

ALU ZM

ALU ZM is a quick-drying, one-component aluminium-flake coating (non-leaving). It can be applied directly onto old, uncorroded hot-dip galvanised, metallised, or other zinc-aluminium-magnesium coated (ZAM) surfaces, or as an aluminium topcoat on ZINGA. ALU ZM is primarily selected for its bright, metallic finish that restores the appearance galvanised surfaces, while also providing good chemical and abrasion resistance for use in industrial environments. ALU ZM can be applied by brush, roller or spray equipment onto a clean and rough substrate under a wide range of atmospheric conditions.

PHYSICAL DATA AND TECHNICAL INFORMATION

WET PRODUCT

Type	Single pack organic aluminium coating
Density	1,00 kg/dm ³ (± 0,06 kg/dm ³)
Solid content	34% by weight (±2%) 29% by volume (±2%)
Type of thinner	ZINGASOLV
Flash point	54 °C
VOC	<675 g/l

DRY FILM

Colour	Aluminium
Gloss	Metallic shine
Typical layer thickness	30 – 100 µm DFT (microns) (See clause Recommended Systems)
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
Each new layer of ALU ZM re-liquidises the previous layer, allowing seamless fusion into a single coating. Therefore, structures coated with ALU ZM can be easily repaired with ALU ZM.	

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, ALU ZM 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 ALU ZM can still be applied outside this temperature range but this shall influence the smoothness of the dry layer.

COVERAGE AND CONSUMPTION

Theoretical	Coverage	Consumption
30 µm DFT	9,67 m ² /L	0,10 L/m ²
60 µm DFT	4,83 m ² /L	0,21 L/m ²
<i>Practical</i> : Depends on the roughness profile of the substrate and the application method.		

PACKAGING

1 L	Available, packed in undividable boxes of 6 x 1 L
2,5 L	Available
15 L	Available

SURFACE PREPARATION

GENERAL

ALU ZM is to be applied on a clean and dry surface, preferably with some roughness to ensure adhesion. The prepared surface shall be free from oil, grease, dirt, dust, rust, mill scale, oxides, corrosion products and other foreign matter.

SURFACE PRE-CLEANING

If the surface has any form of contamination in the form grease, oil, dirt and other foreign matter, this shall be removed by the appropriate means before commencement of the next phase.

Any remaining residue from the pre-cleaning process shall be removed by a final rinse with clean water 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.

ZINGA	The ZINGA surface shall be free of zinc corrosion products and other contamination. It is therefore recommended to apply ALU ZM <u>within 24 hours</u> after the application of ZINGA.
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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)	St3 (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	25 – 60 µm Rz / ISO 8503-1 - Fine (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	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 25 µm Rz	

De-dusting	Prior to the application of ALU ZM, the surface shall be properly de-dusted with non-contaminated compressed air. Maximum allowed dust contamination: Class 2 - ISO 8502-3
Maximum time to application	Apply the ALU ZM 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	ALU ZM must be thoroughly stirred before use in order to achieve a homogeneous liquid.
Thinning	ALU ZM 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	0 – 5%
Type of brush or roller	- Industrial natural bristle brush - Short hair roller (mohair)

AIR-ASSISTED SPRAYING

Dilution	10 – 20%
Air pressure	2,0 – 4,0 bar (conventional) 1,0 – 2,0 bar (HVLPI)
Nozzle orifice size	1,4 – 2,0 mm
Note:	Remove all filters from the pistol to avoid blockages.

AIRLESS SPRAYING

Dilution	5 – 15 %
Pump ratio	Minimum 30/1
Fluid pressure	± 150 bar
Nozzle orifice size	0,015 – 0,025 inch
Notes:	- A 60 mesh tip filter is advised to avoid blockage. - Remove all other filters from the pump and spray gun.

DRYING TIME (40 µm DFT in a well-ventilated environment)

Air Temp.	10°C	20°C	30°C
Dust dry	30 minutes	15 minutes	5 minutes
Touch dry	45 minutes	25 minutes	10 minutes
Dry to handle	2 hours	90 minutes	1 hour
Fully cured	24 hours	24 hours	24 hours
ALU ZM dries by evaporation of the solvent. The drying process is influenced by the total WFT, the dilution, the environmental conditions (humidity, air temperature, wind speed), and the steel surface temperature.			

OVERCOATING (In a well-ventilated environment)

Overcoating ALU ZM with a new layer of ALU ZM

Air Temp.	10°C	20°C	30°C
Brush / Roller*	4 hours	2 hours	1 hour
Spraying*	2 hours	1 hour	30 min.

**after touch-dry*

Any intermediate coat contamination that could disturb the adherence of the next coat should be removed by appropriate cleaning.

Maximum overcoating time

Maximum overcoat time depends on the environmental conditions. For surface preparation on old ALU ZM surfaces, contact a ZINGAMETALL representative / distributor.

APPLICATION ON ZINGA (In a well-ventilated environment)

Overcoating ZINGA with a layer of ALU ZM

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 ALU ZM on the same day of the ZINGA layer.

RECOMMENDED COATING SYSTEMS

ALU ZM STAND-ALONE

- ALU ZM can be applied on steel, (old) hot-dip galvanised, metallised, or zinc-aluminium-magnesium surfaces in 1 or 2 layers:

ALU ZM 1x / 2x 30-50 µm DFT.

- **Do not apply ALU ZM more than 60 µm DFT per layer** (risk for solvent entrapment).

ZINGA – ALU ZM DUPLEX SYSTEM

- In a duplex system, ALU ZM should be applied, preferably by spraying, to obtain a DFT between 30 µm and 50 µm DFT, on a ZINGA layer of 60 to 150 µm DFT.

- The ZINGA – ALU ZM duplex system have been tested according to ISO 12944-6:

- **ZINGA 60 µm DFT + ALU ZM 30 µm DFT – C4 Very High ; C5 High**

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 ALU ZM safety data sheet.

For more specific and detailed recommendations concerning the use and application of ALU ZM, 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.