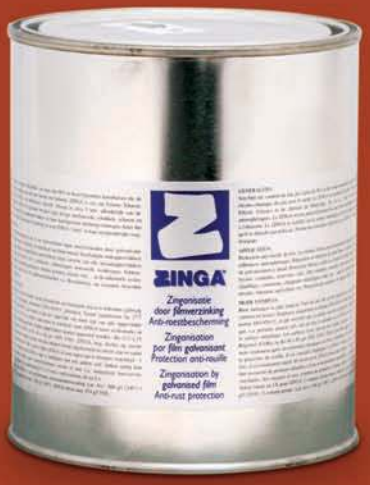
ZINGA®

The Zinga product range is widely used in:

- ✓ Energy, Oil and Gas
- ✓ Marine and Offshore
- ✓ Construction
- ✓ Light and Heavy Engineering
- ✓ Manufacturing
- ✓ Transport, Rail and Automotive
- ✓ Water and Sewerage
- ✓ Agriculture, Food and Fisheries
- ✓ Architectural and Restoration



MGDUFF

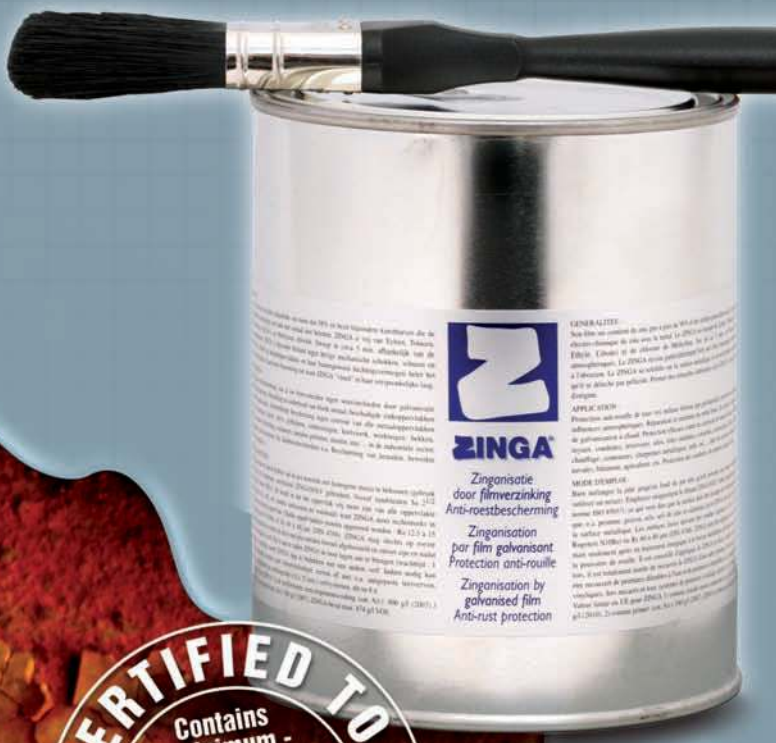
ZINGA UK, a division of MGDuff International Ltd
1 Timberlaine Estate, Gravel Lane, Quarry Lane, Chichester,
West Sussex, PO19 8PP

Telephone: 01243 533336 Fax: 01243 533422
Technical: 01406-701834
Web: www.zinga-uk.com email: sales@zinga-uk.com

Cold Applied Galvanising System

MGDUFF ZINGA®

LIQUID ANODE TECHNOLOGY



CERTIFIED TO BS 6920 & BS476
Contains - minimum - 96% zinc when dry

WRAS NORSOK BBA BRITISH BOARD OF AGREMENT

www.zinga-uk.com

Zinga

Zinga is a film galvanising system comprising precisely milled zinc particles suspended in a unique aromatic liquid base. Zinga will bond to any prepared steel substrate to form a finished surface layer of 96% zinc. Zinga offers all the advantages of hot-dip galvanising and thermal zinc spray but without the application and overcoating problems. Zinga has been approved to NORSOK Standard M-501 Revision 5 to meet the exacting demands of the Oil and Gas Industry. Zinga' Properties:

