

PREPARATION OF PANELS FOR CORROSION TESTS

Application

This procedure describes the preparation of steel and cast iron panels and steel and non-ferrous strips for corrosion resistance tests of rust preventive compounds.

Apparatus Required

Sand or Bead Blast Equipment

Small model capable of producing a surface finish of 90 - 102 micrometres. Apply suitable air pressure using a ceramic or cast iron nozzle (twice the diameter of the air tube). Because of the possible contamination of the sand, sand blasting should be used only when the unit is to be used for one type of panel material.

Desiccator

Shall be of sufficient size to hold the test panels.

Laboratory Tongs

Materials Required

Sand or Glass Beads

Sand - Ottawa sand supplied to meet ASTM C 190.
Glass beads - No. 12.

Abrasive Paper

120, 180, 240 or 320 grit silicon carbide abrasive paper.

Solvents

Petroleum ether, acetone, methanol and petroleum naphtha; CAUTION: Low flash point*.

Steel Panels

Cold-rolled low carbon steel exposed body stock, 50 x 75 mm, with corners rounded off and a deburred hole at one end for use in suspending the panel in liquid.

Note: Larger panels may be used if so specified in the applicable Engineering Material Specification or Manufacturing Standard.

Date	Action	Revisions
2001 07 24	Revised	Editorial – no technical change A. Cockman
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Cast Iron Panels

ASTM A 126 gray cast iron, approximately 50 x 75 x 2 to 6 mm thick.

Steel and Non-Ferrous Strips

25 x 100 x 6 mm; Material: SAE 1020 steel, ASTM A 126 gray cast iron, ASTM B 36 Alloy 4 brass; ASTM B 152 Type B 86 Alloy AG40A zinc and cadmium or electroplated cadmium on steel or aluminum (plated to ESF-M1P4-A).

Cotton "Wool"

Cotton balls.

Lint-free Cloth

Desiccant

*Refer to Industrial Hygiene for health and safety comments.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

Panels are prepared by sand or bead blasting or polishing or solvent wiping alone as specified by the applicable test method, Engineering Material Specification or Material Standard.

Note: Do not sand or bead blast or polish the electroplated cadmium on steel. Wash only with a solvent such as petroleum ether.

Sand or Bead Blasting Steel and Iron Panels

1. Remove any oil from the surface of the steel or cast iron panels with a suitable solvent (refer to Materials Required).
2. Sand or bead blast the panels to a surface finish of 90 - 102 micrometres by placing the panels flat and then abrading for approximately 5 minutes with the nozzle held 70 - 80 mm from the surface.
3. Hold the panels with tongs and rap on a clean surface to remove dust.
4. Immediately place the panels into a desiccator over the desiccant until required.

Note: The panels shall be used on the same day as prepared and shall be handled with tongs at all times to prevent fingerprint corrosion.