Amount of moisture from occupants or humidifier added to 0^F dew point

Cubic feet per minute of air flow/infiltration/ **60% RH** 55% RH 50% RH

N0. of people in the home	Grains/hr	Lbs./hr	50	75	100	125	150	175	200	225	250	275	300
	56000	8.0	Grians of moisture per lb. of 70^F air				86	75	67	60	55	50	47
	52500	7.5					81	71	63	57	52	48	44
	49000	7.0				90	76	67	59	53	49	45	42
	45500	6.5				84	71	62	55	50	46	42	39
	42000	6.0			96	78	67	58	52	47	43	39	37
	38500	5.5			89	72	62	54	48	43	40	37	34
10	35000	5.0		106	81	67	57	50	44	40	37	34	32
9	31500	4.5		96	74	61	52	45	40	37	34	31	29
8	28000	4.0	126	86	67	55	47	41	37	33	31	29	27
7	24500	3.5	111	76	59	49	42	37	33	30	28	26	24
6	21000	3.0	96	67	52	43	37	33	29	27	25	23	22
5	17500	2.5	81	57	44	37	32	28	26	24	22	21	19
4	14000	2.0	67	47	37	31	27	24	22	20	19	18	17
3	10500	1.5	52	37	29	25	22	20	18	17	16	15	14
2	7000	1.0	37	27	22	19	17	16	14	14	13	12	12
1	3500	0.5	22	17	14	13	12	11	11	10	10	10	9

45% RH

40% RH

30% RH

20%

Dehumidifiying 2 lbs/hr.. of moisture lowers the %RH.

Humidifiying 2 lbs/hr.. of moisture raises the %RH.

+- air leakage or ventilation raises/lowers the %RH in the

Effects of air leakage, number of occupants, humidification, or dehumification

Most of us understand that homes that are very dry have significant fresh air entering during dry winter weather. Knowing the moisture content of the house air compared to moisture in the outside air shows the moisture added to the air as it moves through the home. Typically, an adult adds .5 lb. moisture per hour from breathing and activities. Humidifying the outside air with moisture from the occupants is a starting point to estimate the cfm of outside fresh entering the home. The above chart attempts to estimate the amount of air movement verses the moisture levels during known outside conditions(0^F dew point) and number of occupants. The chart works with low or high outdoor moisture levels.

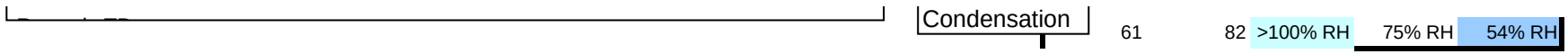
The chart aids in estimating the amount of humidification or dehumidification need to raise or lower the moisture level in a home during winter or summer. By reducing or increasing fresh air infiltration/ventilation, the indoor %RH is reduced or increased. By humidifying or dehumidifying specific lbs. of moisture per hour, the comfort level of the home can be improved. By changing the air in the home in 4-6 hours, indoor pollutants are purged and oxygen is replenished. A 2,500 sq.ft. home needs 75 cfm of fresh air when occupied. Large homes with adequate fresh air may need humidification to be comfortable. All homes need dehumidification to maintain <50%RH with +60^/F OS Dew Pt.

Various Descriptions of equal amounts of moisture in air.

Frost/condensation line on a window indicates a 32^F on the window. Relative humidity/temperature combination above 32^F dew points result in condensation on the window.

^F Dew Point	Grains/ Lb. of air	@ 60^F % RH	@ 70^F % RH	@ 80^F % RH
20	16	21% RH	15% RH	9% RH
27	22	28% RH	20% RH	14% RH
31	27	35% RH	25% RH	18% RH
37	34	44% RH	30% RH	20% RH
41	39	50% RH	35% RH	25% RH
44	44	56% RH	40% RH	29% RH
46	47	60% RH	45% RH	32% RH
47	50	65% RH	50% RH	37% RH
52	60	78% RH	55% RH	40% RH
55	66	85% RH	60% RH	43% RH
57	72	93% RH	65% RH	47% RH
59	78	97% RH	70% RH	50% RH

Condensation


Condensation
61
82
>100% RH
75% RH
54% RH