

Weathering



Do your products withstand sunlight?

Many of the materials we encounter daily are affected by sunlight and other environmental and weather conditions. This applies to materials such as plastic, paint, varnish, printing ink, rubber, wood and textiles. Other products such as e.g. active substances in medicine or foods are also affected by sunlight. Weather and sunlight impacts may occur as changes in colour, radiance, blisters, delamination and chemical activity. The right side doll's jacket above has been tested for 451 hours (almost 19 days) according to ISO 105-B04 in a Xenon test chamber. In the long run mechanical properties may change, which in turn may lead to failure of the product.

Exposure

Light, temperature, water and humidity are some of the most important parameters when testing the weathering. When testing, one differs between fastness to light and constant weather resistance. When testing for fastness to light, the sample is only exposed to the impact of light, without the presence of water or moisture. When testing

for constant weather resistance the material is also exposed to water.

Natural exposure

Depends on:

- Geographical location
- Season
- Annual varieties.

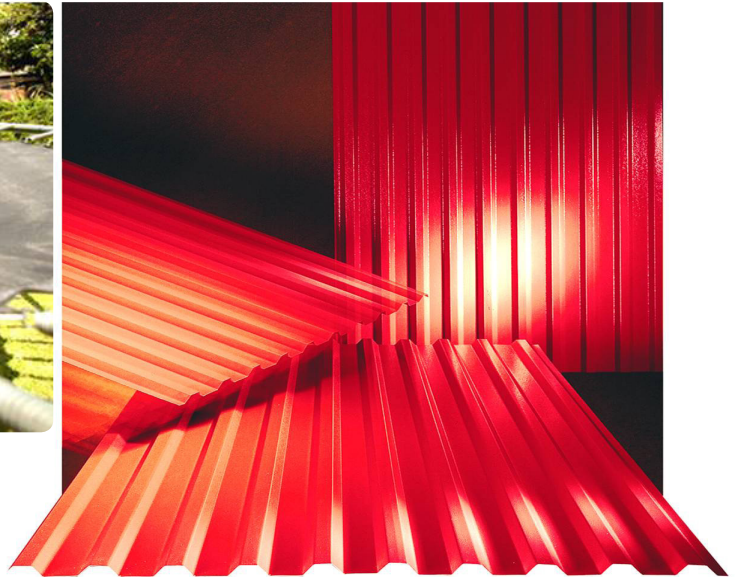
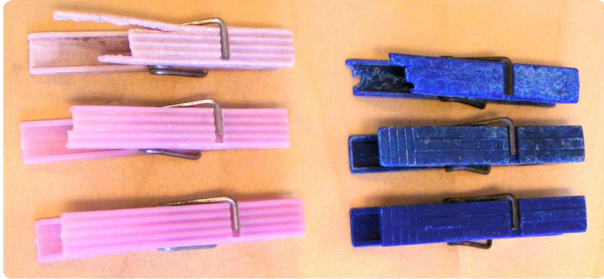
Takes a long time.

Laboratory exposure

Advantages:

- Monitored conditions
- Reproducible results
- Acceleration.

FORCE Technology provides fastness to light tests and weathering tests with Xenon as well as UV test chambers. The above may be applied in combination with a salt mist test chamber, a freezer or other kinds of impact. We also provide outdoor real time exposure.



Plastic materials may fade and disintegrate by the sun and weather conditions. This is very obvious in the pegs in the picture to the left. The two top pegs have been applied outdoor, the middle ones under a pent roof and the last two in a cellar for the same period of time. The choice of material may also be significant, as the pink pegs have only been in use for half as long as the blue, but are much more worn.

The Xenon device

The Xenon lamp system provides the best imitation of natural sunlight and thus the best imitation of real-time exposures. Tests simulating sunlight through window glass may also be performed. The exposure may be adjusted to the climatic conditions of the environment in which the final product is to be used. We can monitor the temperature and humidity and spray samples with water from both sides. We also perform condensation tests.

The UV device

This device can test the impact of the daylight in the UV-spectrum on the materials and the impact of moisture.

We perform a wide range of standard exposures, but we also adjust exposures so that they will fit any given task or assignment best possible.

Test and assessment after exposure

We always pick the subsequent tests in order for them to determine whether the product has changed significantly as regards usage.

The above often includes assessment of colour and a possible change in brightness. Furthermore, we perform various mechanical tests, chemical analyses and other relevant assessments, depending on the product to be tested.

Application

The analysis results are often used for:

- Comparing and classifying materials for a given assignment
- Comparing a new material to the existing when changing materials
- Estimating the expected service life/durability of products
- Documenting in connection with legal requirements and marketing.

Does your paint/varnish/sealing endure the environmental impacts to which it is exposed?

Coated metal plate tested according to Norsok M-501. The sample was very disintegrated and had to be withdrawn before time.



Further information

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