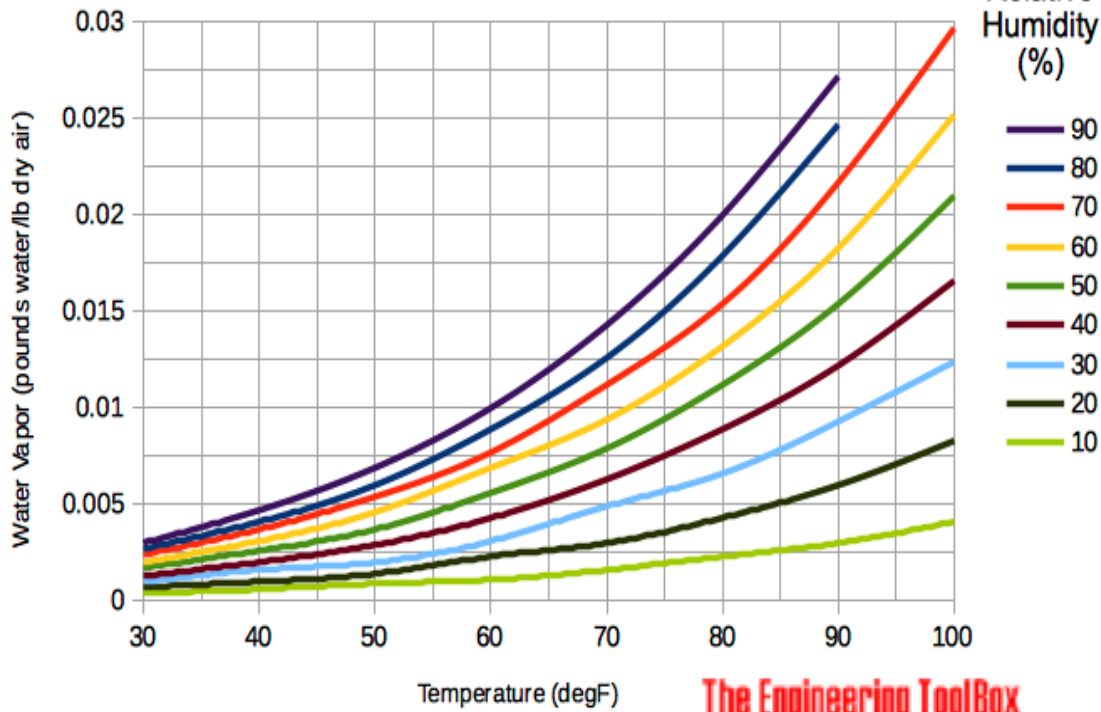


Water Vapour Concentration: Variability with Temperature

Water Vapor

Weight in Air (lb water/lb dry air)



The Engineering Toolbox
www.EngineeringToolBox.com

Relative Humidity %	AirMass g/Kg	way to bal	Tangent Slope ∂K	$\partial m / Kg / d K$	Mass Change per deg C as % of Total Water Mass
288K					
10	1.1	2.5	41.7	0.06	5.45%
20					
30					
40	5.6	14.5	35.5	0.41	7.29%
50					
60					
70					
80					
90	9.5	25.5	38.9	0.66	6.90%
303K					
10	2.5	3.5	27.8	0.13	5.20%
20					
30					
40	13	19.5	25.6	0.76	5.60%
50					
60					
70					
80					
90	24.5	34.4	26	1.32	5.40%
277K					
10	0.75	2	43.3	0.05	6.70%
20					
30					
40	2.5	7	38.8	0.18	7.20%
50					
60					
70					
80					
90	5	14.5	38.8	0.37	7.50%

Temperature								
°F								
	30	40	50	60	70	80	90	100
°C								
	-1	4	10	16	21	27	32	38
RHI%								
10	0.0004	0.0006	0.0009	0.0011	0.0016	0.0023	0.003	0.0041
20	0.0007	0.001	0.0014	0.0023	0.003	0.0043	0.006	0.0083
30	0.001	0.0016	0.002	0.0031	0.0049	0.0066	0.0093	0.0124
40	0.0013	0.002	0.0029	0.0043	0.0063	0.0089	0.0122	0.0166
50	0.0017	0.0026	0.0037	0.0056	0.0079	0.0112	0.0154	0.021
60	0.002	0.0031	0.0046	0.0069	0.0094	0.0132	0.0183	0.0252
70	0.0024	0.0037	0.0054	0.0077	0.0112	0.0154	0.0217	0.0297
80	0.0027	0.0041	0.006	0.0089	0.0126	0.0179	0.0247	-
90	0.003	0.0047	0.0069	0.01	0.0143	0.02	0.0272	-

Created from the Engineering Toolbox Table by B.Rian Catt.
October 2024.
Estimating the Tangent slope to the curve at the stated co ordinates of water vapour and tempertaure on each RHI curve. Done by hand from the original image so can be better with the original data and very precise plotting.