

T

Tables

air changes, 154
 air conditioning temperatures and humidities, 818
 air requirements, 199
 air, volume of, 24
 altitude, pressure and temperature, 70
 anthracite, size, 301
 area flanged fittings, 531
 areas of circles, 912
 attenuation between grille and room, 775
 formula, lining board, 778
 in straight ducts, 773
 of elbows, 774
 average maximum water main temperatures, 654
 black body radiation, 105
 boiler ratings, 346, 347
 capacity constants
 blow-through unit heaters, 499
 draw-through unit heaters, 499
 carbon dioxide maximum, 304
 ceiling temperature, 241
 circular equivalents of rectangular ducts, 752
 circumferences of circles, 912
 classification of
 coals, 300
 motors, 620
 water, 885
 climatic conditions, 234, 257
 coal classification, 300
 combustible elements and compounds, 306
 combustion air requirements, 304, 306, 307
 combustion rates, 353
 conduction problems, 107
 conductivity materials, 99, 115, 531
 copper elbow equivalents, 457
 corrosion resistance, 839
 degree-days for cities, 386
 densities, 911
 design dry- and wet-bulb temperatures, 257, 258, 259, 260
 draft requirements of appliances, 375
 dryers for evaporation of water, 841
 duct attenuation, 773
 dust concentration, 170, 173
 elbow attenuation, 774
 emissivity factors, 104
 end reflection, 777
 environmental conditions, limits, 205
 exhaust pipes for machines, 830
 factors influencing drying, 842
 fitting dimensions, 519, 520, 521, 523, 524, 525, 526
 flame temperature data, 304
 flammability of gases and vapors, 174
 free convection, 100
 factors, 101
 friction valves and fittings, 869
 fuel oil properties, 302
 fumes, concentration, 174
 gaseous fuel properties, 304
 heat flow walls and roofs, 270
 heat gain
 appliances, 286
 glass, 277, 279
 glass blocks, 279
 insulated cold pipes, 537
 heat loss
 bare copper pipe, 529
 bare steel pipe, 529
 heat transmission coefficients, 105, 122, 125, 127, 529, 531, 537, 880
 hot water demand, 875, 877
 hot water pipe sizes, 458, 460
 humidities, industrial air conditioning, 818
 infiltration through outside doors, 153
 infiltration through walls, 150
 infiltration through windows, 152
 inflammability, gases, 174
 inside temperatures, 240
 insulation factors, 531
 iron elbow equivalents, 457
 maximum allowable concentrations
 dusts, fumes, mists, 173
 dusts, 173
 meter performance, 869
 metabolic rate, 209
 minimum outdoor air requirements to remove
 odors, 199

Tables (continued)

moisture content for materials, 818, 821
 noise levels, 772
 orifice capacities, 427
 particulate matter, size, 168
 permeability to vapor, 291
 physiological response
 to gases and vapors, 172
 to heat, 203
 pipe dimensions, 512, 513, 514
 pressure loss
 refrigerant line, 701
 return intake, 742
 properties of
 air, 24
 ammonia, 689
 carbon dioxide, 690
 dichlorodifluoromethane, 686
 fuel oil 302
 gaseous fuels, 304
 methyl chloride, 688
 moist air, 24
 monofluorotrichloromethane, 691
 steam, 48
 water, 36, 691
 radiation, black body, 105
 radiation factors, 104
 radiator sizes, 473
 ratio of specific heats, 79
 regain of hygroscopic materials, 821
 relation between metabolic rate and activity, 209
 requirements for fuel oil, 302
 return pipe capacities, 433, 434, 435, 438
 screen mesh, 169
 shading effect, 281
 sheet metal gages for ducts, 763, 765
 ship practice, 860
 smoke chart numbers, 194
 sol-air temperature, 268
 solar radiation, 262, 263, 266, 277, 278
 specific heat of compressible fluids, 79
 specific heat of solids, liquids, gases, 911
 steady-state conduction problems, 107
 steam consumption of buildings, 393
 steam pipe capacities, 430, 431, 433, 439
 steam table, 48
 summer design conditions, 254, 257
 temperatures, industrial air conditioning, 818
 theoretical air requirements, 307
 thermal conductivity, 99, 107
 thermal convection conductance, 103
 thermodynamic properties
 moist air, 24
 water, 36
 transmissivity, glass, 275
 unit conductance, 103
 unit fuel consumption, 390
 velocity, return intake, 742
 ventilation standards, 261
 water, properties, 36
 water requirements, 867, 875, 877
 weight of air, 24

