uponor

B-19-499

Heating System Summary

Project #:FINCH/MILES
September 13, 2019

Project Information

Project #: FINCH/MILES
Name: FINCH/MILES
Location: 28300 CR14

Notes:

Project Summary

Load Calculation Method:	ASHRAE	Total Circuit Lengths:		Component Losses:	29,139 Btu/hr
Design Location:	(User Specified) STEAMBOAT SPRINGS , Colorado	hePEX 1/2"	2,202 ft	Infiltration/Ventilation:	15,279 Btu/hr
				Radiant Back Losses:	4,069 Btu/hr
Outdoor Temperature:	-15.0 °F	Total RH Circuits:	11	Total Heating Load:	48,486 Btu/hr
Floorplans / Levels:		Total Manifolds:	2		
Ground Floor	1,116 ft²	Total Zones:	2	Radiant Heating:	37,654 Btu/hr
Main Floor	631 ft²			Radiant Back Losses:	4,069 Btu/hr
Total Area:	1,747 ft²	Fluid Type:	100% Water	Other:	6,763 Btu/hr
		Total Tubing Volume:	20.27 USG	Total Heating Load:	48,486 Btu/hr

Note that this project has rooms that may require a supplemental heat supply to meet the design load.

Zone Heating Summary

Zone #	Gross Area	Construction	Heating Types	RH[1] Circuits	Total Tubing	Manifolds	Flowrate	Head Loss (Circuit Only)	RH Load[2]	Supplemental	Zone Load[3]
Zone 101	1,116	Embedded Slab	RH	5	1,068	1	3.27	3.8	32,603	0	32,603
Zone 201	631	Suspended Pipe	RH,OTH	6	1,133	1	1.03	0.5	10,198	6,763	16,961

(1) Complete circuits assigned to this zone. (2) Total Radiant heating load for rooms in zone, including all panel back loss. (3) Total load for zone including all panel back loss. Does not account for reclaimed loss within building envelope.

Room Heating Summary (By Construction Type)

Embedded Slab

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits[1]	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load[2]	Supplemental	Total Load[3]
Zone 101	GARAGE	RH	1,071	1,071	Manifold 1	1/2"	5	12	1,026	0.5	116	30.4	32,603	0	32,603

(1) Circuits assigned to this room. Leaders from other rooms may not be counted. (2) Includes panel back loss. (3) Total load including panel back loss. Does not account for reclaimed loss within building envelope.

Length = ft Area = ft² Temperature = °F Flowrate = USGPM Air Flow = cfm Heat Loss = Btu/hr Unit Heat Loss = Btu/hr·ft² Rv = hr·ft²·°F/btu
Head Loss = ft water RH = Radiant Floor Heating BB = Baseboard FA = Forced Air OTH = Other Heating SM = Snowmelt N = Not Heated

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See end of report for important Notes and Disclaimers.

Suspended Pipe

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits[1]	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load[2]	Supplemental	Total Load[3]
Zone 201	MAN CAVE	RH, OTH	587	587	Manifold 2	1/2"	6	8	1,097	0.5	140	17.4	10,198	6,763	16,961

(1) Circuits assigned to this room. Leaders from other rooms may not be counted. (2) Includes panel back loss. (3) Total load including panel back loss. Does not account for reclaimed loss within building envelope.

Manifold Summary

Manifold Name	# Zones	# Circuits	Flowrate	Head Loss[1]	Required Temp.	Supplied Temp.	Temp Drop	Manifold Type	Control Type	# Actuators	S/R Length[2]	S/R Pipe
Manifold 1	1	5	3.27	4.4	116	140	20	TruFLOW Jr Valved w/ Balancing	Manifold	0	-	-
Manifold 2	1	6	1.03	0.5	140	140	20	TruFLOW Jr Valved w/ Balancing	Manifold	0	-	-
Total	2	11	4.30	4.4	140	-	20	-	-	0	-	-

(1) Total Head loss includes manifold, circuits and supply/return piping if specified. (2) S/R Length = one way

Disclaimers

Cold weather humidification, or some lifestyles that produce excessive moisture, may cause condensation to occur if the absolute humidity of the indoor air is too high for the momentary circumstances. Condensation can occur on surfaces or concealed within the structure, and can lead to mold, mildew, frost damage, and moisture damage. The software does not perform calculations for the estimation or detection of possible condensation problems, and it is the designers (i.e. software users) responsibility to do so independently if required.

