



Wall Assembly Comparison

The following information provides a cost comparison of the alternatives for a high performance home as well as providing advantages and disadvantages of each method. This is all based on our extensive experience in the building industry and the methods we are analyzing.

Price	Wall Thickness	R28 Cedar 1x4 siding		Difference from R28		
		/sqft wall	/3995 sqft	R32	R40	
Wood 2x6; Insulated	7.25"	\$ 26.82	\$107,151.11	\$ -	\$ -	
Gunite/Shotcrete	16"	\$ 38.05	\$152,009.52	\$ 799.05	\$ 2,397.15	
CIP (Tilt-Up)	16"	\$ 40.22	\$160,693.39	\$ 799.05	\$ 2,397.15	
Wood Assembly	TJI	19.5"	\$ 40.23	\$160,714.16	\$ 1,732.19	\$ 5,196.57
	PolyIso	15.5"	\$ 40.36	\$161,241.42	\$ 1,307.44	\$ 3,922.33
	EPS	13"	\$ 40.60	\$162,199.28	\$ 964.85	\$ 2,894.56
	Spray Foam	7.25"	\$ 42.09	\$168,155.33	\$ -	\$ -
	ComfoIS	15.5"	\$ 42.39	\$169,363.20	\$ 2,796.67	\$ 8,390.02
	Neopor	13.5"	\$ 43.25	\$172,812.12	\$ 2,480.97	\$ 7,442.92
ICF	21.25"	\$ 43.52	\$173,853.73	\$ 9,368.00	\$ 9,368.00	

The prices have been obtained from suppliers along with estimates based on past labor and inventory costs. These prices are estimates only and do not reflect a final or fixed estimate

- For all Wood frame and ICF we used a 1"x 4" cedar siding. For Gunite an acrylic colored finish. CIP was given a smooth natural colored concrete finish which is then sealed. We believe this gives all wall systems an approximately equal durability and visual performance.
- Using Hardie Plank or Stucco siding would reduce cost by \$15,990 on each wood assembly.
- These wall assemblies have been priced using a 154ft long by 26ft tall wall. No windows have been included.
- Window install costs will vary drastically between wall assemblies, as some installations are more complex than others.
- Each wall system has an R value of R32 or 0.031 U value (imperial). If you require a specific R value, we can adjust costs accordingly.
- The cost difference of an insulated and non-insulated footing is \$1734 for 154 feet of lineal footing (CIP, Gunite and ICF only).
- Spray foam has an effective R value of 28, the wall would need to be framed with 2x8's or greater in order to obtain a higher R value.



- In order to have insulated footings on a wood frame wall assembly there is an additional cost of \$10,722, this has been included in table above.
- 30% of heat loss is through uninsulated slabs. 80% of this heat loss can be attributed to uninsulated foundation walls and footings.
- A concrete floor system would be suggested for CIP, Gunitite and ICF. Concrete floor systems are more expensive; this has been included in the costings for the systems in table above. For example, for 1250 sqft there is a difference of \$3,328.
- All of these systems will need crane access.
- We have not discussed ecological factors as we do not believe we are qualified to comment on such a wide and hotly debated topic. There are far too many opinions and research papers available from experts in the field for us to be able to find a definitive conclusion.
- Every wall system will require an engineer for assembly.
- If the wall assembly is complicated ICF would need \$5,389 added to the cost.
- With the ICF wall system you are able to deduct a R16 block, leaving you with an R16 wall. This provides \$9,368 in savings.
- Comfo-board cannot be buried below grade unless we step up to a drain board. We have not witnessed results of this through our construction experience.
- Wood wall assemblies use approximately 75% of ordered material while concrete wall assemblies use between 90-95%.

We believe these are the most important considerations when comparing different wall assemblies. There are always more factors from a different perspective. Based on our experience and knowledge this document provides a good overall evaluation of high performance wall systems. Please see the table attached for further comparison.



Wall System Comparison of Advantages and Disadvantages

Scored 1-5; 5 being best

	Gunite	TJI	EPS	Polyiso	CIP	Comfols	Neopor	ICF
Trade Familiarity -Sub-contractors familiarity with product (plumbers, etc)	1	3	4	4	2	3	4	3
Window Install Difficulty	4	2	2	2	5	2	2	2
Protection of Investment - Durability	5	3	2	2	5	3	2	5
Maintenance - ongoing demand to sustain performance and appearance	4	1	1	1	5	1	1	3
Home Air Tightness, and it's preservation	5	1	1	1	5	1	1	4
Acoustics - within the home and from exterior elements	5	2	3	3	5	3	3	5
Cost	5	4	4	3	4	2	2	1
Total	29	16	17	16	31	15	15	23

These figures are based off NZ Builders experience and are not meant to be used as empirical evidence.

In our opinion Concrete Tilt-Up construction using insulated panels provides a home owner with the best overall product