zandleven coatings

ZINKSILICAAT ZL 400-55 ethylsilicate

A two components moisture hardening inorganic zinc dust paint, from which binder and zinc paste are being supplied in separate packings.

- Excellent anti-rust properties and abrasive resistance.
- Temperature resistant from –75 °C to +450 °C.
- The product complies to SSPC Paint 20, Level 1 with respect to zinc content.

Application as a primer and finish layer on blasted steel in an aggressive corrosive and/or maritime environment.
- With suitable finish layers application as protection of steel constructions, pipelines, bridges oil platforms etc.

Product information

Finish	Mat
Colour	Grey
Mass density	approx. 2.3 kg/L (mixed product)
Zinc	87 weight % dry film
Solids content by volume	approx. 55 volume % according to NEN 5346
VOC	approx. 434 gr./L (volatile organic compound)
Recommended film thickness	50-75 µm d.f.t. per layer 90-135 µm w.f.t. per layer (undiluted)
Theoretical spreading rate	At 50 µm d.f.t. 11.0 m²/L At 75 µm d.f.t. 7.3 m²/L A d.f.t. of more than 125 µm has to be prevented, because a higher film thickness may cause 'mud-cracking'. In case of mud-cracking it is necessary to blast again and apply a new primer layer.
Practical spreading rate	Depending on several factors like shape of object, profile of surface, method of application, application circumstances and experience. A few guiding principles are: Brush/roller 85-90% of the theoretical spreading rate Spraying 50-70% of the theoretical spreading rate
Flashpoint ISO 1523	Silicate binder >13 °C Zinc paste 23 °C Thinner FGM 631 26 °C Thinner WTD 107 14 °C
Dry temperature resistance	500 °C (600 °C discontinuously)
Durability	At least 6 months, provided that it has been stored in closed original packing at a dry and cool spot.

Drying times

For d.f.t. up to 75 µm	10°C	20°C	30°C
Dust dry	60 minutes	30 minutes	15 minutes
Manageable	6 hours	4 hours	2 hours
Recoatable:			
Minimum interval	2 days	1 day	12 hours
Maximum interval	Unlimited provided that the surface is clean and dry.		

At a relative humidity of less than 50% there will be no hardening.
If the R.H. is too low, a good hardening can only be obtained by spraying a mist of water on the setted primer approximately 1 hour after application.
The drying and recoating times strongly depend on the relative humidity, ventilation and temperature.

Zincsilicate ZL 400-55 has to be totally hard before overcoating.
It is recommended to do the MEK (methyl ethyl keton) test to ASTM D 4752-8 before overcoating. To avoid bubbles and pinholes, the first coat over the zincsilicate has to be mistcoated for sealing the zincsilicate.
Apply after a few minutes the complete coating layer can be applied.
It might be necessary to delute the mistcoat layer.

Application instructions

Mixing ratio

Weight:	binder component -	zinc paste	16:84
Volume:	binder component -	zinc paste	40:60

Mixing instructions

Add the silicate component gradually to the zinc paste during carefully stirring with a mechanical blender.
Sift the mixture through a sieve of 60 mesh (250 µm).
Keep mechanically stirring during processing.

Pot life after mixing

10.0 litre packing:	approx. 16 hours at 10°C
	approx. 10 hours at 20°C
	approx. 6 hours at 30°C

Application conditions

During application and hardening the temperature should be above 5°C.

Application at lower temperatures(down to -5°C) hardening is possible, however it will take considerable more time.

The surface should remain free from water and ice and the temperature of the surface should at least be 3°C above dew point.

During application and hardening in closed or small spaces, it is necessary to refresh the air continually to remove the solvent vapours, this because of drying, health and safety.

Usage information

	Airless-spray	Airspray
Type of thinner	FGM 631 / WTD 107	FGM 631 / WTD 107
Recommended thinner (depending on application and equipment)	5 – 10 vol. %	5 – 15 vol. %
Nozzle orifice	0.43 – 0.48 mm 0.017 – 0.019 inch	2.0 – 2.5 mm
Nozzle pressure	120 – 150 bar	4 – 5 bar
Cleaning of tools	Thinner FGM 631 / WTD 107	

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Surface conditions

Steel

New steel:
Blasting according to the ISO standard 8501-1:1988 Sa 2½.
Roughness profile Rz 50-80 µm.
Surface must be clean and dry.

Repair and maintenance:
Clean the surface carefully with a suitable cleaning preparation or by means of steam cleaning.
Remove salts and other water-soluble impurity by spraying with clean tap-water under high pressure.
Remove rust a.o. by (water)blasting Sa 2½ or derust mechanical until St. 2-3.
Apply the recommended paint system on a clean surface.

Product Characteristics

No coating work shall be carried out when the temperature of the surface is less than 3°C above dewpoint and when the substrate temperature is below 5°C.

Due to the presence of solvents, applying this product in confined spaces, adequate ventilation has to be ensured.

Maximum film build in one coat is best attained by airless spray. Application by other techniques, it may be necessary to apply multiple coats in order to achieve the total specified dry film thickness.

Safety description

See safety data sheet

Ventilation rules

Minimum required quantity of air to comply with:		
	MAC	10 % LEL
Zinksilicaat ZL 400-55	555 m³/L	31 m³/L
Thinner FGM 631	3995 m³/L	160 m³/L
Thinner WTD 107	4085 m³/L	168 m³/L

MAC = Maximum Accepted Concentration
LEL = Lower Explosion Limit
Also consult the safety information sheets

Pretreatment / Labeling / Technical Terms (downloadable from www.zandleven.com)

A 1 Labeling of paint products in the European Community
A 2 Physical data
A 3 Persistency list for Monopox HB systems
A 4 General guidelines for steelpreservation
A 5 General guidelines for the application of Acraton plastics
A 6 Pretreatment of construction steel