The calculated values shown in this report are based on the data input by the user of the software. Inaccurate or erroneous data input will result in inaccurate or erroneous results. You are strongly advised to review all input data carefully, and to have the calculated results reviewed by an experienced heating professional to ensure reasonableness and suitability for your application.

uponor

Water Supply Summary

Project #:FINCH/MILES
September 13, 2019

Project Information

Project #: FINCH/MILES
Name: FINCH/MILES
Location: 28300 CR14

Notes:

Note that this project has rooms that may require a supplemental heat supply to meet the design load.

Supply Summary

Name	Temp	Total Fluid Vol	Total Flow	Head Loss[1]	Load[2]	# Circuits	# Zones
Water Temperature	140.0	20.27	4.30	4.4	42,795	11	2

(1) Head loss includes manifolds, circuits, and supply/return piping if specified, may also contain control valve losses. (2) Load includes all panel back losses.

Manifold Summary

Manifold Name	Circuits	Flowrate	Required Temp.	Supplied Temp.	Manifold Type	S/R Length[1]	S/R Pipe	Manifold Head Loss	Circuit Head Loss	S/R Head Loss	Total Head Loss[2]
Manifold 1	5	3.27	116	140	TruFLOW Jr Valved w/ Balancing	-	-	0.5	3.8	0.0	4.4
Manifold 2	6	1.03	140	140	TruFLOW Jr Valved w/ Balancing	-	-	0.0	0.5	0.0	0.5
Total	11	4.30	140	-	-	-	-				4.4

(1) S/R Length = one way, (2) Total Head loss includes manifold, circuits and supply/return piping if specified.

Water Temperature (140 °F)

Manifold 1 (140 °F, TruFLOW Jr Valved w/ Balancing, 5 Circuits)

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss[1]	Temp Drop[2]	Load[3]	Actuator	Valve Setting
A-1	GARAGE	216	12	214	hePEX 1/2"	0.65	3.8	20	6,517	No	4.2
A-2	GARAGE	212	12	213	hePEX 1/2"	0.65	3.7	20	6,480	No	4.2
A-3	GARAGE	212	12	214	hePEX 1/2"	0.65	3.8	20	6,523	No	4.2
A-4	GARAGE	213	12	215	hePEX 1/2"	0.66	3.8	20	6,548	No	4.2
A-5	GARAGE	216	12	215	hePEX 1/2"	0.66	3.8	20	6,534	No	4.2
Total	-	1,068		1,071	-	3.27	3.8	-	32,603	0	

(1) Head loss for circuit tubing only. (2) Design Temp Drop (Estimated Actual Drop). (3) Load includes panel back losses.

Manifold 2 (140 °F, TruFLOW Jr Valved w/ Balancing, 6 Circuits)

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss[1]	Temp Drop[2]	Load[3]	Actuator	Valve Setting
B-1	MAN CAVE	188	8	116	hePEX 1/2"	0.20	0.4	20	2,011	No	4.13
B-2	MAN CAVE	195	8	114	hePEX 1/2"	0.20	0.4	20	1,987	No	4.2
B-3	MAN CAVE	202	8	114	hePEX 1/2"	0.20	0.5	20	1,984	No	4.2
B-4	MAN CAVE	210	8	109	hePEX 1/2"	0.19	0.4	20	1,887	No	3.93
B-5	MAN CAVE	186	8	79	hePEX 1/2"	0.14	0.2	20	1,376	No	0.87
B-6	MAN CAVE	152	8	55	hePEX 1/2"	0.10	0.1	20	948	No	0.65
Total	-	1,133		587	-	1.03	0.5	-	10,192	0	

(1) Head loss for circuit tubing only. (2) Design Temp Drop (Estimated Actual Drop). (3) Load includes panel back losses.

Disclaimers

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