

**U-values of building assemblies** Passive House with PHPP Version 10.6 EN

/ Climate: PHPP-Standard / TFA: 0 m² / Overheating: % / PER: 0 kWh/(m²a) Show special cases and secondary calculations on the right ->

Description of building assembly		Assembly no.	
Business As Usual - Wall		01ud	
Orientation of building assembly (or R <sub>si</sub> )	2-Wall	Interior insulation?	
Adjacent to (or R <sub>se</sub> )	1-Outdoor air	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
1/2" Drywall	0.180		
5-1/2" Fibreglass batt insulation	0.054	2x6 framing @ 24" o.c.	0.130
1/2" OSB sheathing	0.130		
Percentage of sec. 1: 94%		Percentage of sec. 2: 6.3%	
Heat transmission resistance coefficients		Total thickness [cm]: <b>16.6</b>	
Interior R <sub>si</sub> :	0.13 m²K/W	U-value [W/(m²K)]: <b>0.365</b>	
Exterior R <sub>se</sub> :	0.04 m²K/W		

Description of building assembly		Assembly no.	
Business As Usual - Header		03ud	
Orientation of building assembly (or R <sub>si</sub> )	2-Wall	Interior insulation?	
Adjacent to (or R <sub>se</sub> )	1-Outdoor air	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
1/2" Drywall	0.180		
2-1/2" Fibreglass batt insulation	0.054		
3" Wood header	0.130		
1/2" OSB sheathing	0.130		
Percentage of sec. 1: 100%		Percentage of sec. 2: %	
Heat transmission resistance coefficients		Total thickness [cm]: <b>16.6</b>	
Interior R <sub>si</sub> :	0.13 m²K/W	U-value [W/(m²K)]: <b>0.473</b>	
Exterior R <sub>se</sub> :	0.04 m²K/W		

Description of building assembly		Assembly no.	
Business As Usual - Foundation		02ud	
Orientation of building assembly (or R <sub>si</sub> )	2-Wall	Interior insulation?	
Adjacent to (or R <sub>se</sub> )	2-Ground	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
1/2" Drywall	0.180		
5-1/2" Fibreglass batt insulation	0.054	2x6 framing @ 24 o.c.	0.130
1/2" Air gap	0.079		
8" Concrete foundation	2.300		
Percentage of sec. 1: 94%		Percentage of sec. 2: 6.3%	
Heat transmission resistance coefficients		Total thickness [cm]: <b>36.9</b>	
Interior R <sub>si</sub> :	0.13 m²K/W	U-value [W/(m²K)]: <b>0.350</b>	
Exterior R <sub>se</sub> :	0.00 m²K/W		

Description of building assembly		Assembly no.	
Business As Usual - Slab		04ud	
Orientation of building assembly (or R <sub>si</sub> )	3-Floor	Interior insulation?	
Adjacent to (or R <sub>se</sub> )	2-Ground	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
4" Concrete slab	2.300		
Percentage of sec. 1: 100%		Percentage of sec. 2: %	
Heat transmission resistance coefficients		Total thickness [cm]: <b>10.2</b>	
Interior R <sub>si</sub> :	0.17 m²K/W	U-value [W/(m²K)]: <b>4.665</b>	
Exterior R <sub>se</sub> :	0.00 m²K/W		

**ASSEMBLY VALUES**

	U - Value	R - Value	RSI
Wall Assembly	0.365	15.56	2.74
Foundation	0.350	16.22	2.857
Window Header	0.473	12.0	2.114
Slab	4.665	1.217	0.2144

**NOTES:**



Revisions


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Description of building assembly						Assembly no.
High Performance Retrofit - Wall						01ud
Orientation of building assembly (or R <sub>si</sub> )		2-Wall				Interior insulation?
Adjacent to (or R <sub>se</sub> )		3-Ventilated				U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
1/2" Drywall	0.180					13
3-1/2" Fibreglass batt insulation	0.054	2x4 framing @ 24" o.c.	0.130			89
1/2" OSB sheathing	0.130					13
2" Rockwool ComfortBoard 80	0.033					51
2" Rockwool ComfortBoard 80	0.033					51
Percentage of sec. 1:						94%
Percentage of sec. 2:						6.3%
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 21.7</b>
Interior R <sub>si</sub> :		0.13	m²K/W			
Exterior R <sub>se</sub> :		0.13	m²K/W		<b>U-value [W/(m²K)]: 0.197</b>	

