

4.1 How Certified Clearances Are Determined

The clearance information found on the label of a certified or listed appliance is based on actual full fire tests conducted in a laboratory. Test conditions are very severe. The appliance is filled with small pieces of dry wood and fired continuously with the air controls fully open. On the walls, floor and ceiling of the test enclosure are grids of temperature sensors, or thermocouples. Full firing continues until the temperatures measured on the enclosure surfaces reach equilibrium — that is, when they stop rising. The test enclosure surfaces, painted flat black to produce worst case heat absorption conditions, must not exceed a temperature of 90°C or the appliance fails the test.

The size, shape, materials and design of the appliance affect the intensity of the radiant energy it produces. This explains the wide variation in the clearance dimensions found on labels.

Clearance specifications represent the minimum allowable distances that the appliance can be installed from unprotected combustible material. Without the addition of shielding to safely reduce the minimum clearance, no compromise can be made in the established clearance figures. If in doubt as to the interpretation of clearance requirements, always choose the larger clearance or check with the appliance manufacturer, the certifying agency, or the regulatory authority. Try to get the interpretation in writing so that if the problem arises again, you will have a record of it.

Certain products have certified clearances that cannot be reduced by using shielding. For example, the minimum 50 mm (2") clearance to a factory built chimney may not be reduced if a shield is installed. Only with the use of certified components, such as a ceiling support or radiation shield, can the clearance to a metal chimney ever be less than 50 mm (2").

Many appliances are certified with different clearances for sides and rear. The difference is either because of differences in radiant surface area or the presence of additional shields on the back providing a passage for convection or forced air flow. When installing these appliances diagonally in the corner of a room, check the label for corner clearances. If no corner clearance is given, use the larger of the two dimensions to establish the clearance between the corner of the appliance and the wall.

