

ChemXP™-NovVE Flake

PRODUCT DESCRIPTION

ChemXP™-NovVE Flake is a two-component, inert flake filled Novolac Vinyl Ester resin based coating/lining system. The inert flake fillers are oriented parallel to the substrate surface to form a high level of protection against permeation and ensure a long service life.

COATING LAYERS COMPOSITION

The coating system consists of a primer (**ChemXP™-VE Primer**) and two coats of **ChemXP™-NovVE Flake** applied at 15-20 mils (375-500 microns) DFT, target 18 mils (450 microns) DFT per coat. Total applied thickness is 30-40 mils (750-1000 microns) DFT with a target of 36 mils (900 microns) DFT. **ChemXP™-NovVE Flake** can also be applied in three coats for specific industry applications. The **ChemXP™-NovVE Flake** is available in Off-White and Industrial Gray colors.

FIELDS OF APPLICATION

Due to its low water vapor permeation coefficient, high thermal resistance and excellent resistance to acids, alkalis and organic chemicals **ChemXP™-NovVE Flake** is an ideal corrosion protection material for concrete and steel structures in process and storage areas. Applications include protection in tanks, vessels, trenches, pits, vaults, dikes and secondary containment at chemical plants, power plants and other industries where chemical processes exist.

FEATURES

- Dry temperature stability up to 350°F (177°C)
- Excellent permeation resistance
- Excellent chemical resistance
- Outstanding adhesion to steel and concrete
- Application by spraying, brushing or rolling
- Can be exposed to process conditions shortly after application

CHEMICAL RESISTANCE

Information on the chemical resistance properties is available upon request.

SURFACE PRE-TREATMENT

Carbon steel

For immersion or frequent spillage conditions, abrasive blast to "White Metal" in accordance with SSPC SP-5, NACE Specification #1 or SA 3. For fumes or occasional spill exposure and dry environments, abrasive blast to "Near White" in accordance with SP-

10, NACE #2 or SA 2 1/2. A minimum surface profile of 3 mils (75 microns) is required. After blast cleaning the steel surface shall be primed or coated before the formation of any rust bloom. For direct to metal coating options consult Tennant Coatings.

Concrete

The concrete shall have a minimum compressive strength of 3500 psi (25 N/mm²) and a minimum surface strength of 200 psi (1.4 N/mm²) for coatings and 300 psi (2.1 N/mm²) for linings. The concrete must be thoroughly cured and dry at the time of application. The residual moisture content should not exceed 4%. ASTM D 4263 plastic sheet test method is recommended to ensure concrete is moisture free. If moisture is detected, repeat test until dry.

Abrasive blast or mechanically abrade surface to remove the weak laitance and surface contaminants.

APPLICATION

The primer and coating can be applied by airless or conventional spray, roller or brush. The target thickness of **ChemXP™-NovVE Flake** should be 18 mils (450 microns) DFT per coat with a range of 15-20 mils (375-500 microns) DFT. The total coating thickness with two coats should be approximately 36 mils (900 microns) DFT with a range of 30-40 mils (750-1000 microns) DFT. Thickness range for a three coat specification is 45-60 mils (1125-1500 microns) DFT with a target of 54 mils (1350 microns).

Application by roller or brush may require additional coats to achieve the total recommended thickness.

Note: During application, the lined surface should be shaded from direct or indirect sunlight whenever possible.

MIX RATIO

ChemXP™-VE B is used for the **Primer** as well as for the **ChemXP™-NovVE Flake** resins. The mixing ratio of hardener to resin for primer and coating is 1.5-2.5 oz per gallon of resin.

The primer and coating components are supplied in premeasured units so that weighing or measuring of the components is kept to a minimum.

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CONSUMPTION

Layer	Thickness mils (microns)	Coverage
PRIMER on steel	2-5 (50-125)	250-300 ft ² /gal
PRIMER on concrete	2-5 (50-125)	160-200 ft ² /gal
BASECOAT	15-20 (375-500)	50-70 ft ² /gal
TOPCOAT	15-20 (375-500)	50-70 ft ² /gal

WORKING TIME & RECOAT TIME

Temperature	Working Time	Min Recoat	Max Recoat
50 °F (10 °C)	approx. 90 min	12 hrs	7 days*
70 °F (21 °C)	approx. 60 min	6 hrs	7 days*
90 °F (32 °C)	approx. 30 min	3 hrs	3 days*

* Maximum when area is shaded. If exposed to direct or indirect sunlight, maximum recoat time is 4 hrs @ 70 °F (21 °C).

CURE TIME (to place in service)

Temperature	Minimum Cure time
50 °F (10 °C)	72 hrs
70 °F (21 °C)	48 hrs
90 °F (32 °C)	24 hrs

Generally **ChemXP™-NovVE Flake** can be placed in service after the final cure time intervals have been achieved. Shorter or longer intervals may apply depending on service conditions. Consult Tennant for specific recommendations.

Technical Data	Testing Standard	Unit	Value
Density	ASTM D1475	lbs/gal (kg/l)	9.89 ± 0.25 (1.19)
Viscosity (Brookfield)	ASTM D2196	cps (mPa·s)	3000 ± 250
Modulus of Elasticity (Bend Test)	ASTM D790	psi MPa	435 K – 580 K 3,000 – 4,000
Tensile Strength	ASTM D638	psi MPa	2500-3000 17-20
Abrasion Resistance	ASTM D4060	mg	90
Adhesion Strength - Concrete	ASTM D7234	Psi (N/mm ²)	Exceeds concrete strength
Minimum Adhesion Strength - Steel	ASTM D4541	psi N/mm ²	1000 7
Linear Coefficient of Thermal Expansion	ASTM C531	in/in°F cm/cm°C	14-17 x 10 ⁻⁶ 25-30 x 10 ⁻⁶
Water Vapor Permeability	ASTM E-96, Procedure E	perm-inch	0.0016
Volatile Organic Compounds	EPA Method 24	g/L (lbs/gal)	164 (1.37)
Maximum Operating Temperature*	Immersion Steel	°F °C	130 54
	Immersion Concrete	°F °C	140 60
	Splash/Spill Concrete	°F °C	220 104
	Continuous Dry	°F °C	350 177

*Maximum operating temperature limits may vary depending on actual service conditions

All data provided in this Product Information are based on the best of our knowledge and they are to inform generally about our products and their application spectrum. In view of the multitude of possible operating conditions and parameters, the given specifications can only be seen as general information, which do not guarantee special product properties for each particular case. In case of order all essential properties for an individual application should concretely be enquired. On request our Technical Service will furnish a feature profile for such application without undue delay.

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CLEANING: Acetone

SAFETY MEASURES

The material safety data sheets of the individual components as well as the legal requirements for handling hazardous materials must be observed.

PACKING UNITS

The products are supplied in the following standard package sizes:

Description	Package Size
ChemXP™-VE Primer	1, 4, 50 gal kits
ChemXP™-NovVE Flake	1, 4, 25 gal kits

STORAGE

The materials must be stored in a cool and dry place. At storage temperature of 70 °F (21 °C) the shelf life is as follows:

ChemXP™-VE Primer (resin)	6 months
ChemXP™-NovVE Flake (resin)	6 months
ChemXP™-VE B	12 months

If the storage time is exceeded, the materials must be tested before use. Higher storage and transport temperatures will reduce the shelf life. The containers must be kept tightly closed. Liquid products must be stored frost-proof.

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