
METALTEK
Test & Analysis Laboratory
More than a Lab
CORROSION TEST
DEVICES


METALTEK
METALTEK
TEKNOLOJİ

ABOUT US

Our company, which has a laboratory accreditation certificate in accordance with the **TS EN ISO/IEC 17025:2017** standard, provides testing services within the scope of international (DIN, EN, ISO, IEC, NATO AEP, ASTM, MIL) standards.

It helps all industrial companies that produce in the automotive, white goods, paint, defense, aviation, metal, general industry, electrical-electronics, glass and others to find their place in the world markets by obtaining the quality certificates they want with internationally valid test reports.

In addition, Metaltek, which is the only authorized authority in Turkey approved by the Swiss-based **QUALICOAT** Quality Institution, performs the necessary tests for Qualicoat approvals for powder paint, wet paint, chemical manufacturers and companies that produce and coat aluminum with powder paint.

With the **ISO/IEC 17043:2023** accreditation, we have added another quality system to our company and have reached the position of an arbitrator laboratory competent to conduct comparison tests between laboratories.

PRODUCTION OF TEST DEVICES

METALTEK, the first laboratory to receive an accreditation certificate within the scope of natural aging corrosion tests in Turkey, started producing test devices in 2022. We are happy to share our strong knowledge and experience with you through these products.

Our expertise in our testing services has been transferred to the production of test cabins and devices as a Turkish brand. You will be very pleased with these test cabins and devices under the METALTEK guarantee and brand that we have built based on the precision and accuracy we show while performing the tests.

With corrosion test cabinets, you will have the opportunity to determine both the coating performance of your products and to perform process and surface treatment control. Before shipping your productions, you will have the necessary information and if there are any errors, you will be able to correct them or record the appropriate productions after the tests performed on the samples taken, thus ensuring the sustainability of quality.

Comparative performance determinations of R&D products, comprehensive quality control and reliable results, sustainable high quality and more...

Affordable Price

Rapid Technical Service

Spare Parts

Test Standard Trainings

METALTEK
Test & Analysis Laboratory
More than a Lab

Salt Spray Test Cabinet

EN ISO 9227 / ASTM B117 / ASTM B368 / ASTM G85 / MIL STD 810 H

Salt spray test methods aim to reveal the corrosion resistance of coatings and surface treatments on metal surfaces.

Simulate natural atmospheric corrosion with accelerated laboratory tests and discover the corrosion life of your products against marine influences in the outdoor environment.

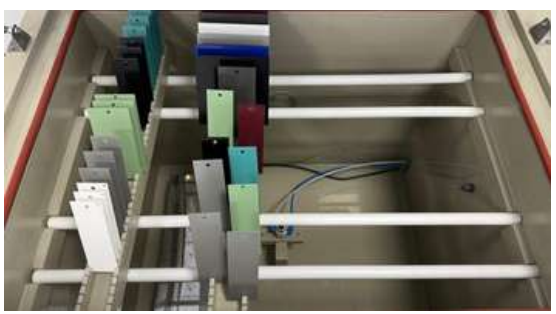
The test method involves an accelerated corrosion attack on panels or samples and demonstrates the protective durability of coatings. After the panels or finished products have been in the chamber for a period of time, the appearance of corrosion formation (oxides) is assessed.

The test duration depends on the corrosion resistance of a coating; the more corrosion-resistant the coating, the longer the test period without showing signs of corrosion.

The test cabinet consists of a closed test chamber using a nozzle to atomize the salt solution, usually 5% sodium chloride solution, into the chamber with a temperature of 35 degrees celsius. This produces a corrosive environment of dense saline fog in the chamber so that parts exposed in it are subjected to severely corrosive conditions.

