

ZINGA

The Film Galvanising System ZINGA is a high-performance, one-component organic zinc-rich coating. ZINGA contains 96% ultra-pure zinc in the dry film, providing durable cathodic protection to ferrous metals. It can be used as a stand-alone system and an alternative to hot-dip galvanising or metallising, as primer in a duplex system (active + passive), or as a repair or recharging layer for hot-dip galvanised, metallised, or other zinc-aluminium-magnesium coated (ZAM) surfaces. ZINGA can be applied by brush, roller or spray equipment onto a clean and rough substrate under a wide range of atmospheric conditions.

ZINGA is also available in aerosol form and is sold as ZINGASPRAY.

PHYSICAL DATA AND TECHNICAL INFORMATION

WET PRODUCT

Type	Single pack organic zinc coating
Density	2,67 kg/dm ³ (± 0,06 kg/dm ³)
Solid content	80% by weight (±2%) 58% by volume (±2%)
Type of thinner	ZINGASOLV
Flash point	54°C
VOC	474 g/l (= 178 g/kg)

DRY FILM

Colour	Grey (colour changes depending on environment – Patination)
Gloss	Matt
Typical layer thickness	40 – 150 µm DFT (microns) (See clause Recommended Systems)
Zinc content	96% (±1%)* by weight, zinc purity of 99,995% (ASTM D520 – Type III). *Tested by TÜV Austria.
Temperature resistance	From -40°C to +120°C, with peaks up to +150°C
pH resistance	Atmospheric: 3.5 to 12.5 pH Immersion: 5.5 to 9.5 pH
UV resistance	Excellent
Non-toxicity	A dry layer of ZINGA is not toxic – Tested according AS/NZS 4020.
Each new layer of ZINGA re-liquidises the previous layer, allowing seamless fusion into a single coating. Therefore, structures coated with ZINGA can be reloaded or easily repaired with ZINGA.	

CONSERVATION

Shelf life	Unlimited – Recommended to shake unopened tin in an automatic shaker at least once every 3 years.
Storage	Store in a dry, well-ventilated storage area between +5°C and +30°C.
Pot life	Not applicable – If closed correctly after usage, ZINGA will remain usable.

APPLICATION METHODS

Brush – Roller – Spray (air assisted and airless)

APPLICATION CONDITIONS

Ambient temperature	-15°C – +50°C
Relative humidity	Maximum 95% RH. Do NOT apply on a damp or wet surface
Surface temperature	Minimum 3°C above dewpoint Maximum 60°C No visual presence of water or ice
Product temperature	+5°C – +30°C ZINGA can still be applied outside this temperature range but this shall influence the smoothness of the dry layer.

COVERAGE AND CONSUMPTION

Theoretical	Coverage	Consumption
60 µm DFT	3,62 m ² /kg or 9,67 m ² /L	0,28 kg/m ²
120 µm DFT	1,81 m ² /kg or 4,83 m ² /L	0,55 kg/m ²
<i>Practical</i> : Depends on the roughness profile of the substrate and the application method.		

PACKAGING

0,25 kg	Available as sample (on request), not for sale
0,50 kg	Available, packed in undividable boxes of 24 x 0,50 kg
1 kg	Available, packed in undividable boxes of 12 x 1 kg
2 kg	Available, packed in undividable boxes of 6 x 2 kg
5 kg	Available
10 kg	Available
25 kg	Available

SURFACE PREPARATION

GENERAL

ZINGA is to be applied on a clean, rough and dry surface so that the active zinc particles are in **direct contact with the steel or zinc substrate**. The prepared surface shall be free from oil, grease, dirt, dust, rust, mill scale, paint, oxides, corrosion products and other foreign matter.

SURFACE PRE-CLEANING

The surface shall first be cleaned to remove oil, grease, dirt and other contamination in accordance with **ISO 8504-2, ISO 8504-3** or **SSPC-SP 1**. Recommended cleaning methods are:

- Steam cleaning at min. 140 bar and 80°C
- High-pressure waterjetting at min. 700 bars
- Freshwater pressure washing with a cleaner or detergent at min. 150 bar
- Organic solvent cleaning with ZINGASOLV (only for small areas and touch-ups – does not remove salts)

Any remaining residue from the pre-cleaning process shall be removed by a final rinse with clean water or solvent and blown dry with clean, dry compressed air.

Consult a ZINGAMETALL representative / distributor for maximum allowable surface salt concentration.

