeding 1 1/2 in x 1 1/2 in (38 mm x 38 mm) meeting ASTM C 1032.

B. Accessories (by others).

1. Type, style and manufacturer shall be indicated on construction documents.
2. Depth of accessories (grounds) shall be sized for the plaster thickness.
3. In corrosive environments, accessories manufactured of PVC or zinc are recommended.
4. Steel accessories shall meet ASTM C 841.
5. PVC accessories shall meet ASTM D 1784 and ASTM C 1063.

C. Plaster Base Coat:

1. Dryvit CCP Base - Sanded: A fiberglass reinforced, cement plaster mix utilizing alkali resistant fibers and proprietary cementitious admixtures which is field mixed with water and Dryvit AC-100 activator (when specified). CCP Base - Sanded is packaged in 80 lb (36.3 kg) bags.
2. Dryvit CCP Base - Concentrate: A fiberglass reinforced, cement plaster mix utilizing alkali resistant fibers and proprietary cementitious admixtures which is field mixed with clean, graded plaster sand meeting ASTM C 897, water and Dryvit AC-100 activator (when specified). CCP Base - Concentrate is packaged in 80 lb (36.3 kg) bags.

D. Primer:

1. Dryvit Color Prime™, Color Prime-W or Primer with Sand™: A water-based, pigmented acrylic primer applied over the cured Commercial Cement Plaster base coat to improve adhesion and provide a more uniform appearance of the finish.

E. Dryvit Coating:

1. Demandit® - integrally colored smooth exterior wall coating enhanced with proven mildew resistance. A minimum of 2 coats are required.
2. Weatherlastic® Smooth - integrally colored, elastomeric, smooth exterior wall coating enhanced with proven mildew resistance. A minimum of 2 coats are required.

F. Dryvit Finish(es): 100% acrylic finishes with integral color and texture. Shall be the type, color and texture as selected by the architect/owner and shall be of the following types:

1. Standard DPR (Dirt Pickup Resistance): Water-based, acrylic coating with integral color and texture and formulated with DPR chemistry:
 - a. Quarzputz® DPR: Open-texture
 - b. Sandblast® DPR: Medium texture
 - c. Freestyle® DPR: Fine texture
 - d. Sandpebble® DPR: Pebble texture
 - e. Sandpebble® Fine DPR: Fine pebble texture
2. Hydrophobic (HDP™) Finishes: 100% acrylic coating with integral color and texture and formulated with hydrophobic properties:
 - a. Quarzputz® HDP
 - b. Sandblast® HDP
 - c. Sandpebble® HDP
 - d. Sandpebble® Fine HDP
 - e. Limestone™ HDP
3. **E™**: Water-based, lightweight acrylic coating with integral color and texture and formulated with DPR chemistry:
 - a. Quarzputz® **E**
 - b. Sandpebble® **E**
 - c. Sandpebble® Fine **E**

4. Specialty: Factory mixed, water-based acrylic:
 - a. Ameristone: Multi-colored quartz aggregate with a flamed granite appearance.
 - b. Stone Mist®: Ceramically colored quartz aggregate.
 - c. Custom Brick™: Acrylic polymer-based finish used in conjunction with a proprietary template system to create the look of brick.
 - d. TerraNeo®: 100% acrylic-based finish with large mica chips and multi-colored quartz aggregates.
 - e. Limestone™: A premixed, 100% acrylic-based finish designed to replicate the appearance of limestone blocks.
 - f. Finesse™: A Smooth 100% acrylic-based dirt pickup resistance finish.
5. Elastomeric DPR (Dirt Pickup Resistance): Water based, elastomeric acrylic coating with integral color and texture and formulated with DPR chemistry:
 - a. Weatherlastic® Quarzputz
 - b. Weatherlastic® Sandpebble
 - c. Weatherlastic® Sandpebble Fine
 - d. Weatherlastic® Adobe
6. Medallion Series PMR™ (Proven Mildew Resistance): Water-based, acrylic coating with integral color and texture and formulated with PMR chemistry:
 - a. Quarzputz® PMR
 - b. Sandblast® PMR
 - c. Freestyle® PMR
 - d. Sandpebble® PMR
 - e. Sandpebble® Fine PMR
7. Coatings, Primers and Sealers:
 - a. Demandit®
 - b. HDP Paint
 - c. Weatherlastic® Smooth
 - d. Tuscan Glaze™
 - e. Revyvit®
 - f. Color Prime™
 - g. Prymit®
 - h. SealClear™