EN ISO 9227 / ASTM B117: (Neutral Salt Fog Resistance Test) Test samples are exposed to a 5% concentration of salt fog in a 35 ± 2 °C cabin without interruption for the required test period.
EN ISO 9227 / ASTM G85: (Acetic Acid Salt Fog Resistance Test) In the cabin at 35 ± 2 °C, a 5% concentration salt water solution is sprayed onto the test pieces continuously for the desired test period, with the pH adjusted with acetic acid in the range of 3.1 - 3.3.
EN ISO 9227 / ASTM B368: (Copper Accelerated Acetic Acid Salt Fog Resistance Test) The purpose of the test is to examine the effects that will be observed on the surface when the sample is in polluted atmospheres.
The test samples are exposed in a cabin at 50± 2 °C. Test solution: pH value is adjusted to 3.1 - 3.3 with 5% copper II chloride dehydrate addition and Acetic acid.

Zinc plated bolts



METALTEK
Test & Analysis Laboratory
More than a Lab

Salt Spray Test Cabinet

EN ISO 9227 / ASTM B117 / ASTM B368 / ASTM G85 / MIL STD 810 H

Volume (liters)	600	800	1100
Panel Capacity (7.5x15 cm)	140 pieces	160 pieces	240 pieces
Internal Dimensions (cm) length x depth x height	96 x 70 x 74 (35)	100 x 80 x 77 (35)	140 x 80 x 77 (35)
External Dimensions (cm) length x depth x height	180 x 130 x 100	180 x 130 x 100	210 x 130 x 100
Weight (kg)	200-250	220-270	240-290
Sample Type	Panel / Finished product		
Operating Temperature Range	Ambient to + 50 °C		
Cabinet Material	Polypropylene		
Control System	Manual		
Electricity	220 V		
Origin	Turkey		

To operate these devices, following systems are required to have;

- *Pure water unit, (1-2 lt/h flow rate, providing 5 µs/cm conductivity)*
- *Air compressor, (providing 6-8 bar pressure)*
- *Water drain, (for the discharge of salt water to the outside)*
- *Exhaust outlet, (10 cm diameter, opening to the outer atmosphere)*

METALTEK
Test & Analysis Laboratory
More than a Lab

Humidity Resistance Test Cabinets

EN ISO 6270-1 / EN ISO 6270-2 (CH) / ASTM D2247

Humidity resistance tests are preferred for determining the resistance of paint films, paint systems and related products to high humidity conditions according to the requirements in the coating or product specifications.

By simulating the effects of rain and dew that may be exposed in the atmospheric outdoor environment, the success of the coating and surface treatment is revealed. Methods can be applied to coatings on both porous base materials such as wood, plaster and gypsum board and non-porous base materials such as metal.

Test methods involve heating water to a specific temperature to create water vapor production within the test chamber.

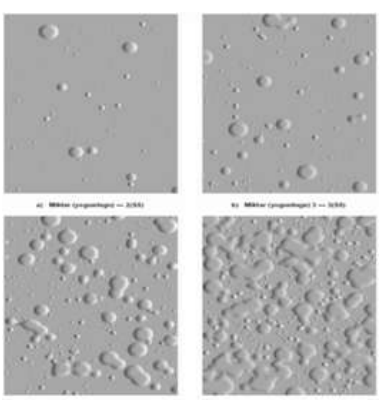
Coated specimens are placed in an enclosed chamber containing a heated, saturated mixture of air and water vapor. The test panels or finished products are surrounded by moisture enriched air, allowing the water to be absorbed by the coating and cause damage.

Water permeates the coating at rates that are dependent upon the characteristics of the coating. Any effects such as color change, blistering, loss of adhesion, softening, or embrittlement are observed and reported. The exposure condition is varied by selecting the duration of the test.

Failure in tests at 100 % relative humidity may be caused by a number of factors including a deficiency in the coating itself, contamination of the substrate, or inadequate surface preparation. This practice is therefore useful for evaluating coatings alone or complete coating systems.

ISO 6270-1 : Condensation (single-sided exposure) Panel samples are used for testing. One surface of the test panel is exposed to approx.100 % relative humidity environment at 40°C, while the other side is exposed to ambient conditions. Then, coated samples are examined for deterioration in the coating (such as blistering, staining, softening, wrinkling and becoming brittle) and deterioration in the base material at the end of the humidity tests.

