FINESTONE®

SPECIFICATION
1022544

Section 07242 — IMPACT-R SYSTEM

High-impact Exterior Insulation and Finish System Class PM

Part 1 - General

1.1 GENERAL REQUIREMENTS

1.1.1 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.

1.1.2 System Description: Class PM, non-structural Exterior Insulation and Finish System (EIFS) consisting of mechanical attachment, insulation board, base coat, reinforcing mesh, and finish coat.

1.1.3 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.

1.1.4 The system type shall be Impact-R Class PM EIFS as manufactured by Finestone, Jacksonville, Florida.

1.2 SCOPE OF WORK

1.2.1 The Contractor shall provide all materials, labor and equipment required to apply the Exterior Insulation and Finish System and related work necessary for the proper completion of the operation.

1.2.2 The following related work is specified under other sections of these specifications:

A. Section 07900 Sealants.

B. Section 06100 Exterior Gypsum Substrates.

C. Section 04200 Masonry.

D. Section 03300 Concrete.

E. Section 04500 Plywood.

F. Section 05400 Metal Studding.

1.3 REFERENCES

1.3.1 References

A. EIFS: Exterior Insulation and Finish System.

B. ASTM: American Society for Testing and Materials.

C. Building Authority: Local jurisdictional building authority.

1.4 QUALITY ASSURANCE

1.4.1 Qualifications

A. The Exterior Insulation System Applicator shall provide satisfactory evidence of his qualifications to apply the Exterior Insulation and Finish System (EIFS).

B. The manufacturer shall have marketed EIFS in the United States for at least 5 years.

C. The Insulation Board Manufacturer must be approved by the EIFS manufacturer to produce insulation board in accordance with Finestone requirements. The Insulation Board shall be Code approved by third party testing agency and labeled with the system manufacturer's pertinent information. Finestone MEPS or approved equal.

1.4.2 Plan Review

A. At the Architect's discretion, the EIFS manufacturer shall review and comment regarding EIFS application and details prior to bidding.

B. At the Architect's Discretion, the EIFS manufacturer shall perform a water vapor transmission analysis of a typical wall assembly with information provided by the Architect/Engineer.

1.4.3 Pre-Construction Meeting

A. At the Architect's discretion, a pre-construction meeting shall be conducted to review EIFS details and necessary coordination with other trades. Representatives shall be present from:
   1. Architect.
   2. General Contractor.
   3. Finestone Applicator.
   4. Finestone Manufacturer's Representative.
   5. Other trades affected by EIFS applicator. (e.g., Roofing Contractor, Window and Glazing Contractor, Sealant Contractor, etc.)

1.4.4 Design and Detailing a Standard Class PM EIFS.

A. General
   1. The system shall be installed in strict accordance with current recommended published details and product specifications from the system's manufacturer.
   2. Sealants and backer rod as required at dissimilar materials and expansion joints within the EIFS shall provide a complete watertight system.
   3. Prefabricated accessories at control joints as required.
   4. The use of dark colors must be considered in relation to wall surface temperature as a function of local climate conditions.
   5. Minimum slope for all projections shall be 1:2 with a maximum length of 30.5 cm (12") [e.g. 15 cm in 30.5 cm (6" in 12")] unless other manufacturer-approved detailing is shown on the construction documents.

B. Substrate Systems
   1. Deflection of the substrate systems shall not exceed L/360.
   2. Acceptable substrates for Impact-R EIFS include unpainted surfaces of brick, unit masonry, concrete, stucco brown coat, gypsum sheathing (C79), Dens Glass Gold®, and certain cementitious and exterior wood sheathing.
   3. Painted and otherwise coated surfaces of brick, unit masonry, stucco and concrete shall be inspected and prepared as approved by the EIFS manufacturer before application. Paint on surface consolidants or primers shall not be used to bond EIF System to painted surfaces.
   4. Other substrates shall be approved by the system's manufacturer in writing prior to the application.
   5. The applicator shall verify that the proposed substrate is acceptable prior to the insulation board installation.
   6. The substrate systems shall be engineered with regard to structural performance by others.

