



ISO 12944

SMALLER LAYER THICKNESS
SAME RESULT · COST EFFECTIVE

→ For Engineers and corrosion experts: offers a conceptual framework for making the best choice in corrosion protection of steel structures.

*Duplex = ZINGA + Zingalufer / Zingaceram HS

	System with ZINGA®	Alternative system: Paint system	Alternative system: Zinc + Paint
C4 High = C5 I/M Medium	ZINGA® 2 x 60 µm DFT	Paint min. 300 µm DFT	Hot dip galvanisation 80 µm + Paint 160 µm DFT
C5 I/M High	ZINGA® 2 x 90 µm DFT ZINGA® in duplex	Paint min. 320 µm DFT	Hot dip galvanisation 80 µm + Paint 320 µm DFT
Im2 & Im3	ZINGA® 1 x 60-80 µm DFT + 2 x 100 µm DFT Zingatarfree	Paint min. 500 µm DFT	Zink (R) Paint 60 µm DFT +

CORROSION ZONES

C5 M: Coastal zone with high salinity
Im2: immersion in salt water

C5 I: Industrial zone with high humidity and aggressive environment
Im3: Subterranean

LIFE EXPECTATION

Medium: Life expectation between 5 and 15 years.

Hoog: Life expectation more than 15 years.

ISO 12944 ADVANTAGES

- + Confidence that the specified corrosion protection will be fit for purpose.
- + Life expectation based on scientific tests.
- + A universally accepted standard.

ALTERNATIVES ACCORDING TO C5 I/M HIGH

Paint System

4 x 80 µm DFT Epoxy or PU Paint
Total layer thickness **320 µm DFT**

ZINGA Film Galvanising System

2 x 90 µm DFT ZINGA®
Total layer thickness **180 µm DFT**

MORE INFO?
Ask our ZINGA experts!

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ZINGAMETALL SYSTEMS

ZINGA 2 x 60 µm DFT

The system ZINGA 2 x 60 µm DFT is suitable for a **C5I** environment (atmospherically) with a Medium life expectancy and Im2 and Im3 environment (immersion) with a Medium life expectancy.

A C5I Medium classification equals to a C5M Medium or C4 High classification.



Since 1988, several pulp and paper factories in Canada used ZINGA in 2 layers of 60 µm DFT to treat their structures. In 2005 (17 years after application), no touch-ups were necessary in this corrosive C5I environment.

ZINGA 2 x 90 µm DFT

The system ZINGA 2 x 90 µm DFT is suitable for a **C5I** environment (atmospherically) with a **High** life expectancy and Im2 and Im3 environment (immersion) with a Medium life expectancy.

A C5I High classification equals to a C5M High classification.



The phosphate Mine in Togo (Office Togolais des Phosphates) was treated in 1994 with 2 layers of ZINGA. In 2006 (12 years after application), no trace of rust was found. In 2014, 20 years after application, the structures were still in good condition.

ZINGA 1 x 60 µm DFT + Zingalufer 1 x 80 µm DFT

The system ZINGA 1 x 60 µm DFT + Zingalufer 1 x 80 µm DFT is suitable for a **C5I** environment (atmospherically) with a **High** life expectancy.

This system should be overcoated with a topcoat, to give a coloured finish.



Since 2006, Shell Morocco uses the system with Zingalufer as a basis to protect its hydrocarbon storage tanks. Not a small defect was detected and Shell is continuing to use the system because of high satisfaction.

ZINGA 1 x 60 µm DFT + Zingaceram HS 1 x 120 µm DFT

The system ZINGA 1 x 60 µm DFT + Zingaceram HS 1 x 120 µm DFT is suitable for a **C5I** environment (atmospherically) with a **High** life expectancy.

This system should be overcoated with a topcoat, to give a coloured finish.



In 2012-2013, the 6 penstocks and hoist crane of the Akasombo Dam have been treated with the Zingaceram system. This system has a life expectancy of >15 years in an industrial zone with high humidity and aggressive environment.

ZINGA 1 x 60 µm DFT + Zingaceram HS 1 x 120 µm DFT + Zingaceram PU 1 x 60 µm DFT

The system ZINGA 1 x 60 µm DFT + Zingaceram HS 1 x 120 µm DFT + Zingaceram PU 1 x 60 µm DFT is suitable for a **C5I** environment (atmospherically) with a **High** life expectancy.

This system gives a coloured finish for use in **outdoor** conditions.



Over the period 2013-2016, the Izmit Bay Suspension Bridge (Marmara Bridge) in Turkey - the fourth largest suspension bridge in the world - has been treated with the Zingaceram system. It has a life expectancy of >15 years in the harsh maritime environment.

ZINGA 1 x 60 µm DFT + Zingaceram HS 1 x 120 µm DFT + Zingaceram EP 1 x 60 µm DFT

The system ZINGA 1 x 60 µm DFT + Zingaceram HS 1 x 120 µm DFT + Zingaceram EP 1 x 60 µm DFT is suitable for a **C5I** environment (atmospherically) with a **High** life expectancy.

This system gives a coloured finish for use in **indoor** conditions.



In April 2005, the interior of 22 wind mills of Zephyros in Taiwan has been treated with the Zingaceram system. This system has a life expectancy of >15 years in a maritime zone with high humidity and aggressive environment.

ZINGA 1 x 60 µm DFT + Zingatarfree 2 x 100 µm DFT

The system ZINGA 1 x 60 µm DFT + Zingatarfree 2 x 100 µm DFT is suitable for a **Im2 or Im3** environment with a **High** life expectancy.

This system gives a black finish for use in **immersion** (soil or water).



Since 2012, GUGLER Water Turbines GmbH (Austria) uses the system with Zingatarfree as a basis to protect the underground parts of water tubes. This system will provide a life expectancy of >15 years on structures immersed in soil.