SURFACE PREPARATION

It is strongly recommended that all surfaces shall be in compliance with **ISO 8501-3 Table 1, minimum P2** and that all sharp edges shall have a radius of minimum of 2 - 3 mm prior to any surface preparation work.

Steel

Surface cleanliness	Minimum	Recommended
Abrasive grit blasting	SSPC-SP 6 / NACE No. 3	Sa 2.5 / SSPC-SP 10 / NACE No. 2
Hand / Power tool cleaning	St 2 (ISO 8501-1)	St 3 (ISO 8501-1) / SSPC-SP 11
UHP waterjetting	SSPC-SP WJ-1 / NACE WJ-1 / Wa 3 (ISO 8501-4)	
Laser cleaning	PLA-TA (AMPP SP21511-1)	
Surface profile	50 – 100 µm Rz / ISO 8503-1 - Medium (G)	

Hot-Dip Galvanised steel (HDG), ZAM (zinc, aluminium, magnesium) and Metallised Steel (TSZ or TSZA)

Surface cleanliness	HDG or ZAM	TSZ or TSZA
New	Sweep blasting: SSPC-SP 16 / ASTM D 6386 Hand and/or power tool cleaning: Controlled roughening of the surface	Newly metallised surfaces have a porous structure that ensures good adhesion of ZINGA. Remove any zinc corrosion products before application.
Weathered and intact – <i>Removing white rust (zinc corrosion products)</i>	Steam cleaning or high pressure waterjetting Sweep blasting: SSPC-SP 16 / ASTM D 6386 Hand and/or power tool cleaning	
Surface profile	Minimum 30 µm Rz	

De-dusting	Prior to the application of ZINGA the surface shall be properly de-dusted with non-contaminated, dry compressed air. Maximum allowed dust contamination: Class 2 - ISO 8502-3
Maximum time to application	Apply the ZINGA layer as quickly as possible on the prepared metal substrate to prevent any potential contamination or corrosion prior to coating. Otherwise, the surface will need to be cleaned again following the previously outlined procedure.

For more information, please consult a ZINGAMETALL representative / distributor.

APPLICATION INSTRUCTIONS

GENERAL

Stirring	ZINGA must be thoroughly mechanically stirred before use in order to re-disperse any deposit and achieve a homogeneous liquid. Care must be taken that no zinc deposit remains on the bottom of the tin. After a maximum of 20 minutes, re-stirring is necessary.
Thinning	ZINGA is diluted with ZINGASOLV only . Never use universal thinner, white spirit or other diluting products. Increasing the dilution will result in a more smooth surface and thinner coating layer. It is advised to start with minimal dilution and increase if necessary.
Stripe coat	It is always recommended to treat corners, edges, nuts, bolts and bolted joints by brush before applying a uniform coat.
Cleaning	The spraying equipment shall be rinsed with ZINGASOLV before and after usage. Brushes and rollers shall also be rinsed with ZINGASOLV. Never use White Spirit.

BRUSH AND ROLLER

Dilution by weight	0 – 5%
Type of brush or roller	- Industrial natural bristle brush - Short hair roller (mohair)
Note: It is <u>not</u> advised to apply the first layer by roller as this will not properly fill the cavities of the surface profile and therefore not properly wet the surface.	

AIR-ASSISTED SPRAYING

Dilution by weight	7 – 15%
Air pressure	2,0 – 4,0 bar (conventional) 1,0 – 2,0 bar (HVLDP)
Nozzle orifice size	1,8 – 2,2 mm
Notes: - Remove all filters from the pistol to avoid blockages. - Use a 150 mesh filter when filling the reservoir. - Use short feeding lines in a pressure-pot setup.	

AIRLESS SPRAYING

Dilution by weight	0 – 7%
Pump ratio	Minimum 45/1
Fluid pressure	± 150 bar
Nozzle orifice size	0,017 – 0,031 inch
Notes: - A 60 mesh <u>tip filter</u> is advised to avoid blockage. - Remove all other filters from the pump and spray gun. - (Continuous) Stirring during application is advised. - Avoid standstill of ZINGA in the pump and feeding lines.	