ISO 6270-2 (CH) / ASTM D2247: Condensation (atmosphere with constant humidity) Methods define continuous and constant humidity within a chamber where condensation occurs on all the surface. In both methods, the panel or the finished products can be tested. Approx. 100 % condensation is presented on to test specimens inside the 40 °C cabinet chamber. At the end of the humidity tests, coated pieces are examined for deterioration in the coating (such as blistering, staining, softening, wrinkling and brittleness) and deterioration in the base material.



METALTEK
Test & Analysis Laboratory
More than a Lab

Humidity Resistance Test Cabinets

EN ISO 6270-1

Volume (liters)	200
Panel Capacity (7.5x15 cm)	64
Internal Dimensions (cm) length x depth x height	120 x 45 x 40
External Dimensions (cm) length x depth x height	150 x 60 x 120
Weight (kg)	70-90
Sample Type	Panel
Operating Temperature Range	Ambient to + 40 °C
Relative Humidity	≥ %95
Cabinet Material	Polypropylene
Control System	Manual
Electricity	220 V
Device Origin	Turkey

To operate these devices, you must have the following systems:

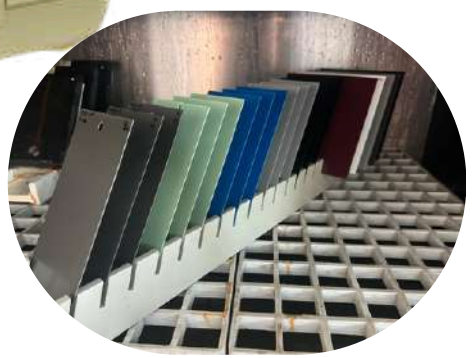
- *Pure water, (max. 5 µs/cm conductivity)*
- *Water drain, (for the discharge of used water)*

METALTEK
Test & Analysis Laboratory
More than a Lab

Humidity Resistance Test Cabinets

EN ISO 6270-2 (CH) / ASTM D2247

Volume (liters)	300	400
Panel Capacity (7.5x15 cm)	100	240
Cabinet Type	Countertop	FLoor Mounted
Internal Dimensions (cm) length x depth x height	80 x 54 x 60 (19)	96 x 50 x 60 (35)
External Dimensions (cm) length x depth x height	110 x 80 x 70	135 x 80 x 110
Weight (kg)	60-80	110-130
Sample Type	Panel / Finished Product	
Operating Temperature Range	Ambient to + 40 °C	
Relative Humidity	≥ %95	
Cabinet Material	Polypropylene	
Control System	Manual	
Electricity	220 V	
Device Origin	Turkey	



To operate these devices, you must have the following systems:

- *Pure water, (max. 5 µs/cm conductivity)*
- *Water drain, (for the discharge of used water)*

METALTEK
Test & Analysis Laboratory
More than a Lab

UV Fluorescent Type Environmental Aging Test Cabinet

ISO 16474-3 : Method A
ISO 4892-3 : Method A

UV resistance tests are conducted to evaluate how materials exposed to sunlight behave and degrade over time, especially when subjected to environmental factors in natural settings.

Based on outdoor conditions, there are three main challenging parameters in these test.

- The destructive effect of solar radiation
- Increased surface temperature due to radiation
- Humidity

UV fluorescent lamps, UVA 340 or UVB 313 types, expose the test samples to continuous radiation at a fixed wavelength in this test device. Since UV rays are the most damaging radiation source from sunlight, they become highly destructive and fast-resulting tests, especially for painted parts.

In addition to UV radiation, the conditions are made more challenging by the temperature and humidity parameters inside the cabinet. Wetting is usually produced by condensation of water vapour onto the exposed specimen surface.

These devices are especially suitable for use in R&D stages or when product comparisons are required.

The test device has an internal design that allows testing of products with certain heights as well as panel samples.