- ✓ **Is easy to use**
  – Apply by brush, roller, spray or dipping
- ✓ **Protects longer than hot-dip galvanising at the same dft** – 28 years of field evidence
- ✓ **Cost effective alternative to hot-dip galvanising**
  – And no distortions, fettling or drilling to de-gas
- ✓ **Can be applied on site**
  – regardless of structure, size and shape
- ✓ **Re-coats existing galvanising**
  – No dismantling required
- ✓ **Can be re-charged**
  – fusing with the first coat to form single layer
- ✓ **Excellent primer in Duplex systems**
  – Can more than double the lifespan
- ✓ **High resistance to mechanical abrasion**
  – Used to coat piling, rail track and chain
- ✓ **Excellent adhesion**
  – Extremely high pull-off results achieved
- ✓ **Extremely flexible**
  – Will not crack or delaminate, unlike HDG
- ✓ **Can be applied to damp surfaces**
  – Up to 90% Relative Humidity
- ✓ **Can be applied in extreme temperatures**
  – Minus15°C to Plus 40°C
- ✓ **Weldable to X-ray quality**
  – Weld steel through 60µm of Zinga
- ✓ **Certified for use with potable water**
  – BS6920(2000)
- ✓ **Certified as non-flammable**
  – BS476 Part 6 & 7 Fire Propagation
- ✓ **Suitable for large and small areas**
  – From the largest bridges to small nuts and bolts