Description of building assembly						Assembly no.
High Performance Retrofit - Foundation						02ud
Orientation of building assembly (or R <sub>si</sub> )		2-Wall				Interior insulation?
Adjacent to (or R <sub>se</sub> )		2-Ground				U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
1/2" Drywall	0.180					13
3-1/2" Fibreglass batt insulation	0.054	2x4 framing @ 24" o.c.	0.130			89
1/2" Air gap	0.079					13
8" Concrete foundation	2.300					203
2" EPS type ii	0.036					51
2" EPS type ii	0.036					51
Percentage of sec. 1:						100%
Percentage of sec. 2:						
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 42.0</b>
Interior R <sub>si</sub> :		0.13	m²K/W			
Exterior R <sub>se</sub> :		0.00	m²K/W		<b>U-value [W/(m²K)]: 0.203</b>	

Description of building assembly						Assembly no.
High Performance Retrofit - Header						03ud
Orientation of building assembly (or R <sub>si</sub> )		2-Wall				Interior insulation?
Adjacent to (or R <sub>se</sub> )		3-Ventilated				U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
1/2" Drywall	0.180					13
1/2" Fibreglass batt insulation	0.054					13
3" Wood header	0.130					76
1/2" OSB sheathing	0.130					13
2" Rockwool ComfortBoard 80	0.033					51
2" Rockwool ComfortBoard 80	0.033					51
Percentage of sec. 1:						100%
Percentage of sec. 2:						
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 21.7</b>
Interior R <sub>si</sub> :		0.13	m²K/W			
Exterior R <sub>se</sub> :		0.13	m²K/W		<b>U-value [W/(m²K)]: 0.230</b>	

Description of building assembly						Assembly no.
High Performance Retrofit - Slab						04ud
Orientation of building assembly (or R <sub>si</sub> )		3-Floor				Interior insulation?
Adjacent to (or R <sub>se</sub> )		2-Ground				U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
3/4" Plywood	0.130					20
2" EPS type ii	0.036					51
2" EPS type ii	0.036					51
4" Concrete slab	2.300					102
Percentage of sec. 1:						100%
Percentage of sec. 2:						
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 22.4</b>
Interior R <sub>si</sub> :		0.17	m²K/W			
Exterior R <sub>se</sub> :		0.00	m²K/W		<b>U-value [W/(m²K)]: 0.312</b>	

**ASSEMBLY VALUES**

	U - Value	R - Value	RSI
Wall Assembly	0.197	28.82	5.076
Foundation	0.203	27.97	4.926
Window Header	0.230	24.69	4.348
Slab	0.312	18.2	3.205

**NOTES:**



Revisions

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Notes

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 Show special cases and secondary calculations on the right ->

Description of building assembly							Assembly no.
Passive House - Wall							01ud
Orientation of building assembly (or R <sub>si</sub> )		2-Wall					Interior insulation?
Adjacent to (or R <sub>se</sub> )		3-Ventilated					U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
3-1/2" Service cavity	0.483	2x4 framing @ 24" o.c.	0.130			89	
1/2" Plywood	0.130					13	
3-1/2" Cellulose	0.039	2x4 framing @ 24" o.c.	0.130			89	
3-3/4" Cellulose	0.039					95	
5-1/2" Cellulose	0.039	2x6 framing @ 24" o.c.	0.130			140	
1/2" Plywood sheathing	0.130					13	
3" Rockwool ComfortBoard 80	0.033					76	
Percentage of sec. 1:		94%	Percentage of sec. 2:	6.3%	Percentage of sec. 3:		
Heat transmission resistance coefficients						<b>Total thickness [cm]: 52.8</b>	
Interior R <sub>si</sub> :		0.13	m²K/W				
Exterior R <sub>se</sub> :		0.13	m²K/W		<b>U-value [W/(m²K)]: 0.093</b>		

