UNIQUE CHARACTERISTICS AND ADVANTAGES OF ZINGA®

ZINGA® is much more efficient than any other existing traditional passive anti-corrosion system.
This efficiency is based on a number of unique characteristics and advantages.
ZINGA® cannot be classified as a paint or as a zinc-rich primer but as a **film galvanising system**.
This is explained in the following summary.

1. ZINGA® protects steel against rust in two ways: an active, cathodic, galvanic protection due its high zinc content (96% in the dry layer) and a passive barrier protection due to the formation of zinc salts on top of the surface, and due to the special binder (resin) in ZINGA® that reduces the disintegration of the zinc.

2. The application of ZINGA® is very easy. It can be applied by brush, roller and conventional or airless spray equipment. ZINGA® can be applied in a workshop or on site (on- and offshore).

3. ZINGA® can be applied in a wide range of weather conditions. ZINGA® is applicable in very dry or very humid conditions up to a RH (Relative Humidity) of 95%. After its application, humidity can even intensify the cathodic action and accelerate the formation of the zinc salts on the surfaces, providing a better barrier protection (i.e. "water saturation" technique). ZINGA® can be applied at very high or low outside temperatures (up to 50°C or 122°F and down to -15°C or 5°F).

4. ZINGA® has a zinc content of 96% in the dry layer and therefore provides a long-term cathodic protection. According to the standard ASTM A780-01 the minimum content of zinc needed in coatings for providing a real cathodic protection is 92% of zinc in the dry layer.

5. ZINGA® can be applied under ambient temperatures. Steel structures will not be deformed when using ZINGA®. This might not be the case when thin or light steel structures are dipped into molten zinc at 450°C (or 842°F).

6. ZINGA® has a quick drying time (approx. 15 min @ 20°C or 68°F). A new layer of ZINGA® can be applied after 1 hour. Topcoats can be applied after 4 to 24 hours, depending on layer thickness and atmospheric conditions.

7. ZINGA® does not peel off and is not brittle. In case of an impact the ZINGA® layer will be compressed or crushed, but it will not crack due to the flexibility of its binder.

8. One of the most decisive advantages of using ZINGA® is that this film galvanising system can be indefinitely recharged or reloaded. Each new layer of ZINGA® on top of an old ZINGA® layer will perfectly blend with the previous one. Additional layers all blend to one single, homogeneous ZINGA® layer. There is no risk for accumulation of layers that are different in structure, which could cause peeling off. Moreover, this capacity of recharging / reloading reduces the surface preparation to an absolute minimum. When using traditional paints on older paints you will often have to strip the old layers off with an elaborate and expensive surface preparation before the application of a new 3-layer paint system.

9. This unique property of recharging / reloading can be used if you still have to do some drilling or welding on the steel surface, or if the steel members still have to be transported. In that case the first ZINGA® layer can be considered as a welding primer. It will also intercept possible damages. Welding is possible on ZINGA® (much less burn-back effect than epoxy). After welding, a final layer of ZINGA® can be applied and local damages will be repaired. The new ZINGA® layer will form one homogeneous layer with the first ZINGA® layer. Repairs with ZINGA® will be invisible after a certain time (photos available on demand).

10. Worn or rusting steel structures that have been metallised or galvanised (HDG) can also be recharged with ZINGA® with a quite simple, cheap and fast surface preparation.

11. The atomised zinc powder (granules) used for making the ZINGA® (ASTM D520 Type III) have an ellipsoidal shape so that there is a bigger surface contact between the granules. The same type of atomised zinc powder is also used in medical and cosmetical products.

12. ZINGA® is a sacrificial coating. It will consume itself, or deplete, to protect the steel surface.
The average depletion rate of ZINGA® lies between 2 to 10 µm per year depending on the environmental conditions. This is an important factor for the estimation of the necessary service lifetime of the ZINGA® system and for monitoring your maintenance schedule and budget planning (by reloading or recharging the old ZINGA® layer).

13. ZINGA® can offer you customized and personal solutions. Customers are not always in need of a long term corrosion protection or do not have the budget for it. In case of a limited budget and/or of a desired short-term protection the ZINGA® layer thickness can be reduced, which will have a direct impact on the price per m^2.
In other words: ZINGA® offers a very "flexible" customized solution.

14. ZINGA® can be top coated with a large number of compatible paints. Such duplex systems will double the service lifetime of ZINGA®. We can propose different compatible paints: acryl, epoxy, polyurethane; with or without micaceous iron oxides. These coatings can be applied directly on ZINGA® (using the mist/full coat technique).

15. ZINGA® is composed of non-toxic elements according to European Standards and can be used in contact with potable water (NSF/ANSI/CAN 61 and APAS certifications, Green Label Singapore).

16. ZINGA® is cold resistant up to -40°C or -40°F and is heat resistant up to 120°C or 248°F.
ZINGA® can also intercept occasional and short thermal shocks up to -50°C or -58°F and to 150°C or 302°F.

17. a) ZINGA® has an unlimited shelf life (no wastage, unlike traditional paints).
    b) ZINGA® has an almost unlimited pot life (no formation of a skin after 1 week or more, i.e. no wastage unlike traditional paints !)
    c) ZINGA® is a one component coating (no components A & B mixing, i.e. reduced application costs).
    d) ZINGASOLV, the aromatic solvent used in ZINGA®, can be used for flushing and rinsing the paint equipment (brushes, spray equipment). The rinsing products can be re-used for dilution in the ZINGA® cans (no wastage, no spilling, unlike traditional paints !).

18. If there is no need for a coloured finish, ZINGA® can be used as a complete stand-alone system.

19. ZINGA® has passed the following outsourced tests:
    80 µm to 100 µm DFT : ISO 12944-6: **C5 Medium**
    120 µm DFT : ISO 12944-6 and ISO 12944-9 : **C5 Very High and CX and Im4**
    120 µm DFT : NORSOK M-501- systems 1 and 7: passed.

Additional information concerning the ISO 12944 standard

Classification of the Environment

C3 – Urban and industrial atmospheres, moderate sulphur dioxide pollution. Coastal areas with low salinity.
C4 – Industrial areas and coastal areas with moderate salinity.
C5 – Industrial areas with high humidity and aggressive atmosphere and coastal areas with high salinity.
CX – Offshore areas with high salinity and industrial areas with extreme humidity and aggressive atmosphere and subtropical and tropical atmospheres.
Im1 – River installations, hydro-electric power plants.
Im2 – Immersed structures without cathodic protection (e.g. harbour areas with structures like sluice gates, locks, jetties ; offshore structures).
Im3 – Buried tanks, steel piles, steel pipes.
Im4 – Immersed structures with cathodic protection (e.g. harbour areas with structures like sluice gates, locks, jetties ; offshore structures).

Classification of Durability	
Low	up to 7 years
Medium	7 to 15 years
High	15 to 25 years
Very High	More than 25 years

ZINGAMETALL has a series of worldwide references, showing lifetime durations of more than 20 years, without notable defects.