METALTEK
Test & Analysis Laboratory
More than a Lab

UV Fluorescent Type Environmental Aging Test Cabinet

ISO 16474-3 : Method A
ISO 4892-3 : Method A

Volume (liters)	300
Panel Capacity (7.5x15 cm)	30 pieces
Cabinet Type	Countertop
Internal Dimensions (cm) length x depth x height	100 x 40 x 60
External Dimensions (cm) length x depth x height	120 x 60 x 100
Weight (kg)	150-200
Sample Type	Panel
Operating Temperature Range	Ambient to + 60 °C
Relative Humidity	≥ %90
Irradiance value	0.80 W/m2/nm fixed
Lamp type used	UVA 340 nm or UVB 313 nm Fluorescent
Number of lamps used	4 pieces
Cabinet Material	Aluminum + powder coated outer case
Control System	Manual
Electricity	220 V
Device Origin	Turkey

To operate these devices, you must have the following systems:

- *Pure water, (max. 5 µs/cm conductivity)*
- *Water drain, (for the discharge of used water)*

METALTEK
Test & Analysis Laboratory
More than a Lab

Cyclic Corrosion Test Cabinet

ISO 11997-1, Ford CETP, VW PV 1210, GMW 14872, SAE J2334 ..

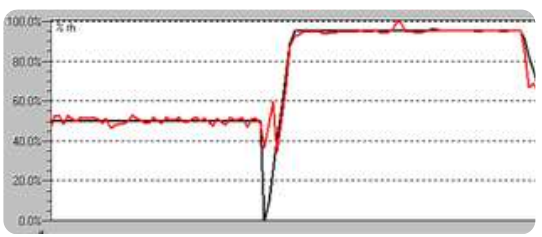
In cyclic corrosion tests, samples are exposed to different environments in a repeating cycle. Cyclic tests simulate all environments that products may be exposed to when determining their lifespan or quality. It provides information about the resistance of products according to their aggressiveness and requirements.

Simple tests consist of two-state cycles: fog and drying. More complex operations (especially automotive standards) require multi-stage cycles that include humidity and drying as well as salt fog or shower functions.

It is recommended to test the finished products in these tests since welding areas, corner edges, inside holes and joints on the finished products are the most difficult areas where corrosion can occur. Therefore, it is important for both the manufacturer and the customer to test the finished products as long as the size of the parts allows.

Cyclic tests are performed in chambers that have special and many functions.

Our cyclic corrosion test cabinets have a PLC control system. This allows you to set up the desired cycles and record them. This way, you can monitor and control the steps of the test cycle and also obtain the graph of the test process.



METALTEK
Test & Analysis Laboratory
More than a Lab

Stone Chip Test Devices

ISO 20567-1 / SAE J400 / ASTM 3170

In the automobile industry, multi-layer paint coatings are applied to car bodies for protection. Grit, road-metal, and other materials can damage these coatings in such a way that individual layers come off or the whole coating delaminates from the substrate.

The stone-chip resistance of the coating under test is checked by projecting a large number of small sharp-edged bodies onto it in a short period of time. These test consist of projecting standardized road gravel by means of a controlled air blast onto a suitable test panel.

The testing apparatus is called a gravelometer, designed to contain road gravel, a test panel holder, and a gravel projecting mechanism based on air pressure.

At the end of the test, the resistance of single-layer or multi-layer coatings to multiple mechanical impacts is revealed.

SAE J400 / ASTM 3170:
The test is designed to reproduce the effect of gravel or other media striking exposed paint or coated surfaces of an automobile. The specific intent of the test is to evaluate organic surface coatings or systems on flat test panels; however, it may be possible to extend this type of testing to finished parts or other types of materials.

ISO 20567-1
This standard specifies three methods for the evaluation of the resistance of automobile finishes and other coatings to chilled-iron grit projected onto the surface under test to simulate the impact of small stones. The material used in the test is chilled-iron grit, which is projected onto the coating at a defined angle using compressed air.

METALTEK
Test & Analysis Laboratory
More than a Lab

Water Jetting Test Device

ISO 16925

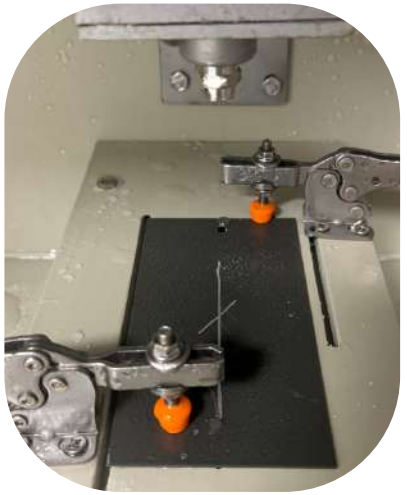
The test method is used for the evaluation of the resistance of coatings to pressure water-jetting. Consequently, the water-jetting tester simulates the effects of pressurized hot water on coatings.

