

IDENTIFICATION OF PIPING SYSTEMS BY COLOR

The color scheme for identification of piping systems listed in the following table and shown in Fig. 1 is reprinted from Part V, Fourth Edition, of the Engineering Standards of the *Heating, Piping and Air Conditioning Contractors National Association*.

All piping systems are classified according to the material carried in the pipes and colors are assigned as follows:

CLASS	COLOR
F—Fire-protection	Red
D—Dangerous materials	Yellow or Orange
S—Safe Materials	Green (or the achromatic colors, white, black, gray or aluminum)
and, when required	
P—Protective materials	Bright blue
V—Extra valuable materials	Deep purple

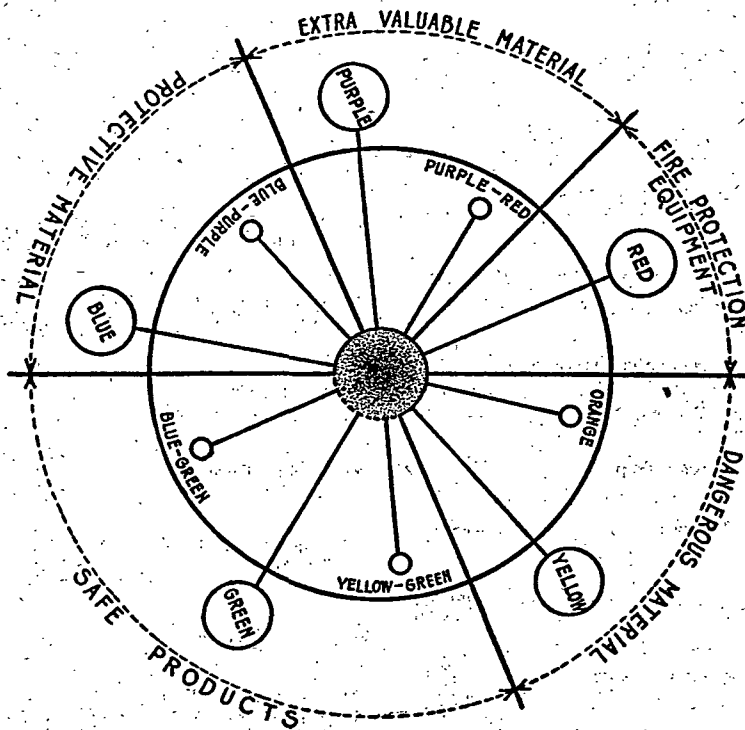


FIG. 1. MAIN CLASSIFICATION BY COLOR^a

^aFrom Scheme for Identification of Piping Systems, *Heating, Piping and Air Conditioning Contractors National Association*, Part V, Fourth Edition, p. 17. Used by permission.

SPECIFIC HEAT

TABLE 1. SPECIFIC HEAT OF SOLIDS^a

MATERIALS	TEMPERATURE F	SPECIFIC HEAT	AUTHORITY
Alloys	32	0.0899	S
Brass, Red	32	0.0883	S
Brass, Yellow	32	0.0862	S
Bronze (80Cu, 20Sn)	57-208	0.127	S
Monel Metal	68-2370	0.212	S
Aluminum	80-212	0.212	S
Asbestos	68-208	0.195	S
Brickwork		0.195	H
Carbon (Graphite)	104-1637	0.314	I
Coal		0.278	H
Coke		0.201	H
Concrete		0.270	H
Copper	64-212	0.0928	S
Fire Clay Brick	77-1832	0.258	I
Glass			S
Crown	50-122	0.161	S
Flint	50-122	0.117	S
Gold	64	0.0312	S
Gypsum		0.259	H
Ice	32	0.487	S
Ice	-40	0.434	S
Iron, Pure	32	0.1043	S
Iron, Pure	32-600	0.127	S
Iron, Cast	68-212	0.1189	M
Iron, Wrought	59-212	0.1152	H
Lead	32	0.0297	S
Nickel	32	0.1032	S
Masonry		0.2159	S
Plaster		0.2	H
Platinum	58-212	0.0319	S
Rocks			S
Gneiss	63-210	0.196	S
Granite	54-212	0.192	S
Limestone	59-212	0.216	S
Marble	32-212	0.21	S
Sandstone		0.22	S
Silver	32	0.0536	S
Steel		0.1175	S
Sulphur	240-320	0.220	S
Silica Brick	77-1832	0.263	S
Tin	77	0.0548	S
Woods (Average)	68	0.327	S
Zinc	32	0.0913	S

TABLE 2. SPECIFIC HEAT OF LIQUIDS

LIQUID	TEMPERATURE F	SPECIFIC HEAT	AUTHORITY
Alcohol, Ethyl	32	0.548	S
Alcohol, Methyl	59-68	0.601	S
Glycerine	59-122	0.576	S
Lead (Molten)	360	0.041	H
Mercury	68	0.03325	S
Petroleum	70-136	0.511	S
Sea Water			S
Sp Gr 1.0043	64	0.980	S
Sp Gr 1.0463	64	0.903	S
Water	59	1.000	S

TABLE 3. SPECIFIC HEAT OF GASES AND VAPORS

SUBSTANCE	TEMPERATURE F	SPECIFIC HEAT AT CONSTANT PRESSURE	RATIO OF SPECIFIC HEAT C_p/C_v	SPECIFIC HEAT AT CONSTANT VOLUME (COMPUTED)	AUTHORITY
Air	32-392	0.2375	1.405	0.169	S
Ammonia	80-392	0.5356	1.377	0.419	S
Carbon Dioxide	52-417	0.2169	1.3003	0.1668	S
Carbon Monoxide	79-388	0.2426	1.395	0.1736	S
Coal Gas	68-1900	0.3145			S
Flue Gas		0.24 (Approx.)			H
Hydrogen	70-212	3.41	1.419	2.402	S
Nitrogen	32-392	0.2438	1.41	0.1729	S
Oxygen	55-404	0.2175	1.3977	0.155	S
Water Vapor	212	0.421	1.305	0.322	S
Water Vapor	356	0.51			S

^aSee also The Specific Heat of Thermal Insulating Materials, by Gordon B. Wilkes and Carl O. Wood (A.S.H.V.E. TRANSACTIONS, Vol. 48, 1942, p. 493).

NOTES: When one temperature is given the true specific heat is given, otherwise the value is the mean specific heat between the given limits.

AUTHORITIES: S—Smithsonian Physical Tables, 1933; I—International Critical Tables; H—Heating, Ventilation and Air Conditioning, by L. A. Harding and A. C. Willard; M—Engineers' Handbook, by Lionel S. Marks.