Tank, tanks

expansion, 462, 468
 Tax, pipe, 350, 351

Temperature, temperatures

absolute, 8
 attic, 241
 automatic control, 554, 606
 basement, 244
 control for railway passenger cars, 852
 control service water, 880
 design wet-bulb, 660
 design temperature map, 239
 dew-point, 53
 dry-bulb, 8
 drying, 842
 effective, 8, 207, 210, 211, 564
 ground, 243
 hazards, 203, 205
 industrial, 255
 inside, 233, 255, 858, 861
 ceilings, high, 240
 proper level, 239
 mean radiant, 206, 563
 measurement, 180
 thermocouple, 181
 thermometers, 180

Index to Technical Data Section

Temperature, temperatures (continued)

operative, 563
 outside, 232, 239, 254, 255, 858
 surface, 182, 383, 570
 thermodynamic wet-bulb, 52
 unheated spaces, 242
 water main, 654
 wet-bulb, 8

Terminology, 1

Test methods, 180, 906

Tetany

cold, 226
 fever, 224
 oxygen, 228

Thermal

conductance, 112
 conduction equation, 98
 conductivity, 99, 113
 convection, 98
 convection equation, 99
 expansion of pipe, 615
 interchanges of body, 199
 radiation equation, 101
 resistance, 7, 115, 122
 resistivity, 7, 115, 122
 steady-state conduction problems, 107
 transmittance, 244
 unit conductances for convection, 103
 Thermocouples, 181
 Thermodynamics, 22
 air and water mixture, 22
 laws of, 8
 wet-bulb temperature, 53, 660

Thermometers, 180

alcohol, 180
 dry-bulb, 180
 globe, 183, 477, 577
 Kata, 193
 mercurial, 180, 477
 resistance, 181
 stem correction, 180
 wet-bulb, 191

Thermostat, 9, 607

room, 607

Time lag through walls and roofs, 269

Ton of refrigeration, 7

Total heat, 5

Total pressure, 6

Tower, towers

cooling, design, 665
 cooling, performance, 671
 mechanical draft, 664
 natural draft, 663
 spray cooling, 658, 790

Transmission

heat losses, 244, 262
 solar heat, 262

Transmittance, thermal, 9

Transportation air conditioning, 850

Trap, traps, 448

automatic return, 448
 bucket, 449
 float, 449
 impulse, 449
 steam, 8
 thermostatic, 449
 tilting, 449

Traveling-grate stoker, 323

Treatment of disease, 217

Tube radiator, 7

Tunnel dryer, 846

Tunnels, pipe, 546

Turning vane, 739, 755

Two-pipe system, 9

U

Ultra-violet light, 171, 199, 218

Underfeed stoker, 323

Underground pipe insulation, 541

Unheated space temperatures, 243

Unit, units

air cleaners, 595
 air conditioners, 639
 application, 646
 cooling, 639
 dehumidifying, 644
 filters, 595
 humidifying, 495
 ratings, 646
 types of, 639
 air coolers, 649
 defrosting, 650
 design, 650
 performance, 650
 ratings, 652
 types of, 652
 air filters, 595
 British thermal, 2
 dehumidification, 676
 direct-indirect heating, 3
 fuel consumption, 381, 384, 385, 390
 heaters, 495
 application, 496
 boiler capacity, 504
 capacity factors, 499
 control, 501
 direct-fired, 500
 electric, 556
 piping connections, 502
 ratings, 497
 temperatures, 499
 types of, 495
 humidifiers, 508
 types of, 508
 induction, 797
 noise measurement, 769
 systems, 495, 639
 ventilators, 495
 air exhaust vents, 508
 applications, 507
 capacity, 504
 control, 639
 ratings, 504
 window, 508
 Unitary equipment, 495
 definitions, 495

V

Vacuum

cooling unit, 705, 706
 heating pumps, 417, 424, 446
 control, 447
 piston displacement, 448
 heating system, 9, 423
 down-feed, 424
 unit heater connection, 417, 502
 Vacuum dryer, 845

Valve, valves, 454, 525

automatic, 527
 check, 525
 control, 454
 expansion, 700, 717
 gate, 525
 globe, 525
 reducing pressure, 442

Vane, vanes, 730

Vaned outlets, 739

Vapor, vapors, 167

heating systems, 9
 unit heater connection, 502
 pressure, 7

Vaporizing oil burner, 332

Velocity, 9

exhaust intakes, 742, 829
 hood, 829
 method duct design, 757
 pressure, 7
 return grilles, 742
 unit heater, 497
 warm air duct, 407