

Subject Index

A

Actual delivered density, 354
 Aggregate, concrete, 176
 Air-conditioning systems, 9, 301
 Air terminals, 301
 Airtightness of buildings, 10, 11
 Alarms, fire, 408
 Animal testing, 330
 Asphalt shingles, 255
 ASTM standards
 E 84-84, 241, 285
 E 119-83, 182, 195, 201, 206, 223
 E 152-81*a*, 316
 E 162-83, 240
 E 283-73, 318
 E 648-78, 241
 E 662-83, 285
 E 783-81, 321
 Fire test standards, 15

B

Bench-scale measurements, 268
 Building
 Codes and regulations, 16, 21
 Control Act 1984 (United Kingdom), 18
 Buildings, 386
 Airtightness, 10, 11
 Design, 8, 160
 Evacuation times, 386
 High-rise, 310
 Performance standards, 8
 Static pressures, 301
 Steel-framed, 223
 Whole-building performance, 10

C

Calorimeter, cone, 268
 Carpets, 239
 Central fans, 301
 Chairs, 268, 338
 Chipboard, 239
 Climatization subsystems, 9, 301
 Coatings, 256
 Codes and standards [*see also* ASTM standards; International Organization for Standardization (ISO)], 13, 16, 21, 24
 Columns, concrete, 176
 Combustible lining material, 45, 256
 Compartment fires (*see also* Room fire tests), 145, 285, 310
 Compartmentation, 310
 Compressed air interlocks, 301
 Computer modeling, 206, 223
 Concrete, 145, 176
 Condensation on building structure, effect on thermal insulation, 10, 11
 Cone calorimeter, 268
 Convective heat release rate, 354
 Correlation study, 45
 Cross-section area of concrete columns, 176

D

Deformation of concrete columns, 176
 Delivered density, 354

Design models, 45
 Destructive spread potential, 160
 Door assemblies, 310

E

Environmental studies, 9
 Extreme-value technique, 122
 Evacuation times, 386

F

Fail closed, 301
 Fail open, 301
 Failure probability, 160, 176
 Fans, 301
 FASBUS II, 206, 223
 Fiber glass shingles, 244
 Fiberboard, 45, 244
 Fire
 Alarms, 408
 Curve, standard, 145
 Endurance, 223
 Escapes, 409
 Extinguishers, 405
 Gas production, 346
 Growth, 29, 45, 70, 122
 Hazards, 330
 High-challenge, 354
 Human behavior in and response to, 386
 Investigation, 386
 Load, 160
 Mathematical modeling (*see also* Computer modeling), 21, 70, 97, 122, 239
 Nonstandard, 206
 Performance standards of buildings, 8
 Real-world, 160
 Resistance, 160
 Risk
 Analysis, modeling of, 5
 Assessment, 21
 Perception, 386

Safety

Codes and standards (*see also* ASTM standards), 13, 21
 Components of, 13
 Design, 160
 Smoke production, 285
 Specific load, 160
 Spread of, 29, 70, 122, 239
 Standard, 145, 206
 Test laboratories, 21, 91
 Testing, 8, 14, 21, 160, 330
 Organizations, 24–26, 29, 91
 Reinforced concrete columns, 176
 Room fire test methods, 29, 45, 330

Fireproofing, 206
 FIRES-T3, 206
 Flame spread, 29, 70, 122, 239
 Flammability tests, 268
 Flammable liquids, 377
 Flashover, 97
 Floor systems, 223
 Fluids, spilled, 377
 Foams, synthetic, 29, 239
 Frame assemblies, steel, 206, 223
 Furnished rooms, 330
 Furniture, 330
 Calorimeter, 268
 Upholstered, 268, 338

G

Gypsum board, 29, 45, 239, 334

H

Hardboard, 239
 Heat load, normalized, 160
 Heat release, 29, 268, 354
 Heating systems, 301
 Heights for ignition sources, codes regulating, 377
 High-rise buildings, 310

