

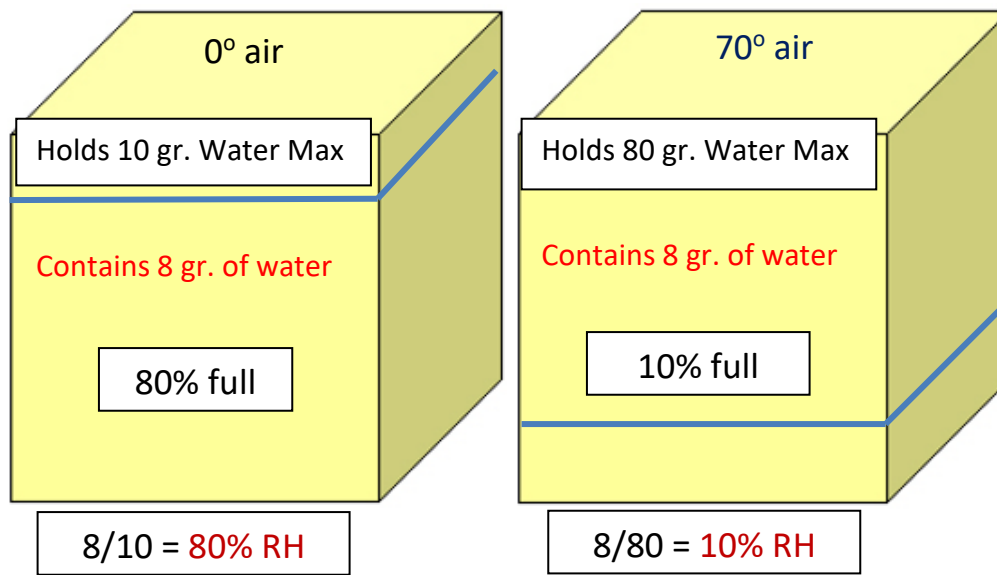
Understanding Relative Humidity

Relative Humidity is a ratio. It is expressed as a percentage.

- **Actual amount of water in the air / maximum amount of water the air can hold = RH%**
- If a cubic foot of air had NO water in it – the RH% would be 0%
- If a cubic foot of air was half full – the RH% would be 50%
- If a cubic foot of air was completely full – the RH% would be 100%

The amount of water the air can hold is dependent upon the temperature of the air.

- Warm air can hold a lot more water than cold air – RH% will change as air temperature changes
- RH% is inversely proportional to temperature – assuming no water added or taken from the air
- As the air is heated – the RH% will go down – As the air is cooled – the RH% will go up



Discussion:

What happens to the RH% indoors with winter infiltration in a very leaky building?

(Dries out the building)

What happens to the RH% indoors in the winter when you have ducts that leak to outside?

(Same – dries out the building)

What happens to the RH% indoors when we air-seal the building and seal duct leaks?

(RH% goes up)

Define Dewpoint:

(Dewpoint is the temperature at which water will condense out of the air)

Why is this important for an auditor?

(We can't have condensation on colder surfaces where mold might grow – windows to box-sills)

Pollutant source control and surface temperatures are important:

- To eliminate the chance of condensation, either reduce the water or increase the surface temp or both