

CHIP RESISTANCE TEST FOR PAINTED PANELS**Application**

This test method is used to determine the chip resistance of painted panels and body parts and painted plastic panels and parts.

Apparatus Required**Gravelometer**

The Gravelometer (see attached sketch) consists of an elongated box with a hopper and nozzle system on one end and a slot for the insertion of a test panel on the other end. Steel shot is poured into the hopper where a stream of air propels the shot onto the test panel.

The nozzle system consists of - beginning from the main line air supply side - a 200 mm, 1/2 inch (12.5 mm) air inlet pipe with an inner diameter of 11.5 mm, a tee-piece to fix a pressure gage with a range of 0 to 1.6 bars, a 150 mm, 1/2 inch (12.5 mm) air inlet pipe with an inner diameter of 11.5 mm, and a nozzle which is exactly described in an additional drawing.

To guarantee a laminar air stream during the test, all pipes have to be polished on the inner surface. From the inlet to the outlet of the air the inner diameter of the pipe system must be exactly 11.5 mm. The joint from the main line air pressure to the pipe has to be made by a two meter, 25 mm metal hose.

The test air pressure will be adjusted by a ball cock. This cock is fixed behind the main line air pressure gage. This gage has a range of 0 to 16 bars, and it is used to control the static pressure at closed cock. During the test the flow pressure must be controlled by this gage all the time. A second gage of a range from 0 to 6 bars must be fixed immediately behind the ball cock. By this gage it is possible to control the pressure which is reduced only by the position of the cock.

All gages must be tested every 6 months. It is recommended to have a primary pressure of 7 bars. It is not permitted to deviate from the dimensions of these specified components.

Source:

Messrs.Erichsen
5870 Hemer Sundwig
Germany

or

Pearson-Panke Equipment Ltd.
1-3 Halegrove Gardens
London NW7 3LR

Date	Action	Revisions
2001 03 13	Revised	Editorial – no technical change A. Cockman
1994 02 28		

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Steel Shot

13.6 kg of SAE 780 shot with the following additional requirements:

Size

100 % to pass through a No. 7 screen (2.8 mm)
100 % to be retained on a No. 10 screen (2.0 mm)

Shape

To be as near 100 % round as possible.

Hardness

90 % to be RC 42-48

One litre of water containing 5 g of potassium dichromate is used to wet the steel shot and then dried to prevent rusting of the shot in storage.

Source: Messrs. Noltén
4200 Oberhausen
Europahaus
Germany

Steel Test Panels

Steel body skin panels 100 x 300 mm, prepared according to the requirements of the relevant material specification.

Evaluation Standards

4 black and white photographs.

Source: Central Laboratory
Ford-Werke AG
5000 Köln 60
West Germany

Calibration of the Gravelometer

For calibration of a Gravelometer a master nozzle and specially prepared calibration panels are required. These panels prepared with three different test enamels which give after shot rating 0, rating worse than 3 with particular chipping of enamel and rating worse than 3 with complete chipping, can be obtained from Materials Laboratory Product Engineering. The Central Laboratory Cologne is in possession of the master nozzle which can be obtained on request for the calibration exercise.