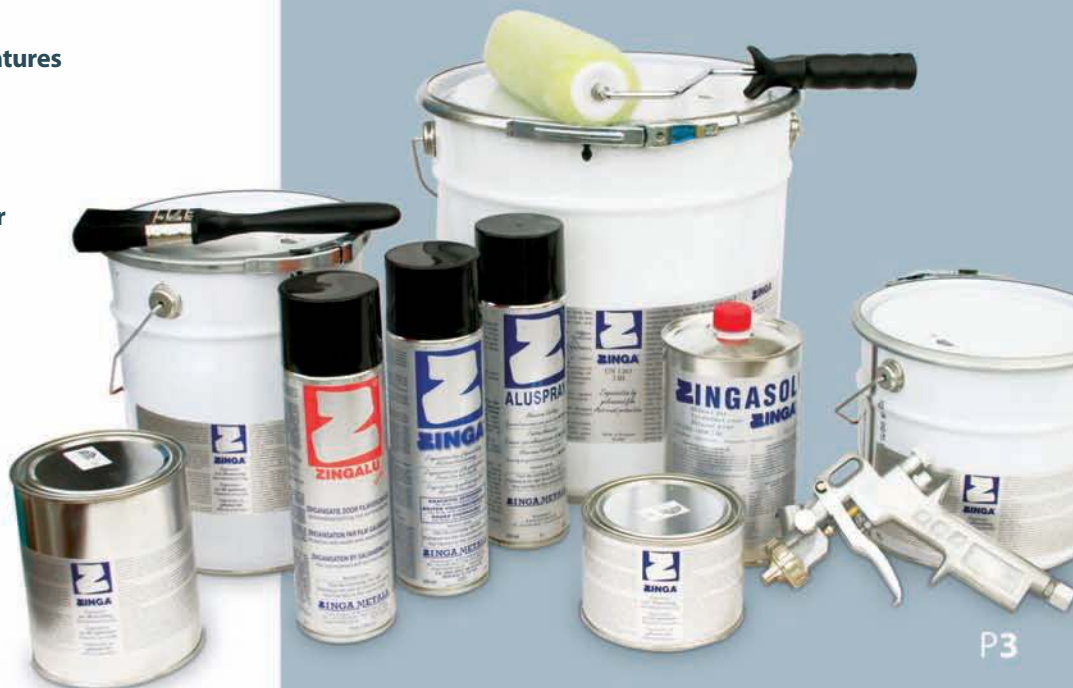
MGDUFF ZINGA®

Technical Specification

Surface Preperation	Grit blast to SA2.5 (Rz 50 - 70 µm)
Approx. Drying Times @ 15°C	
Touch Dry	10 mins
Dry to Handle	30 mins
Overcoat with Zinga	30 - 60 mins
Overcoat with Epoxy	24 hrs
Application Temp Range	-15°C to +40°C
Application Humidity Range	90%
Substrate Temp	>3°C above Dew Point
Thinner	Zingasolv
Cleaner	Zingasolv/Gunwash
Pot Life	Unlimited
Packaging	Available in 1Kg Can 2Kg Can 5Kg Can 10Kg Can 25Kg Can 500ml Spray

Coverage & Consumption

Wet Film Thickness (microns)	Dry Film Thickness (microns)	Coverage (Overspray and wastage not accounted for)	Consumption (Overspray and wastage not accounted for)
34	20	10.86m²/kg	0.09kg/m²
69	40	5.43m²/kg	0.18kg/m²
86	50	4.34m²/kg	0.23kg/m²
103	60	3.62m²/kg	0.28kg/m²
138	80	2.72m²/kg	0.37kg/m²
172	100	2.17m²/kg	0.46kg/m²
207	120	1.81m²/kg	0.55kg/m²
241	140	1.55m²/kg	0.64kg/m²
259	150	1.45m²/kg	0.69kg/m²
276	160	1.36m²/kg	0.74kg/m²
310	180	1.22m²/kg	0.83kg/m²
344	200	1.08m²/kg	0.92kg/m²



MGDUFF ZINGA®

Application Recommendations

Unique system

Zinga is normally used as a stand-alone system, applied in 2 or 3 layers to obtain a total maximum DFT of 120 to 180 µm depending on the specification.

Two 60 µm DFT layers of Zinga conforms to the standards NORSOK M-501 syst.7 and ISO 12944 cat. Im2 and Im3.

The unique system is strongly recommended because of the ease of future maintenance. Over time the Zinga layer will sacrifice itself due to its' cathodic protection properties and a new layer of Zinga can be very easily applied to "recharge" the system. see below.

Duplex system

In a duplex system, Zinga should be applied in one single application, preferably by spraying, to obtain a maximum DFT of 60 to 80 µm.

The surface of the Zinga should be free of zinc salts and other contaminations prior to the application of a topcoat.

Zinga can be overcoated with a wide range of compatible sealers and topcoats. To avoid pinholes, the mist coat & full coat application technique is recommended for all topcoats.

Stripe-coating

It is recommended that a stripe-coat of Zinga is applied by brush on all sharp edges, nuts and bolts and weld areas before the application of the first full layer of Zinga.

Recharging

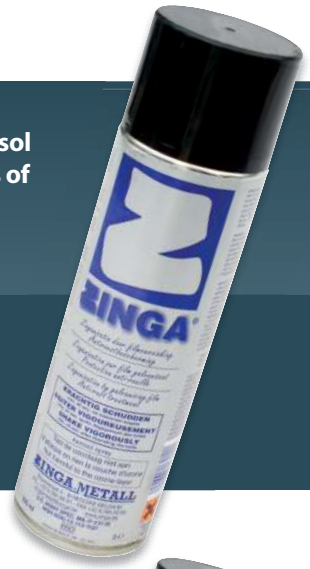
Zinga can be applied on top of old layers of hot-dip galvanising, metallisation or old Zinga in order to renew or enhance the cathodic protection. The DFT of Zinga that should be applied depends upon the existing zinc layer thickness.

Note:
One coat of Zinga normally dries at around 50µm DFT, (dry film thickness) whether it is brushed or sprayed and one kilogramme of Zinga will cover 4.34 square metres at this thickness.

