

(Unless denoted otherwise, all dimensions are in millimetres.)

FIGURE 2A. "GLOBAR" RADIANT PANEL

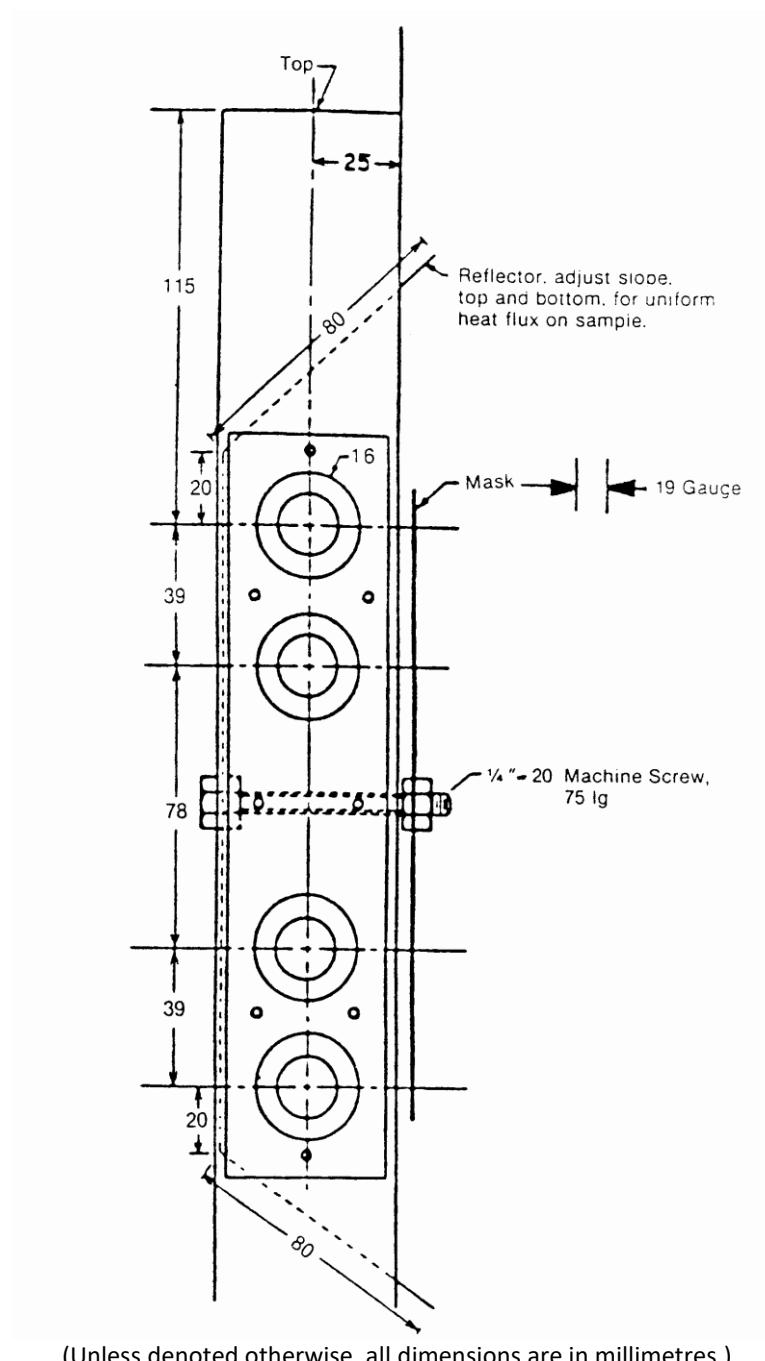
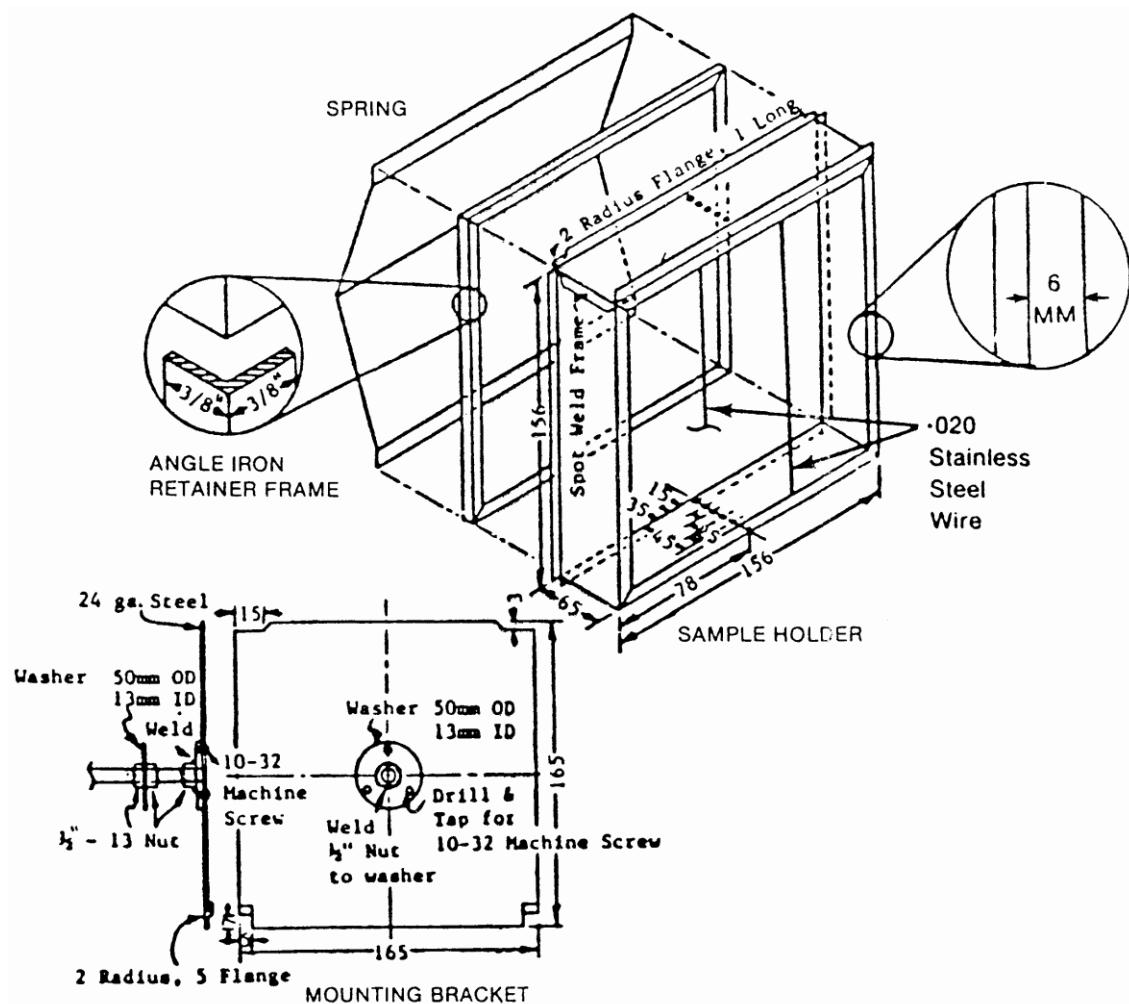
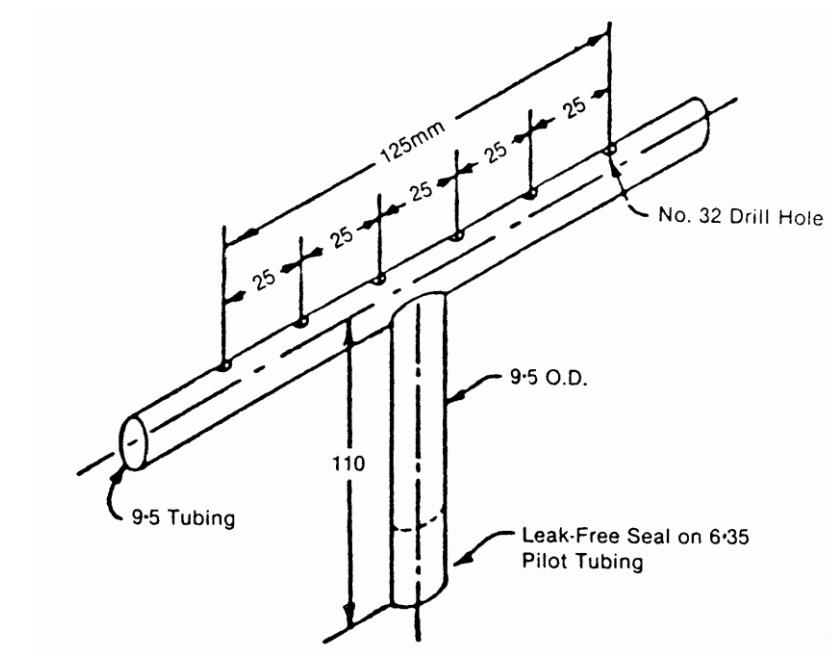


