

SYSTEM RESISTANCE

URA-POX 038 RAL 7035 + URA-TEXT 372 WHITE

BESA LABORATORY

OCTOBER-DECEMBER 2023

Laboratory Technician
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WORK No. 4500 URA-POX 038 / URA-TEXT 372

Subject: Lak Grossisten requests tests on zinc magnesium specimens using the Ura-Pox 038+Ura-Text 372 system to achieve a C5-high result.

Objective: Verify the behaviour in humidity and salt spray chambers of the Ura-Pox 038+Ura-Text 372 process with thicknesses greater than 360 µm.

CLIENT	LAK GROSSISTEN
SYSTEM	URA-POX 038 RAL 7035 + URA-TEXT 372 BLANCO
SUPPORT	ZINC MAGNESIUM SPECIMEN
LABORATORY RESPONSIBLE	LORENZO CERRADA
START OF TESTS	OCTOBER 2023
END OF TESTS	DECEMBER 2023

On September 20, Lak Grossisten requests tests to improve the C4-high/C5-low result presented in May 2023. Therefore, the goal is to achieve a C5-high result by increasing the thicknesses of the Ura-Pox 038+Ura-Text 372 system: according to UNE-EN ISO 12944-5, 360 µm should be achieved in 3 layers.

Tabla B.2 – Resumen del número mínimo de capas (MNOC en sus siglas en inglés) y mínimo NDFT del sistema de pintura dependiendo de la durabilidad y la categoría de corrosividad sobre sustratos chorreados con abrasivo

Durabilidad	Baja (B)			Media (M)			Alta (A)			Muy alta (MA)		
	Zn(R)	Misc		Zn(R)	Misc		Zn(R)	Misc		Zn(R)	Misc	
Base ligante de la imprimación	ESI, EP, PUR	EP, PUR, ESI	AK, AY	ESI, EP, PUR	EP, PUR, ESI	AK, AY	ESI, EP, PUR	EP, PUR, ESI	AK, AY	ESI, EP, PUR	EP, PUR, ESI	AK, AY
Base ligante de las siguientes capas	EP, PUR, AY	EP, PUR, AY	AK, AY	EP, PUR, AY	EP, PUR, AY	AK, AY	EP, PUR, AY	EP, PUR, AY	AK, AY	EP, PUR, AY	EP, PUR, AY	AK, AY
C2	MNOC	a		–	–	1	1	1	1	2	2	2
	NDFT			–	–	100	60	120	160	160	180	200
C3	MNOC	–	–	1	1	1	2	2	2	2	2	2
	NDFT	–	–	100	60	120	160	180	200	200	240	260
C4	MNOC	1	1	1	2	2	2	2	2	3	2	–
	NDFT	60	120	160	160	180	200	200	240	260	300	–
C5	MNOC	2	2	–	2	2	–	3	2	–	3	–
	NDFT	160	180	–	200	240	–	260	300	–	320	–

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	HARDENER	RATIO	WATER
URA-POX 038 RAL 7035	U-509	100:30 P	6%
URA-TEXT 372 WHITE	U-422	100:20 P	5%

Four zinc magnesium specimens are degreased, and the following process is applied:

Two coats of Ura-Pox 038 RAL 7035 batch 207942 primer, with sufficient time between layers for water evaporation, and one coat of Ura-Text 372 White (4372/200 63/37) textured finish. The specimens are left to dry for 7 days, then baked for 3 hours at 60 degrees, sealed with wax, and masked with adhesive tape. Finally, they are left for an additional 3 days before starting the tests.

THICKNESSES	SYSTEM	HUMIDITY CHAMBER	SALT SPRAY
SPECIMEN 1	URA-POX 038	240 my	250 my
	URA-TEXT 372	140 my	130 my
SPECIMEN 2	URA-POX 038	240 my	250 my
	URA-TEXT 372	140 my	130 my

*The specimens have a surface treatment of 15-20 µm.

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SALT SPRAY

0 HOURS



240 HOURS



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480 HOURS



740 HOURS



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1520 HOURS



1690 HOURS



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HUMIDITY CHAMBER

0 HOURS



240 HOURS



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480 HOURS



720 HOURS



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RESULTS

Up to 1690 hours of salt spray chamber exposure, no blisters are observed on specimens 1 and 2. There is only some residue on the edges of the internal sheet and at the cut.

ASSESSMENT OF SALT SPRAY CHAMBER	
UNE-EN ISO 4628-2:2016	BLISTERING: 0 (S0)
UNE-EN ISO 4628-3:2016	CORROSION: Ri 0
UNE-EN ISO 4628-4:2016	CRACKING: 0 (S0)
UNE-EN ISO 4628-5:2016	FLAKING: 0 (S0)

After 720 hours of testing in the humidity chamber, specimens 1 and 2 show no blisters or rust.

ASSESSMENT OF RESULTS IN HUMIDITY CHAMBER	
UNE-EN ISO 4628-2:2016	BLISTERING: 0 (S0)
UNE-EN ISO 4628-3:2016	CORROSION: Ri 0
UNE-EN ISO 4628-4:2016	CRACKING: 0 (S0)
UNE-EN ISO 4628-5:2016	FLAKING: 0 (S0)

CONCLUSION

The **Ura-Pox 038+Ura-Text 372** System with thicknesses exceeding **360 microns** on zinc magnesium specimens supplied by Lak Grossisten complies with the C5-HIGH corrosivity category of **UNE-EN ISO 12944** Standard:

720 hours in the humidity chamber

1440 hours in the salt spray chamber.

According to ISO 12944-1:1999: Durability is not a warranty period. Durability is a technical consideration that can help the owner establish a maintenance program. The warranty period has a legal consideration that is the subject of clauses in the administrative part of the contract. The warranty period is usually shorter than durability. There are no rules connecting the two time periods.

The results obtained and indicated in this report only respond to tests carried out in BESA laboratories and based on the data reported in the report. In addition to the durability requirements of a paint system, it is worth noting that durability also depends on external factors such as the environment, the morphology of the piece, the surface treatment, and the application method of the system. Furthermore, durability depends on the physical and chemical characteristics of the system. These characteristics are measured through aging tests, and natural exposure will not necessarily have the same effects because there are factors influencing degradation that are impossible to reproduce in the laboratory.

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