

ICF FINISH SYSTEM



Textured 100% Acrylic Finishing Systems (TAFS)
For Use Over Insulating Concrete Forms (ICF)

DUK194

ICF Finish System Specifications

**MANUFACTURER SPECIFICATION
SECTION 09960
DRYVIT ICF FINISH SYSTEM
TEXTURED ACRYLIC FINISHING SYSTEM**

PART I – GENERAL

1.01 SUMMARY

- A. This document contains all the Manufacturer's requirements for the proper design, use, and installation of the Dryvit ICF Finish System over Insulating Concrete Forms (ICF) with or without an additional layer of EPS foam insulation board. Refer to DUK193 ICF Finish System Installation Details for additional information.
- B. SECTION INCLUDES
 - 1. Textured Acrylic Finishing Systems.
- C. RELATED SECTIONS
 - 1. Insulating Concrete Forms – Section _____

1.02 REFERENCES

- A. ASTM B117 (Federal Test Standard 141A Method 6061) Test Method of Salt Spray (Fog) Testing.
- B. ASTM C150 Specification for Portland Cement.
- C. ASTM C297 Test Method for Tensile Strength of Flat Sandwich Constructions in Flatwise Plane.
- D. ASTM D968 (Federal Test Standard 141A Method 6191) Test Method for Abrasion Resistance of Organic Coatings by Falling Abrasive.
- E. ASTM D3273 Test Method for Resistance to Growth of Mold on Surfaces.
- F. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials.
- G. ASTM E96 Test Method for Water Vapour Transmission of Materials.
- H. ASTM G155 (ASTM G23 or G26) Recommended Practice for Operating Exposure Apparatus (Carbon-Arc Type) With and Without Water, for Exposure of Nonmetallic Materials.
- I. DUK131 Expanded Polystyrene (EPS) Insulation Board Specifications.
- J. DUK152 Dryvit Cleaning and Recoating Data Sheet.
- K. DUK204 Outsulation System Application Instructions.

1.03 DEFINITIONS

- A. Contractor: The contractor that applies materials to the substrate.
- B. Dryvit: Dryvit UK Ltd., the manufacturer of the ICF Finish System materials.
- C. Lamina: The layer consisting of the reinforced base coat and finish materials.
- D. Finish: An acrylic based coating, available in a variety of textures and colours, which is applied to the prepared wall surface.
- E. Reinforced Base Coat: The layer consisting of fiberglass reinforcing mesh fully embedded in the base coat material applied to the outside surface of the substrate.
- F. Reinforcing Mesh: Glass fiber mesh used to reinforce the base coat.
- G. Substrate: The ICF or additional layer of EPS to which the Dryvit base coat is applied.

1.04 DESCRIPTION

- A. General: Dryvit ICF Finish System is a TAFS consisting of base coat, reinforcing mesh and finish.
- B. Design Requirements:
 - 1. Acceptable surfaces for the Dryvit ICF Finish System include ICF consisting of molded EPS manufactured with buried webs and ICF with exposed webs when additional EPS is applied to the ICF surface. Contact Dryvit UK Ltd. for recommendations regarding other products.
 - 2. Vapour Retarders: Use, type and location of vapour retarders, within a wall assembly, is the responsibility of the project designer and shall be noted on the project drawings and specifications.
 - 3. Projecting surfaces shall have a minimum slope of 6:12 and maximum length of 305 mm (12 in).
 - 4. The substrate shall be flat and smooth.
 - 5. The specified ICF shall comply with all applicable code requirements for the construction type (combustible or non-combustible). Details shall conform with proper termination requirements for combustible or non-combustible construction (refer to published details).
- C. Performance Requirements: As a minimum the Dryvit materials shall be tested as follows:
 - 1. Mildew/Fungus Resistance: ASTM D3273; Passed
 - 2. Accelerated Weathering: ASTM G155 - 5000 hrs.; Passed
 - 3. Salt Spray Resistance: ASTM B117 – 300 hrs.; Passed
 - 4. Abrasion Resistance: ASTM D968; Passed
 - 5. Absorption, Freeze/Thaw: ASTM C67 – 60 Cycles; Passed
 - 6. Water Penetration: ASTM E331; Passed
 - 7. Flame Spread: ASTM E84 – Flame Spread Index less than 25, Smoke Developed less than 450.