FIGURE 2B. "GLOBAR" RADIANT PANEL



(Unless denoted otherwise, all dimensions are in millimetres.)

FIGURE 3.



(Unless denoted otherwise, all dimensions are in millimetres.)

FIGURE 4.

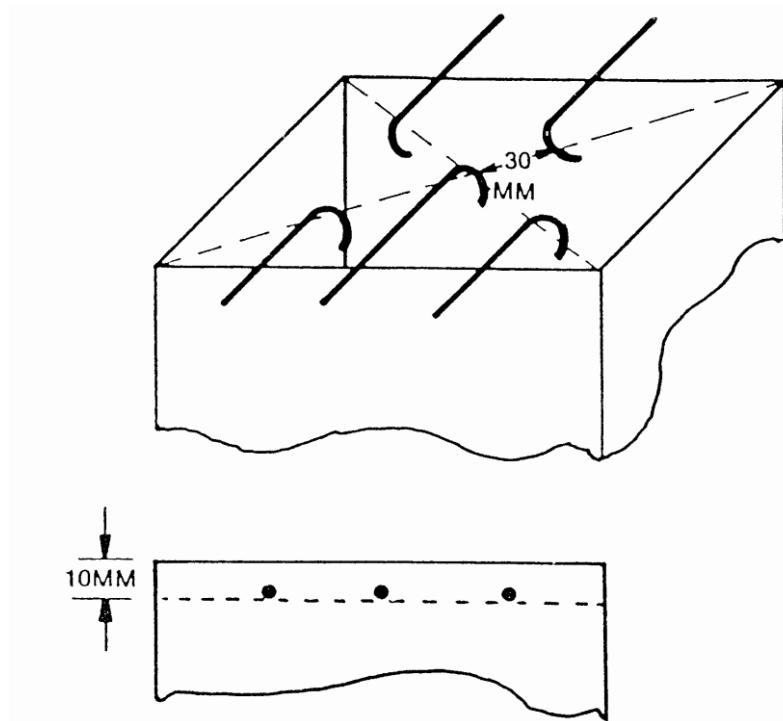


FIGURE 5. THERMOCOUPLE POSITION

AMC to Appendix F, Part IV – Test Method to Determine the Heat Release Rate from Cabin Materials Exposed to Radiant Heat

ED Decision 2003/2/RM

Appendix F, Part IV (b)(4) Air Distribution System.

The air distribution is to be determined by the equipment design. The 3-to-1 ratio described in this paragraph is approximate. An external air distribution system which will deliver that ratio precisely is not permitted as a substitute for the air distributor plates.

Appendix F, Part IV (b)(6) Specimen Holders.

In order to accommodate specimens which distort and delaminate during testing, two 0.508 mm (0.020-inch) stainless steel wires should be used to secure the specimens to the holder during the testing.

These wires should be used with all specimens and are in addition to the drip pan that should be used for materials which are prone to melting and dripping.

Appendix F, Part IV (b)(8) Pilot-Flame Positions.

Various installations have experienced difficulties with the pilot burners being extinguished during the test.

The following revisions to the pilot burner configurations have been found to be acceptable:

- (1) For the lower pilot burner – a sparking device which either sparks automatically at approximately $\frac{1}{2}$ to 1 second intervals or is manually operated, which requires continuous monitoring of the pilot flame.

Note: This requires that the laboratory test procedure specifies that the technician must continuously monitor the pilot for each test and that failure to do so will invalidate the test results.

