Index

A
Absorption coefficient, 134
Accreditation, 152
Air gaps, 73
ASTM
  Committee C16, 122, 154, 229, 233, 239
  Manual STP 15D, 204
  Standard Practice C 687, 154
  Standard Specification C 533, 189
  Standard Test Method
    C 177, 154, 167, 206, 209, 229
    C 236, 207
    C 518, 172, 189, 206, 208, 230
    D 1518, 167

B
Bi-guarded hot plate, 162, 165
Bole, K.-H., 29
Boil-off, 86, 233
Bomberg, M., 140
Brendeng, E., 86
Building Research Institute of Japan, 52

C
Calibration, 95, 118, 144, 174, 209, 220, 224, 235
Certificate, 202
Coefficient, 145
Nonlinearity, 118
Specimen, 141
Standards, 155
Circular plate-error expression, 36
Clo-value, 169
Commercial apparatus
  Design considerations, 169
  Future requirements, 170
Computer aided operation, 162, 170
Constant compression, 157
Contact resistance, 107
Convection, 10, 42, 87, 91, 93
  Heat transfer coefficient, 13
Coumou, K. G., 161

D
Density
  Uniformity, 196
  Variations, 131
DePonte, F., 191
Deutsches Institute für Normung DIN 52612, 31, 45
Drift error, 190
"Dry state," 112

E
Edge effects, 162
  Errors, 117, 123, 143
  Losses, 111, 123
Effective R-value, 217
Emittance, 83, 133, 136
  Total hemispherical, 129
Error, 14, 62, et seq., 232
  Analysis, 102
  Derivation, 36, 37
  Edge, 117, 123, 143
  Factors, 38, 43, 46
Error
Indeterminate, 136, 232
Propogation, 71
Systemmatic, 14, 53
Unbalance, 143
Eguchi, K., 49, 171
European Economic Community (EEC), 233, 238
Evacuated insulation, 94

F
False air currents, 89
Federal Trade Commission (FTC), 193
Field testing, 207, 216
Finite difference
Model, 8
Program, 123
Finite element method, 8, 26, 108, 230
Advantages, 11

G
Gap unbalance, 12, 13, 14, 25, 102, 231, 232
Width, 102, 107
Governing equations, 8
Gradient guarding, 232
Graves, R. S., 121
Guard ring principle, 30
Guard ring width, 13, 20, 26, 29, 31
Absence of, 45

H
Hager, N. E., Jr., 180
Heat exchange parameter, 42
Heat flows, 76
Edge, 76, 78
Gap, 76
Nonuniform, 217

Heat flow meter
Configurations, 113
Uncertainty, 84
Zone type, 174
Heater-thin foil, 180
HEATINGS, 123, 136
Historic background, 141
Honeycomb structure, 97
Hot plates
Circular, 8, 31, 39, 43
Double sided, 231, 237
Single sided, 231
Square, 8, 31, 39, 43

I
Imbalance error, 107
Insulation systems, 97
Interlaboratory comparisons, 238
International Standardization Organizations (ISO), 108
Technical Committee (TC163), 118, 119, 220, 234
Interpolation practice, 25

L
Larson, D. C., 206
Lateral temperature differences, 216
Lawrence Berkeley Laboratory, 207

M
Mass transfer, 112
Material variability, 156, 234
McCaa, D. J., 154
McElroy, D. L., 121
Measurement speed, 110, 189, 237
Mechanical stresses, 87
Metering area, 73
Definition, 104
Miyake, Y., 171
Moisture
Redistribution, 116
Vaporization, 169
Moore, J. P., 121

N
National Bureau of Standards (NBS), 69, 147, 155, 193, 209, 222, 232, 236, 238
National Research Council of Canada (NRCC), 140, 158, 207, 235

O
Orthotropic disk, 10
Overblow, 158

P
Pelanne, C. M., 193
Perimeter insulation, 88
Physikalisch-Technische Bundesanstalt (PTB), 31
Plate deformation, 75
Platinum resistance thermometer, 81, 135, 222
Proficiency testing, 150

Q
Quality assurance, 170, 194, 236, 237
Control, 143, 237

R
Radiation, 10, 11, 234
Scattering, 111
Rennex, B., 69

S
Sample distribution effects, 162
Scale effects, 87
Scatter band, 92
Schumann, S. P., 220
Screen heater, 123
Self guarding, 235
Septa, 111, 150
Sheathed thermocouples, 169
Shirtliffe, C. J., Ed., 1, 229
Single specimen apparatus, 52
Solvason, K. R., 140
Specimen requirements, 187
Thin, 107, 234
Type and form, 111
Split specimen, 112, 123
Square plate-error expression, 37
Standard Reference Material (SRM) 1450, 147, 195, 238
1451, 228
Standard test conditions, 151

T
Temperature
Control, 83
Imbalance, 104
Jump, 82
Profile, 108
Uncertainties, 82
Thermal
Bridges, 53
Diffusivity, 136
Disturbances, 171, 172
Stresses, 92
Test unit, 207
Thermistor standards, 222
Thickness effect, 111
Transducers, 79
Transfer standards, 141, 143, 145, 193, 199, 233, 235, 238
Triple point, 221
Troussart, L. R., 7
Tye, R. P., Ed., 1, 229
GUARDED HOT PLATE AND HEAT FLOW METER

U
Uncertainty
 Fractional, 135
 Total, 135

Y
Yarbrough, D. W., 121

W
Working reference, 204

Z
Zero balance, 143
 Zone method, 217, 218