

(iv) *Thermocouples*. Provide seven 1/8-inch (3.2 mm) ceramic packed, metal sheathed, type K (Chromel-alumel), grounded junction thermocouples with a nominal 24 American Wire Gauge (AWG) size conductor for calibration. Attach the thermocouples to a steel angle bracket to form a thermocouple rake for placement in the calibration rig during burner calibration (figure 5).

(v) *Air velocity meter*. Use a vane-type air velocity meter to calibrate the velocity of air entering the burner. An Omega Engineering Model HH30A is satisfactory. Use a suitable adapter to attach the measuring device to the inlet side of the burner to prevent air from entering the burner other than through the

measuring device, which would produce erroneously low readings. Use a flexible duct, measuring 4 inches wide (102 mm) by 20 feet long (6.1 meters), to supply fresh air to the burner intake to prevent damage to the air velocity meter from ingested soot. An optional airbox permanently mounted to the burner intake area can effectively house the air velocity meter and provide a mounting port for the flexible intake duct.

(4) *Test specimen mounting frame*. Make the mounting frame for the test specimens of 1/8-inch (3.2 mm) thick steel as shown in figure 1, except for the center vertical former, which should be 1/4-inch (6.4 mm) thick to minimize warpage. The specimen mounting

frame stringers (horizontal) should be bolted to the test frame formers (vertical) such that the expansion of the stringers will not cause the entire structure to warp. Use the mounting frame for mounting the two insulation blanket test specimens as shown in figure 2.

(5) *Backface calorimeters*. Mount two total heat flux Gardon type calorimeters behind the insulation test specimens on the back side (cold) area of the test specimen mounting frame as shown in figure 6. Position the calorimeters along the same plane as the burner cone centerline, at a distance of 4 inches (102 mm) from the vertical centerline of the test frame.