C. System Joints
   1. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, where substrates change and where structural movement is anticipated.
   2. Control joints are required at the following locations:
      a. 13.4 m^2 (144 ft^2) maximum area.
      b. One dimension shall not exceed 2.5 times the other dimensions.
      c. At all dissimilar materials.

D. Coordination with Other Trades
   1. Architect shall evaluate adjacent materials such as windows, doors, etc. for conformance to manufacturers' details. Adjacent trades shall provide scaled shop drawings for review.

1.4.5 Evaluations, Listings, and Classifications

A. The EIFS Finish and Base Coat shall be tested as having a flame spread of less than or equal to 25.

B. The system shall be currently evaluated, listed and classified by the following agencies:
   1. B.O.C.A. Research Report
   2. I.C.B.O. Evaluation Report
   3. S.B.C.C.I. Compliance Report

1.4.6 Code Approvals

The system shall be recognized for the intended use by applicable Building Codes.

1.5 SUBMITTALS

1.5.1 Submit manufacturer's product brochures with product specifications and installation requirements for each component of the EIFS.

1.5.2 Samples

A. Submit a 30.5 cm x 30.5 cm (1' x 1') sample for each finish color and texture specified.

B. Each sample shall be prepared using the same tools and techniques as required for the actual application.

C. An approved sample shall be available and maintained at the job site.

1.5.3 Shop Drawings

A. The applicator shall prepare and submit schedules and complete shop drawings to the Architect for approval.

B. 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.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

1.6.1 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.

1.6.2 Store materials inside, or under cover and off the ground and keep them dry, protected from the weather, direct sunlight, surface contamination, damaging temperatures, damage from construction traffic and other causes.

1.6.3 Stack insulation board flat, a minimum of 20 cm (8") above the ground, and protected from the sun.

1.6.4 Store pail materials in temperatures not less than 4° C (40 F) or more than 43° C (110° F).

1.7 PROJECT CONDITIONS

1.7.1 Existing Conditions

A. The contractor shall refer to section 01010 for project requirements and this contractor's responsibility thereunder.

1.7.2 Environmental Requirements

A. 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.

1.7.3 Protection of Work

A. Protect surrounding areas and surfaces during the application of the system.

B. 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.

1.8 EIFS PERFORMANCE

1.8.1 The system shall have been tested by the following tests and meet or exceed the minimum test requirements:

Environmental

TEST	METHOD	RESULTS
ICBO Freeze/Thaw	ASTM C67	60 cycles, no deleterious effects.
EIMA Freeze/Thaw	ASTM C67 Modified	No visible change. Max. weight gain=6.2 grams
Accelerated Weathering	ASTM G23; Fed. Std. 141A/6061	2000 hours. No deleterious effects to surface or adhesion characteristics.
Water Resistance	ASTM D2247	14 Day exposure. No deleterious effects.
Water Vapor Transmission	ASTM E96	grains/hour/ft^2 (perms)
Wind Driven Rain	TTC-555 B	No leaks, no dampness, no visible adverse effects. 90 gram max. weight gain.
Salt Spray	ASTM B117	5% Salt concentration. 300 hours. No deleterious effects
Mildew/Fungus Resistance	Mil. Std. 810B	No growth of mildew under test conditions
Abrasion Resistance	ASTM D968	500 liters (132 gal.)of sand. No deleterious effects.

Physical/Structural Properties

TEST	METHOD	RESULTS
Acrylic Solid Content	ASTM D3168	Minimum 10% by weight, based on total solids (finishes)
Transverse Load	ASTM E330; Maximum Negative Loading, (psf)	Gypsum sheathing over metal studs Positive = 5602 Pa (117 psf) Negative = 5458 Pa (114 psf)
Tensile Bond (psi)	ASTM D897	Full system tested - 0.15 MPa (22 psi) After G-23 testing - 0.10-0.12MPa (15-17 psi)
Compressive Strength	ASTM C109	Ultimate compressive strength = 19.2 MPa (2787 psi)

Fire Performance Testing

TEST	METHOD	RESULTS
Surface Burning Characteristics	ASTM E84	Flamespread = 5; Smoke Developed = 5
Non-Combustibility	ASTM E136	Passed
Large Scale Fire Test	ASTM E108 (modified)	With 50 mm (2") extruded insulation - passed all criteria
Large Scale Fire Test	ASTM E108 (modified)	With 100 mm (4") EPS insulation - passed all criteria

1.9 COORDINATION AND SCHEDULING

1.9.1 Installation of the system shall be coordinated with other construction trades.

1.9.2 Tops of the walls must be immediately covered to avoid water infiltration. To protect the system, copings or flashing shall be installed as soon as possible after the finish coat of the system has been applied.

