TECHNICAL BULLETIN

COROFLAKE® 23/C/LSE SPRAY APPLIED COATING FOR ANODE BAKE CONDITIONING TOWER

Product Description: COROFLAKE® 23/C/LSE is a two component, inert flake filled, Novolac vinyl ester coating system. This coating system consists of one primer and three coats @ 500 µm WFT per coat to produce a total DFT of 1,500 µm nominal. The vinyl ester resin provides outstanding chemical and high temperature resistance. The multiple layers of inert fillers in each coat are essential to establish needed physical properties, create an effective barrier to permeation and extend service life.

Recommended Uses: COROFLAKE® 23/C/LSE exhibits long-term protection against sulphuric acid, high temperature and condensing vapours. It is especially formulated for the demanding conditions in aluminium smelter anode bake conditioner tower assemblies.

Temperature Resistance: + 70 °C wet + 180 °C dry + 220 °C (short term)

Generic Type: Novolac Vinyl Ester

Filler: Inert Flakes

Solvent: Styrene (reactive)

Design: The steel and concrete construction to be coated must be fabricated according to the EN 14879-1:2005. Further information can be taken from our steel specifications.

Preparation: Steel substrates, which were under service conditions already, require a chemical check for the presence of invisible traces of iron sulphate and or iron chloride. If the check is positive, the total surface area needs to be washed down thoroughly with de-ionised water. In each case, steel substrate shall be prepared by abrasive blasting to obtain a Sa 2½ surface, as defined in DIN EN ISO 12 944 Part 4 and a minimum surface profile @ 60 µm "Medium (G)" as defined in DIN EN ISO 8503-2.

Build-up of the system:

	Layer Thickness	Coverage
COROFLAKE® S Primer	1 x 40 – 60 µm	150 g/m²
COROFLAKE® 23	1 x 500 – 700 µm	1 x 1.100 g/m²
COROFLAKE® C	1 x 500 – 700 µm	1 x 1.100 g/m²
COROFLAKE® LSE	1 x 500 – 700 µm	1 x 1.100 g/m²

Mixing Ratio: 100:2 COROFLAKE® Primer or Liquid to Hardener No. 1 by weight. Mix always hardener into resin-based component, using a low speed mechanical agitator.

Pot Life: 1 ½ hrs. (+ 10 °C) 1 hrs. (+ 20 °C) ½ hrs. (+ 30 °C)

Application Equipment: Conventional Air or Airless Spray, Brush and Roller.

Application:	Primer is normally applied by brush or roller. Spray application can be used, but requires extra clean surface. COROFLAKE® 23, C and LSE shall each be applied utilizing an airless or conventional air spray system. Small areas may be coated by brush or roller. The substrate and air temperature shall be @ + 10 °C to + 36 °C (3 K above dew point). Primer may be recoated after initial set, which will occur normally after 4 hours, first coat must be applied within seven days. The following coats should be applied no more than three days later. *Note:* During application the coated surface must be shaded from direct or indirect sunlight. Otherwise intercoat disbondment may occur.
Cleaning:	Solvent T-100
Shelf Life:	The shelf life is 3 months when stored @ + 20 °C. COROFLAKE® 23, C and LSE Resin, Hardener No. 1 should be stored at a cool and dry place.
Density:	1.2 kg/l (mixed)
Viscosity:	Coroflake® 23 3,000 mPas Coroflake® C 3750 mPas Coroflake® LSE 2200-2800 mPas
Flash Point:	COROFLAKE® 23, C and LSE + 32 °C and Hardener No. 1 + 70 °C
Modulus of Elasticity:	3,000 – 4,000 Mpa (DIN EN ISO 178) flexural
Tensile Strength:	20 Mpa (DIN EN ISO 527)
Elongation at Tear:	0.5 % (DIN EN ISO 527)
Coefficient of Expansion:	25 - 30 x 10^{-6} 1/°C (ASTM D 696-90) linear
Abrasion:	90 mg (ASTM – D 4060)
Permeation:	0.0016 perm inch (ASTM-E 96 – 90) Procedure E
Adhesion:	minimum 7.0 N/mm² (EN ISO 4624) to grit blasted C-Steel
Hardness:	35 Barcol (DIN EN 59)

WHEN CONTRACT SPECIFIC SCOPE OF WORK DOCUMENT IS PROVIDED, THIS SHALL TAKE PRECEDENCE OVER STANDARDS REFERRED TO WITHIN THIS TECHNICAL BULLETIN.

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