- (2) For the upper pilot burner – a manual or automatic sparking device or a revision to the hole system in the burner. One approved deviation utilises 14 holes using a number 59 drill bit.

Appendix F, Part IV (c)(1) Heat Release Rate.

The use of a flowmeter is not acceptable.

The thermopile voltage should be measured for 10 seconds and then averaged.

Appendix F, Part IV (e) Procedure.

The outer door should be closed between tests to maintain the heat within the chamber. It is recommended that the outer door be hinged to facilitate implementing this recommendation. If a detachable door is used, a separate door should be installed during sample holder preparation and installation. This recommendation is based on the 40-seconds holding time (60 seconds less 20 seconds of data acquisition time) required in (e)(4), being insufficient to allow the chamber to reach equilibrium, if the outer door is open for too long between tests.

Appendix F, Part IV (f) Calculations.

It has been found that a typical range for the calibration factor is 8 to 15. If a calibration factor is calculated which falls outside this range, the calculation should be reviewed.

If the factor continues to fall outside this range, the Agency should be contacted.

Part V – Test Method to Determine the Smoke Emission Characteristics of Cabin Materials

ED Decision 2003/2/RM

- (a) *Summary of Method.* The specimens must be constructed, conditioned, and tested in the flaming mode in accordance with American Society of Testing and Materials (ASTM) Standard Test Method ASTM F814-83.
- (b) *Acceptance Criteria.* The specific optical smoke density (Ds) which is obtained by averaging the reading obtained after 4 minutes with each of the three specimens, shall not exceed 200.

Part VI – Test Method to Determine the Flammability and Flame Propagation Characteristics of Thermal/Acoustic Insulation Materials

ED Decision 2009/010/R

Use this test method to evaluate the flammability and flame propagation characteristics of thermal/acoustic insulation when exposed to both a radiant heat source and a flame.

(a) Definitions.

“Flame propagation” means the furthest distance of the propagation of visible flame towards the far end of the test specimen, measured from the midpoint of the ignition source flame. Measure this distance after initially applying the ignition source and before all flame on the test specimen is extinguished. The measurement is not a determination of burn length made after the test.

“Radiant heat source” means an electric or air propane panel.

“Thermal/acoustic insulation” means a material or system of materials used to provide thermal and/or acoustic protection. Examples include fibreglass or other batting material encapsulated by a film covering and foams.

“Zero point” means the point of application of the pilot burner to the test specimen.

(b) Test apparatus.

