

Index

A

- Absorption,**
 - Moisture, 17
 - Radiation, 37, 256, 447
- Accelerated tests,** 500
- Adhesion,** 502
- Aging,** 11, 19, 79, 82, 143, 456
- Air diffusion,** 458
- Air infiltration,** 16, 73, 95, 182
 - Rate, 100
- Air permeability,** 12
- Analysis,** 466
 - Thermal/structural, 466 *et seq*
- Anemometer,** 106
- Anisotropy,** 338, 433, 448
- Anomalies,** 168
- Apparatus**
 - Calibrated hot box, 551
 - Calibrated guarded hot box, 196
 - Guarded hot box, 53, 77
 - Guarded hot plate, 144
 - Guarded water calorimeter, 209
 - Heat flow meter, 66, 260, 288, 308
- ASHRAE,** 232
 - Standard, 55-74, 105
- Assessed properties,** 21 *et seq*
- ASTM,** 197, 272
 - C-8 Committee, 209
 - C-16 Committee, 1, 209, 562
 - C16.30 Subcommittee, 1, 323, 555, 559
 - Round robin, 325
 - Standards, 21, 24
 - C 177, 77, 206, 322, 338, 345, 354, 456, 561
 - C 182, 218

C

- C 201, 209, 212, 561**
- C 236, 53, 144**
- C 518, 242, 260, 263, 270, 288, 305, 310, 323, 338, 354, 456, 560**
- C 519, 29**
- C 653, 291**
- C 687, 260**
- C 739, 51**
- D 1621, 461**
- D 1623, 462**
- E 84, 19**
- E 104, 52**
- Symposia, 1, 287, 555**
- B**
- Backscattering, 37, 256**
 - Cross section, 40
- Basement walls, 57, 77**
- Biodegradation, 81**
- Blackbody, 174**
- Bowman house, 111**
- C**
- Calibration, 203, 243, 262**
 - Heat flow meter, 323
 - System, 203
 - Use of transfer standards, 353
 - Variables affecting, 290
- Canadian Government Standards Board, 362, 413**
- CS-204 method, 27**
- Cargo boil-off, 454**

- Cell morphology, 433
- Chemistry
- Polystyrene, 433
 - Polyurethane, 435, 462
- Chimney effect, 176
- Chloride content, 51
- Clo, 231
 - Value, 234
- Closed cell content, 415
- Combustion properties, 20
- Comfort performance, 103
- Compaction, 14
- Compression, 59, 350
 - Tests, 85
- Compressive strength, 81, 88, 439, 470
- Condensation, 73, 78, 106
 - Index, 166
- Conduction models, 214
- Consumer Product Safety Commission, 381
- Contact
- Pressure, 291
 - Resistance, 37, 358
- Continuous use surface temperature, 413
- Convection
- Coefficient, 507
 - Free, 182
 - Models, 214
 - Natural, 182
- Convective cells, 146
- Convective heat transfer, 12, 178, 269
- Conventional comparison home, 93
- Cost
- Estimates, 71
 - Savings, 99
- Coupled radiation convection, 37
- Coverage, 28
- Creep tests, 470
- Cryogenic fueled airplane, 454
- Cycling, 11, 52
- D**
- Damproofing, 58
- Deformation, 87
- Degradation, 12, 19, 81
- Density
- Correct, 29
 - Fluffed, 29
 - Initial, 28
 - Settled, 27
- Design values, 11, 153
- Diffusion processes, 412
- Diffusion rates, 427
- Diffusivity processes, 412
- Drainage, 58, 79, 89
 - Layer, 75
- Drained insulation, 78
- Durability, 81, 535
- E**
- Economic thickness, 485
- Edge corrosion, 51
- Insulation, 265
- Loss, 355
- Effect of
- Density, 280
 - Heat flow direction, 269
 - Moisture, 52
 - Orientation, 268
 - Slicing, 268
 - Thickness, 17, 36, 48, 255, 265, 279, 324, 335
- Effective conductivity, 273, 282, 351
- Effective R-value, 191, 387
- Electrochemical interaction, 69
- Emittance calorimetric, 215, 219
- Energy
- Consumption, 544, 550
 - Cost, 397
 - Efficient residence, 93
 - Intensity, 398

- Savings, 99
Waste, 537
Environmental factors, 417
- F**
- Federal Trade Commission Rule, 257
Federal Standard HHI 515 D, 29, 51
Ficks law, 423
Field measurements, 13, 16, 58, 154, 215, 221, 307, 363, 519 *et seq*
Five performance, 19
Flow
 Exfiltrative, 192
 Infiltrative, 192
Foil thermocouples, 218
Formaldehyde odor, 381
- G**
- Gap unbalance, 355
Gaps, 517
Gas
 Conduction, 12
 Permeation, 305
Ground temperatures, 70
- H**
- Heat
 Cogeneration, 495
 Flow meter model, 238
 Flux plotting, 476
 Industrial waste, 495
 Meter zero, 263
 Retention index, 226
House model, 399
Humidity control, 197
Hydrolysis, 363, 379
- I**
- Ideal guarded hot plate, 245
Installation
 Effects, 13
 Poor, 373, 382
 Practices, 143
 Quality, 374
Insulation
 Efficiency, 166
 Faults, 143, 158
 Voids, 147
 Wet, 528
Interference, 143
Iterative techniques, 476, 484
- K**
- Key sources, 2
- L**
- Lateral
 Heat loss, 323
 Radiation leakage, 337
Lattice conduction, 445
Life cycle costs, 396
Lifetime, 501
Low thermal comfort threshold, 231
- M**
- Maintenance, 535
Manikin, 226
Mass transfer, 251
Materials
 Balsa wood, 460
 Calcium silicate, 488, 508
 Cellulose, 15, 18, 21, 17, 51
 Ceramic fiber, 216
 Down, 227
 Fiberglass