1.9.3 All sealants shall be installed in a timely manner.

1.9.4 Sufficient labor and equipment must be employed to ensure a continuous operation, free of cold joints, scaffolding lines, etc.

1.10 LIMITED WARRANTY

Upon request, the system's manufacturer shall offer a 5 year limited warranty for materials.

Part 2 - Products

2.1 GENERAL

2.1.1 All components of the Finestone Impact-R Class PM EIF System shall be obtained from the system manufacturer or through an authorized distributor.

2.2 MATERIALS

2.2.1 Insulation Board (MEPS): Molded expanded polystyrene insulation board. Rigid, cellular, nominal 0.45 kg per 30.5 cm^3 (1.0 lb. per ft^3) polystyrene insulation complying with ASTM C578, Type I: aged in block form by air drying for not less than 6 weeks prior to cutting and shipping producing 61 cm x 122 cm x thickness [2' x 4' x thickness] shown on drawings. Thickness shall be not less than 19 mm ($^3/_4$") or in excess of 100 mm (4").

2.2.2 Insulation Board (XEPS): Rigid extruded foam plastic insulation board, smooth extruded, natural skinned, free of facing films, papers or foils. Insulation shall comply with ASTM C578, Type IV thermal insulation board and have a minimum compressive strength of 0.172 Mpa (25 psi) when tested in accordance with ASTM D1621 and a maximum water absorption of 0.3% when tested in accordance with ASTM C272.

2.2.3 Base Coat: Fiber reinforced acrylic modified cementitious coating 4.8 - 6.4 mm ($^3/_{16}$" to $^1/_4$") thick. Finestone Base Mortar Field Mix or approved equal. Base coat shall be mixed in the following form:

A. Finestone Base Mortar Field Mix
A field mixed blend of Type I Portland cement, hydrated lime, plaster sand, Finestone Base Mortar Liquid, water, and Finestone Fibers.

2.2.4 The system manufacturer's reinforcing mesh shall be a balanced, open weave, treated glass fiber fabric, treated for alkaline resistance and conforming to ASTM D1682. Finestone Base Mortar Mesh (152 g/m^2 [4.5 oz/yd^2]) or approved equal.

2.2.5 Insulation Fasteners: Fasteners shall have the necessary pull out, tensile and shear strength as installed to resist design loads imposed on the system

A. Steel and wood construction:
   1. Windlock Corp. - #8 wire screws with corrosion resistant coating by length required. Phone: (800) 872-5625
   2. Tru-Fast Corp. - UP screw with corrosion-resistant coating by length required. Phone: (419) 636-6715
   3. Buildex - Phone: (312) 595-3500

B. Brick, masonry or poured concrete construction:
   1. Windlock Corp. - #12 Windlock masonry anchor with corrosion-resistant coating (requires pre-drilling). Phone: (800) 872-5625

2.2.6 Finish: Factory-mixed formulation of 100% acrylic polymers and quartz aggregate, integrally pigmented and formulated for specific textures. Finestone Pebbletex Finishes or approved equal. Texture shall be <_____>

2.2.7 Aggrelastic Finish: Elastomeric factory-mixed formulation of 100% acrylic polymers and aggregate, integrally pigmented and formulated for specific textures. Finestone Aggrelastic 100, 200 Finish or approved equal. Texture shall be <_____>.

2.2.8 Finish Enhancements: Finish material shall include the following factory-formulated finish enhancements:

ADDITIVE	DESCRIPTION
None	
SRS	Standard in all Finestone Finishes
Maximum A/S	For maximum resistance to soiling. Siloxane polymer (silicone) is added. Silicone polymers reduce mildew and algae growth, stay cleaner, and are hydrophobic.
XL	Mildew protection additive.

