

INDEX

HEATING VENTILATING AIR CONDITIONING GUIDE 1946

Technical Data Section

Chapters 1-51 and Pages 1-904

A

Abatement
air pollution, 184
smoke, 188

Abbreviations, 11

Absolute
humidity, 5
pressure, 6
temperature, 8
zero, 1

Absorbents, 663, 666
process, 666
temperature, pressure, concentration, 665, 667, 668

Absorbers
duct sound, 767
outlet, 770
plate cells, 770
plenum, 769

Absorption systems, 666

Acceleration, 1

Acclimatization, 225

Activated alumina, 664

Activated carbon, 590

Adiabatic, 1
mixing
injected water, 58
two air streams, 57
saturation, 58

Adsorbents, 663
process, 665
temperature, pressure, concentration, 667, 668

Adsorption, odor, vapor, 590

Aerosol, 1

Agitated dryer, 851, 853

Air
change measurements, 209
chemical vitiation of, 215
circulation in drying, 586
classification of impurities, 184, 581
dust, 185, 582
lint, 582
cleaner, 581, 868
viscous impingement type, 583, 585
cleaning devices, 581
classification of, 583
maintenance, 588, 589
performance, 587
safety requirements, 589
selection, 588
testing, 587
vapor adsorption, 590
combustion, 297
conditioning process, 55
contaminants, 184, 218
cooled
condensers, 707
unit conditioning, 627, 631

Air (continued)

currents, 207
dehumidification, 663
distribution, 389, 399, 736, 868
air entrainment, 718, 722
application of methods, 736
balancing system, 401, 737
definitions, 717
duct approaches to outlets, 729
flow patterns, 729, 730
furnace systems, 389, 399
induction, 718, 728
mechanics, 718
momentum theory, 718
operation of ceiling outlets, 724
outlet location, 727
outlet performance, 724, 729, 730
outlets, 726
railway car, 867
recommended velocity, 399, 400, 403, 731, 749
return and exhaust intakes, 731
room air motion, 723
spread, 721
standards for, 717
throw, 719
vanes, 720
vertical drop and rise, 721
duct design, 401, 739, 748, 750
duct friction loss, 740, 742
dust concentrations, 188, 192
excess, 301, 314
filter, 581
flow resistance of coils, 152, 752
impurities, 184, 186, 582
infiltration, 167
causes of, 167
due to wind pressure, 167
through walls, 188
leakage, 167, 267
moist, 24, 26
motion, 221, 723
movement, influence of, 221
movement, measurement of, 205
outdoor, 184, 787
physical impurities in, 184, 218
pollution, 187, 835
abatement, 188
quantity, 182, 216, 796
room motion, 400, 723
saturated, 1
secondary, 302, 334
space conductance, 116
standard, 1
sterilization of, 241, 248
supply and return openings, 726
supply opening noise, 725, 773
temperature, 225, 243, 281
theoretical requirements, 216, 300
thermodynamics of, 24
unit cleaning devices, 581
washers, 1, 641

Air change method
computing infiltration, 172

Index to Technical Data Section

Air conditioning, 1

airplane, 872
automobiles in summer, 872
central systems, 781
comfort, 2
hospitals, 244, 246, 247, 251
humidity table, 826
industrial, 823
atmospheric conditions required, 823
calculations, 832
classification of problems, 825
general requirements, 825
owning and operating cost, 812
passenger bus in summer, 871
railway passenger car, 869
relation to metabolism, 236
ship, 875
State codes, 899
stoker-fired units, 318
storage systems, 703
temperature, table, 827
transportation, 867
treatment of disease, 241
unit, 627

Air cooler, 627

cost
maintenance, 639
operation, 639
units, 627, 630
control, 602
defrosting, 636
design, 636
performance, 636
ratings, 636
types of, 636
Air requirements, 216
Air supply opening noises, 725, 773
Air washer, 1, 641
Airfoil fan, 567
Airplane air conditioning, 872

Allergic disorders, 251

apparatus, 251
asthma symptoms, 251
hay fever symptoms, 251
limitations of air conditioning methods, 252
Altitude, pressure and temperature, 70, 71
Aluminum oxide, 664
Ammonia, 684
Anemometer, 1, 208
deflecting vane, 208
hot wire, 208
propeller, 208
revolving vane, 208
Anesthetics, 244
Anthracite coal, 305, 306, 307, 308
firing methods, 309
Apparatus dew-point, 63, 295, 790
Aspect ratio, 722, 746
Asthma symptoms, 251
Atmosphere, standard, 70

Atmospheric

conditions for industrial processes, 826
pressure, 1, 71
water cooling equipment, 646
make-up water, 662
sizes, 649
winter freezing, 662
Atomizing humidifiers, 644
Atomizing oil burner, 326
Attenuation, 763, 766
ducts, 766
elbows, 766
grilles to room, 766

Artic

fans, 639
location, 639
types, 639
temperature, 263

Automatic

controls (see Controls), 401, 593
purpose of, 593
types of, 595
fuel burning equipment, 317
viscous filter, 583
Automobile air conditioning, 872
Axial flow fans, 567

B

Baffle, 1, 333
Bare pipe heat loss, 513
Barometer, 203
Basement
coefficients of transmission, 139
heat loss, 139, 265
temperatures, 265
Bernoulli equation, 75
Bin-feed stoker, 318, 320, 321
Biochemical reactions
control of rate of, 831
Bituminous coal, 305, 306
firing methods, 309
Blast heater, 1
Blow 1, 718, 720
Body
adaptation to hot conditions, 220, 222, 225
heat loss, 219, 234, 237
odor, 217
thermal interchanges, 219
Boiler, boilers, 339
capacity for unit heaters, 487
care, 351
cast-iron, 339
cleaning steam, 350
combustion rates, 348
connections, 348, 436, 437
Hartford return, 436
return, 436
sizing, 437
steam, 436
efficiency, 341, 342, 344
electric, 344
erection, 349
fittings, 348
furnace design, 341
gas-fired, 332
selection of, 347
gas-fired units, 333, 478
conversions, 332
selection of, 335
heating, 339
heating surface, 2, 341
heat transfer rates, 341
horsepower, 2
hot water supply, 340, 891, 893
maintenance, 349
oil-fired units, 329
operation, 349
output, 345
rating codes, 341
selection of, 345
based on heating surface and grate area, 347
cast-iron, 346
estimated design load, 345
estimated maximum load, 345
gas-fired, 347
hot water supply load, 345, 888
piping tax, 345, 513
radiation load, 345
steel, 346
warming up allowance, 346
soot, 314
space limitations, 348
special heating, 340
steel, 340
stoker-fired units, 318
testing codes, 341
troubles, 350
British thermal unit, 2
Bucket trap, 441
Building, buildings
condensation, 139
heat transfer through surfaces, 113
infiltration, 167, 172, 266
intermittently heated, 271
materials heat transfer through, 113, 123, 125, 210
multi-story, air leakage, 172, 173
Burner, oil, 325
Bus air conditioning, 871, 874
By-pass, 2, 797