

Fundamentals of Hydronic Design



Radiant Based HVAC Systems

Fundamentals of Hydronic Design

This educational material is copy written © by Robert Bean, R.E.T., All Rights Reserved.

If you wish to use this presentation for non commercial or for profit purposes, please contact info@healthyheating.com for details and restrictions.

Portions of this presentation are copy written by others including materials copy written © 2005, by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (www.ashrae.org). Reprinted with permission from ASHRAE Applications Handbook.

This material may not be copied nor distributed in either paper or digital form without permission.

Some slides contained animations in the original .ppt format which have been eliminated in the conversions to Adobe's .pdf format.

Fundamentals of Hydronic Design

Flow Rate GPM	Flow Velocity ft/sec					60°F (16°C) Water ft of head loss / 100 ft of pipe				
	3/8"	1/2"	5/8"	3/4"	1"	3/8"	1/2"	5/8"	3/4"	1"
Pipe Size-	3/8"	1/2"	5/8"	3/4"	1"	3/8"	1/2"	5/8"	3/4"	1"
0.5	1.6	0.9	0.6	0.4	0.3	4.4	1.1	0.4	0.2	0.1
1.0	3.2	1.7	1.2	0.9	0.5	15.3	3.7	1.5	0.7	0.2
1.5	4.7	2.6	1.8	1.3	0.8	31.5	7.6	3.1	1.5	0.4
2.0	6.3	3.5	2.4	1.8	1.1	52.8	12.6	5.2	2.5	0.7
2.5	7.9	4.3	3.0	2.2	1.3	78.7	18.9	7.7	3.7	1.1
3.0		5.2	3.6	2.6	1.6		26.2	10.7	5.1	1.5
3.5		6.1	4.2	3.1	1.9		34.5	14.2	6.8	2.0
4.0		6.9	4.8	3.5	2.1		43.8	18.0	8.6	2.6
4.5		7.8	5.4	4.0	2.4		54.1	22.2	10.6	3.2
5.0			6.0	4.4	2.7			26.8	12.9	3.9
5.5			6.6	4.8	2.9			31.9	15.2	4.6
6.0			7.2	5.3	3.2			37.2	17.8	5.4
6.5				5.7	3.5				20.6	6.2
7.0				6.2	3.7				23.5	7.1
7.5				6.6	4.0				26.6	8.0
8.0				7.0	4.3				29.9	9.0
8.5				7.5	4.5				33.3	10.0
9.0				7.9	4.8				36.9	11.1
9.5					5.1					12.2
10.0					5.3					13.4
10.5					5.6					14.6
11.0					5.9					15.9
11.5					6.1					17.2
12.0					6.4					18.6
13.0					6.9					21.5
14.0					7.5					24.6

Flow Velocity and Head Losses for PEX Pipe

Fundamentals of Hydronic Design



Contact info@healthyheating.com or visit our website at www.healthyheating.com.

If you have questions contact us at our online forum at <http://www.healthyheating.com/bb2/index.php>

This material is presented as an educational service and is supported by downloading the Guide to Indoor Comfort Quality and the Architectural Guide to Radiant Based HVAC Systems

Radiant Based HVAC Systems