

PATCHCRETE TECHNICAL DATA SHEET

PATCHCRETE is a pre-bagged Cementitious Coating with high viscous properties placing in concrete repair applications using the techniques of the spray, or painting by the brush, or rolling. Polishing after is an option as an enforcing treatment.

It is no dilatation, free of shrinkage cracks and no curing after application with minimal range of layer thickness at 1.5 mm to 5 mm or at $\frac{1}{16}$ " to $\frac{1}{4}$ ". Applied as a layer or been casted, it has no expansion in both the plastic and hardening phases without compensation of water. Layer of PATCHCRETE is a water impermeable under the hydraulic pressure at 8 bar and stable to aggressive environment at pH of 2.

PATCHCRETE-2 APPLICABILITY BY COMPRESSIVE STRENGTH

CONCRETE HARDNESS	PSI	TYPICAL APPLICATION	SHIELDCRETE 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	●

PATCHCRETE-2 CONSUMPTION of layer at 2 mm thick

SHIELDCRETE BATCH INSTALLATION	CONSUMPTION PER A BAG		CONSUMPTION PER AREA	
	LB	Kg	LB per 1 SF	Kg per 1 m ²
1 BAG 50 LB or 22.7 Kg	50	22.7	1.0	4.8
Water per 1 bag = .7 GL or 2.7 Liters	6.16	2.8	0.12	0.59
Total: D = 150 LB/CF = 2396 Kg/m ³ .	56.16	25.5	1.12	5.4

Technique of concrete resurfacing by PLASTCRETE layers

1. For chemical adhesion without surface cleaning, prepare Kalmatron® KF-G by dissolution with water as 3 Lbs per 1 GL (300 Gram/1 Liter) respectively.
2. Spray Kalmatron® KF-G by 1 GL per 40 SF (2 Liters/m²) on area of application.
3. Apply PLASTCRETE no sooner than after 45 minutes with thickness at 1.5 mm to 5 mm or at $\frac{1}{16}$ " to $\frac{1}{4}$ ".
4. Curing is not required.

PLASTCRETE INSTALLATION

1. Batch must be no smaller than 55 Lbs (25 Kg).
2. Turn on mixer for 2 minutes.
3. In a case of the batch stiffness add 0.2 Liters or 7 Oz of water. Continue mixing another 1 minute.
4. Continue mixing during of application. Do not stop mixer.
5. Distribute layer with consumption 5.4 Kg/m² or 1.12 LB/SF to get layer at 1.5 mm to 5 mm or at 1/16" to 1/4".
6. Hardening time is 4 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 fresh PATCHCRETE surface.
3. Do not cover fresh PATCHCRETE with films or blankets.
4. Average of expected results by 28 days:

Compressive Strength is at 5,700 ÷ 7,000 [PSI] or 40 ÷ 49 [MPa]

Tensile Strength is at 1,140 PSI or 8 MPa

Water impermeability is at 1,550 PSI or W12

$\rho = 1800$ [kg/m³] - density;

$\alpha = 14.5$ [10⁻⁶ m/m°C] - coefficient of linear thermal expansion;

$\lambda = 1.73$ [W/m °C] - coefficient of thermal conductivity;

$E = 3 \times 10^4$ MPa = 3×10^4 kg/mm² = 30 kg/mm² - Young modulus;

$\nu = 0.107967$ - Poisson ratio;

Mohs' Scale of Hardness of materials at the age after 100 days

Material	N° by the Mohs' scale		
	Original	Not treated	Treated
Ordinary Stucco	2.5 ÷ 3		
Stucco & Kalmatron KF-A		4	4 +
Shotcrete & Kalmatron KF-A		4 +	4.5
Ordinary Concrete 5,000 PSI	4.5 ÷ 5.5		
PATCHCRETE – 3 MM		5.5 ÷ 6	
PATCHCRETE – 5 MM		5.5 ÷ 6+	6+ ÷ 7
High Alumina Concrete 51	6 ÷ 6 +		
PATCHCRETE- 5 MM		6 + ÷ 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.