8. Impact Resistance: EIMA 101.86. Impact resistance is measured over EPS insulation and varies with the specific reinforcing mesh used. Refer to table below:

Reinforcing Mesh/Weight g/m ² (oz/yd ²)	EIMA Impact Classification	EIMA Impact Range		Impact Test Results	
		Joules	(in-lbs)	Joules	(in-lbs)
Standard™ - 146 (4.3)	Level 1	3-6	(25-49)	4	(36)
Standard Plus™ - 203 (6)	Level 2	6-10	(50-89)	6	(56)
Intermediate® - 407 (12)	Level 3	10-17	(90-150)	12	(108)
Panzer® 15 * - 509 (15)	Level 4	>17	(>150)	18	(162)
Panzer 20 * - 695 (20.5)	Level 4	>17	(>150)	40	(352)
Detail® Short Rolls - 146 (4.3)	n/a	n/a	n/a	n/a	n/a
Corner Mesh - 244 (7.2)	n/a	n/a	n/a	n/a	n/a
*Shall be used in conjunction with Standard Mesh					

9. Water Vapour Transmission: ASTM E96 – Vapour Permeable

1.05 SUBMITTALS

- A. Product Data – The Contractor shall submit to the owner/architect manufacturer’s product data sheets describing products, which will be used on this project.
- B. Samples – The Contractor shall submit to the owner/architect two samples of each finish, texture, and colour to be used on the project. The same tools and techniques proposed for the actual installation shall be used to prepare the samples. Samples shall be of sufficient size to accurately represent each colour and texture to be utilized on the project.

1.06 QUALITY ASSURANCE

- A. Qualifications
 - 1. Manufacturer: Shall be Dryvit UK Ltd. All materials shall be manufactured or sold by Dryvit and shall be purchased from Dryvit or its authorized distributor.
 - a. Materials shall be manufactured at a facility covered by a current ISO 9001:2000 certification. Certification of the facility shall be done by a registrar accredited by the American National Standards Institute, Registrar Accreditation Board (ANSI-RAB).
 - 2. Contractor*: Shall be knowledgeable in the installation of the Dryvit materials and shall be experienced and competent in the application of TAFS. Additionally the contractor shall possess a current trained contractor certificate from Dryvit.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. All Dryvit materials shall be delivered to the job site in the original, unopened packages with labels intact.
- B. Upon arrival, materials shall be inspected for physical damage, freezing or overheating. Questionable materials shall not be used.
- C. Materials shall be stored at the job site in a cool, dry location, out of direct sunlight, protected from weather and other damage. Minimum storage temperature shall be 7 °C (45 °F) for Color Prime™, 10 °C (50 °F) for Ameristone™ and 4 °C (40 °F) for all other products.

1.08 PROJECT CONDITIONS

- A. Environmental Requirements
 - 1. 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.
 - 2. At the time of application, the air and wall surface temperatures shall be minimum 7 °C (45 °F) for Color Prime, 10 °C (50 °F) for Ameristone, 2 °C (35 °F) for Rapidry DM 35-50™, and 4 °C (40 °F) for all other products. These temperatures shall be maintained, with adequate air ventilation and circulation, for a minimum of 24 hours thereafter, or until the products are dry.
- B. Existing Conditions – The Contractor shall have access to electric power, clean water, and a clean work area at the location where the Dryvit materials are to be applied.

1.09 SEQUENCING AND SCHEDULING

- A. Installation of the Dryvit ICF Finish System shall be coordinated with other construction trades.
- B. Sufficient manpower and equipment shall be employed to ensure a continuous operation, free of cold joints, scaffold lines, texture variations, etc.

1.10 LIMITED MATERIALS WARRANTY

A. Dryvit UK Ltd. shall provide a written limited warranty against defective materials, upon written request. Dryvit shall have no liability for the application of the materials. Dryvit shall make no other warranties, expressed or implied. Dryvit is not liable for incidental or consequential damages. Contact Dryvit UK Ltd. for complete details.

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 and details 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. Maintenance and repair shall follow the procedures noted in Dryvit Outsulation System Application Instructions, DUK204.
B. All Dryvit products are designed to minimize maintenance. However, as with all building products, depending on location, some cleaning may be required. See Dryvit publication DUK152 on Cleaning and Recoating.
C. Sealants and flashings shall be inspected on a regular basis and repairs made as necessary.