Description of building assembly							Assembly no.
Passive House - Foundation							02ud
Orientation of building assembly (or R <sub>si</sub> )		2-Wall					Interior insulation?
Adjacent to (or R <sub>se</sub> )		2-Ground					U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
2-3/4" Quadlock ICF - EPS	0.036					70	
8" Concrete foundation	2.300					203	
2-3/4" Quadlock ICF - EPS	0.036					70	
2" EPS	0.036					51	
2" EPS	0.036					51	
Percentage of sec. 1:		100%	Percentage of sec. 2:		Percentage of sec. 3:		
Heat transmission resistance coefficients						<b>Total thickness [cm]: 45.8</b>	
Interior R <sub>si</sub> :		0.13	m²K/W				
Exterior R <sub>se</sub> :		0.00	m²K/W		<b>U-value [W/(m²K)]: 0.143</b>		

Description of building assembly							Assembly no.
Passive House - Header							03ud
Orientation of building assembly (or R <sub>si</sub> )		2-Wall					Interior insulation?
Adjacent to (or R <sub>se</sub> )		3-Ventilated					U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
3-1/2" Service cavity	0.483	2x6 @ 24" o.c	0.130			89	
1/2" Plywood	0.130					13	
9-3/4" Cellulose	0.039					248	
3" Wood header	0.130					76	
1/2" Plywood sheathing	0.130					13	
3" Rockwool ComfortBoard 80	0.033					76	
Percentage of sec. 1:		94%	Percentage of sec. 2:	6.3%	Percentage of sec. 3:		
Heat transmission resistance coefficients						<b>Total thickness [cm]: 52.8</b>	
Interior R <sub>si</sub> :		0.13	m²K/W				
Exterior R <sub>se</sub> :		0.13	m²K/W		<b>U-value [W/(m²K)]: 0.100</b>		

Description of building assembly							Assembly no.
Passive House - Slab							04ud
Orientation of building assembly (or R <sub>si</sub> )		3-Floor					Interior insulation?
Adjacent to (or R <sub>se</sub> )		2-Ground					U-value supplement [W/(m²K)]
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
4" Concrete slab	2.300					104	
4" EPS type ii	0.036					102	
4" EPS type ii	0.036					102	
Percentage of sec. 1:		100%	Percentage of sec. 2:		Percentage of sec. 3:		
Heat transmission resistance coefficients						<b>Total thickness [cm]: 30.8</b>	
Interior R <sub>si</sub> :		0.17	m²K/W				
Exterior R <sub>se</sub> :		0.00	m²K/W		<b>U-value [W/(m²K)]: 0.170</b>		

ASSEMBLY VALUES

	U - Value	R - Value	RSI
Wall Assembly	0.093	61.05	10.75
Foundation	0.143	39.71	6.993
Window Header	0.102	55.67	9.804
Slab	0.170	33.40	5.882

NOTES:

Project No. 2024.36



Revisions

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Notes

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Project North



Scale  
Passive House

**U-values of building assemblies** Passive House with PHPP Version 10.6 EN

/ Climate: PHPP-Standard / TFA: 0 m² / Overheating: % / PER: 0 kWh/(m²a) Show special cases and secondary calculations on the right ->

Description of building assembly						Assembly no.
High Performance PolyCore - Wall						01ud
Orientation of building assembly (or R <sub>adj</sub> )		2-Wall	Interior insulation?			
Adjacent to (or R <sub>adj</sub> )		3-Ventilated	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
1/2" Drywall	0.180					13
1/2" Drywall	0.180					13
3-1/2" EPS	0.036	2x4 steel stud @ 16" o.c.	50.000			89
9-1/2" EPS	0.036					241
1" EPS	0.036	1x1 steel stud @ 16" o.c.	50.000			25
Percentage of sec. 1:						100%
Percentage of sec. 2:						0.0%
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 38.1</b>
Interior R <sub>adj</sub> :						0.13 m²K/W
Exterior R <sub>adj</sub> :						0.13 m²K/W
						<b>U-value [W/(m²K)]: 0.099</b>