Note: Any combination of enhancements may be added.

2.2.9 Portland cement: Type I or I-II per ASTM C150.

2.2.10 Water: Clean and potable.

2.3 EXTERIOR SEALANTS

2.3.1 Sealant systems shall be compatible as required by the sealant manufacturer, Architect and system manufacturer. Reference Section 07920.

2.3.2 Compatible Sealants:

MANUFACTURER	PRODUCT	PRIMER	COMMENTS
Dow Corning Corporation	790 Silicone Sealant	1200 Prime Coat	EIFS to EIFS Joints
Dow Corning Corporation	791 Silicone Sealant	Generally not required	EIFS to dissimilar materials
Dow Corning Corporation	795 Silicone Sealant	Generally not required	EIFS to dissimilar materials
Pecora Corporation	Dynatrol II	P-75	
Sonneborn Building Products	Sonolastic NP II	Primer #733	
Tremco, Inc.	Dymeric	#P1 Primer	

A. Do not return finishes into sealant joints.

B. Substitutions to these sealants must be proved to be compatible with the EIFS by both the Contractor and sealant manufacturer, and approved by the Architect and EIFS manufacturer.

2.3.3 Color of Sealant: Color of sealant shall be manufacturer's standard as approved by Architect.

2.3.4 Backing Materials

A. Backer rod shall be round closed cell non-staining, non-absorbent extruded polyethylene flexible rod as recommended by the manufacturer of the sealant.

B. Backer rod shall be clean, dry and free of foreign matter.

C. Open cell, Oakum, or other types of absorptive materials shall not be used.

D. Bond breaker tape shall be used as recommended by sealant manufacturer for proper sealant joint design and performance.

2.3.5 Sealant primer: Sealant primer use and application according to manufacturer's requirements. Surfaces shall be primed prior to installation of the sealant.

Part 3 - Execution

3.1 INSPECTION

3.1.1 Installer shall examine substrates to determine if they are in satisfactory condition to receive exterior insulation and finish system. A satisfactory substrate is one that complies with requirements including installation tolerance of the sections in which the substrate and related work are specified. Installer shall submit written report listing conditions detrimental to performance of work of this section. Do not proceed with installation of system until unsatisfactory conditions have been corrected.

3.2 PRE-INSTALLATION MEETING

3.2.1 At the Architect's discretion, installer, system manufacturer's technical representative, installer of substrate material and other trades whose work affects exterior insulation and finish system shall meet at project site to review procedures and time schedule proposed for installation of the system and coordination with related work.

3.3 SUBSTRATE PREPARATION

3.3.1 Perform preparation and cleaning procedures in compliance with system manufacturer's requirements to obtain optimum bond between substrate and adhesive used to attach insulation.

3.4 INSTALLATION, GENERAL

3.4.1 Comply with manufacturer's current published instructions for installation of EIFS as applicable to each type of substrate indicated.

3.5 INSULATION APPLICATION

3.5.1 Install insulation board using mechanical fasteners appropriate for the substrate. Achieve preliminary attachment by applying two mechanical fasteners through insulation and into the framing or masonry 30.5 cm (12") up from bottom of insulation board and 40.5 cm (16") [61 cm (24")] from each end.

3.5.2 Apply boards over dry substrates in courses with typically long edge oriented horizontally; begin first course from a level line and work upwards.

3.5.3 Stagger vertical joints in successive courses to produce running bond pattern.

3.5.4 Offset joints of insulation from joints in substrates.

3.5.5 Interlock ends at external corners.

3.5.6 Abut boards tightly at joints within and between each course to produce a flush, continuously even surface without gaps or raised edges between insulation boards. If gaps occur, fill with insulation cut to fit gaps exactly; insert without use of adhesive.

3.5.7 Cut insulation to fit openings, corners, and projections precisely and to produce edge and shapes conforming to details indicated. Form joints for sealant by leaving joint of width indicated between insulation edges and dissimilar adjoining surfaces projecting through insulation with adequate allowance for base coat and mesh.

3.5.8 Provide proper joint through insulation where expansion joints occur in substrates.

3.5.9 Coordinate installation of insulation with contiguous construction to produce a wall system which does not allow water to penetrate behind exterior insulation and finish system.