PART II PRODUCT**2.01 MANUFACTURER**

A. All components of the Dryvit ICF Finish System shall be obtained from Dryvit or its authorized distributors.

2.02 MATERIALS

A. Portland Cement: shall be Type I, I-II or II, meeting ASTM C150, white or gray in colour, fresh and free of lumps.
B. Water: Shall be clean and free of foreign matter.

2.03 COMPONENTS

- A. Weather Barrier (at openings and penetrations).
1. Dryvit Backstop NT™: A fully formulated, non-cementitious, water based material.
 2. Dryvit Grid Tape™: A 100 mm (4") wide, open weave fiberglass mesh tape.
 3. Dryvit Flashing Tape™: A high density, polyethylene backed, tape with a rubberized asphalt adhesive.
 4. Dryvit Flashing Tape Surface Conditioner™: A water-based surface conditioner and adhesion promoter for the Dryvit Flashing Tape.
- B. Expanded polystyrene (if applicable): Additional layer of EPS and EPS shapes shall be 16 kg/cu. m (1 pcf) nominal density meeting DUK131 and be produced by a manufacturer licensed by Dryvit. Shall be minimum 25.4 mm (1") thick. Maximum EPS thickness shall be limited by local code jurisdiction.
- C. Base Coat/Adhesive
1. Cementitious: A liquid polymer based material, which is field-mixed in a 1:1 ratio by weight with Portland Cement.
 - a. Shall be Genesis® or Primus®.
 2. Ready mixed: A dry blend cementitious, co-polymer based product, field mixed with water.
 - a. Shall be Genesis DM™, Primus DM™ or Rapidry DM™.
 3. Water Resistant: A high percentage polymer-blend material, which is field mixed with Portland Cement in a 1:1 ratio by weight.
 - a. Shall be Dryflex®.
 4. Dryvit AP Adhesive (adhesive only): A moisture cure one-part urethane-based product.
- D. Reinforcing Mesh(es): Shall be a balanced open weave, glass fiber fabric treated for compatibility with other System materials and shall be as noted in Paragraph 1.04.C.8 above.
- E. Finishes: Shall be the type, colour, and texture as selected by the owner/architect and shall be one or more of the following:
1. Standard DPR (Dirt Pickup Resistance): Water based, acrylic coatings with integral colour and texture, and formulated with DPR (Dirt Pickup Resistance) chemistry.
 - a. Quarzputz®: Coarse texture.
 - b. Sandblast®, Sandblast NTX: Medium texture.
 - c. Freestyle®, Freestyle Smooth, Freestyle Fine: Fine texture.
 - d. Sandpebble®, Sandpebble NT: Coarse pebble texture.
 - e. Sandpebble Fine™, Sandpebble Fine NT: Fine pebble texture.
 - f. Sandpebble Coarse™: Very heavy pebble texture.
 2. Elastomeric DPR (Dirt Pickup Resistance): Water based elastomeric acrylic coatings with integral colour and texture, and formulated with DPR chemistry:
 - a. Weatherlastic™ Quarzputz: Coarse texture.
 - b. Weatherlastic Sandpebble: Rough pebble texture.
 - c. Weatherlastic Sandpebble Fine: Fine pebble texture.
 - d. Weatherlastic Adobe™: Fine texture.

3. **E™** Finishes: Lightweight water based acrylic coatings with integral colour and texture, and formulated with DPR chemistry.
 - a. Quarzputz **E**: Rilled pattern in a regular or random style.
 - b. Sandpebble **E**: Rough, pebbly texture.
 - c. Sandpebble Fine **E**: Fine pebble texture
 4. Medallion Series PMR™ (Proven Mildew Resistance): Water based acrylic coatings with integral colour and texture, and formulated with PMR chemistry:
 - a. Quarzputz PMR: Coarse texture.
 - b. Sandblast PMR, Sandblast NTX PMR: Medium texture.
 - c. Freestyle PMR: Fine texture.
 - d. Sandpebble PMR, Sandpebble NT PMR: Coarse pebble texture.
 - e. Sandpebble Fine PMR, Sandpebble Fine NT PMR: Fine pebble texture.
 5. Specialty Finishes: Factory mixed, water based acrylic:
 - a. Ameristone: Multi-coloured quartz aggregate with a flamed granite appearance.
 - b. Stone Mist®: Ceramically coloured quartz aggregate.
 - c. TerraNeo®: Large mica chips and multi-coloured quartz aggregate.
 - d. Custom Brick™: A template system resulting in a brick, stone or tile appearance.
 - e. Limestone™: Simulates appearance of limestone.
- F. Coatings, Primers and Sealers:
1. Demandit®, Weatherlastic Smooth™, Revyvit, Tuscan Glaze™, Color Prime™, Prymit®, and SealClear™.