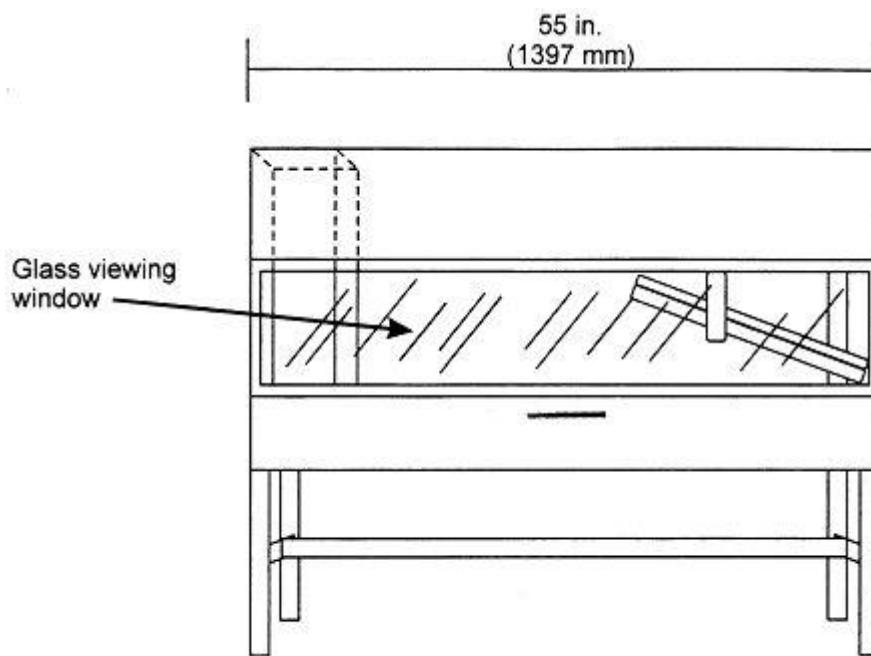


Figure 1 - Radiant Panel Test Chamber

- (1) Radiant panel test chamber. Conduct tests in a radiant panel test chamber (see figure 1 above). Place the test chamber under an exhaust hood to facilitate clearing the chamber of smoke after each test. The radiant panel test chamber must be an enclosure 1397 mm (55 inches) long by 495 mm (19.5 inches) deep by 710 mm (28 inches) to 762 mm (maximum) (30 inches) above the test specimen. Insulate the sides, ends, and top with a fibrous ceramic insulation, such as Kaowool MTM board. On the front side, provide a 52 by 12-inch (1321 by 305 mm) draft-free, high-temperature, glass window for viewing the sample during testing. Place a door below the window to provide access to the movable specimen platform holder. The bottom of the test chamber must be a sliding steel platform that has provision for securing the test specimen holder in a fixed and level position. The chamber must have an internal chimney with exterior dimensions of 129 mm (5.1 inches) wide, by 411 mm (16.2 inches) deep by 330 mm (13 inches) high at the opposite end of the chamber from the radiant energy source. The interior dimensions must be 114 mm (4.5 inches) wide by 395 mm (15.6 inches) deep. The chimney must extend to the top of the chamber (see figure 2).

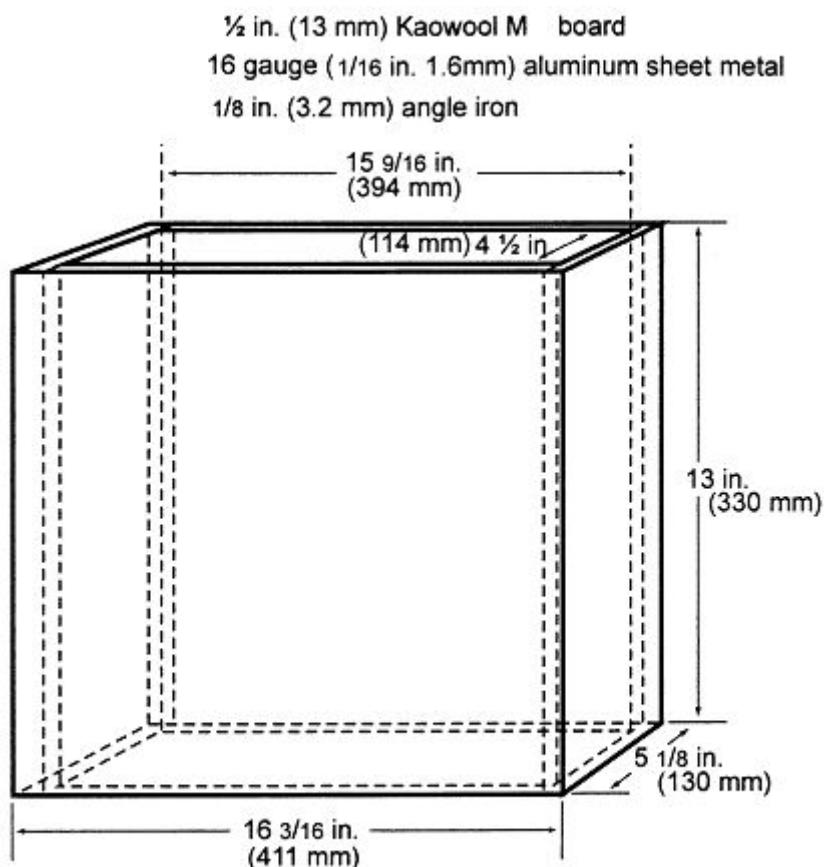


Figure 2 - Internal Chimney

- (2) Radiant heat source. Mount the radiant heat energy source in a cast iron frame or equivalent. An electric panel must have six, 76 mm (3-inch) wide emitter strips. The emitter strips must be perpendicular to the length of the panel. The panel must have a radiation surface of 327 by 470 mm (12⅔ by 18½ inches). The panel must be capable of operating at temperatures up to 704°C (1300°F). An air propane panel must be made of a porous refractory material and have a radiation surface of 305 by 457 mm (12 by 18 inches). The panel must be capable of operating at temperatures up to 816°C (1500°F). See figures 3a and 3b.

