

**RECOMMENDED
PRACTICE SAE J275**

APPROVED AS ANSI Z265.1-1973
BY AMERICAN NATIONAL
STANDARDS INSTITUTE

**TEST METHOD FOR DETERMINING
WINDOW FOGGING RESISTANCE
OF INTERIOR TRIM MATERIALS**

SPONSORED BY
SOCIETY OF AUTOMOTIVE ENGINEERS, INC.

PUBLISHED BY
SOCIETY OF AUTOMOTIVE ENGINEERS, INC. TWO PENNSYLVANIA PLAZA, N.Y., N.Y. 10001

Z265.1

Approved by American National Standards Institute June 8, 1973

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Printed in U.S.A.

TEST METHOD FOR DETERMINING WINDOW FOGGING RESISTANCE OF INTERIOR TRIM MATERIALS—SAE J275

SAE Recommended Practice

Report of Nonmetallic Materials Committee approved November 1971.

1. Scope

1.1 To simulate the formation of a condensate on the inside surface of clear glass when interior trim materials are exposed to an external source of radiant energy.

1.2 To provide a method of measuring the effect of condensate formation on light transmittance.

2. Materials and Equipment Required

2.1 Heating Unit (Fig. 1)

2.1.1 500W infrared lamp (nonreflective type) (General Electric "Industrial" or equivalent).

2.1.2 Parabolic reflector 10 in (254 mm) deep with 10 in (254 mm) ID bell.

2.1.3 Cylindrical draft shield of 20 gage galvanized steel metal 15 in (381 mm) in height and 23 in (584.2 mm) ID lined with 0.001 in (0.0254 mm) gage aluminum foil.

2.1.4 Circular piece of 0.001 in (0.0254 mm) gage aluminum foil 18 in (457.2 mm) in diameter with a 10 in (254 mm) diameter concentric circle marked on surface. This piece of foil to lie flat on an 18 in (457.2 mm) diameter turntable capable of revolving at 3 rpm. A ring with a thickness of $\frac{1}{4}$ in (6.35 mm) and $1\frac{5}{8}$ in (41.28 mm) ID to be fastened to the foil at the center point.

2.1.5 Thermocouple and lamp controller to maintain specified temperature on surface of reference specimen (West Instrument Corp. Model JP Controller or equivalent).

2.2 Condensing Unit (Figs. 2 and 3)

2.2.1 Six watch glasses, plain, ground edge, 75 mm in diameter. Lip of one watch glass to be notched to accommodate thermocouple lead to reference cell.

2.2.2 Six octagonal gaskets of $\frac{1}{32}$ in (0.79 mm) silicone rubber, $3\frac{5}{8}$ in (92.08 mm) cross corner with $2\frac{1}{4}$ in (57.15 mm) diameter hole in center (DuPont No. SR-5550 silicone rubber or equivalent).

2.2.3 Six clear glass cover plates, $\frac{1}{8}$ in (3.18 mm) thick, octagonal in shape, $3\frac{5}{8}$ in (92.08 mm) cross corner.

2.2.4 Circular reference specimen, $2\frac{1}{2}$ in (63.5 mm) in diameter. This reference specimen should be black in color and of similar composition to materials to be tested.

2.2.5 Circular test specimens, $2\frac{1}{2}$ in (63.5 mm) diameter.

2.2.6 Twelve No. 1 pad clips.

2.3 Measuring Assembly (Figs. 4 and 5)

2.3.1 Foot-candle meter (Weston's Model 614 or equivalent).

2.3.2 Light-tight box (Fig. 4).

2.3.3 Microscope illuminator with variable transformer (American Optical's Model 353 or equivalent).

2.3.4 Constant voltage transformer (Iola Electric Co. Model 302554 or equivalent).

3. Procedure

3.1 Place a circular test specimen into the concavity of a clean, dry, watch glass with the finished surface of the specimen facing upward. The convex surface of the watch glass will be down and against the circular piece of aluminum foil. A maximum of five specimens may be tested.

3.1.1 Place a gasket and then a clean glass plate on the ground edge of the watch glass and clip the condensing unit together with two pad clips. A strip of masking tape attached to the convex side of the watch glass will prevent slippage of the clips.

