

FOX FIRE

CLEANERS + SEALERS + CORROSION CONTROL

MATRIX PRO®

PENETRATING CRYSTALLINE SEALER, DENSIFIER, SOLUBLE CHLORIDE REDUCER AND PRIMER FOR CONCRETE, MASONRY, AND CEMENTITIOUS MATERIALS

- Greatly reduces moisture and chloride intrusion into concrete and masonry substrates.
- Offers a high-degree of permanent protection against rebar corrosion, spalling, freeze-thaw damage and alkali attack.
- Can be used on new, green and aged concrete.
- Purges soluble chlorides and prevents re-entry.
- Does not alter surface profile, appearance or breathability.
- Improves coating and adhesive bond-strength of coatings and in multi-layered systems.
- Does not form a film or membrane. Will not chip, peel, blister, fade or yellow.
- Environmentally friendly. Non-toxic. ZERO-VOC.

DESCRIPTION: Foxfire Matrix Pro® is a ZERO-VOC, non-flammable, non-toxic, potassium silicate based penetrating crystalline sealer that internally strengthens, waterproofs and primes concrete, masonry and cementitious materials. Matrix Pro® reacts with free calcium hydroxide forming a silica hydrogel that fills the capillaries within the matrix. This hydrogel permanently seals the matrix internally, greatly reducing the ingress of damaging moisture and chloride ions, while simultaneously maintaining breathability of the substrate and allowing trapped moisture vapor to escape.

Matrix Pro® also acts as a primer for breathable surface coatings and systems. It does not alter the breathability of these coatings and may increase their adhesion and performance characteristics. Matrix Pro® can also be used in conjunction with non-breathable coatings and systems. Always defer to the manufacturer's recommendations when applying a non-breathable system over substrates that have been treated with Matrix Pro®. For more information regarding use of Matrix Pro® with either breathable or non-breathable coatings or systems, please contact a Foxfire technical representative.

PRIMARY APPLICATIONS: Foxfire Matrix Pro® is suitable for use on freshly cured, aged and green concrete as well as on brick and masonry. Typical uses include but are not limited to: concrete decks, sidewalks, driveways, building facades, highway barriers, parapets, precast concrete structures, seawalls, retaining walls, stadiums, concourses, public buildings, amusement parks, racetracks, airports, train and bus stations, and other brick, masonry, or poured-in-place concrete structures.

SPECIALTY APPLICATIONS: Foxfire Matrix Pro® has a long and successful track record of being used as the crucial first line of defense in numerous, multi-layered gunite, shotcrete and concrete vault waterscapes. By treating the concrete shell before applying

plaster and other secondary coatings, Matrix Pro® will permanently protect subsequent layers against the harmful effects of ASR, efflorescence and moisture drive, while simultaneously enhancing the bond strength and overall lifespan of these secondary waterproof coatings and toppings.

SAFETY PRECAUTIONS: Caution: always keep out of the reach of children. Use eye protection; minimize skin contact by wearing gloves and protective clothing, and only apply in areas with adequate ventilation. Avoid breathing vapor. Slippery when wet. See SDS for more information.

APPLICATION PRECAUTIONS: Application temperature range: 40-100° F. Prior to full-scale application, we recommend performing test patterns to determine substrate compatibility and performance. All surfaces must be clean, sound, dry and completely free of efflorescence, laitance, dirt, oil, grease or any other coatings that may inhibit the penetration and performance of the treatment. Do not apply in extreme heat or in freezing temperatures. Slippery when wet. Protect vehicles, glass surfaces, plant life, aluminum, ceramics, glazed tile and wood from overspray. Remove overspray with water, immediately. Unprotected areas should be pre-wet with water and rinsed continuously. MAY ETCH GLASS. Remove overspray immediately.

HORIZONTAL SURFACE APPLICATION: Using a low-pressure sprayer (40 psi) with a fan-type nozzle, apply first treatment in an overlapping pattern, to refusal. Approximately 20-40 minutes later, apply a second treatment in an overlapping pattern, again to refusal. Areas that absorb sealer at faster rate may require additional treatments. Avoid over-application or ponding as it may cause discoloration on the surface. Brush, broom or mop any ponded material to more absorbent areas.

Approximately 30-40 minutes after the final application of Matrix Pro®, apply a light push coat of potable water at approximately 300 sq. ft. per gallon to the surface. The application of potable water pushes the treatment deeper into the substrate and leaves the surface more open to accept other coatings or overlays. After the final application of potable water, the treated area can be put back into service when the surface is dry to the touch. Matrix Pro® must be allowed to cure for 1-7 days, depending upon temperature, humidity and density of the concrete, before any other type of surface material is applied.

