

TECHNICAL DATA SHEET KALMATRON® KF-F
R.F. Patent 2072335 “Coating on the concrete and masonry structures”

Kalmatron® KF- F is a cementitious protective and waterproofing film-thin coating on the concrete/mortar structures also functioning as an antimicrobial agent and metal corrosion passivity coating. **KF-F** is applicable by spray, roll, trowel, and brush by oil paint technique to get a layer up to **2 mm** or $\frac{5}{64}$ ” thick.

It is no dilatation, free of shrinkage cracks and no curing after application with minimal range of layer thickness at **1 mm** to **2 mm** or at $\frac{1}{25}$ ” to $\frac{5}{64}$ ”. Applied as a layer, it has no expansion in both the plastic and hardening phases without compensation of water. Layer of KF-F is a water impermeable under the hydraulic pressure at 8 bar and stable to aggressive environment at pH of 1.

KALMATRON® KF-F APPLICABILITY BY COMPRESSIVE STRENGTH

CONCRETE HARDNESS	PSI	TYPICAL APPLICATION	APPLICABILITY
Very hard	10,000 or more	Nuclear Plants, Loading decks	●
Hard	6,000 - 8,000	Bridges, Piers, Chemical facility	●
Medium	4,000 - 6,000	Roads, Housing projects	●
Soft	3,000 or less	Sidewalks, Patios, Parking lots	●

KALMATRON® KF-F CONSUMPTION of layer at 2 mm thick

KALMATRON® KF-F BATCH INSTALLATION	CONSUMPTION PER A BAG		CONSUMPTION PER AREA	
	LB	Kg	LB per 1 SF	Kg per 1 m ²
1 Kg of KF-F require .165 Liter of water				
1 bag of KALMATRON® KF-F	50	22.7	.226	1.1
Water per 1 bag ≈ 1.0 GL or 3.75 Liters	8.33	4.12	.038	0.182
Total:	58.33	26.82	.264	1.282

UPGRADE APPLICABILITY & SURFACE PREPARATION

- - To increase level of applicability, provide spray of Kalmatron® KF-G onto hardened KF-F surface.
- - To increase adhesion of KF-F to contaminated concrete, provide primer spray by Kalmatron® KF-G without sand blasting and acid washing.

PREPARATION & APPLICATION

1. Add 1 part of water into 4 parts of KF-F powder by the volumes and mix for ½ minute. That ratio might be gradually corrected for the different spray equipment on a job site. The consistency of mixed KF-F batch is close to the oil paint.
2. Apply KF-F on a concrete or masonry surface as a layer by the roll, spray or brush with thicknesses at 1.5 mm t 2 mm, or .059” to .079” with consumption at 0.85 Kg/m² to 1.1 Kg/m² or .174 LB/ft² to .226 LB/ft² respectively.
3. Use KF-F at a minimum temperature on the concrete surface not below of 23°F (-5°C).
4. Hardening time is at 1.5 to 3 hours in normal conditions.

ESSENTIALS AND CURING

1. After application, do not provide curing procedure and do not use curing compounds.
2. Do not spray water on a freshly applied KF-F surface.
3. Do not cover fresh KF-F with films or blankets.
4. Average of expected results by 3 days:

W = is at 1,550 PSI or W12 - water impermeability;
 ρ = 2300 [kg/m³] - density;
 α = 10.5 [10⁻⁶ m/m°C] - coefficient of linear thermal expansion;
 λ = 1.93 [W/m °C] - coefficient of thermal conductivity;
 E = 3.45 x 10⁴ MPa = 3 x 10⁴ kg/mm²=30 kg/mm² - Young modulus;

**Mohs’ Scale of Hardness
of materials at the age after 10 days**

Material	N° by the Mohs’ scale		
	Original	Not treated	Treated
Ordinary Concrete 5,000 PSI	4.5 ÷ 5.5		
The same with KF-A 5,000 PSI		5.5 ÷ 6.0	6.5 +
High Alumina Concrete -51	5.5 ÷ 6		
Epoxy, 2 mm	6 ÷ 6 +		
KALMATRON® KF-F, 2 mm		6.5 ÷ 7	7 +

The data above is not linear, but exceed experimental results of the ASTM C779 / C779M - 05 Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces by rotating – cutter drill press and ASTM C 418 Method for abrasion resistance of concrete by sandblasting.

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