DILUTION TABLE

Dilution	5% (by weight)	7% (by weight)	15% (by weight)
1 kg	0,06 L	0,08 L	0,17 L
2 kg	0,11 L	0,16 L	0,35 L
5 kg	0,30 L	0,40 L	0,90 L
10 kg	0,60 L	0,80 L	1,70 L
25 kg	1,50 L	2,00 L	4,30 L

DRYING TIME (60 µm DFT in a well-ventilated environment)

Air Temp.	10°C	20°C	30°C
Dust dry	25 minutes	15 minutes	10 minutes
Touch dry	45 minutes	30 minutes	15 minutes
Dry to handle	2 hours	90 minutes	1 hour
Full cure	24 hours	24 hours	24 hours

ZINGA dries by evaporation of the solvent. The drying process is influenced by the total wet-film thickness, the dilution, the environmental conditions (humidity, air temperature, wind speed), and the steel surface temperature.

OVERCOATING (In a well-ventilated environment)

Overcoating with a new layer of ZINGA

Air Temp.	10°C	20°C	30°C
Brush / Roller*	2 hours	1 hour	30 min.
Spraying*	1 hour	30 min.	15 min.

**after touch-dry*

It is recommended:

- To apply the second coat on the same day.
- That the film thickness of the second coat is lower than or equal to the film thickness of the first coat.

Overcoating with a compatible paint

ZINGA can be overcoated with various compatible paints. **Use the mist/full coat method.** First a thin continuous mist coat is applied, by spray or roller, of 25-40 µm DFT to allow air passage and block aggressive solvents before applying the full coat.

Air Temp.	10°C	20°C	30°C
1 - Mist-coat*	6 hours	4 hours	2 hours
2 - Full-coat	4 hours	2 hours	1 hour

**after touch-dry*

For optimal results, **we recommend using a sealer**. ZINGAMETALL provides two sealers: **ZINGACERAM HS** (2-component, EP) and **ZINGALUFER** (1-component, PU).

For more details, refer to our overcoating guideline or contact a ZINGAMETALL representative / distributor.



Maximum overcoating time

Maximum overcoat time depends on the environmental conditions. If zinc corrosion products have formed on the surface, they shall first be removed.

For surface preparation on old ZINGA surfaces, contact a ZINGAMETALL representative / distributor.

RECOMMENDED COATING SYSTEMS

ZINGA STAND-ALONE

- ZINGA can be used as a stand-alone system, applied in 1 or 2 layers to obtain a total DFT of 40 µm up to 150 µm.
- The ZINGA stand-alone system have been tested according to:
 - **ZINGA 90 µm DFT:**
 - » **ISO 12944-6: C4 Very High / C5 High**
 - **ZINGA 120 µm DFT:**
 - » **ISO 12944-6: C5 Very High & Im1 Very High**
 - » **ISO 12944-9: CX & Im4**
 - » **NORSOK M-501: System 1 & System 7**
- The ZINGA stand-alone system is highly recommended because of the **easy maintenance**. In time the active zinc layer will reduce as the ZINGA sacrifices itself due to the cathodic protection. A new layer of ZINGA can be directly applied once the surface has been properly prepared, this will re-liquidise and recharge the previous ZINGA layer.
- **The total DFT of a ZINGA layer must never be higher than 250 µm. (= absolute maximum)**

ZINGA DUPLEX OR TRIPLEX SYSTEM

- In a duplex or triplex system, ZINGA should be applied in **one single application**, preferably by spraying, to obtain a DFT between 60 µm and 100 µm DFT.
- Several duplex and triplex systems have been tested according to ISO 12944. Please consult a ZINGAMETALL representative / distributor or the ZINGAMETALL website (www.zinga.eu) for more information.

HEALTH & SAFETY

Always wear appropriate personal protective equipment (PPE) such as safety gloves and goggles. In case of insufficient ventilation, wear suitable respiratory protection.

For detailed information about the health and safety hazards and precautions for use, refer to the ZINGA safety data sheet.

For more specific and detailed recommendations concerning the use and application of ZINGA, please contact the Zingametall representative / distributor.

The information on this sheet is merely indicative and is given to the best of our knowledge based on practical experience and testing. The conditions or methods of handling, storage, use or disposal of the product cannot be controlled by us and are therefore outside our responsibility. For these and other reasons we retain no liability in case of loss, damage or costs that are caused by or that are linked in any way to the handling, storage, use or disposal of the product. Any claim concerning deficiencies must be made within 15 days upon reception of the goods quoting the relevant batch number. We retain the right to change the formula if properties of the raw material are changed. This data sheet replaces all former specimens.