Description of building assembly						Assembly no.
High Performance PolyCore - Foundation						02ud
Orientation of building assembly (or R <sub>adj</sub> )		2-Wall	Interior insulation?			
Adjacent to (or R <sub>adj</sub> )		2-Ground	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
1/2" Drywall	0.180					13
1/2" Drywall	0.180					13
3-1/2" EPS	0.036	2x4 steel stud @ 16" o.c.	50.000			89
3-1/2" EPS	0.036					89
1" EPS	0.036	1x1 steel stud @ 16" o.c.	50.000			25
Percentage of sec. 1:						100%
Percentage of sec. 2:						0.0%
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 22.9</b>
Interior R <sub>adj</sub> :						0.13 m²K/W
Exterior R <sub>adj</sub> :						0.00 m²K/W
						<b>U-value [W/(m²K)]: 0.175</b>

Description of building assembly						Assembly no.
High Performance PolyCore - Header						03ud
Orientation of building assembly (or R <sub>adj</sub> )		2-Wall	Interior insulation?			
Adjacent to (or R <sub>adj</sub> )		3-Ventilated	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
1/2" Drywall	0.180					13
1/2" Drywall	0.180					13
3-1/2" EPS	0.036	2x4 steel stud @ 16" o.c.	50.000			89
9-1/2" EPS	0.036					241
1" EPS	0.036	1x1 steel stud @ 16" o.c.	50.000			25
Percentage of sec. 1:						100%
Percentage of sec. 2:						0.0%
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 38.1</b>
Interior R <sub>adj</sub> :						0.13 m²K/W
Exterior R <sub>adj</sub> :						0.13 m²K/W
						<b>U-value [W/(m²K)]: 0.099</b>

Description of building assembly						Assembly no.
High Performance PolyCore - Slab						04ud
Orientation of building assembly (or R <sub>adj</sub> )		3-Floor	Interior insulation?			
Adjacent to (or R <sub>adj</sub> )		2-Ground	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
3/4" Plywood	0.130					19
2-1/2" EPS	0.036	2-1/2" steel stringer	50.000			64
3" EPS	0.036					76
Percentage of sec. 1:						100%
Percentage of sec. 2:						0.0%
Percentage of sec. 3:						
Heat transmission resistance coefficients						<b>Total thickness [cm]: 15.9</b>
Interior R <sub>adj</sub> :						0.17 m²K/W
Exterior R <sub>adj</sub> :						0.00 m²K/W
						<b>U-value [W/(m²K)]: 0.244</b>

**ASSEMBLY VALUES**

	U - Value	R - Value	RSI
Wall Assembly	0.099	57.35	10.1
Foundation	0.175	32.45	5.714
Window Header	0.099	57.35	10.1
Slab	0.244	23.27	4.098

**NOTES:**



Revisions

1.	
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Notes

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NOT FOR CONSTRUCTION



NET ZERO DOUBLE STUD - DETAIL SET

**U-values of building assemblies** Passive House with PHPP Version 10.6 EN

/ Climate: PHPP-Standard / TFA: 0 m² / Overheating: % / PER: 0 kWh/(m²a) Show special cases and secondary calculations on the right ->

Description of building assembly						Assembly no.	
Net Zero Double Stud - Wall						01ud	
Orientation of building assembly (or R <sub>si</sub> )		2-Wall		Interior insulation?			
Adjacent to (or R <sub>se</sub> )		3-Ventilated		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
1-1/2" Service cavity	0.206			2x4 on flat @ 16" o.c.	0.130	38	
1/2" Plywood	0.130					13	
3-1/2" Cellulose	0.039	2x4 framing @ 16" o.c.	0.130			89	
2" Cellulose	0.039					51	
3-1/2" Cellulose	0.039	2x4 framing @ 16" o.c.	0.130			89	
1/2" Plywood sheathing	0.130					13	
Percentage of sec. 1:		69%	Percentage of sec. 2:	9.4%	Percentage of sec. 3:	21.9%	
Heat transmission resistance coefficients						Total thickness [cm]: <b>30.6</b>	
Interior R <sub>si</sub> :		0.13	m²K/W				
Exterior R <sub>se</sub> :		0.13	m²K/W		U-value [W/(m²K)]: <b>0.169</b>		

