SOCIETY OF AUTOMOTIVE ENGINEERS, INC. • TWO PENNSYLVANIA PLAZA • NEW YORK, NEW YORK 10001

LAND SEA AIR SPACE

TECHNICAL REPORT J369

FLAMMABILITY OF AUTOMOTIVE INTERIOR TRIM MATERIALS— HORIZONTAL TEST METHOD—SAE J369

SAE Recommended Practice

Report of Nonmetallic Materials Committee approved March 1969.

Scope—This method of test is intended for use in the measurement of the burning rate of materials used for automotive interior trim which includes, but is not limited to, the components used in items such as seats, arm rests, visors, crash pads, door and quarter panels, headliners, floor coverings, occupant restraints, headrests, plastic trim components, and any other items that are used in automotive interiors.

Apparatus Required

1. Burner—A Tirrill, Bunsen, or equivalent burner with a gas flow regulating valve and ⅜ in. inside diameter tube, so positioned in the cabinet that the center of the end of the specimen shall be directly above the tip of the flame when the specimen is in place.

2. Burner Fuel—A synthetic gas mixture of the following composition:

55 ± 1% hydrogen
24 ± 1% methane
3 ± 1% ethane
18 ± 1% carbon monoxide

The mixture shall have a specific gravity of 0.380 ± 0.005 and a Btu content of 539 ± 7 per cubic foot (dry basis) at 21 C (69.8 F). It shall be furnished at the burner at a pressure of 2.5 ± 0.25 psi.

(Note: This is known as Matheson "B" Gas and may be obtained from Matheson Co. Inc., 333 Paterson Plank Road, East Rutherford, N.J.)

3. Specimen Holder—Consisting of two identical U-shaped metal clamps made from chrome or nickel plated steel, or other metal that will not corrode.

Dimensions for these clamps are shown in Fig. 1. Lines shall be engraved or scribed on both surfaces of each clamp located as shown in Fig. 1.

4. Specimen Holder Support—The specimen holder shall be supported *horizontally* so that the top of the burner is ¾ in. below the top surface of the lower specimen clamp. A suitable arrangement for supporting the specimen holder is shown in Fig. 2.

5. Metal Cabinet (See Fig. 3)—The cabinet for protecting the specimen from drafts shall be fabricated from stainless steel and/or aluminum and shall be 15 in. long, 8 in. wide, and 14 in. high. It shall have a removable top and a glass observation window in front. For ventilation, the base shall have five ¾ in. diameter holes equally spaced along each side of the cabinet. In addition, there shall be a ½ in. ventilating clearance running around the perimeter of the cabinet just below the top. At one end of the cabinet there shall be a door to permit insertion of the specimen and specimen holder. At the other end, a small hole shall be drilled near the bottom to accommodate the tubing which connects the gas line to the burner. The cabinet shall have ⅜ in. risers to permit the circulation of air.

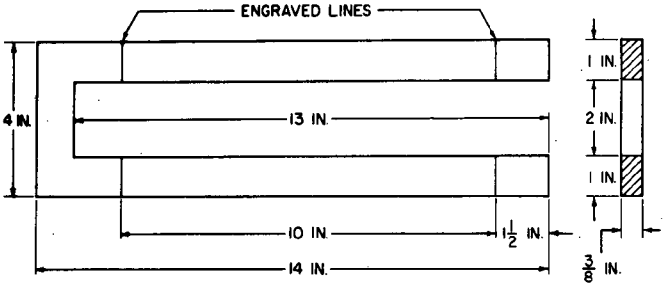

FIG. 1

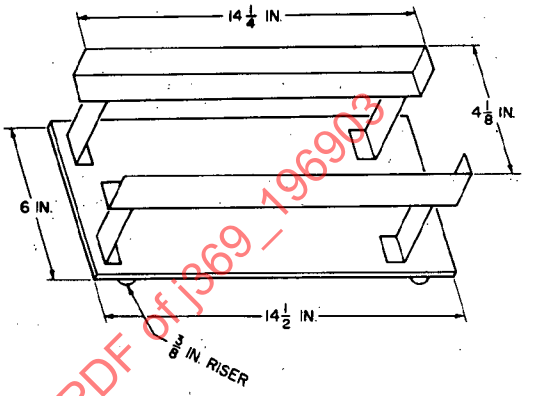

FIG. 2

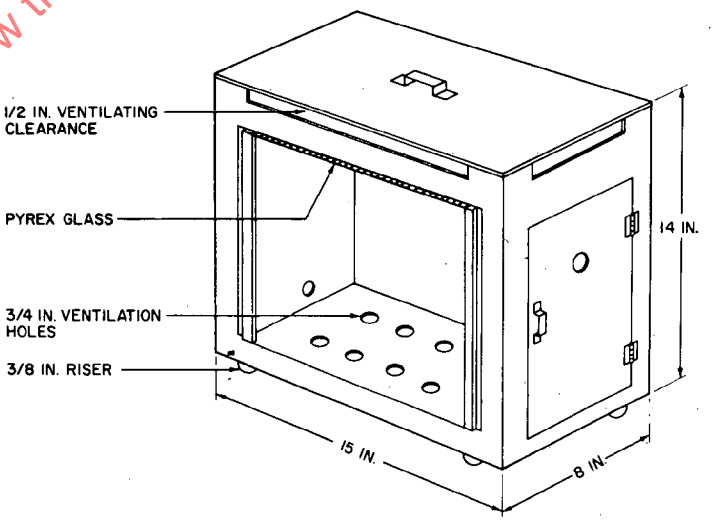

FIG. 3

6. Combing Device—A comb 4 in. wide with 7 to 8 smooth rounded teeth per inch.

7. Timing Device—A stopwatch which will indicate time to ⅕ sec.

Test Specimens—A minimum of three rectangular test specimens 4 in. by 14 in. shall be prepared and tested.

Maximum thickness of any specimen shall be ½ in. If any material to be tested exceeds this, it shall be cut down to a thickness of ½ in. and will include the primary surface of the part.

It has been found that in some fabrics a more severe burn rate results in one direction of the weave than in the other. The long dimension of the specimen should be parallel to the more severe burn rate direction of the material.

If this characteristic for a material has not been established previously, then duplicate sets of specimens shall be tested with both the warp and fill directions parallel to the longer dimension of the specimen to determine the more severe burn rate.