

Pressure, pressures (continued)

- measurement of, 807
- partial, Dalton's law of, 1
- refrigerating plant, 486
- of saturated vapor, 12
- static, 421, 828
- steam,**
 - in direct heating, 765
 - drop, 278, 302, 307
 - initial, 302
 - in orifice systems, 290
 - saturated, 28
 - in sub-atmospheric systems, 289
- total, 829
- vapor, 31, 830
- velocity, 830
- water, 27, 789
- Prime surface, 827**
- Processing, 621**
 - cooling systems, 469, 621
 - industrial, temperatures and humidities for, 622
 - of textiles, 626
 - unit heaters, 444
- Propeller fans, test code for, 534**
- Psychrometer, 827**
 - sling, 811
- Psychrometric,**
 - chart, 25, 60, 61, 62, (*back cover*)
 - for drier, 654
 - explanation, 25
 - tests, 59
- Pulmonary disturbances, 605**
- Pump, pumps,**
 - centrifugal, 334
 - characteristics, 181
 - circulating, 333
 - condensation return, 292
 - heat, 472, 749
 - vacuum, 292
- Pyrometer, 810, 827**
 - mercurial, 810
 - optical, 810
 - radiation, 810
 - thermo-electric, 810

Q-R

- Quality,**
 - of air, 69, 70, 71
 - impaired by recirculation 83
- Quantity,**
 - of air,
 - measurement of, 811
 - necessary for ventilation, 70, 71, 72, 158, 609, 675
 - of cooling water, 511
- Radiant heaters, 743**
- Radiant heating, 753**
 - physical and physiological factors, 753
- Radiation, 827**
 - by black body, 759
 - drying with, 847
 - equivalent direct, 304, 828
 - heat loss by, 63, 76, 754
 - by human body, 63, 76, 754
 - load, 252
 - of pipe, 722
 - by radiators, 263
 - solar, 151, (*see also Solar Heat*)
 - occlusion of, 84
 - through glass, 152
 - through walls, 152
 - ultra-violet, 75, 82
- Radiator, radiators, 263, 827**
 - A.S.H.V.E. code for, 271
 - column, 821
 - concealed, 821
 - condensation rate in, 267
 - connections, 320, 348
 - control of, 687
 - correction rating factors, 271
 - effect of superheated steam, 265
 - enclosed, 267
 - gas-fired, 223

Radiator, radiators (continued)

- heat emission of, 263, 270
- heating capacity of, 270
- heating effect of, 266
- for hot water systems, 346
- output of, 264
- paint, effect of, 265
- panel, 827
- pipe coil, 263
- ratings of, 264
- recessed, 827
- selection, 270
- tube, 829
- types of, 263
- wall, output, 264
- warm air, 223
- Railway air conditioning, 609**
 - air distribution, 560, 610
 - cleaning, 611
 - cooling equipment, 611
 - calculation of load, 619
 - capacity, 612
 - costs, 617
 - heating, 611
 - humidity control, 612
 - power requirements, 613
 - tractive resistance, 615
 - temperature control, 613
 - ventilation, 609
- Racults law, 493**
- Receivers, alternating, 299**
- Refrigerants, 35, 827**
 - ammonia, 36
 - carbon dioxide, 38
 - codes for use of, 426
 - dichlorodifluoromethane, 40
 - lithium chloride, 46, 47
 - methyl chloride, 42
 - monofluorotrichloromethane, 44
 - water, 45
- Refrigerating, capacity, 429, 475**
- Refrigerating plant, 24, 469**
 - centrifugal, 478
 - compressor, 470, 512
 - operating methods, 485
 - size of, 429, 475, 485
 - steam jet system, 477, 512
 - types of, 471
- Refrigeration,**
 - characteristics, 481
 - curves, 480, 481
 - coefficient of performance, 475
 - carnot cycle, 475
 - compression ratio, 477
 - control of equipment, 701
 - dehumidification by, 470
 - efficiency,
 - cycle, 475
 - ejector, 479
 - mechanical, 477
 - losses, 476
 - mechanical, 472
 - pipe sizing, 484
 - discharge, 486
 - liquid, 487
 - suction, 488
 - practical cycle, 475
 - reverse cycle, 749
 - limiting factors, 749
 - systems,
 - absorption, closed, 493
 - centrifugal, 479
 - mechanical, 496
 - steam ejector, 477
 - various types, 469
 - theoretical mechanical cycle, 473
 - theoretical work per pound, 474
 - ton of, 429, 475, 829
 - ton days of, 829
 - unit of, 429, 475
- Regain,**
 - control of, 624
 - of hygroscopic materials, 626
- Registers, 827, (*see also Grilles*)**
 - with gas-fired furnaces, 223
 - with gravity furnace systems, 381

Registers (continued)