Description of building assembly						Assembly no.	
Net Zero Double Stud - Foundation - N/A						02ud	
Orientation of building assembly (or R <sub>si</sub> )				Interior insulation?			
Adjacent to (or R <sub>se</sub> )				U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
Percentage of sec. 1:		100%	Percentage of sec. 2:		Percentage of sec. 3:		
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R <sub>si</sub> :			m²K/W				
Exterior R <sub>se</sub> :			m²K/W		U-value [W/(m²K)]:		

Description of building assembly						Assembly no.	
Net Zero Double Stud - Header						03ud	
Orientation of building assembly (or R <sub>si</sub> )		2-Wall		Interior insulation?			
Adjacent to (or R <sub>se</sub> )		3-Ventilated		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
1-1/2" Service cavity	0.206	2x4 @ 16" o.c.	0.130			38	
1/2" Plywood	0.130					13	
3-1/2" Cellulose	0.039	2x4 @ 16" o.c.	0.130			89	
2-1/2" Cellulose	0.039					64	
3" Wood header	0.130					76	
1/2" Plywood sheathing	0.130					13	
Percentage of sec. 1:		91%	Percentage of sec. 2:	9.4%	Percentage of sec. 3:		
Heat transmission resistance coefficients						Total thickness [cm]: <b>30.6</b>	
Interior R <sub>si</sub> :		0.13	m²K/W				
Exterior R <sub>se</sub> :		0.13	m²K/W		U-value [W/(m²K)]: <b>0.203</b>		

Description of building assembly						Assembly no.	
Net Zero Double Stud - Slab on Grade						04ud	
Orientation of building assembly (or R <sub>si</sub> )		3-Floor		Interior insulation?			
Adjacent to (or R <sub>se</sub> )		2-Ground		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
6" Concrete	2.300					152	
4" EPS	0.036					102	
8" EPS	0.036					203	
8" EPS	0.036					203	
Percentage of sec. 1:		100%	Percentage of sec. 2:		Percentage of sec. 3:		
Heat transmission resistance coefficients						Total thickness [cm]: <b>66.0</b>	
Interior R <sub>si</sub> :		0.17	m²K/W				
Exterior R <sub>se</sub> :		0.00	m²K/W		U-value [W/(m²K)]: <b>0.070</b>		

ASSEMBLY VALUES

	U - Value	R - Value	RSI
Wall Assembly	0.169	33.60	5.917
Foundation	n/a	n/a	n/a
Window Header	0.203	27.97	4.926
Slab	0.070	81.11	14.29

NOTES:



Revisions

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Notes

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# NET ZERO DOUBLE STUD - DETAIL SET

## U-values of building assemblies

Passive House with PHPP Version 10.6 EN

/ Climate: PHPP-Standard / TFA: 0 m² / Overheating: % / PER: 0 kWh/(m²a)

Show special cases and secondary calculations on the right ->

Description of building assembly						Assembly no.	
Net Zero Steel Stud Exterior Insulation - Wall						01ud	
Orientation of building assembly (or R <sub>si</sub> )		2-Wall		Interior insulation?			
Adjacent to (or R <sub>se</sub> )		3-Ventilated		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
3-1/2" Structure - service cavity	0.483	2x4 steel stud @ 16" o.c.	50.000			89	
1/2" Plywood sheathing	0.130					13	
2" GPS exterior insulation	0.030					51	
2" GPS exterior insulation	0.030					51	
Percentage of sec. 1:		100%		Percentage of sec. 2:		0.0%	
Percentage of sec. 3:				Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R <sub>si</sub> :		0.13		m²K/W		21.7	
Exterior R <sub>se</sub> :		0.13		m²K/W		U-value [W/(m²K)]:	
						0.249	

