



The Chemical Company

March 15 2007

**BASF Construction Chemicals, LLC
Wall Systems
Engineering Report 03-07**

**PermaLath® 1000 Tests and Code
Compliance**

Subject: Engineering Report 03-07 - PermaLath® 1000 Tests and Code Compliance

Abstract:

PermaLath 1000 is a self-furred, nominal 1/4" thick, three-dimensional, non-metallic, patent-pending glass fiber lath by BASF Wall Systems. It serves as an alternative to metal or plastic plaster bases (lath) typically used in nominal 3/4" thick Exterior Cement Plaster (Three Coat Stucco) or nominal 1/2" thick Cementitious Exterior Wall Coatings (One Coat Stucco). Requirements for use and recognition of glass fiber lath have been established by the ICC Evaluation Service, Inc. (ICC-ES) under AC 275, which are the *Acceptance Criteria for Glass Fiber Lath Used in Cementitious Exterior Wall Coatings or Exterior Cement Plaster (Stucco)*. Compliance with the requirements in AC 275 is used to demonstrate that products meet or exceed performance requirements in the following codes:

- 2003 International Building Code®
- 2003 International Residential Code®
- 1997 Uniform Building Code™

Background

ICC-ES is the Evaluation Service arm of the International Code Council, the organization that publishes the International family of building codes. Among the services provided by ICC-ES is evaluation of products for code compliance based upon performance features of the product compared to requirements contained in the International family of codes, other widely adopted code families, or ICC ES Acceptance Criteria.

Test Results:

PermaLath 1000 has been subjected to numerous independent laboratory tests, including those set forth in AC 275 which is the *ICC-ES Acceptance Criteria for Glass Fiber Lath Used in Cementitious Exterior Wall Coatings or Exterior Cement Plaster (Stucco)*. Listed below is a summary of the tests and results*.

Test	Method	Criteria/Results
Softening (minimum 750°F)	AC 275 Section 1.2 (ASTM C 338)	Pass (>750°F)
Tensile Strength	AC 275 Section 3.1 (ASTM E 2098)	Pass (>120 pli retained)
*Structural Tests (Transverse load)	AC 275 Section 3.2.1 (ASTM E 330)	<p>2x4 SPF wood studs 16" oc, 7/16" OSB nailed (6d common) to studs @ 12" oc field, 6" oc perimeter, 2 layers weather barrier, PermaLath 1000 fastened 6" oc with 1" crown x 1-1/4" long staples 6" oc vertically to studs x 16" oc horizontally, 3/4" stucco. Average ultimate pressures: Positive: 163 PSF Negative: 222 PSF</p> <p>3-5/8" x 1-5/8" 20 ga steel studs 16" oc, 1/2" ASTM C 79/C 1396 gypsum sheathing screwed (No. 6, 1-1/4" bugle head) to studs @ 7" oc field & perimeter, 1 layer weather barrier, PermaLath 1000 fastened 6" oc vertically to studs x 16" oc horizontally with No 6, 1-1/4" bugle head screws and galvanized Lath Plates, 3/4" stucco. Average ultimate pressures: Positive: 153 PSF Negative: 63 PSF</p>
*Structural Tests (Racking)	AC 275 Section 3.2.2 (ASTM E 72)	2x4 SPF wood studs 16" oc, 1/2" ASTM C 79/C 1396 gypsum sheathing nailed (11 gauge, 1-3/4" long) to studs @ 8" oc field & perimeter, 1 layer

		<p>weather barrier, PermaLath 1000 fastened with 1" crown x 1-1/4" long staples 6" oc vertically to studs x 16" oc horizontally, 3/4" stucco. Pass (>180 plf)</p> <p>1/2" ASTM C 36 Gypsum wallboard (interior) fastened (6d nails) to studs 8" oc vertically, 2x4 SPF studs spaced 16" oc, 7/16" OSB nailed (8d common) to studs @ 12" oc field, 6" oc perimeter, 2 layers weather barrier, PermaLath 1000 fastened with 1" crown x 1-1/4" long staples 6" oc vertically to studs x 16" oc horizontally, 3/4" stucco. Pass (>180 plf)</p>
*Structural Tests (Fastener attachment)	AC 275 Section 3.2.2	Pass (>100 lbs over three fasteners)
*Structural Tests (Attachment)	AC 275 Section 3.2.3	Pass (>18 lbs)
*Embedment	AC 275 Section 3.3	Pass (minimum 1/4" embedment)
Non Combustibility	ASTM E 136	Pass (StuccoBase and PermaLath 1000)
Tensile/Yield Strength	Lab	>300 lbs/inch in both directions

*Test results based on base coat proportions for a C plaster mix as described in Table 3 of ASTM C 926. Portland Cement to sand ratio for the 1st coat (scratch) was 1:4, 1:5 for the 2nd coat (brown) and a total, nominal base coat thickness of 3/4".

Summary:

PermaLath 1000 is for use as a plaster base in Exterior Cement Plaster (Stucco) that meets the base coat proportions and application methods (including nominal scratch/brown base coat thicknesses of 3/4") set forth in ASTM C 926, which is the *Standard Specification for Application of Portland Cement Based Plaster*. PermaLath 1000 can also be used as an alternative to PermaLath in ICC ES recognized Cementitious Exterior Wall Coatings ('One Coat Stucco'), such as BASF Wall Systems' StuccoBase that is applied at nominal thicknesses of 1/2".

PermaLath 1000, as tested in nominal ¾" thick Exterior Cement Plaster Stucco (ASTM C 926) has met or exceeded the physical performance test requirements set forth in AC 275. The process of independent verification and recognition of PermaLath 1000 in an International Code Council Evaluation Service report is underway.

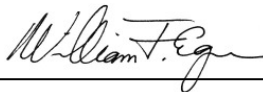
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