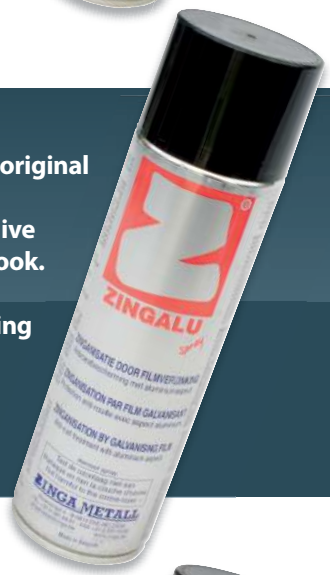
Full Product Specification sheets are available to down load from **www.zinga-uk.com** or contact us on **01243 533336**

AEROSOL SPRAYS

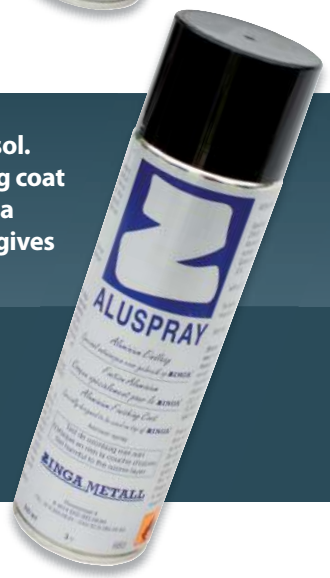
Zingaspray 500ml aerosol with all the advantages of the original Zinga in a handy spray can for repairing or touching up galvanising or Zinga systems.



Zingalu Spray 500ml aerosol similar to the original Zinga but containing aluminium flakes to give a more "galvanised" look. Ideal for repairing or touching up galvanising



Aluspray 500ml aerosol. As high gloss finishing coat for Zinga, Aluspray is a metallic lacquer that gives a bright aluminium finish that does not have the appearance of paint.



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AquaZinga

Aquazinga is a 2 pack 100% water-based anti-corrosion system based on inorganic zinc silicates. Due to its high zinc content in the dry film (92%) it provides cathodic protection to ferrous metals. It can be used as a stand alone system as an alternative to hot-dip galvanising or metallisation.

Aquazinga has an excellent resistance to abrasion and is designed to withstand corrosive environments and severe conditions, including high temperatures (up to 600°C).

- ✓ Works in constant temperatures up to 600°C
- ✓ Excellent resistance to abrasion
- ✓ Excellent resistance to steam and other hot gases
- ✓ Excellent resistance to hydrocarbons
- ✓ High tolerance to thermal shock
- ✓ High tolerance to mechanical shock
- ✓ High level of conductivity
- ✓ Ph range of 5.5 to 12.5
- ✓ Works in tandem with sacrificial anodes
- ✓ Can be over-coated with a wide range of compatible seaters and topcoats

Aquazinga can be used on its own as an alternative to hot-dip galvanising and thermal metallisation in high temperature environments. It can also be used as a primer under high heat paints. Typical uses include ballast tanks, turbine exhausts and high heat pipelines.

Technical Specification

Surface Preparation	Grit blast to SA2.5 –SA3 (Rz 50 –70µm)
Approx. Drying Times @ 15°C	
Touch Dry	15 mins
Dry to Handle	4 hours
Overcoat with Aquzinga	8 hours
Overcoat with Epoxy	8 hrs
Application Temp. Range	+5°C to +30°C
Application Humidity Range	60 – 80%
Substrate Temp.	>3°C above Dew Point
Shelf Life	12 months
Pot Life	6 hours
Packaging	Available in 5kg (3.5 powder, 1.5 binder) 10kg (7 powder, 3 binder) 25kg (17.5 powder, 7.5 binder)

System Recommendations

Unique system
Aquazinga is used as a stand-alone system, applied in 2 layers to obtain a total maximum DFT of 80µm.

