

TESTING OF SURFACE PROTECTION



WE MEASURE. YOU GROW.

A FLAWLESS SURFACE IS THE RESULT OF SUITABLE TECHNOLOGY SUPPORTED BY REGULAR TESTING.

YOUR CLIENTS DEMAND PERFECTION. WE OFFER YOU A COMPLETE SOLUTION.

- Verified influence of environmental conditions on product durability.
- Confirmation of corrosion resistance of raw material.
- Detection of possible errors by analysis in baths and other process waters.
- Your selection of the most suitable technology confirmed by results on the basis of comparison testing.
- Help with meeting your customers' requirements.
- Reputation of a reliable supplier who guarantees quality of surface protection.



MONITORING OF PARAMETERS IN BATHS AND OTHER PROCESS WATERS

GENERAL PARAMETERS

Temperature	Hardness – carbonates
pH	Concentration of surface protection agents in bath
Electrical conductivity	Oxygen concentration

ALKALINE DEGREASING BATHS

Total alkalinity	Carbonates
Free alkalinity	Tensides
Sodium hydroxide	

ACIDIC DEGREASING BATHS

Total acidity	Chlorides
Free Acidity	Sulphates
Fluorides	Tensides

ACTIVATION BATHS, ETCHING AND FLUX

Metals (Fe, Ti)	Chlorides
Precious metals (Au, Ag, Pd)	Sulphates
Ammonium	Fluorides

PASSIVATION BATHS

Metals (Zr, Co, Zn, Cr, Fe)	Nitrates
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GALVANIC BATHS

Metals (Zn, Ni, Ba, Fe, Sn, Cu, Cr ³⁺ , Cr ⁶⁺)	Sulphite
Potassium hydroxide	Fluorides
Sodium hydroxide	Boric acid
Carbonates	Chromic acid
Chlorides	Sulfuric acid
Sulphates	

PHOSPHATE BATHS

Metals/Cations (Zn, Ni, Mn, Fe, Ca)	Free acidity
Total acidity	Catalysts (nitrites, chlorates)

RINSING WATERS

Total organic carbon (TOC)	Nitrates and nitrites
Chemical oxygen demand (COD)	Content of microorganisms
Hardness	Mineral oils

ORGANIC BATHS

Content of microorganisms	Dry residue
Dry matter content	Amines

QUALITY OF SURFACE PROTECTION

ENVIRONMENTAL TESTING AND ACCELERATED AGEING

Temperature and relative humidity	
Cyclic climatic tests	
Neutral salt spray – NSS	ISO 9227*
Acetic salt spray – AASS	ISO 9227
Copper accelerated acetic salt spray – CASS	ISO 9227*
Industrial climate (SO ₂)	DIN 50018*
Constant condensation	ISO 6270-2*
Damp heat, cyclic	IEC 60068-2-30*
UV light	IEC 60068-2-5
Cold	EN 60068-2-1*
Dry heat	EN 60068-2-2*

QUALITY OF GALVANIC AND OTHER INORGANIC COATINGS

Degree of corrosion	ISO 10289*
Corrosion testing of zinc coatings	DIN 50961*
Corrosion testing of copper and nickel coatings	ISO 1456*
Chemical determination of impurities on the surface	
Metallographic determination of surface protection	
Metallographic examination of surface protection failure	
Coating thickness	ISO 1463*
Coating hardness	
Mass and thickness of phosphate coating	
Comparative analysis of different surface coatings	

QUALITY OF ORGANIC COATINGS

Coating thickness	ISO 2178, ISO 2360
Degree of corrosion	ISO 4628-3*
Filiform corrosion resistance	EN 3665
Degree of blistering	ISO 4628-2*
Delamination and corrosion around a scribe	ISO 4628-8*
Degree of cracking	ISO 4628-4
Cross cut test	ISO 1520
Cupping test (Erichsen)	ISO 20482
Gloss determination	DIN 67530
Colour determination	
Coating hardness	
Resistance to impact	
Chemical analyses of paints and varnishes	
Comparative analysis of different surface coatings	
Stone-chip resistance	DIN 559961-1

SURFACE RESISTANCE

Resistance to abrasion	DIN 53754, ISO 9352
Resistance to liquids (water, oil, brake fluid, graphite, organic solvents, acids, detergents, petroleum products)	ISO 2812

SURFACE PROTECTION FAULT ANALYSIS

Consulting on problems with the production line
Advise on choosing the appropriate materials
Comparative analysis of different surface coating technologies

EXPERTS OPINION



CERTIFICATE WITH INTERNATIONAL VALUE

At SurTec we produce and sell chemicals for industrial and electro-chemical protection – galvanisation of metals. The successful marketing of our products is closely connected with technical support for our customers in the form of surface protection testing. When we encounter a situation which calls for a quick response in the central European region we choose LOTRIČ Metrology. We value their business-like manner, professionalism and their dedication. They are a suitable partner for all companies which must ensure quality of their products. For instance they have helped us solve our problem of acid zinc blistering where only their measurements and tests showed the source of our problem - the low quality raw material.

Edi Kokalj, managing director CE Europe at SurTec International GmbH – Brand of Freudenberg



COOPERATING BRINGS US NEW BUSINESS OPPORTUNITIES

We have been working with LOTRIČ Metrology group for some years now on the testing of galvanised protective coating, analysis of raw materials and monitoring of waste water. Analysis is done when developing and launching new products for clients on the automotive industry, such as VW, Daimler, Audi, BMW and PSA which have to meet very precise standards. We also use the test results for the optimisation and improvement of production processes. The great advantage of working together with LOTRIČ Metrology group is the proximity of their laboratory, the technical know-how of their experts and their quick response time. A great added value are their certificates on performed analyses with included justification as they help us gain more business opportunities.

Aleš Mesec, general manager at ISKRA ISD Galvanika d. o. o.