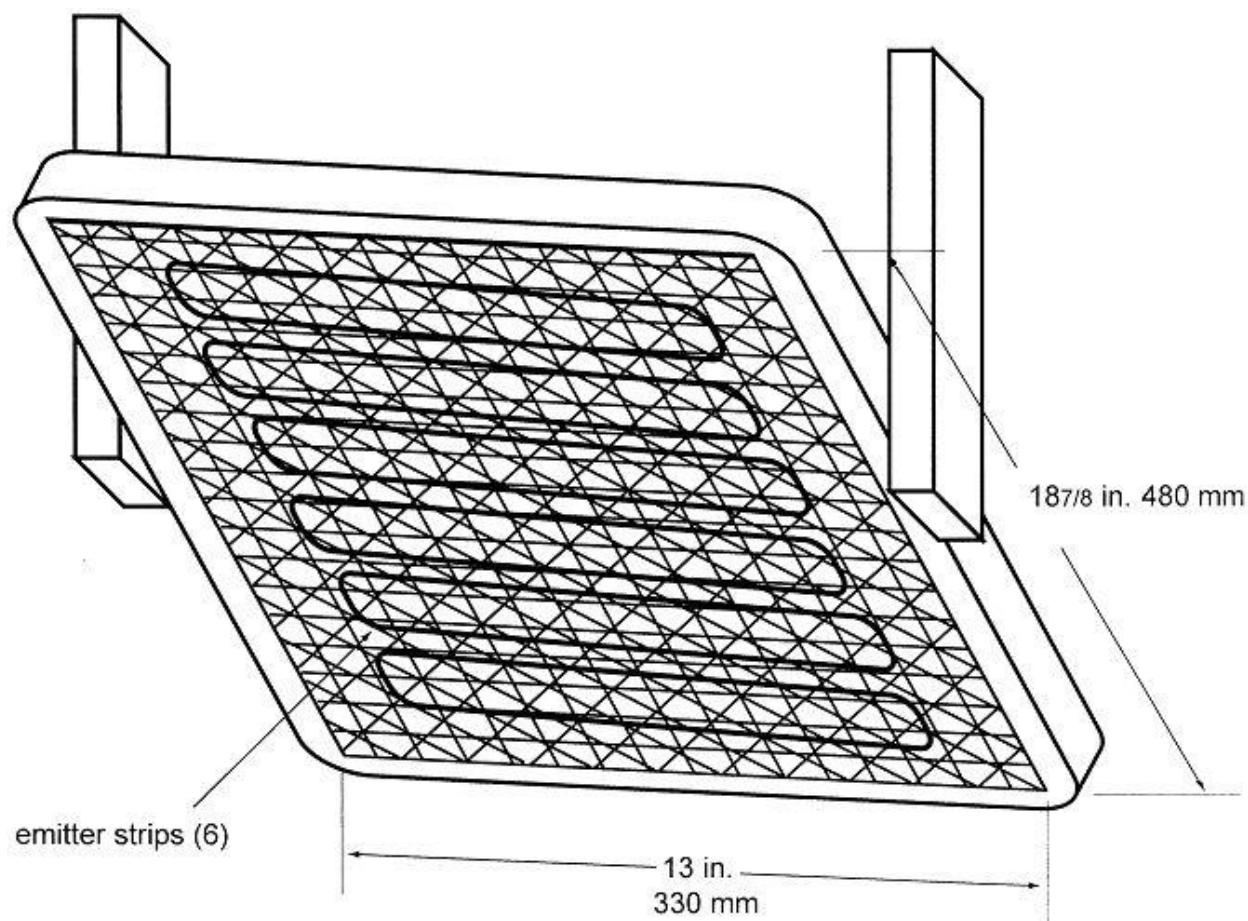


Figure 3a – Electric Panel

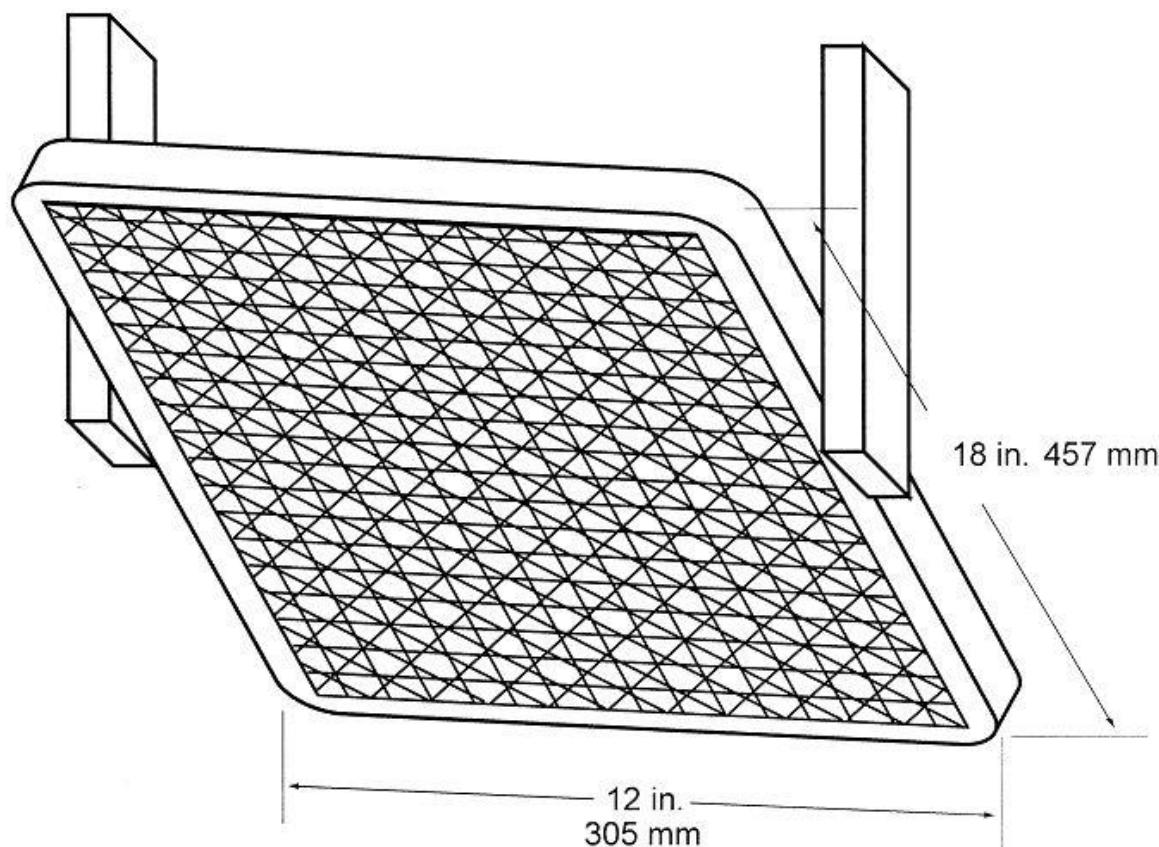


Figure 3b – Air Propane Radiant Panel

- (i) Electric radiant panel. The radiant panel must be 3-phase and operate at 208 volts. A single-phase, 240 volt panel is also acceptable. Use a solid-state power controller and microprocessor-based controller to set the electric panel operating parameters.
 - (ii) Gas radiant panel. Use propane (liquid petroleum gas—2.1 UN 1075) for the radiant panel fuel. The panel fuel system must consist of a venturi-type aspirator for mixing gas and air at approximately atmospheric pressure. Provide suitable instrumentation for monitoring and controlling the flow of fuel and air to the panel. Include an air flow gauge, an air flow regulator, and a gas pressure gauge.
 - (iii) Radiant panel placement. Mount the panel in the chamber at 30° to the horizontal specimen plane, and 19 cm (7 ½ inches) above the zero point of the specimen.
- (3) Specimen holding system.
- (i) The sliding platform serves as the housing for test specimen placement. Brackets may be attached (via wing nuts) to the top lip of the platform in order to accommodate various thicknesses of test specimens. Place the test specimens on a sheet of Kawool MTM board or 1260 Standard Board (manufactured by Thermal Ceramics and available in Europe) or equivalent, either resting on the bottom lip of the sliding platform or on the base of the brackets. It may be necessary to use