

MANUAL SECTION	ISSUE DATE	AUTHORISED	REPLACES	PAGE
Flooring	Jan 2010	PM	July 2005	1 of 4

SURECHEM VE - Highly durable Industrial Floor Topping

GENERIC TYPE: A highly chemical resistant vinyl ester resin based aggregate filled topping for durable floor toppings

- PROPERTIES /FEATURES:**
- Surechem VE is an extremely hard wearing monolithic 6.5 to 9mm thick vinyl ester resin based flooring system.
 - Surechem VE has been specifically designed to provide excellent all round chemical resistance at both end of the pH scale i.e. concentrated acid and alkali compounds.
 - Exceptional impact, abrasion and wear resistance.
 - Excellent adhesion to most substrates (refer Surechem specification).
 - Can be used to form coves, plinths and follow complex curves and shapes.
 - Good weathering resistance. May chalk and exhibit slight discolouration when subjected to prolonged UV exposure. This will, however, not detract from its general durability and chemical resistance.
 - Chemical resistance and general physical properties can be improved by POST CURE TREATMENT.
 - Almost any surface finish can be obtained, from a smooth easily cleaned, to a coarse non-skid texture.
 - Good resistance to high temperatures and thermal shock.
 - Will not support bacteria or fungal growth.
 - It is not moisture permeable.
 - Minimum application temperature +12°C.

- TYPICAL PHYSICAL PROPERTIES OF CURED TOPPING:**
- Compressive strength (50mm cube): 110MPa
 - Tensile strength: 22 MPa
 - Moisture absorption: 0.04%
 - Flexural strength: 38 MPa
 - Flexural modulus: 17 GPa
 - Weight per m² @ 6.5mm thick: 15.0kgs
 - Temperature resistance: up to 100°C
- (Note: temperature resistance is lowered when combined with certain chemical solutions. Refer to Nuplex Industries for specific advice.)

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SURECHEM VE (cont'd)

IGNITABILITY:

Tested in accordance with BS4790:1987

Time till flame extinction: Did not ignite
Time of after glow: 4 seconds
Containment radius: 15mm

COLOUR:

Yellow/gold (dependant on selected aggregate blend).

SUGGESTED USES:

- On Floors, walls, upstands, coves, plinths etc where a very high degree of all round chemical resistance is required.
- Chemical storage bunds.
- Process floors where hygiene is essential.
- Surechem VE topcoat is also used to provide extra durability as a replacement for STZ topcoat in the Sureshield floor topping system.

NOT RECOMMENDED:

- Application to uncured or green concrete (minimum recommended cure period 28 days).
- Application to unstable substrates.
- Application to damp surfaces or when surface dew point has been reached. Maximum moisture content – timber 12%, Concrete 75% RH.
- Application where fumes may contaminate adjacent foodstuffs.
- Application over existing coatings/toppings without approval by Nuplex Industries Ltd.
- Always use Surechem VE topcoat. (VE resin surface will be tacky).

APPLICATION:

Method

STZ Primer: Brush, roller
Surechem VE Topping: Hand trowel, power float to form floors, coves, drain sides, etc
Surechem VE Topcoat: Brush, roller

*****Caution***** System must be topcoated with Surechem VE topcoat for full cure.

Full detailing is on the Nuplex website. The concrete must be strongly abraded for adhesion.

Mixing Method

Concrete mixer, paddle mixer, Hobart mixer (small quantities only). (Care must be taken to avoid air entrainment.)

Typical Mix Ratios (by weight)

Surechem VE Resin: 19%
Selected gap graded aggregates/fillers: 81%

New Pails are marked as unpromoted. Nuplex supply the VE in 20 ltr pails with open top lids enabling the Cobalt to be mechanically mixed into the resin base. Buy another catalyst dispenser and mark it for Cobalt use only. The cobalt can be added up to 12 hours prior to use. Always add Cobalt first, mix and then add catalyst. Never mix Cobalt and catalyst. Pre-train staff. The lids are marked as un-promoted – tick or mark once promoted. **Good Trade Practice:** – **Train staff & mix cobalt and mark all resin in a**

separate operation on the same day as use. Then take the promoted material to the workface for catalyst addition.