Duplex system
In a duplex system, Aquazinga should be applied in one layer of 50 to 80µm. The surface of the Aquazinga should be free from zinc salts and other contaminations prior to application of a topcoat. Aquazinga can be topcoated with a wide range of compatible sealers and top-coats.

Stripe-coating
It is recommended that a stripe-coat of Aquazinga is applied by brush on all sharp edges, nuts and bolts and weld areas before the application of the first full layer of Aquazinga.

Coverage & Consumption

Theoretical consumption	for 60µm DFT: 0,31kg/m^2
Theoretical coverage	for 60µm DFT: 3,25m^2/kg
Practical coverage	depends upon the roughness profile of the substrate and on the application method

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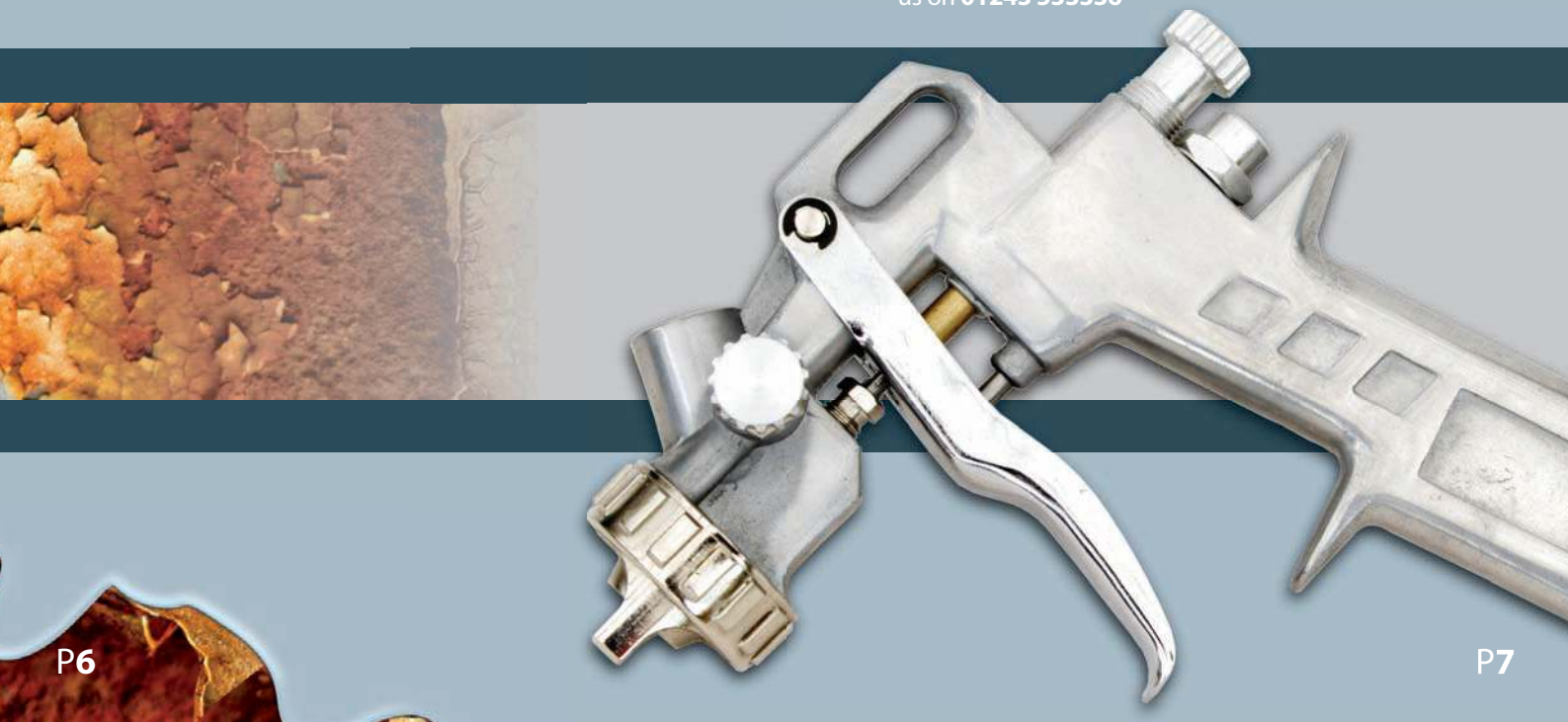


Zingaceram

ZINGACERAM

The Zingaceram range provides high specification anticorrosion systems for situations at risk from heavy abrasion and chemical attack.