Description of building assembly						Assembly no.	
Net Zero Steel Stud Exterior Insulation - Foundation						02ud	
Orientation of building assembly (or R <sub>si</sub> )		2-Wall		Interior insulation?			
Adjacent to (or R <sub>se</sub> )		2-Ground		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
2-3/4" Quadlock ICF - EPS	0.036					70	
8" Concrete foundation	2.300					203	
2-3/4" Quadlock ICF - EPS	0.036					70	
Percentage of sec. 1:		100%		Percentage of sec. 2:			
Percentage of sec. 3:				Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R <sub>si</sub> :		0.13		m²K/W		35.6	
Exterior R <sub>se</sub> :		0.00		m²K/W		U-value [W/(m²K)]:	
						0.239	

Description of building assembly						Assembly no.	
Net Zero Steel Stud Exterior Insulation - Header						03ud	
Orientation of building assembly (or R <sub>si</sub> )		2-Wall		Interior insulation?			
Adjacent to (or R <sub>se</sub> )		3-Ventilated		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
1/2" Drywall	0.180					13	
3-1/2" Structure -service cavity	0.483	2x4 steel stud @ 16" o.c.	50.000			89	
1/2" Plywood sheathing	0.130					13	
2" GPS exterior insulation	0.030					51	
2" GPS exterior insulation	0.030					51	
Percentage of sec. 1:		91%		Percentage of sec. 2:		9.4%	
Percentage of sec. 3:				Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R <sub>si</sub> :		0.13		m²K/W		21.7	
Exterior R <sub>se</sub> :		0.13		m²K/W		U-value [W/(m²K)]:	
						0.255	

Description of building assembly						Assembly no.	
Net Zero Steel Stud Exterior Insulation - Slab						04ud	
Orientation of building assembly (or R <sub>si</sub> )		3-Floor		Interior insulation?			
Adjacent to (or R <sub>se</sub> )		2-Ground		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
4" Concrete	2.300					102	
2" EPS type ii	0.036					51	
2" EPS type ii	0.036					51	
Percentage of sec. 1:		100%		Percentage of sec. 2:			
Percentage of sec. 3:				Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R <sub>si</sub> :		0.17		m²K/W		20.4	
Exterior R <sub>se</sub> :		0.00		m²K/W		U-value [W/(m²K)]:	
						0.328	

### ASSEMBLY VALUES

	U - Value	R - Value	RSI
Wall Assembly	0.249	22.80	4.016
Foundation	0.239	23.76	4.184
Window Header	0.249	22.80	4.016
Slab	0.328	17.31	3.049

### NOTES:



Revisions

Notes
1. .
2. .
3. .

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# NET ZERO DOUBLE STUD - DETAIL SET

## U-values of building assemblies

Passive House with PHPP Version 10.6 EN

/ Climate: PHPP-Standard / TFA: 0 m² / Overheating: % / PER: 0 kWh/(m²a)

Show special cases and secondary calculations on the right ->

Description of building assembly		Assembly no.	
Net Zero Retrofit - Wall		01ud	
Orientation of building assembly (or R <sub>adj</sub> )	2-Wall	Interior insulation?	
Adjacent to (or R <sub>sep</sub> )	3-Ventilated	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
1/2" Drywall	0.180		
3-1/2" Old cavity insulation	0.055	2x4 framing @ 16" o.c.	0.130
1/2" Wood slat sheathing	0.130		
1-1/2" Cellulose	0.039	1-1/2" exterior frame	0.130
4-1/2" Cellulose	0.039		
1-1/2" Cellulose	0.039	1-1/2" exterior frame	0.130
Percentage of sec. 1:	91%	Percentage of sec. 2:	9.4%
Heat transmission resistance coefficients			
Interior R <sub>si</sub> :	0.13	m²K/W	
Exterior R <sub>se</sub> :	0.13	m²K/W	
Total thickness [cm]:		30.5	
U-value [W/(m²K)]:		0.154	

