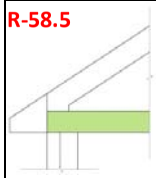
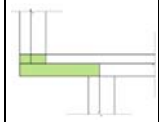
HUNTSMAN
BUILDING SOLUTIONS

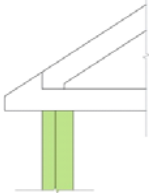
Insulation requirements

(Calculation made by ASHRAE 90.1)

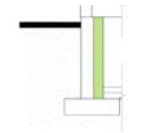
NOVO CLIMAT 2.0

Roof		Spcacing @ 16''		Spacing @ 24''	
		Inch	mm	Inch	mm
R-58.5 	**Sloped Roof with attic**				
	Roof truss by attic ventilated (sprayed on ceiling)	10.75	272	10.75	268
R-41 	**Cathedral or Flat roof**				
	I-Joist or Web joist by interior unvented	8.5	214	7.75	196
	I-Joist or Web joist by interior vented cavity outside	8.75	218	8	199
	I-Joist or Web joist by exterior vented cavity outside	9	226	8.25	207
	Joist by interior unvented				
	2x8	Consult Demilec			
	2x10 (with flat 2x3 perpendicular for 16'' C/C only) (R-9)	7.75	193	8.5	213
	2x12	8.5	213	7.75	196
	Joist by interior vented cavity				
	2x8	Consult Demilec			
	2x10 (with flat 2x3 perpendicular for 16'' C/C only) (R-9)	8	199	8.75	219
	2x12	8.75	219	8	201
	Joist by exterior vented cavity				
	2x8	Consult Demilec			
	2x10 (with flat 2x3 perpendicular for 16'' C/C only) (R-9)	8.5	211	9.25	232
	2x12	9.25	232	8.5	211
	Truss by interior unvented	7.5	190	7.5	185
	Truss by interior vented cavity	7.75	193	7.5	188
	Truss by exterior vented cavity	8	199	7.75	194

Cantilevered Floor		Spcacing @ 16''		Spacing @ 24''	
		Inch	mm	Inch	mm
R-28.5/R-7.5 	I-joist or Web joist by interior (air cavity ½'' under the floor)	5.25	130	5	122
	I-joist or Web joist by exterior	5.25	130	5	122
	Joist by interior (2x3 flat under joist) (R-9)				
	2x8	4.75	116	4.5	113
	2x10	4.5	111	4.5	110
	2x12	4.25	108	4.25	108
	Joist by exterior (2x3 upwards under joist) (R-9)				
	2x8	4.75	116	4.5	113
	2x10	4.5	111	4.5	110
	2x12	4.25	108	4.25	108

Above grade wall (cladding, furring 90° or 45°)		Spcacing @ 16''		Spacing @ 24''	
		Inch	mm	Inch	mm
R-23.5/R-4 	Heatlok Soya exterior + Int. insulation (Cellulose or fiberglass)				
	2x4 (R-10.5)	1.75	44	1.75	43
	2x6 (R-6)	1	24	1	21
	Heatlok Soya breaking thermal bridges + Heatlok Soya interior				
	2x4 (R-9)	1.5-3	36-75	1.5-3	34-75
	2x6 (R-6)	1-3	25-75	1-3	25-71
	Heatlok Soya interior + Int. insulation (Cellulose or fiberglass)				
	2x4	Non	Non	Non	Non
	2x6 (breaking thermal bridges) (R-6)	1	22	1	20
	R-4 exterior + Heatlok Soya interior				
	2x4	Non	Non	Non	Non
	2x6 (R-4)	4.25	106	4	97
	R-5 exterior + Heatlok Soya interior				
	2x4	Non	Non	Non	Non
	2x6 (R-5)	3.75	94	3.5	86

Rim joist		Spcacing @ 16''		Spacing @ 24''	
		Inch	mm	Inch	mm
R-23.5 	I-Joist with R-4 exterior (R-4)	4	97	3.5	88
	I-Joist (no exterior insulation)	4.75	116	4.25	106
	Rim joist R-4 exterior (R-4)	4.25	108	4	100
	Rim joist (no exterior insulation)	5.25	130	4.75	120
	Rim joist parallel with structure with R-4 exterior (R-4)	3	72	3	72
	Rim joist parallel with structure	3.5	86	3.5	86

Foundation wall		Spcacing @ 16''		Spacing @ 24''	
		Inch	mm	Inch	mm
R-18/R-4 	By interior structure 2x4 (spcaced 1'' from concrete) (R-6)	3	75	3	73
	By interior structure 2x3 (spaced 1.5'' from concrete) (R-9)	2.75	70	2.75	69
	By exterior with interior finish	2.5	64	2.5	64
	By exterior whitout interior finish	2.75	70	2.75	70

Slab		Full surface	
		Inch	mm
	Slab-on-grade R-6.2	1.25	32
	Slab-on-grade (with foundation wall insulated 4' underground) R-11.1	1.75	41
	Heated slab or Raft slab R-16.1	2.5	62

* Red = Effective R values for the assembly
* Orange = Minimum R value required for thermal bridges covering (Part 11)
* Blue = R values of thermal bridges covering achieved for the assembly

Demilec technical support : 1.866.437.0223

HEATLOK® SOYA HFO™

Comparison of insulation requirements for buildings 3 stories and less and 600 m^2 and less (Part 9) (National Building Code)

	Act respecting the conservation of energy in buildings (Zone A) 1983	Part 11 CCQ / Novoclimat (<6000 DD) 2012	Novoclimat 2.0 2014 ④
	Mandatory before 2012	**Presently mandatory**	**Volontary (Québec)**
	Total R value ①	Total R value + minimum thermal bridges covering ②	Effective R value ③
Sloped roof with attic	R-30.1 (RSI 5.30)	R-41 (RSI 7.22)	R-58.5 (RSI 10.3)
Flat or cathedral roof	R-30.1 (RSI 5.30)	R-41 (RSI 7.22)	R-41 (RSI 7.22)
Above ground wall (including rim joist)	R-19.3 (RSI 3.4)	R-24.5 (RSI 4.31) Thermal bridges covering : R-4 *(R-22 effective)*	R-23.5 (RSI 4.14)
Cantilevered floor	R-26.7 (RSI 4.7)	R-29.5 (RSI 5.2) Thermal bridges covering : R-7.5 *(R-25 effective)*	R-28.5 (RSI 6.02)
Foundation wall	R-12.5 (RSI 2.2)	R-17 (RSI 3.0) Thermal bridges covering : R-4 *(R-15 effective)*	R-18 (RSI 3.17)
Basement slab	None	R-5 (RSI 0.88) Full surface	R-6.2 (RSI 1.09) Full surface
Slab on ground	None	R-7.5 (RSI 1.32) Full surface	R-11.1 (RSI 1.95) Full surface
Heated or Raft slab	R-9 (RSI 1.6)	R-10 (RSI 1.76) Full surface	R-16.1 (RSI 2.84) Full surface

① *Thermal resistance value through insulation only.*
② *Total R value incluant including thermal bridges covering.*
③ *Thermal R value including calculation of thermal bridges by structure.*
④ *For region with more than 6000 degree days, the effective R value is increased only to the building parts below :*
- *Flat or cathedral roof : R-45 (RSI 7.93)*
- *Above ground wall : R-25 (RSI 4.4)*
- *Foundation wall : R-19.5 (RSI 3.43)*

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