PART III - EXECUTION

3.01 EXAMINATION

- A. Prior to installation of Commercial Cement Plaster 1, it is the contractor's responsibility to ensure that:
 1. The surfaces to receive plaster are free of dust, loose particles, oil and other conditions that would affect the adhesion, installation or performance of Commercial Cement Plaster 1 materials.
 2. The lath is of the proper type, installed tight, properly fastened, and meets the requirements of ASTM C 1063, ASTM C 847 (expanded metal), ASTM C 933 (Welded Wire), or ASTM C 1032 (Woven Wire), and local building code requirements.
 3. All accessories including corner aids, control and expansion joints, casing beads, etc. are properly fastened and positioned according to contract drawings and local building code requirements.
 4. The water-resistive barrier (if specified) is of a proper type and has been installed in a weatherboard fashion in accordance with building code and manufacturer's requirements.
 5. Doors, windows, decks, and other openings and penetrations have been properly flashed in accordance with building code and contract documents.
 6. Metal roof flashing has been installed in accordance with Asphalt Roofing Manufacturers Association (ARMA) Standards.
 7. The substrate is flat within 1/4 in (6.4 mm) in 10 ft (3.0 m).
 8. The contractor shall notify the general contractor and/or owner and/or architect of all discrepancies. Do not proceed until unsatisfactory conditions are resolved.

3.02 PREPARATION

- A. Protection
 1. The Commercial Cement Plaster 1 materials shall be protected by permanent or temporary means from weather and other damage prior to, during, and following application, until dry.
 2. Protect adjoining work and property.
- B. Solid surfaces such as precast or cast-in-place concrete or masonry, shall have adequate suction and surface roughness to provide bond. Smooth or non-absorptive surfaces shall be prepared by the following methods:

1. Sandblasting, wire brushing, acid etching, chipping or any combination thereof. Refer to ASTM D 4258, ASTM D 4259, ASTM D 4260, or ASTM D 4261 as applicable.
2. Application of an approved bonding agent.
3. Where effective bond cannot be achieved, the entire surface shall be covered with furred metal lath in accordance with ASTM C 1063 and building code requirements.

3.03 INSTALLATION

- A. Mixing and Application Instructions – refer to the product literature for specific mixing and application instructions of each product.
- B. CCP Base shall be moist cured for a minimum of 48 hours following application.
- C. CCP Base shall be completely dry and cured for a minimum of 7 days prior to application of primer and finish.

3.04 FIELD QUALITY CONTROL

- A. The lath and water-resistive barrier installation shall be inspected as required by the local building department prior to plaster materials being applied.
- B. The contractor shall be responsible for the proper application of the Commercial Cement Plaster 1 materials.
- C. Dryvit assumes no responsibility for on-site inspections or application of its products.

3.05 CLEANING

- A. All excess Commercial Cement Plaster 1 materials shall be removed from the job site by the contractor in accordance with contract provisions.
- B. All surrounding areas, where the Dryvit Commercial Cement Plaster 1 has been applied, shall be left free of debris and foreign substances resulting from the contractor's work.

3.06 PROTECTION

- A. The Commercial Cement Plaster 1 materials shall be protected from weather and other damage until permanent protection in the form of flashings, sealants, etc. are installed.

DISCLAIMER

Information contained in this specification conforms to standard detail and product recommendations for the installation of the Commercial Cement Plaster 1 products as of the date of publication of this document and is presented in good faith. Dryvit Systems, Inc. assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To insure that you are using the latest, most complete information, contact:

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