- with mechanical warm air furnace systems, 397
- selection of, 381
- sizes, 381, 389
- temperature, 401
- velocity through, 401
- Reheater, 424, 432**
- Relative humidity, 9, 826**
 - apparatus sensitive to, 684
 - in comfort zone, 64, 68
 - relation of dew-point to, 9
 - control of, 684
 - in industrial plants, 622, 624
 - for processing, 622
 - in public buildings, 67
 - in residences, 403
 - from water pans, 403
- Relays, 685**
- Relief valves, 350**
- Repulsion motors, 706, 707**
- Research residence, 388, 406**
- Residences,**
 - air distribution in, 397
 - automatic fuel burning equipment, 201
 - conditioning units, 291, 460
 - control systems, 399, 699
 - gas heat, 221
 - humidification of, 403
 - oil burners for, 213
 - requirements in, 405
 - steam consumption, 234
 - stokers for, 204
- Resistance,**
 - of bright metallic surfaces, 94
 - of building materials, 97
 - in ducts, 565, 643
 - of exhaust systems, 643
 - of filters, 396
 - of insulators, 97
 - thermal, 829
 - thermometer, 810
- Resistor, 742**
- Respiratory diseases, 607**
- Restaurants,**
 - tobacco smoke, in, 70
 - water supply to, 804
- Return,**
 - dry, 823
 - mains, 827
 - pipe, capacity, 308
 - reversed, 827
 - wet, 830
- Reverse cycle of refrigeration, 495, 749**
- Reversed return system, 332**
- Reynolds number, 184**
- Ringelmann chart, 816**
- Rock wool insulation, 100, 729**
- Roof, roofs,**
 - coefficients of transmission of, 114
 - conductivities of, 101
 - solar radiation on, 152, 153, 154
 - ventilator, 672, 827
- Room absorption correction charts, 557**
- Room control, 687**

S

- Salts in cooling water, 509**
- Saturated air, 827**
- Saturation, fiber point, 651**
- Scale,**
 - in boilers, 260
 - Centigrade, 809
 - on equipment, 509
 - Fahrenheit, 809
 - in pipe, 374
 - Reaumur, 809
- School, schools,**
 - air flow necessary in, 70
 - optimum air conditions, 65
 - stokers suitable for, 201
 - temperature of, in winter, 134
 - ventilation in, 70
- Scrubbers, 499, 528**
- Self-contained control system, 686**
- Sensible heat, 147, 827**
 - of air, 12
 - loss, 73
 - of water, 31
- Series wound motor, 703**
- Service connections, 770**
- Sheet metal, for ducts, 580, 641**
- Shingles air leakage through, 123**
- Shunt wound motor, 703**
- Skin diseases, 607**
- Silica gel**
 - with oxygen chambers, 606
 - regain of moisture of, 626
 - silicon dioxide, 41
 - equilibrium conditions, 43
 - system of adsorption, 39, 41, 491
- Single phase motor, 706**
- Sizes of pipe, (*see Pipe Sizes*)**
- Skylights, 117, 671**
- Sling psychrometer, 814**
- Slip-ring wound motors, 710**
- Smoke, 79, 827**
 - abatement of, 84
 - measurement of, 816
 - recorders, 816
 - tobacco, 70
- Smokeless arch, 828**
- Solar heat, 151**
 - absorption coefficients, 155
 - effect of,
 - awnings, 155
 - latitude, 152
 - intensity chart, 150
 - occlusion of, 84
 - radiation,
 - factors, 154
 - through glass, 152
 - through walls, 152
 - time lag, 155
- Solenoid valves, 685**
- Sound, 583, (*see also Noise*)**
 - absorption coefficients, 589
 - control, 583
 - duct lining factor, 593
 - effect on duct design, 567
 - insulation of, 589
 - intensity, 335
 - measurement of, 584
 - in steam heating systems, 303
 - unit of, 583
- Specific density, 3**
- Specific gravity, 2, 828**
 - of fuel gas, 176
- Specific heat, 3, 828**
 - of air, 5
 - mean, of water vapor, 3
 - of water, 31
- Specific humidity, 8**
- Specific volume, 3, 828**
 - of saturated steam, 31
- Split phase motor, 707**
- Split system, 828**
 - air conditioning equipment, 461
 - automatic control of, 689
 - central fan, 409
 - unit ventilators, 445
- Spray,**
 - booths for painting, 640
 - cooling,
 - ponds, 513
 - efficiency of, 512
 - towers, 514
 - distribution of, 504
 - generation of, 504
 - humidifiers, 505
 - type of central station system, 423
 - water coolers, 482, 512
- Square foot of heating surface, 828**
- Squirrel cage motors, 707**
- Stack, stacks, 378, 639**
 - effect, 670
 - height, 828
 - size of, 380, 389, 675
 - wall, 380
- Stairways, 129**