

Standard/Base state air

Standard-state air:

Standard air is with temperature of 20 °C, atmosphere pressure of 760mmHg and humidity of 65%. The unit-volume air weight (also called "Specific Weight") is 1.2Kg/M³

Standard-state air:Base-state air:

Base air is with temperature of 0 °C, atmosphere pressure of 760mmHg and humidity of 0%. The unit-volume air weight (also called "Specific Weight") is 1.293Kg/ M³ . Input air flow is the air-flow volume input by a fan within a time unit. This is usually expressed as [M³/min]. Air volume is varied with pressure and temperature. When the input air flow is mentioned, the pressure and temperature of the area must be included.

For the fan conditions, the input positive pressure is expressed as mmAq[H₂O], Aq is the abbreviation of Aqua (water), and Hg is mercury. The relation of them is described as the following: The Specific weight is the weight/volume of air and expressed as γ[Kg/M³]. Specific weight of air is varied with temperature, pressure and humidity.

γ: air specific weight [Kg/M³]

p: pressure [mmHg]

O: humidity [%]

Ps: vapor saturation pressure at that temperature [mmHg]

T: absolute temperature (273+[°C]) [K]

Vapor Table

T[°C]	0	4	8	10	12	16	20	24	28	30
Ps[mmHg]	4.58	6.09	8.04	9.21	10.51	13.16	17.5	22.38	28.35	31.8
T[°C]	32	36	40	50	60	70	80	90	100	
Ps[mmHg]	35.76	44.57	55.3	92.5	149.5	234	355	526	760	

Air Weight Table

	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C	100°C
0%	1294g/M ³ 3	1249g/M ³ 3	1206g/M ³ 3	1166g/M ³ 3	1129g/M ³ 3	1094g/M ³ 3	1061g/M ³ 3	1030g/M ³ 3	1001g/M ³ 3	974g/M ³ 3	974g/M ³ 3
10%	1294g/M ³ 3	1248g/M ³ 3	1205g/M ³ 3	1164g/M ³ 3	1126g/M ³ 3	1089g/M ³ 3	1053g/M ³ 3	1030g/M ³ 3	983g/M ³ 3	948g/M ³ 3	912g/M ³ 3
20%	1294g/M ³ 3	1248g/M ³ 3	1204g/M ³ 3	1163g/M ³ 3	1123g/M ³ 3	1084g/M ³ 3	1045g/M ³ 3	1018g/M ³ 3	965g/M ³ 3	922g/M ³ 3	876g/M ³ 3
30%	1294g/M ³ 3	1247g/M ³ 3	1203g/M ³ 3	1161g/M ³ 3	1120g/M ³ 3	1079g/M ³ 3	1037g/M ³ 3	1006g/M ³ 3	947g/M ³ 3	896g/M ³ 3	840g/M ³ 3
40%	1293g/M ³ 3	1246g/M ³ 3	1202g/M ³ 3	1159g/M ³ 3	1117g/M ³ 3	1074g/M ³ 3	1029g/M ³ 3	994g/M ³ 3	929g/M ³ 3	870g/M ³ 3	804g/M ³ 3
50%	1293g/M ³ 3	1246g/M ³ 3	1201g/M ³ 3	1157g/M ³ 3	1114g/M ³ 3	1069g/M ³ 3	1021g/M ³ 3	982g/M ³ 3	911g/M ³ 3	844g/M ³ 3	768g/M ³ 3
60%	1293g/M ³ 3	1245g/M ³ 3	1200g/M ³ 3	1155g/M ³ 3	1110g/M ³ 3	1064g/M ³ 3	1013g/M ³ 3	970g/M ³ 3	893g/M ³ 3	818g/M ³ 3	732g/M ³ 3
70%	1292g/M ³ 3	1245g/M ³ 3	1199g/M ³ 3	1153g/M ³ 3	1107g/M ³ 3	1059g/M ³ 3	1005g/M ³ 3	958g/M ³ 3	875g/M ³ 3	792g/M ³ 3	696g/M ³ 3
80%	1292g/M ³ 3	1244g/M ³ 3	1198g/M ³ 3	1152g/M ³ 3	1104g/M ³ 3	1054g/M ³ 3	998g/M ³ 3	946g/M ³ 3	857g/M ³ 3	766g/M ³ 3	660g/M ³ 3
90%	1292g/M ³ 3	1244g/M ³ 3	1197g/M ³ 3	1150g/M ³ 3	1101g/M ³ 3	1049g/M ³ 3	990g/M ³ 3	934g/M ³ 3	839g/M ³ 3	740g/M ³ 3	624g/M ³ 3
100%	1292g/M ³ 3	1243g/M ³ 3	1196g/M ³ 3	1148g/M ³ 3	1098g/M ³ 3	1044g/M ³ 3	983g/M ³ 3	922g/M ³ 3	821g/M ³ 3	714g/M ³ 3	58