- Batts, 18, 21, 94, 143, 184, 255, 279, 284, 289, 325, 335, 359, 497, 508
- Boards, 57, 77, 343
- Fibrous board, 343
- Loose fill, 15, 27, 187
- Resin bonded, 252, 262, 291
- SRM 1450, 343
- Gypsum board, 148, 371
- Insulating concrete, 22
- Paper septum, 330
- Perlite, 454
 - Board, 319
 - Concrete, 22
 - Loose fill, 22
- Polyisocyanurate, 22, 497
 - Faced, 298, 425
- Polystyrenene, 431, 454, 456, 460
 - Extruted, 18
 - Molded, 18
- Polyurethane, 22, 301, 412, 431, 454, 464, 497
- Polyvinylchloride, 454
- Reflective, 25
- Rockwool
 - Batts, 21, 143, 497
 - Loose fill, 21
- SRM 1450, 292
- Urea formal dehyde, 18, 22, 154, 361
- Urethane, 305, 412, 425, 488
- Vermiculite
 - Concrete, 22
 - Loose fill, 22, 187
- Mean radiant temperature, 103
- Mechanical properties, 10, 81, 85, 88, 436
- Mildew, 78, 106
- Minimum detectable temperature difference, 174
- Modal comfort envelope, 233
- Modified Rayleigh number, 277
- Mold growth, 378
- Moisture, 15, 423, 536
 - Absorption, 17
 - Accumulation, 416
 - Cycling, 29
 - Effects, 52
 - Meter, 63
 - Migration, 197
- National Energy Plan, 1, 555
- Natural convection, 182
- O**
- Odor, 363, 381
- Opacifying media, 324
- Optically thick, 37, 447
- Organization committee, 3
- P**
- Packaging time, 15
- Participating organizations, 5, 6
- Permeability, 12
- Polystyrene chemistry, 433
- Polyurethane chemistry, 435, 462
- Precision, 316
- Present worth factor, 99
- Properties, 21
- Putrefaction tests, 81
- Pycnometer, 427
- Q**
- Quality control, 288
- R**
- R-value, effective, 191
- Radiation, 256
 - Barrier, 283
 - Conductivity, 284

- Models, 214
- Permeance, 17
- Transmission, 447
- Radiation conduction
 - Coupled, 37
 - Uncoupled, 37
- Radiative heat transfer, 12, 56, 178, 324
- Radiant panel, 19
- Reference specimens, 253
- Reproducibility, 261
- Reflective foil, 25
- Relaxation methods, 476
- Residence
 - Energy efficient, 93
 - Conventional, 93
- Resiliency, 15
- Response factor, 548
- Retrofit, 165, 170
- Rotting, 78

- S**
- Sampling, 298
- Scattering cross section, 40
- Septa, 324
- Service life, 520
- Settle, 14
- Settled density, 27, 28
- Shape factor, 337
- Shrinkage, 154, 363, 380
- Sleeping bags, 225
- Slicing, 268
- Smoldering, 19
- Solar reflectance, 533
- Specific scattering parameter, 279
- Specimens
 - Nonuniform, 259
 - Orientation, 268
 - Uniform, 258
- Stability, 363, 381
- Stack effect, 176
- Standard Reference Material, 343
- Steric factor, 446
- Structural foams, 432
- Systematic errors, 355

- T**
- Temperature
 - Continuous use surface, 413
 - Control, 200
 - Drying, 350
 - Effects, 16
 - Ground, 70, 376
 - Index, 166
 - MDTD, 170
 - Mean radiant, 103
 - Uniformity, 241
- Test duration, 269
- Theoretical model, 273
- Thermal comfort threshold, 231
- Thermal conductance, 313
 - Ratio method, 313
 - Slope method, 313
- Thermal conductivity, 351
- Thermal diffusivity, 169, 450
- Thermal effectiveness, 382
- Thermal gradient testing, 426
- Thermal mass, 310
- Thermal performance, 115 *et seq*
 - Attics, 544
 - Bibliography, 114
 - Overall, 165
- Thermal radiation, 37
 - Absorption, 37
 - Backscattering, 37
 - Reemission, 37
- Thermal research facility, 197
- Thermal resistance, 11, 12, 18, 37, 38, 82
- Thermal response, 272
- Thermal stability, 349
- Thermal structural/analysis, 466
- Thermocouple
 - Foil, 218

- Placement, 323
Junction layout, 241
T
Thermograms, 170
Thermographic tests, 163
Thermography, 13, 101, 151, 165
Thickness effect, 17, 36, 48, 255,
 265, 279, 322, 335
Thickness
 Economic, 485
 Optimum, 506
Three layer materials, 38, 43, 48
Transfer standards, 289, 343, 353,
 356
Transient model, 547
V
Transient thermal response, 442
Two flux model, 274, 335
W
Vapor barrier, 15
Vibration, 29, 363, 379
Void areas, 151
Warping, 380
Water permeability coefficient, 78
Water retention, 79
Wet insulation, 528