Zingaceram systems are usually applied over a Zinga base coat and would comprise an intermediate coat of:

Zingaceram EP MIO

An epoxy primer, unique in that the pigmentation contains ceramic fillers with micaceous iron oxide particles, forming around two hundred plus layers of metallic platelets that act as moisture-barriers. The ceramic particles are extremely hard-wearing, so with the combined MIO and ceramics Zingaceram delivers an extremely hard-wearing, chemical-resistant primer and / or finishing coat.

Zingaceram EP MIO can be left as the topcoat or overcoated with either:

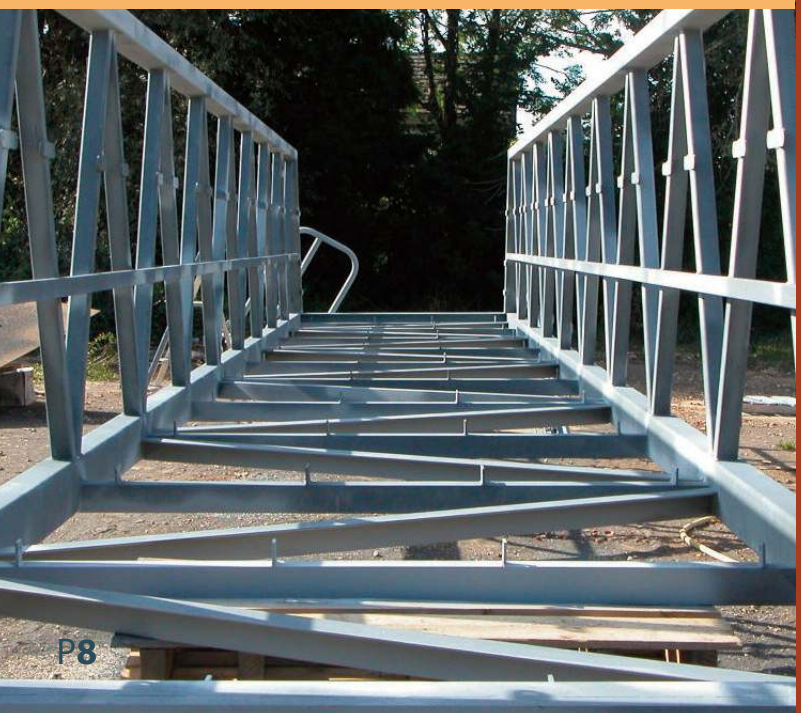
Zingaceram EP TOP

Two-pack epoxy top coat with easy film build, very good hardness and high chemical resistance.
or:

Zingaceram ZM PU

Two-pack acrylate-polyurethane sealer or topcoat with excellent resistance to abrasion, weathering and yellowing.

- ✓ Both topcoats are available in a range of colours.
- ✓ High level resistance to abrasion
- ✓ Excellent chemical resistance