Housing conditions, 386
 Human aspects and behavior, 386
 HVAC systems, 9, 301

I

Ignition, 239
 Sources, heights for, 377
 Interactions of building performance aspects, 8
 Interior finish, 29, 45, 97, 256
 Interlocks, compressed air, 301
 International Organization for Standardization (ISO), 45, 322
 ISO 834 standard fire curve, 145
 ISO 3008, 316
 ISO 5925, Part 1, 321

L

Leakage, smoke, 310
 Life
 Safety, 310
 Value, 386
 Lining materials, 29, 45, 97, 256
 Liquids, spilled, 377
 Load, 176
 Load limiting, 301

M

Mathematical methods and modeling (*see also* Computer modeling), 3, 21, 45, 70, 97, 122
 Materials, 239
 Measurement methods, 239
 Melamine-faced particleboard, 45
 Mineral wool, 45, 239
 Modeling methods (*see also* Computer modeling), 5, 9, 21, 45, 70, 239
 Moisture content of concrete, 176

N

National Bureau of Standards, 29, 91, 109, 230
 National Electrical Code NFPA 70, 24
 Nonstandard fires, 206

P

Paint, 256
 Particleboard, 45, 239
 Perception of risk, 386
 Performance standards for buildings, 8
 Plastic materials, 29, 45, 239, 285
 Rack storage, 354
 Plywood, 29, 239
 Polycarbonate, 239
 Polyisocyanurate, 29
 Polymethyl methacrylate (PMMA), 239, 285
 Polypropylene, 285
 Polystyrene, 29, 45, 239
 Polyurethane foam, 45, 239
 Polyvinyl chloride (PVC), 45
 Postflashover, 145
 Pressure differential, 310
 Pressurization, 301, 310
 Probability distributions, 122
 Properties of materials, 239
 Property protection, 310

R

Regulations (*see also* Codes and standards), 8
 Regulatory authorities, 21
 Required delivered density, 354
 Response time index, 354
 Risk
 acceptability, 386
 analysis, modeling of, illus., 5
 assessment, 21
 perception, 386

Room fire tests (*see also* Compartment fires), 29, 45, 97, 330

S

Safe refuge, 310

Scaling, 97

Second moment analysis, 160

Shingles

Asphalt, 255

Fiber glass, 244

Smoke

Control, 301, 310

Detectors, 350

Leakage, 310

Movement, 70, 310

Production, 285

Testing and measurement, 285

Toxicity, 330

Transport, 70

Socioeconomic factors, 386

Specific fire load, 160

Spilled liquids, 377

Spread of fire, 29, 70, 122, 239

Sprinkler systems, 350, 354

Stack effect, 310

Staircases, 409

Stairwells, 317

Standard fire, 206

Curve, 145

Standard tests, 29, 160

ASTM E 84-84, 241, 285

ASTM E 119-83, 182, 195, 201, 206, 223

ASTM E 152-81a, 316

ASTM E 162-83, 240

ASTM E 283-73, 318

ASTM E 648-78, 241

ASTM E 662-83, 285

ASTM E 783-81, 321

State transition model, 122

Static pressures, 301

Statistical methods, 122

Steel, structural, 206, 223

Steel frames, 223

Steel-reinforced concrete, 179

Stochastic processes, 122

Structural

Failure, 160

Response, 160, 223

Steel, 206, 223

Synthetic foams, 29, 239

T

Target failure probability, 160

Technology transfer, 3

Temperature calculation, 145, 176

Test fire, 160

Testing, fire safety (*see also* Standard tests), 8, 14, 21, 310

Animal, 330

Full-scale, 45, 330

Organizations, 24-26

Room fire test methods (*see also* Compartment fires), 29, 45, 97, 330

Small scale, 45

Textile wall covering, 45

Toxic hazards, 70, 330

Transition probabilities, 122

U

Upholstered furniture, 268, 338

V

Vapor concentration gradient, 377

Ventilating systems, 9, 301

Ventilation factor, 160

W

Wall coverings, 29, 45, 97, 256

Wallpaper, 45

Weather conditions, 386

Whole-building performance, 10

Wood, 45, 239, 285

Z

Zone models, 70