3.6 SURFACE PREPARATION

3.6.1 Rout aesthetic grooves as indicated on construction drawings. Do not align aesthetic grooves with insulation board joints.

3.7 REINFORCING MESH APPLICATION

3.7.1 Apply Finestone Base Mortar Mesh over insulation board with 7.5 cm (3") overlaps at edges. Secure through insulation and into substrate with mechanical fasteners at 40.5 cm (16") o.c. horizontally over masonry, 40.5 cm (16") o.c. [61 cm (24") o.c.] horizontally over framing and 30.5 cm (12") o.c. vertically.

3.8 IMPACT-R BASE COAT APPLICATION

3.8.1 Attach control joints, corner, casing beads and other accessories.

3.8.2 Base Coat shall be applied over entire surface of Base Mortar Mesh and insulation board with a stainless steel trowel to a uniform thickness of approximately 3.2 mm (1/8").

3.8.3 Base Coat must be properly keyed into expanded flange of trim.

3.8.4 Immediately trowel a second layer of Base Coat to a thickness of 3.2 mm (1/8"). Level Base Coat with metal or wood slicker to achieve a smooth, uniform surface; total thickness shall be 6.4 mm (1/4"), matching height of grounds of trim accessories.

3.10 FINISH APPLICATION

3.10.1 Apply Finestone Finish over clean, dry, cured base coat in minimum thickness required by system manufacturer to produce a uniform textured finish. Reference architectural drawings or specifications for finish texture and color.

3.10.2 Apply Finestone Finish using sufficient manpower and equipment to insure a continuous operation without cold joints, scaffolding lines, etc. Texture Finestone Finish to match the approved sample.

A. Trowel Application:
   1. The finish shall be mixed thoroughly before use with a clean mixer.
   2. The base coat surface must be flat, smooth, dry and cured. Level any irregularities with additional base coat. Allow to cure before proceeding.

B. Spray Application:
   1. Prime surface (spray, brush, or roller techniques) using Finestone Fineprime or Sanded Primer tinted to match finish color. Allow primer to cure 12 hours prior to finish application.
   2. Spray finish onto primed surface using conventional plaster hopper gun or a proven pump. Apply finish to achieve desired texture using a circular overlapping pattern keeping the spray gun at a 90° angle to the surface and maintaining the same distance to the wall at all times.
   3. Be cautious of flooding an area with too much finish because it may appear shinier when it dries.

3.10.3 Allow finishes to cure in accordance with manufacturer's published literature. Protect from rain and temperatures below 4° C (40° F) for a minimum of 24 hours after application. Provide longer protection as necessary during lower temperatures and/or higher humidity conditions.

3.11 CLEANING AND PROTECTION

3.11.1 Remove temporary covering and protection of other work. Promptly remove protection from window and door frames.

3.11.2 Provide final protection and maintain conditions, in a manner suitable to installer and system manufacturer, that ensure exterior insulation and finish system being without damage or deterioration at the time of substantial completion. If damage occurs, whoever is responsible for damaged area shall restore to a condition indistinguishable in appearance from, and equivalent in performance to, undamaged areas by replacing or repairing in compliance with system manufacturer's recommendations.

3.11.3 All work adjacent to operations under this section shall be inspected for damage resulting from EIFS installation, and repaired or cleaned prior to completion of work.

3.12 CLEAN-UP

3.12.1 Upon completion of the work this contractor shall remove from the site all scaffolding, equipment, and materials used on the work as well as any debris resulting from the operations.

IMPACT-R SYSTEM

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

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.cc.

NOTE

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RESIDENTIAL POLICY

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. 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 BASF Wall Systems warrant the use of any other system on this type of construction without expressed written authorization from BASF Wall Systems [Residential construction using EIFS on masonry (CMU) or poured concrete does not require the additional water management provisions described above.] See the FINESTONE Residential Policy Bulletin for a more detailed discussion of this topic. Consult BASF Wall Systems Technical Services Department for specific recommendations concerning all other applications. Consult the FINESTONE website, www.finestone.cc for additional information about products and systems and for updated literature.

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