PART III EXECUTION

3.01 EXAMINATION

- A. Prior to application of the Dryvit ICF Finish System, the Contractor shall ensure that the substrate is as listed in Section 1.04.B.1.
- B. Prior to the installation of the Dryvit ICF Finish System, the Architect or General Contractor shall insure that all needed flashings and other waterproofing details have been completed, if such completion is required.
- C. The Contractor shall notify the General Contractor and/or Architect and/or Owner of all discrepancies. Work shall not proceed until discrepancies have been corrected.

3.02 SURFACE PREPARATION

- A. The substrate shall be free of foreign materials such as dust, dirt, moisture, frost and any other materials that inhibit adhesion.
 1. The ICF shall be manufactured with buried webs or exposed webs (additional layer of EPS required) and consist of molded EPS. Extruded ICF must include a layer of EPS attached to the ICF.
 2. The surface of the ICF or EPS layer shall be prepared as to be flat and smooth.
 3. The entire surface of the ICF or EPS layer shall be rasped to remove any UV degradation and provide a smooth planar surface.
 4. All voids and gaps greater than 1.6 mm (1/16 in) in the ICF or EPS layer shall be slivered and filled using additional pieces of insulation. Note: base coat material shall not be used for leveling. The wall surface must be brought into plane prior to applying coatings.
 5. Where required, provision shall be made for termite control and inspections along the base of the wall. Consult ICF manufacturer regarding proper treatment at grade.

3.03 INSTALLATION

- A. The Dryvit materials shall be mixed and applied in accordance with current Dryvit printed Outsulation System Application Instructions (DUK204).
 1. Install additional layer of EPS insulation board when specified:
 - a. To face of molded ICF (if applicable) using adhesive per DUK204 or using mechanical fasteners anchored in attachment strips in the ICF to satisfy structural requirements.
 - b. To face of extruded ICF (required) using mechanical fasteners anchored in attachment strips in the ICF to satisfy structural requirements.
 2. Apply edge wrap using Detail reinforcing mesh embedded in base coat at all ICF and EPS terminations.
 3. Install all EPS trim by adhering to the existing ICF using Dryvit adhesive and allow to dry.
 4. Apply a layer of the specified reinforcing mesh embedded in wet base coat mixture over the entire wall surface area and trowel smooth. The recommended method is to apply the base coat in two passes. Refer to Dryvit printed Outsulation System Application Instructions (DUK204).
 5. Allow the base coat mixture to cure a minimum of 24 hours until completely dry. Cool, humid conditions may require longer cure times.

6. Apply the specified finish in accordance with Dryvit's printed installation instructions.

3.04 FIELD QUALITY CONTROL

- A. The Contractor shall be responsible for the proper application of the Dryvit materials.
- B. Dryvit assumes no responsibility for on-site inspections or application of its products.

3.05 CLEANING

- A. All excess Dryvit materials shall be removed from the job site by the Contractor in accordance with contract provisions.
- B. All surrounding areas, where Dryvit coatings have been installed, shall be left free of debris and foreign substances resulting from the Contractor's work.

3.06 PROTECTION

- A. The Dryvit coatings and the project shall be protected from damage and exposure to dust and other contaminants until dry.

DISCLAIMER

Information contained in this specification conforms to standard detail and product recommendations for the installation of the Dryvit ICF Finish System as of the date of publication of this document and is presented in good faith. Dryvit UK Ltd. assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To ensure that you are using the latest, most complete information, contact:

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*The Trained Contractor Certificate indicates certain employees of the company have been instructed in the proper application of Dryvit products and have received copies of Dryvit's Application Instructions and Specifications. The Trained Contractor Program is not an apprenticeship. Each trained contractor is an independent company experienced in the trade and bears responsibility for its own workmanship. Dryvit UK Ltd. assumes no liability for the workmanship of a trained contractor.

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