The resistance of a coated test specimen to the loss of adhesive strength is tested by means of defined pressure water-jetting.

The extent of the damage of the test specimen primarily depends on, besides the adhesive strength, the space between the nozzle and test piece, the mass flow rate, the test time, the geometry of the nozzle, the impact area, the angle of impact, the water temperature of the jet, as well as the cutting and scribing tool.

The evaluation is carried out by means of a visual comparison of pictures, in which characteristic values are related to the peeled-off areas.

Pressure water jetting tester consists of a high-pressure pump and a nozzle. A high-pressure pump transports heated water from the storage chamber and sprays it onto the scribed sample. Cuts or scribes should be introduced through the coating into the substrate.



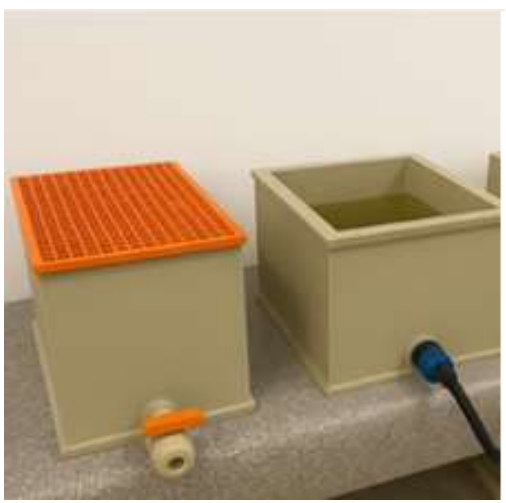
ADDITIONAL EQUIPMENT

PAINT CUTTING BLADES:

- One of the most important evaluation/success parameters in corrosion tests is the corrosion progression around the scratch.
- Therefore, X, I, or T-shaped scratches should be applied to painted surfaces before testing. Blade widths of 1 mm or 2 mm are most commonly required by test standards and specifications.

PRODUCTS MADE OF POLYPROPYLENE:

- Surface preparation baths (degreasing, rinsing, etching, chromating, phosphating)
- Water tanks (on wheels)
- Test cassettes for placement of test panels (6-degree or 20-degree angled)



ADDITIONAL EQUIPMENT

CROSS-CUT (ADHESION TEST) BLADES:

- These blades are used in the adhesion test, a crucial mechanical test for paint and topcoat coating systems.
- The Cross-Cut test reveals the adhesion performance of the coating system to the base metal and is used to check the success of surface preparation.
- You can choose between blades with 1/2/3mm spacing.

TEST PANELS :

Aluminum and Steel panels that you need to use in the tests have been prepared for you.

ALUMINUM PANEL

- MT-BARE : Untreated, top center 6 mm perforated panel
- MT-NON : Nonchromate coated, top center 6 mm perforated panel
- MT-FULL : Surface preparation and powder coated panel

STEEL PANEL

- MT-S-BARE : Untreated, top center 8 mm perforated panel
- MT-S-SRF : Requested surface treatment, 8 mm perforated panel

METALTEK TEKNOLOJİ LABORATUVARI EĞİTİM VE DANIŞMANLIK HİZMETLERİ SANAYİ TİCARET LİMİTED ŞİRKETİ

ADDRESS : SARAY OSB MAH. K3 STREET. NO : 2/2
HAB ORGANIZED SARAY/KAHRAMANKAZAN
ANKARA

Tel : +90 312 385 52 01 – 03
Fax : +90 312 385 52 02
Mobile: +90 506 774 02 86

For offers, additional information and all your questions, you can write to sebnem.yucel@metaltekkimya.com.tr, info@metaltekkimya.com.tr.