3.1.2 Prepare a reference condensing unit in the same manner as above, except introduce a thermocouple lead through the notched watch glass. Establish intimate contact between the black surface of the reference specimen and the thermocouple lead. The lead must remain in contact with the reference specimen throughout the test. Center this reference condensing unit upon the raised ring described in paragraph 2.1.4 so that the thermocouple wire will restrain it from revolving with the turntable. If the thermocouple wire is not stiff enough to restrain the reference unit, a fine wire between the reference unit clips and the draft shield will secure the unit in the central position.

3.1.3 Position the condensing units containing the test specimens on the circular piece of aluminum foil so that they are equally spaced and

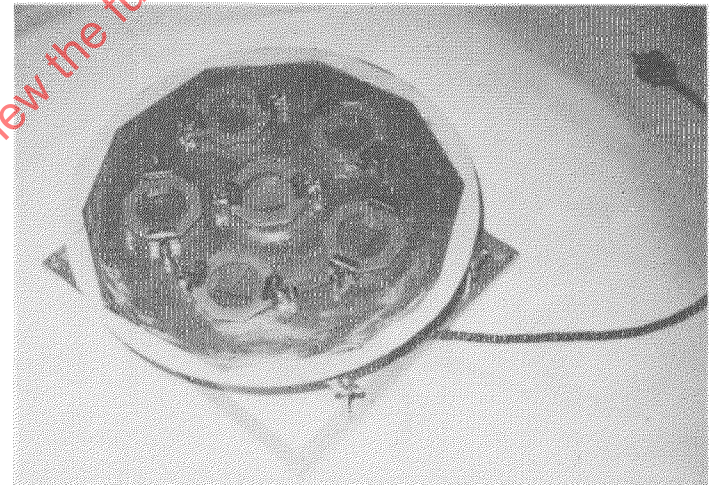


FIG. 2—ARRANGEMENT OF CONDENSING UNITS ON ALUMINUM FOIL

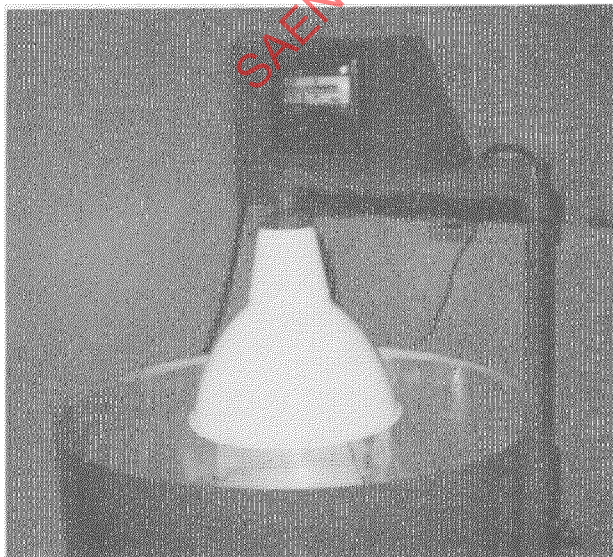


FIG. 1—HEATING UNIT

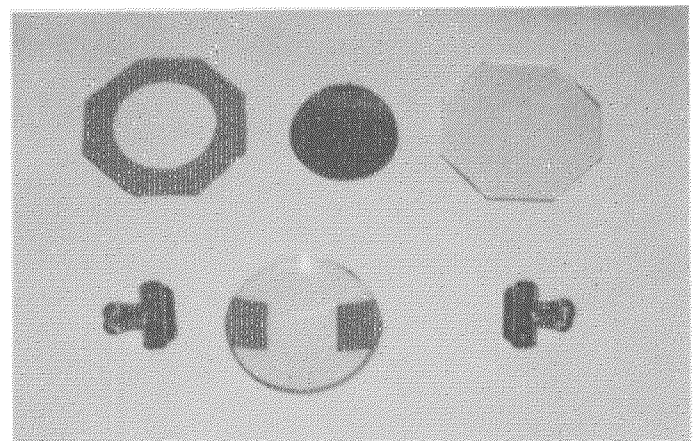


FIG. 3—COMPONENTS OF SINGLE CONDENSING UNIT