Radiant Design Summary - Manifold View

Project #: 2015--2 Slabs
Date: Nov 23, 2015
Prepared For: Langans Plumbing & Heating LLC

Bluewater Mechanical Inc 1048 Cox Cro Rd Toms River, NJ 08755
Prepared By: Richard McGrath Phone: 732-581-3833 Email: dmcgrath40@comcast.net

Project Summary

Project #:	2015--2 Slabs	**Total Flowrate:**	0.6 USGPM
Project Name:	2 Slabs comparison	**Maximum Head Loss:**	2.4 ft(H2O)
		Total Loops:	6
Design Data Location:	(User-Specified Location)	**Total Manifolds:**	3
Outdoor Temperature:	0 °F	**Total Zones:**	1
Wind Speed:	22 mph	**Min. Tubing Required:**	1342 ft
		Total Load:	6,110 Btu/hr
Total Area:	675 ft²	**Total Radiant Load:**	4,951 Btu/hr
Heated Area:	675 ft²	**Total Supplemental Load:**	0 Btu/hr
Construction Quality:	Best		
RFH Glycol Level:	100% Water		
Design Temp. Drop:	20 °F (20 °F for all QuikTrak)		
Radiant Tubing Volume:	4.7 gallons(US)		
Volume Water:	4.7 gallons(US)		
Volume Glycol:	0 gallons(US)		

Units: Flowrate = USGPM; Head Loss = ft(H2O); Cover Rv = °F·ft²·hr/Btu; Length = ft; Area = ft²; Unit Heat = Btu/hr/ft²; Spacing = in; Temperature = °F

* User-Specified Climate Data - Created using Uponor Advanced Design Suite - 7.9.1

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Radiant Design Data

Manifold 1

Water Temperature:	90.3 °F	**Flow Rate:**	0.2 USGPM
Zone Control:	Circulator	**Head Loss:**	2.4 ft(H2O)
Control Method:	None/Other	**Head Loss S/R:**	0 ft(H2O)
Total Loops:	2	**S/R Tube Length (One way):**	0 ft
		S/R Tube Type:	hePEX 3/4"

Room	Zone #	Attach Method	Tube Type	Loop #	Area	Unit Heat	Tube Spacing	Leader Length	Loop Length	Flow Rate	Head Loss	Valve Turns	Cover Rv	Surface Temp.	Req. Water Temp.	Design Temp. Drop
Room-1 - Ceiling	1	Quik Trak	hePEX 5/16"	1	112.6	7.3	7	30	253	0.1	2.4	n/a	0.45	72.6	80.5	20
Room-1 - Ceiling	1	Quik Trak	hePEX 5/16"	2	112.6	7.3	7	30	253	0.1	2.4	n/a	0.45	72.6	80.5	20

Manifold 2

Water Temperature:	90.3 °F	**Flow Rate:**	0.2 USGPM
Zone Control:	Circulator	**Head Loss:**	2.1 ft(H2O)
Control Method:	None/Other	**Head Loss S/R:**	0 ft(H2O)
Total Loops:	2	**S/R Tube Length (One way):**	0 ft
		S/R Tube Type:	hePEX 3/4"

Room	Zone #	Attach Method	Tube Type	Loop #	Area	Unit Heat	Tube Spacing	Leader Length	Loop Length	Flow Rate	Head Loss	Valve Turns	Cover Rv	Surface Temp.	Req. Water Temp.	Design Temp. Drop
Room 2 - Floor	1	Quik Trak	hePEX 5/16"	1	112.6	6.8	7	40	273	0.1	2.1	n/a	0.3	71.4	80.1	20
Room 2 - Floor	1	Quik Trak	hePEX 5/16"	2	112.6	6.8	7	40	273	0.1	2.1	n/a	0.3	71.4	80.1	20

Units: Flowrate = USGPM; Head Loss = ft(H2O); Cover Rv = °F·ft²·hr/Btu; Length = ft; Area = ft²; Unit Heat = Btu/hr/ft²; Spacing = in; Temperature = °F

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Manifold 3

Water Temperature:	90.3 °F	**Flow Rate:**	0.2 USGPM
Zone Control:	Circulator	**Head Loss:**	1.1 ft(H2O)
Control Method:	None/Other	**Head Loss S/R:**	0 ft(H2O)
Total Loops:	2	**S/R Tube Length (One way):**	0 ft
		S/R Tube Type:	hePEX 3/4"

Room	Zone #	Attach Method	Tube Type	Loop #	Area	Unit Heat	Tube Spacing	Leader Length	Loop Length	Flow Rate	Head Loss	Valve Turns	Cover Rv	Surface Temp.	Req. Water Temp.	Design Temp. Drop
Room 3 - Wall-1	1	Quik Trak	hePEX 5/16"	1	49.6	17.9	7	30	145	0.1	1.1	n/a	0	78	90.3	20
Room 3 - Wall-1	1	Quik Trak	hePEX 5/16"	2	49.6	17.9	7	30	145	0.1	1.1	n/a	0	78	90.3	20

Radiant Design Comments

All radiant floor heating circuits shall begin at the exterior wall and run to the interior . thermostat placement will be determined , this is of the utmost importance for a favorable result .

No floor surface temps exist for any Hardwood areas that will place those surfaces in danger . Relative humidity must be controlled throughout the winter and summer .

Towel warmers in master bath will be controlled by a simple on / off switch located in the bathroom . Turn them on 5 - 10 minutes prior to bathing .

Units: Flowrate = USGPM; Head Loss = ft(H2O); Cover Rv = °F·ft²·hr/Btu; Length = ft; Area = ft²; Unit Heat = Btu/hr/ft²; Spacing = in; Temperature = °F

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