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20929 Bridge Street, Southfield, MI 48033
4121 Brockton Drive SE, Grand Rapids, MI 49512
6200 Baron Drive, Bridgeport, MI 48722
6910 Treeline Drive, Suite A, Brecksville, OH 44141

Phone: (800) 589-6120 - Fax: (248) 354-3710
www.deppmann.com

March 23rd 2012 ~ Monday Morning Minutes:

Absorption Distance In Action

by Chris Lieder

In the last couple Monday Morning Minutes, we showed how the type of humidifier dispersion method could affect the absorption distance. Let's look at an example.

Example: 5000 CFM at 55°F Duct temperature to provide a room RH at 35% at 70°F with 50% outside air.

Dispersion Selection

Type of Dispersion Duct

Duct Inside Dimensions (inches)

Width Height

Leaving Duct Temp (°F)

Absorp. Distance (inches)

Show: All Models

Airflow Horizontal

Header Outside Duct

Water Seal Outside Duct

Plumbing: Hose

Hose Length (feet)

Calculate Piping Steam Loss

Insulated Tube(s)

Load (lbs/hr)

Humidifier (lbs/hr)

Air Volume (CFM)

Humidified Air Volume

Air Velocity (ft/min)

Entering Duct RH (%)

Leaving Duct RH (%)

Actual RH (%)

	Dispersion Method	Quantity	Absorption (inches)	Tube Centers	Tubes	Load + Loss
1	RAPID-SORB 1.5"	1	22	24	2	55.83
2	RAPID-SORB 2"	1	22	24	2	56.14
2	Single Tube 2", with Drain	1	59	35	1	55.99
	ULTRA-SORB LV	1	6	3	-	74.68
3	ULTRA-SORB LV	1	6	6	-	62.71
	ULTRA-SORB LV	1	8	9	-	59.85
	ULTRA-SORB LV	1	10	12	-	58.17

1. Traditional single tube dispersion..... 59" inches absorption
2. Rapidsorb multiple tube dispersion..... 22" inches absorption
3. Ultrasorb panel type dispersion..... 6" inches absorption

As you can see, in tight spaces, Ultrasorb or Rapidsorb can solve wetting problems in ducts.

Next week we show an easy way to save energy.

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