

## Subject Index

### A

- Absorption, 257
- Accelerated aging tests, 351
  - protocols, 379
- Alumina fiber insulation, 257
- Apparent thermal conductivity, 284
- Area-weighted method, 203
- ASTM C 16, 203, 395
- ASTM C 177, 79, 115, 395
- ASTM C 335, 241, 284, 395
- ASTM C 518, 241, 299, 395
- ASTM C 1033, 241, 395
- ASTM C 1045, 17, 284
- ASTM C 1114, 115, 395
- ASTM C 1199, 189
- ASTM C 1303, 379
- ASTM C 1363, 147, 189
- ASTM C 1484, 314
- Attenuation, 257
- Attic/ceiling assemblies, steel framing, 159

### B

- Below-ambient, 176, 241, 326
- Below-grade applications, 366
- Building insulation
  - normal variation and tolerances, 32
  - sugarcane fiber, 299

### C

- Calcium silicate, 284
- Calibrated hot box, 221
  - uncertainty analysis, 189
- Calibration, 221
- Calibration transfer standard method, 203
- CAN/ULC-S 770, 379
- Cellular foam insulation, 379
- Cellular glass, 284
- Cellulosic fibre insulation, 42
- Certified reference material, 3
- Closed-cell foam, 379
- Code support, 159
- Coefficient of variance, 203
- Concrete, 58
- Creep tests, 42

### E

- Ecological insulation materials, 335
- Evacuated insulation, 130, 314

Expanded polystyrene, performance, 366

### F

- Fenestration, 189, 221
  - interlaboratory repeatability, 203
- Fiber glass, 284
- Fiber insulation, 257
- Fibrous material, 299
- Finite difference thermal modeling, 241
- Finite element analysis, 79
- Fire performance, pipe insulation, 270
- Fumed silica powder, 130

### G

- Guarded hot plate, 115, 395
  - masonry materials, 58
  - multiple-line-heat-source, 79
  - over extended temperature range, 97
- Guarded hot plate laboratories, international study, 3

### H

- Heat flow meter, 395
- Heat flux, 395
- HEATING7 program, 241
- Heat release rate, 270
- Heat transfer, 79, 97, 189, 221
  - extraneous, 189, 221
- High temperature testing, 115, 257, 395
- Hot-box tests, 147, 159
- Hot-humid environment, 176
- Hygrothermal performance, measurement uncertainties and calculation, 335

### I

- Impermeable facer, 351
- Insulation panels, 314
- Interlaboratory comparison, 115, 203
- ISO-8302, 115

### L

- Long-term thermal resistance, 351
- Loose-fill insulation, settling, 42

### M

- Masonry materials, 58
- Mineral fiber, 32, 284
- Moisture, wicking, 326

Moisture absorption, 176  
 Moisture adsorption, 58  
 Moisture desorption, 58  
 Moisture permeability, 58  
 Molded expanded polystyrene insulation, 366  
 Monte Carlo simulation, 335  
 Mortar, 58

**N**

National Fenestration Rating Council, 100, 203

**O**

Optical properties, 257

**P**

Perlite, expanded, 284  
 Pipe insulation, 326  
   fire performance, 270  
   hot humid environment, 176  
   test apparatus, 241, 395  
   thermal properties, 284  
 Pitched roof, 335  
 Polyisocyanurate foam insulation, 351

**R**

Radiative-conductive heat transfer theory, 257  
 Reflective insulation, 130  
 Root Sum Square method, 189  
 Round robin, 115, 203, 314, 379  
 R-value, 32, 79, 97  
   system, 159  
   wall, 147

**S**

Scattering, 257  
 Settling, loose-fill insulation, 42  
 Smoke obscuration, 270  
 Standardized film coefficient, 203  
 Standard Reference Materials, 3  
 Starch, 299

Steel framing, 147  
   attic/ceiling assemblies, 159  
 Steel stud walls, hot-box tests, 147  
 Sugarcane fiber, 299

**T**

Thermal analysis, 79  
 Thermal bridges, 159  
 Thermal conductivity testing, 115  
 Thermal conductivity, 3, 79, 97, 335  
   fiber insulation materials, 257  
   masonry materials, 58  
   scaled aging time, 379  
   sugarcane fiber, 299  
   vacuum guarded hot plate, 103  
 Thermal diffusivity, 257  
 Thermal insulation, 3, 42, 79, 97, 366  
   specifications, normal variation and tolerances, 32  
 Thermal measurements, 115  
 Thermal performance, 17  
 Thermal physical properties, 257  
 Thermal resistance, 79, 97, 189, 221, 314  
   long-term, 351  
   normal variation and tolerances, 32  
 Thermal tests, calculating results, 17  
 Thermal transmittance, 189, 203, 221  
 Thin heater, 395  
 Total hemispherical emittance, 130

**U**

U-factor, 203  
 Uncertainty analysis, calibrated hot box, 189

**V**

Vacuum Guarded Hot-Plate, 130  
 Vacuum insulation, 314  
 Vertical pipe chase fire test, 270  
 Volume stability, loose-fill insulation, 42

**W**

Wicking, 326  
 WUFI, 335