Emissivity Table for Non-Metals

In the table below, please use the 8-14 micron column if you have an MT, ST, or l
Please check your user manual if you own a 3i to determine the correct
column to use.

Note: These emissivities values are "approximate" and may vary depending on the
actual material and conditions.

Material	**Emissivity**			
	1.0 µm	**5.0 µm**	**7.9 µm**	**8-14 µm**
Asbestos	0.9	0.9	0.95	0.95
Assphalt	n.r.	0.9	0.95	0.95
Basalt	n.r.	0.7	0.7	0.7
Carbon				
Unoxidized	0.8-0.95	0.8-0.9	0.8-0.9	0.8-0.9
Graphite	0.8-0.9	0.7-0.9	0.7-0.8	0.7-0.8
Carborundum	n.r.	0.9	0.9	0.9
Ceramic	0.4	0.85-0.95	0.95	0.95
Clay	n.r.	0.85-0.95	0.95	0.95
Concrete	0.65	0.9	0.95	0.95
Cloth	n.r.	0.95	0.95	0.95
Glass				
Plate	n.r.	0.98	0.85	0.85
Gob	n.r.	0.9	n.r.	n.r.
Gravel	n.r.	0.95	0.95	0.95
Gypsum	n.r.	0.4-0.97	0.8-0.95	0.8-0.95
Ice	n.r.		0.98	0.98
Limestone	n.r.	0.4-0.98	0.98	0.98
Paint (non-Al.)		0.9-0.95	0.9-0.95	
Paper (any color)	n.r.	0.95	0.95	0.95
Plastic				
Qpaque	n.r.	0.95	0.95	0.95
Over 20 mils	n.r.			
Rubber	n.r.	0.9	0.95	0.95
Sand	n.r.	0.9	0.9	0.9
Snow	n.r.		0.9	0.9
Soil	n.r.		0.9-0.98	0.9-0.98

Water	n.r.		0.93	0.93
Wood, (natural)	n.r.	0.9-0.95	0.9-0.95	0.9-0.95

n.r. = not recommended

To optimize surface temperature measurement accuracy:

1. Determine the object emissivity for the spectral range of the instrument to be used for the measurement.
2. Avoid reflections by shielding object from surrounding high temperature source
3. For higher temperature objects use shorter wavelength instruments, whenever p
4. For semi-transparent materials such as plastic film and glass, assure that the background is uniform and lower in temperature than the object.
5. Hold instrument perpendicular to surface whenever emissivity is less than 0.9. In all cases, do not exceed angles more than 30 degrees from incidence.
6. For 1M and 2M models, avoid measurements in high ambient light conditions.