0.3% or 60grams GRAMS COBALT TO ADD PER 20Kg:

Check the Cobalt's age and stability by doing a TRIAL prior to work start. Promote at the correct level, then add a high catalyst % to check that the reaction starts. Even if high catalyst levels are added, unpromoted resins will not cure. This trial can also be used if confusion occurs about Cobalt addition. Be well organised and train staff clearly in the promotion and catalysation processes. Mistakes are costly.

COVERAGE RATES:
(6.5mm topping/m²)

Nuplex STZ Primer:	0.25kg/m ²
Surechem VE Resin:	2.50kgs
Selected Gap Graded Aggregates:	13.0kgs
Surechem VE Topcoat:	0.25kg/m ²

(level of catalyst dependant on temperature)

Note:

The above rates are theoretical and do not take into account losses through surface irregularities, mixing and application.

CATALYST:

NB: Promote both resin and topcoat before use.
Use Nuplex VE Catalyst only. Use 1.5 - 2.5% on resin weight depending on temperature.

RETARDER:

Where extended working time is required Nuplex VE Retarder may be incorporated in the resin prior to the addition of catalyst. Maximum recommended addition rate 1.0%.

THINNING:

Not recommended. If necessary consult Nuplex Industries Ltd for advice.

CLEAN UP:

Acetone. Lubricate equipment, tools (mixer, barrow, trowels etc) using styrene monomer only.

CURE AND DRY TIMES @ 25°C:

(Excluding the use of retarder) 1.5% MEKP catalyst

Workable pot life:	20 minutes
Hard Dry:	3 hours
Light Foot Traffic:	6 hours
Full use (unrestricted):	18 hours
Maximum recoat:	24 hours

(Requires special preparation after this period)

CAUTION:

Residual fumes may contaminate foodstuffs.

- Provide adequate ventilation during application and cure.
- VE catalyst is highly corrosive. Protect eyes, skin etc.
- Do not mix or store MEKP (catalyst) or promoter together – explosion and/or fire may result.
- Wear suitable protective respirator and clothing when using this product.
- Products are highly flammable.
- Erect "No Smoking" signs.
- No welding or naked flames permitted during installation.
- Have fire extinguishers readily available.

- Refer MSDS on line www.nuplexconstruction.co.nz
12 months in unopened containers.
Maximum useful life 12 months (check suitability with Nuplex Industries before use).

SHELF LIFE:

CHEMICAL RESISTANCE @ 25°C (Ambient)

Acetic Acid	70%	NC
Brine	Sat	NC
Citric Acid	Sat Soln	NC
Distilled Water	All	NC
Hydrochloric Acid	37%	NC
Hydrofluoric Acid	20% (may attack silica aggregates)	EF
Hydrogen Peroxide	35%	NC
Hydrogen Sulphide	All	NC
Lactic Acid	All	NC
Nitric Acid	30%	NC
Nitric Acid	40%	EF*
Oxalic Acid	Sat	NC
Phosphoric Acid	85%	NC
Caustic, Sodium Hydroxide	50%	NC
Sodium Hypochlorite	(Refer Nuplex Industries for a specific recommendation)	
Sulphuric Acid	70%	NC
NR	Not recommended	
NC	Not corrosive	
EF	Evaluate further	
*	Staining may result	

Solutions are Aqueous unless otherwise stated

NOTE:

The table represents a guide only. Variable which may under extreme conditions, influence the chemical or corrosion resistance are:

1. Temperature of chemical concentration.
2. Intermittent or continuous contact.
3. Application under adverse conditions.
4. Risks of evaporation from chemical spillages causing concentration to rise adversely.
5. Good service may be expected where NR or EF is specified if exposure is intermittent or limited to occasional splash spill or fumes. Refer to Nuplex Industries Ltd for specific advice on this, or chemical contamination other than those listed.
6. Chemical resistance and general physical proprietary can be improved by post cure treatment (refer to Nuplex Industries Ltd for specific advice).

