

Matrix-FP

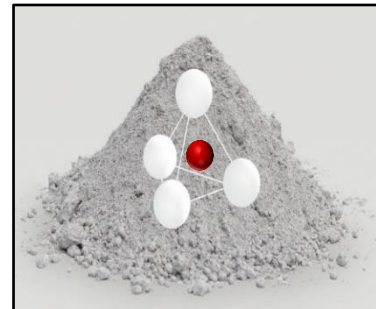
Geopolymer Concrete

Technical Data Sheet

M-250-FP

ZAH Technologies is proud to introduce our Patented “Eco-Friendly” Fireproofing Technology, for use where extreme durability and chemical resistance is desired. The **M.250.FP** is a spray applied, fiber reinforced, variable aggregate, Geopolymer Concrete.

M-250-FP is a 42 – 48 pounds per cubic foot (pcf) density material, infused with proprietary, FRC reinforcement to resist cracking caused from external stresses. Stresses are caused by anything from handling and transportation, excessive loading, to seismic events. This FRC benefit, combined with early and final compressive strengths greater than that in any other cementitious fireproofing material available, clearly makes M-250-FP the material of choice!



As part of the **Matrix Series**, **M-250-FP** contains no Portland Cement, and therefore has none of the weaknesses of conventional cementitious fireproofing materials. It's resistant to acids, solvents, chlorides and sulfates. And, due to its reduced permeability, harsh environmental conditions including extreme heat, cold, and salt water spray has no detrimental effect.

Physical Performance			
Physical Property	Test Method	Recommended Specification	Tested Value (> 21 Days)
Dry Density	ASTM E605	MIN 42 PCF	43.5 PCF
Compressive Strength @ 10% Deformation	ASTM E761	MIN 2000 PSI	> 2500 PSI ¹
Bond Strength	ASTM E736	MIN 10,000 PSF	> 24,770 PSF ²
Hardness (Shore DO)	ASTM D2240	MIN 50	> 75
Deflection	ASTM E759	PASS	PASS
Bond Impact	ASTM E760	PASS	PASS
Flame Spread	ASTM E84	0	0
Smoke Development	ASTM E84	0	0

1. > 2000 PSI w/in 5 Days 2. > 6000 PSF w/in 5 Days

QUALITY STATEMENT

M-250-FP has been tested in accordance with Underwriters Laboratories Inc. (UL) standards using UL263 and UL1709 time-temperature burn curves. Our manufacturing facility has been observed by UL, and they have provided a Manufacturer's Classification. ZAH Technologies is unaware of any other commercially available, high-density fireproofing material which is Portland cement free.

M-250-FP complies with ASTM C1157 Standard Performance Specification for Hydraulic Cement, and all applicable building code requirements for interaction with conventional reinforcing steel, strength and modulus properties. M-250-FP does not comply with typical industrial Portland Cement specifications due to the absence of Portland Cement.

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 2995 New Cut Road ♦ Spartanburg, SC 29303 ♦ 864.345.6186 ♦ ZAHTechnologies.com

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APPLICATIONS

The ability to apply **M-250-FP** to any size steel up to a 4-Hour rating in a single – one pass layer means the economics of Matrix are second to none. M-250-FP should be specified where long lasting Fireproofing with high abrasion, impact and chemical resistance is required. M-250-FP is ideal for use in a wide variety of commercial, institutional and industrial environments where sufficiently rugged Fireproofing is needed.

M-250-FP withstands weathering and chemical exposure and is highly recommended for use on offshore drilling platforms, petrochemical plants, power plants, military and dock facilities based on its projected life-span at 10 times that of traditional Portland cement concrete!

Matrix M-250-FP Specifications	RECOMMENDATIONS: Mixing, Placing and Finishing
<p>Compressive Strengths</p> <p>3 Hours Custom 24 Hours Custom 7 Days Typical 4000 psi 28 Days Custom 5000 – 9000 psi</p> <p>Flexural Strength</p> <p>7 Days Typical 600 - 800 psi 28 Days Typical 800 - 1200 psi</p> <p>Splitting Tensile Strength</p> <p>7 Days Typical 600 - 800 psi 28 Days Typical 1000 - 1600 psi</p> <p>Bond Strength</p> <ul style="list-style-type: none"> ◆ Greater Bond Modulus than PCC <p>Product Yield</p> <ul style="list-style-type: none"> ◆ 1, 5 Gallon Pail is equal to ½ ft³ ◆ 1, 3-Part System is equal to 1 ft³ 	<p>MIXING: Use a mechanical paddle type mixer if a continuous mixing apparatus is not available. Water should be added at a rate of 4.0 – 5.0 gallons per 50 lb. bag. The water can then be adjusted to achieve a sprayed wet density of between 55 and 65 pcf. Mixing should continue for a minimum of 60 seconds. M-250-FP contains no Portland cement, and the strength is produced from other ingredients. Variable water chemistry should be recorded & maintained.</p> <p>PLACING: Prepare the surface according to SSPC, SP-2 and /or SP-3 Guidelines. Remove any existing prime coat materials which are not alkali resistant. M-250-FP should be placed when the surface and ambient temperature is above 40°F, and when the surface temperature is below 300°F. M-250-FP should be protected from freezing for 4 days.</p> <p>FINISHING: Finishing may occur at any time up to ~1/2 hour after application at ambient temperatures less than 85°F. Use steel trowel for smooth finish.</p>

Pumping

M-250-FP is suitable for pumping in any rotor stator, squeeze, or piston type pump. Application delays of greater than 30 minutes should not occur without emptying the pump and pump lines, or adjusting the water content. The water content should be calibrated for extended pump lines or substantial elevation increases – but the sprayed wet density should be maintained as described above.

Normal Safety Precautions

Just like Portland, batching procedures for Matrix are critical. Employees should be protected from inhaling dry materials and any materials making contact with skin or clothing, and should be cleaned immediately. Matrix has a higher pH than Portland in its dry state, however after batching, and in its plastic phase, Matrix has a similar pH as Portland.

Typical Shelf-Life and Storage

The shelf-life of stored Matrix Geopolymer Concrete materials are approximately 3 years in unopened Pails and Plastic Bags; when stored in a humidity and temperature controlled environment.

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