Technical Specification

Product	Zingaceram EP MIO	Zingaceram EP TOP	Zingaceram ZM PU
Colour	Metallic Silver	White, off white, beige, light grey	RAL Colours
Surface Preparation	Over dry, clean Zinga system	All surfaces should be dry and clean, all soluble salts should be removed	All surfaces should be dry and clean, all soluble salts should be removed
Approx. Drying Times	for 60µm DFT at 20°C in a well ventilated environment Dust-proof: 1 hr Dry to handle: 5 hrs Hard: 18 hrs Fully cured: 7 days Overcoatable Min: 6 hrs Max: 3 days	for 50µm DFT at 20°C in a well ventilated environment Dust-proof: 1 hr Dry to handle: 4 hrs Hard: 20 hrs Fully cured: 3 days Overcoatable Within 24 hrs	for 50µm DFT at 20°C in a well ventilated environment Dust-proof: 1 hr Dry to handle: 4 hrs Hard: 20 hrs Fully cured: 4 days Overcoatable After 12 hrs
Application Temp. Range	Min 15°C	Min 15°C	Min 5°C
Application Humidity Range	Max 70%	Max 70%	Max 85%
Substrate Temp.	Min >3°C above Dew Point	Min >3°C above Dew Point	Min >3°C above Dew Point
Shelf Life	12 months	12 months	12 months
Pot Life	6 hours	6 hours	6 hours
Packaging available in	5ltr (4 pt A; 1 pt B) 25ltr (16 pt A; 4 pt B)	5ltr (4 pt A; 1 pt B) 25ltr (16 pt A; 4 pt B)	4ltr (3.5 pt A; 0.5 pt B) 20ltr (17.5pt A; 2.5pt B)

Coverage & Consumption

Theoretical	for 75µm DFT 0,130 Lt/m^2	for 50µm DFT 0,113 Lt/m^2	*for 50µm DFT 0,086 to 0,098 Lt/m^2
Consumption	for 75µm DFT 7,73m^2/Lt	for 75µm DFT 8.88m^2/Lt	*for 50µm DFT 10,2 to 11,6m^2/Lt
Theoretical coverage	depends upon the roughness profile of the substrate and on the application method		

*Dependent on colour selection

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ALUFER

Alufer N

A one-component polyurethane sealer that is used over Zinga and Aquazinga. It gives the zinc a total seal against any salt or chemical attack and has been used in projects varying from sewage works to ship hulls.

Alufer N can be used as an intermediate or topcoat over a Zinga substrate in immersed or chemical environments.

Alufer WR

The initials refer to its 'weather resistant' properties. This coating is used as a finish coating because it will retain its high gloss for many years. It is available in the same range of colours.

Alufer WR can be used as a topcoat over a Zinga substrate in marine or chemical environments where UV exposure is prolonged. However, best performance is achieved when applied over Alufer N.

ALUFER N & ALUFER WR OFFER:

- ✓ Good resistance to chemicals
- ✓ Good resistance to abrasion
- ✓ Dirt repellent
- ✓ Can be applied on a vertical surface to 200µm in one coat.
- ✓ Available in a limited range of colours

Full Product Specification sheets are available to down load from **www.zinga-uk.com** or contact us on **01243 533336**

MONOWASH

This is a tried and tested product (25 years old) and is still an excellent primer where speed is important.

It is a single-component product, and because it dries so fast it has to be spray-applied. It can be used over Zinga, Aquazinga or even galvanised finishes where proprietary coatings including alkyd enamel paints are going to be applied.

Note: Alkyd enamels can never be applied directly onto any zinc surface whether it is a primer or hot-dip galvanising etc as the enamel never cures. They will dry but will never cure to their full hardness.

Monowash can also be used to prime aluminium, brass, lead, tin etc as it is an etch primer based on phosphoric acid. When applied to say, aluminium, it will react and form a protective layer of aluminium phosphate on the surface. This gives added corrosion protection to the surface of the aluminium.

This primer normally dries hard in **8-12 minutes** on warm days.
Note: Not suitable for marine applications

TAR FREE MIO

This coating has a similar resin-structure to Alufer N and provides excellent water and corrosion resistance, hence it is an ideal 'hull blacking' for all types of craft.

It can be applied directly onto Zinga or Aquazinga as a finish coat on steel hulls and other structures in both marine and inland water situations.

Unlike the tars and bitumens used over the years, it does not leach any poisons (phenols) into the water and nor does it become brittle.

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