Description of building assembly		Assembly no.	
Net Zero Retrofit - Foundation		02ud	
Orientation of building assembly (or R <sub>adj</sub> )	2-Wall	Interior insulation?	
Adjacent to (or R <sub>sep</sub> )	2-Ground	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
1/2" Drywall	0.180		
3-1/2" Fibreglass batt insulation	0.054	2x4 framing @ 24" o.c.	0.130
2" EPS type ii	0.036		
2" EPS type ii	0.036		
8" Concrete foundation	2.300		
Percentage of sec. 1:	94%	Percentage of sec. 2:	6.3%
Heat transmission resistance coefficients			
Interior R <sub>si</sub> :	0.13	m²K/W	
Exterior R <sub>se</sub> :	0.00	m²K/W	
Total thickness [cm]:		40.7	
U-value [W/(m²K)]:		0.214	

### ASSEMBLY VALUES

	U - Value	R - Value	RSI
Wall Assembly	0.154	36.87	6.494
Foundation	0.214	26.53	4.673
Window Header	0.170	33.40	5.882
Slab	0.310	18.32	3.226
Roof	0.124	45.79	8.065

Description of building assembly		Assembly no.	
Net Zero Retrofit - Header		03ud	
Orientation of building assembly (or R <sub>adj</sub> )	2-Wall	Interior insulation?	
Adjacent to (or R <sub>sep</sub> )	3-Ventilated	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
1/2" Drywall	0.180		
1/2" Old cavity insulation	0.055		
3" Wood header	0.130		
1/2" Wood slat sheathing	0.130		
1-1/2" Cellulose	0.039	1-1/2" exterior frame	0.130
4-1/2" Cellulose	0.039		
1-1/2" Cellulose	0.039	1-1/2" exterior frame	0.130
Percentage of sec. 1:	91%	Percentage of sec. 2:	9.4%
Heat transmission resistance coefficients			
Interior R <sub>si</sub> :	0.13	m²K/W	
Exterior R <sub>se</sub> :	0.13	m²K/W	
Total thickness [cm]:		30.5	
U-value [W/(m²K)]:		0.170	

Description of building assembly		Assembly no.	
Net Zero Retrofit - Slab		04ud	
Orientation of building assembly (or R <sub>adj</sub> )	3-Floor	Interior insulation?	
Adjacent to (or R <sub>sep</sub> )	2-Ground	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
3/4" Plywood	0.130		
3/4" EPS between strips	0.036	3/4x3 embeded plywood	0.130
3-1/4" EPS	0.036		
4" Concrete slab	2.300		
Percentage of sec. 1:	100%	Percentage of sec. 2:	
Heat transmission resistance coefficients			
Interior R <sub>si</sub> :	0.17	m²K/W	
Exterior R <sub>se</sub> :	0.00	m²K/W	
Total thickness [cm]:		22.5	
U-value [W/(m²K)]:		0.310	

Description of building assembly		Assembly no.	
Net Zero Retrofit - Roof		05ud	
Orientation of building assembly (or R <sub>adj</sub> )	1-Roof	Interior insulation?	
Adjacent to (or R <sub>sep</sub> )	3-Ventilated	U-value supplement [W/(m²K)]	
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]
1/2" Drywall	0.180		
Empty attic cavity - average	0.000		
1/2" Plywood sheathing	0.130		
1-3/4" Cellulose	0.039	1-3/4" i-joint cord	0.130
8-3/8" Cellulose	0.039		
1-3/4" Cellulose	0.039	1-3/4" i-joint cord	0.130
Percentage of sec. 1:	100%	Percentage of sec. 2:	
Heat transmission resistance coefficients			
Interior R <sub>si</sub> :	0.10	m²K/W	
Exterior R <sub>se</sub> :	0.10	m²K/W	
Total thickness [cm]:		93.7	
U-value [W/(m²K)]:		0.124	



Revisions

1.	
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Notes

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