

JIS

JAPANESE INDUSTRIAL STANDARD

Methods for weathering test of aluminium and aluminium alloys

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Methods for weathering test of
aluminium and aluminium alloys

H 0521-1996

1. Scope This Japanese Industrial Standard specifies the methods for weathering test by exposing a sample outdoors for the purpose of examining deterioration with age of chemical and physical properties under natural environment of raw materials and surface treatment materials of aluminium and aluminium alloys.

Remarks: The following standards are cited in this Standard:

- JIS H 0201 Glossary of terms used in the surface treatment of aluminium
- JIS H 4001 Painted aluminium and aluminium alloy sheets and strips
- JIS H 8601 Anodic oxide coatings on aluminium and aluminium alloys
- JIS H 8602 Combined coatings of anodic oxide and organic coatings on aluminium and aluminium alloys
- JIS H 8681 Test methods for corrosion resistance of anodic oxidation coatings on aluminium and aluminium alloys
- JIS K 5400 Testing methods for paints
- JIS L 0804 Grey scale for assessing change in colour
- JIS Z 2201 Test pieces for tensile test for metallic materials
- JIS Z 2241 Method of tensile test for metallic materials
- JIS Z 2381 Recommended practice for weathering test
- JIS Z 8720 Standard illuminants and sources for colorimetry
- JIS Z 8730 Colour specification—Colour differences of non-luminous object colours
- JIS Z 8741 Method of measurement for specular glossiness
- JIS Z 9112 Classification of fluorescent lamps by chromaticity and colour rendering property

2. Definitions For main terms used in this Standard the definitions in JIS H 0201 apply.

3. General matters General matters common to test methods shall be in accordance with JIS Z 2381.

4. Test specimen

4.1 Shape and dimensions of test specimen The shape and dimensions of a test specimen used for weathering test shall be suitable for the test purpose.

4.2 Finish of test specimen The test specimen shall be finished to the surface state conforming to the purpose.

4.3 Marks of test specimen In order to identify test specimens, a mark shall be marked at a position which is free from hindrance for weathering test and its evaluation.

4.4 Storage of test specimen for retention The test specimen for retention shall be stored in a cool dark place by putting into a desiccator.

5. Pretreatment of weathering test specimen A weathering test specimen, in order to improve reproducibility by decreasing fluctuation in results of weathering test, shall be subjected to a test after carrying out the following treatments as occasion demands.

- (1) Degrease with solvent which does not corrode the basis material of a test specimen.
- (2) After degreasing, wash sufficiently with methanol or ethanol, then dry as fast as possible by using a hot air dryer or the like, and store it in a desiccator. In this case, do not handle the test specimen with empty hands.
- (3) Treat the surface treating material as described in (2.1.4) of 3.3 in JIS K 5400.

6. Method for exposure of test specimen

6.1 Setting up of exposing rack An exposing rack (see Fig. 1) shall be set up as follows.

- (1) The exposed surface shall be the due south surface, and the angle from the horizontal plane shall be 30° or 45°.
- (2) The ground surface shall be covered by a suitable method so that it is not affected by thermal radiation.
- (3) The height from the bottom end part of the exposed surface to the ground surface shall be 500 mm or over.
- (4) The component of the exposing rack shall be aluminium alloy, wood, or rust prevention treated steel.

6.2 Setting up of test specimen A test specimen shall be set up by either of bolt clamping via an insulating material or insertion fit as given in Fig. 2.