VERTICAL SURFACE APPLICATION: Apply first treatment from top down using a low-pressure sprayer (40 psi) with a fan-type nozzle. Flood surface in an overlapping spray pattern until excess runs down 6 to 8 inches below spray pattern. Approximately 20-40 minutes later, apply a second treatment in an overlapping pattern. Apply only as much material as the surface will readily absorb. Areas that absorb treatment at faster rate may require additional coats.

Approximately 30-40 minutes after the final application of Matrix Pro®, apply a light push coat of potable water at approximately 300 sq ft per gallon to the surface.

FOR MAXIMUM PROTECTION: When the highest-degree of protection is required, Foxfire SS-WB™ Silane-Siloxane repellent can be applied over substrates that have been treated with Foxfire Matrix Pro®. Apply SS-WB™ repellent 48-72 hours after the last application of Foxfire Matrix Pro®. Follow the same application guidelines as when using the repellents as standalone products.

DRY TIME: Dry to touch in 2 to 6 hours depending upon temperature and humidity.

COVERAGE: Test patterns should be performed to determine best approach and estimated coverage.

Different concrete and masonry composites may require different system approaches. Contact Foxfire for further information.

Cured Concrete, Rough Slab Finish: 50 – 150 ft²/gal
Cured Concrete, Dense and Smooth Finish: 150 – 250ft²/gal
Aged Concrete: 50-150 ft²/gal
Masonry and Brick: 150 – 250 ft²/gal
Gunite and shotcrete: 50-150 ft²/gal

PACKAGING: 275-gal (1040 L) IBC totes, 55-gal (208 L) drums and 5 gal (18.9 L) pails.

TRANSPORTATION: Not regulated for transportation by the DOT.

STANDALONE PERFORMANCE: Test results were obtained under controlled laboratory conditions. Field conditions may cause variations in performance. All material was applied at a rate of 150 ft²/gal.

ASTM C642-13: Standard Test Method for Density, Absorption, and Voids in Hardened Concrete Section 7 = Water Absorption Reduction >94%. 48-hr immersion= 0.23%, 50-day immersion= 1.32%

ASTM C672-12: Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals Section 10 = Efflorescence Scale Rating 0 (100 Freeze Thaw Cycles)

ASTM C666-15: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing = No Scaling

ASTM C666-15: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing = Salt Resistance (Passes)

AASHTO-T-259/T260: Chloride Ion Analysis (90 days)
Chloride Ion Content @ 1/16”-1/2” = 0.50lb/ yd³
Chloride Ion Content @ 1/2”- 1” = 0.20lb/ yd³

NCHRP 244 Series II: National Cooperative Highway Research Program Series II-Water weight gain percent reduction= 87%

NCHRP 244 Series II: National Cooperative Highway Research Program Series II = Chloride Ion Penetration Reduction = 86%

ASTM E514-11: Water Penetration and leakage through masonry=>0.12” water penetration depth.

ASTM D4145-17: Maximum force pull off tensile strength of structural concrete treated with Matrix Pro®= 25.03% average increase in maximum force pull off tensile strength of an epoxy coating versus control specimens.

ASTM D4145-17: Maximum strength pull off tensile strength of structural concrete treated with Matrix Pro®= 25.06% average increase in maximum strength pull off tensile strength of an epoxy coating versus control specimens.

Depth of Penetration: Fresh Concrete= 2.9”, Aged Concrete: 0.4”

EPA Method 24: Volatile Organic Compound = (VOC) Content 0 g/L

COMBINATION PERFORMANCE: Application of Foxfire Matrix Pro® penetrating treatment at 150 ft²/gal followed 48-72 hours later by application of Foxfire SS-WB™ Silane-Siloxane Repellent at 150 ft²/gal. Test results were obtained under controlled laboratory conditions. Field conditions may cause variations in performance.

ASTM C642-13: Standard Test Method for Density, Absorption, and Voids in Hardened Concrete Section 7 = Water Absorption Reduction >92%. 48-hr immersion= 0.25%, 28-day immersion= 0.88%

ASTM C672-12: Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals Section 10 = Efflorescence Scale Rating 0 (100 Freeze Thaw Cycles)

ASTM C666-15: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing = No Scaling

ASTM C666-15: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing = Salt Resistance (Passes)

AASHTO-T-259/T260: Chloride Ion Analysis (90 days) = Chloride Ion Content @ 1/16"-1/2" = 0.29lb/yd³
Chloride Ion Content @ 1/2"- 1" = 0.10lb/ yd³

NCHRP 244 Series II: National Cooperative Highway Research Program Series II-Water weight gain percent reduction= >92%

NCHRP 244 Series II: National Cooperative Highway Research Program Series II = Chloride Ion Penetration Reduction 97% @96 days

NCHRP 244 Series IV: National Cooperative Highway Research Program Series II = Chloride Ion Penetration Reduction 99% @24 weeks plus 42-day cure time.

OHD-L-35: Moisture-Vapor Transmission Rate=100%

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