

HEATING VENTILATING AIR CONDITIONING GUIDE 1942

Radiator (continued)
effect of superheated steam, 257
enclosed, 260
gas-fired, 215
heat emission of, 253
heating effect, 257
heating up, 259
output of, 256
panel, 841
recessed, 842
selection, 263
tube, 843
types of, 253
warm air, 215

Railway air conditioning, 709
air distribution, 710
humidity control, 712
summer systems, 711
temperature control, 712
ventilation, 709
winter systems, 711

Reciprocating compressors, 484
Recooling, 413
Reflective insulation, 88

Refrigerant, refrigerants, 481, 842
ammonia, 480
carbon dioxide, 484
dichlorodifluoromethane, 482
feeds, 514
methyl chloride, 483
monofluorotrichloromethane, 486
pipe sizes, 497
water, 486

Refrigeration, 479
absorption systems, 490
control, 658
equipment selection, 503
ice systems, 502
mechanical, 479
reverse cycle, 505, 796
ton of, 843
day of, 843
types of compressors, 484
Regain, 721
control of, 720

Register, registers, 595 (see Grilles)
noises, 603
railway car, 710
selections, 369
types of, 607

Rectangular duct equivalents, 614
Reheat, 413
Reheating, 411

Relative humidity, 19, 113, 842
measurement of, 680

Repulsion induction motors, 686
Residence,

control systems, 668
air conditioning, 669
coal-fired heating plant, 668
domestic hot water supply, 668
cooling methods, 391
gravity furnace system, 365
heat loss problems, 135
hot water heating system, 309
humidity requirements, 390
mechanical furnace system, 379
steam heating system, 267

Resistance thermometers, 673

Resistors, 790

Return mains, 310, 842

Reverse cycle refrigeration, 505, 796
Reversed return system, 310, 842
Roof, roofs,
heat flow through, 145
time lag of solar radiation, 147
ventilators, 766, 842
Room,
control, 649
noise level, 632
operating, 697
Rotary drier, 742
Rotary oil burner, 208
Run-around system, 417

S

Saturated air, 9, 842

Saturation, 842

degree of, 19, 838

pressure, 842

Secondary air, 162

Sectional boiler, 235

Self-contained

conditioner, 443

control systems, 648

humidifiers, 842

Sensible cooling, 417

Sensible heat, 842

loss, 51, 123

Series wound motors, 683

Settling chambers, 577

Sheet metal gages, 624

Shunt wound motors, 683

Silicon dioxide, 463

Silica gel, 463

Single phase motors, 686

Smoke, 842

abatement, 566

density measurements, 682

stacks, 578

Smokeless

arch, 842

combustion, 239

Solar heat,

through shaded windows, 147

time lag, 147

transmission of, 141

transmitted through glass, 146

transmitted through walls, 145

Solar radiation,

against walls, 142

occlusion of, 566

Soot, 177

Sound,

absorbers, 636

air supply, 603

attenuation, 640

control 382, 625, 629

levels, 633

Specific

enthalpy, 842

dry air, 5

water vapor, 7

gravity, 842

heat, 842

gases, 854

liquids, 854

solids, 854

vapors, 854

ALPHABETICAL INDEX TO TECHNICAL DATA SECTION

Specific (continued)

volume, 842

air, 1

water vapor, 7

Split phase motor, 687

Split system, 439, 842

Splitter damper, 384

Spray,

booths, 734

cooling ponds, 549

cooling towers, 551

distribution, 541

equipment, 537

generation, 541

humidifiers, 842

type unit, 451

Square foot of heating surface, 842

Squeeze damper, 384

Squirrel cage induction motor, 687

Stack, stacks, 767

height, 842

smoke, 578

Standard air, 842

Static,

electricity elimination, 725

pressure, 842

control, 662

Steady flow energy equation, 34

enthalpy, 35

gravitational energy, 35

heat and shaft work, 35

kinetic energy, 34

Steam, 843

coils, 512

distribution piping, 325

estimating consumption, 232

flow, 287

heating systems, 267, 285, 843

air line, 271

condensation return, 274

corrosion, 362

down-feed two-pipe vapor, 273

gravity one-pipe air-vent, 268

gravity return, 267

gravity two-pipe air-vent, 271

mechanical return, 267

one-pipe vapor, 271

orifice, 278

piping for, 285

sub-atmospheric, 276

two-pipe vapor, 272

vacuum, 274

high pressure, 299

jet type of compressor, 487

panel heating, 802

pipe capacities, 291

radiant heating, 802

requirements, 336

runout, 268

superheated, 843

supply mains, 843

trap, 843

Steel boilers, 235

Sterilization of air, 700

Stoker, stokers, 197

classification of, 200

combustion adjustments, 205

combustion process, 203

controls, 206, 668

furnace design, 204

mechanical, 197

overfeed flat grate, 197

Stoker (continued)

overfeed inclined grate, 199

sizing and ratings, 205

underfeed, 843

rear cleaning, 199

side cleaning, 199

Sub-atmospheric systems, 276

Summer

air conditioning system, 393

comfort, 62

Supply

mains, 843

openings, 603

measurement of velocities, 678

selection of, 606

types of, 607

Suspended unit heater, 427

Surface,

condensation, 112

conductance, 84, 843

coefficients, 86

heating, 840

extended, 839

temperature, 528

Swimming pool heating requirements, 836

Symbols for drawings, 849

T

Table,

areas flanged fittings, 775

attenuation between grille and room, 635

average maximum water main temperatures, 545

capacity constants,

blow-through unit heaters, 430

draw-through unit heaters, 431

chimney sizes, 190

circular equivalents of rectangular ducts, 615

circumference and areas of circles, 855

classification of,

coals, 167

electric motors, 688

climatic conditions, 130

combustion elements and compounds, 158

conductivity materials, 70, 93

degree days for cities, 228

design dry- and wet-bulb temperatures, 140

drying time for materials, 750

duct attenuation, 634

elbow attenuation, 634

emissivities of surfaces, 80

explosive properties of anesthetic, 698

flow steam in pipes, 286

flame temperature data, 160

free convection factors, 71

gas combustion constant, 753

heat gain,

appliances, 152

glass blocks, 149

insulated cold pipes, 781

heat loss,

bare copper pipe, 773, 774

bare steel pipe, 773

heat transmission,

coefficients, 83

free convection, 71

radiation, 73

infiltration through windows, 118

minimum outdoor air requirements to remove

odors, 40

noise levels, 633