



Devices & Services Co.

D&S TECHNICAL NOTE 85-1

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SECONDARY STANDARDS FOR THE EMISSOMETER MODEL AE

Devices & Services Company supplies two high and two low emittance standards with each Emissometer Model AE. These standards have surfaces that are designed to be as long lasting as possible. However, the heavier the usage, the shorter the life of the supplied standards. If usage warrants, the use of secondary standards is recommended. These standards can be made of common low cost materials.

A good low emittance standard is ordinary aluminum foil that is available in any food store. Ordinary aluminum foil has an emittance of 0.03 on either the shiny or diffuse side. To use it for an emittance standard, simply tear off enough to cover one half of the heat sink supplied with the Emissometer. Apply enough water to the top of the heat sink to insure good contact between the foil and heat sink, and then smooth the foil onto the heat sink with a clean soft tissue or cloth. When the foil begins to show wear or you finish for the day, just throw the foil away and replace with a new piece. Be sure that the foil lays flat on the heat sink.

A high emittance standard can be made by spray painting a piece of aluminum with just about any flat black paint. The aluminum should be approximately the same dimensions as the standards supplied with the Emissometer. Be sure to spray several coats of paint so that the aluminum is completely covered. Since the emittance of paint varies, you will have to calibrate the secondary standards with the supplied standards. First, calibrate the Emissometer as described in the instructions. Then, measure the emittance of your secondary high emittance standard. Mark the emittance on the standard and use this value to calibrate the Emissometer when you use it. Also, it is a good idea to bake any painted standard in an oven at approximately 200 F. to eliminate any volatile materials in the paint.