

Oven radius (rear)	400	mm
Oven radius (side)	375	mm
Brick Height	75	mm
Brick Width	100	mm
Brick Length	200	mm
Radius at outside Bricks	500	mm

Row Number	Row Height (inside)	Height of base of row	Angle of row (radians)	gap at back of brick	Row Height (outside)
1	75	0	0.00	0	75
2	147	75	0.19	19	165
3	213	147	0.38	19	250
4	273	213	0.56	19	326
5	322	273	0.75	19	391
6	361	322	0.94	19	442
7	387	361	1.13	19	477
8	399	387	1.31	19	496
9	397	399	1.50	19	497
10	382	397	1.69	19	481
11	353	382	1.88	19	448
12	311	353	2.06	19	399
13	259	311	2.25	19	337
14	0	259	2.44	19	65

Door Height 252 mm

#### Thermal Mass

Floor tiles	Width	230 mm	
	Depth	215 mm	
	Weight	6.7 kg	
Bricks	Width	110 mm	
	Depth	230 mm	
	Thickness	70 mm	
	Weight	3.6 kg	1.771 2.032749859
Floor	No Tiles	22	
	Weight	147.4 kg	
Dome	Half Bricks	150 kg	
	Weight	270 kg	
Mortar	Cement	35 kg	
	Sand	70 kg	
	Total	522.4 kg	
Thermal Mass		1360 KJ/M3/K	

Volume Brick	0.26 M3
Thermal Mass	350 kJ per Kelvin
Operating Temp	250 DecC
Energy	80038 kJoules

Radius of fire bricks	0.52 metres
area of vermiculite	1.70 square metres
Outside area if	0.05 metres thick
	2.04 square metres
Volume of vermiculite	85 litres
	102
	0.09 if being precise
Circumference of fire blar	3.58 Metres

Radius of row (mm)	Circumference row (mm)	number bricks in row	Running total bricks	Insulation circ (mm)
400	2513	26	0	26
393	2469	25	0	51
372	2339	24	0	75
338	2126	22	0	97
293	1839	19	0	116
237	1487	15	0	131
172	1084	11	0	142
102	642	7	0	149
28	178	2	0	151
-47	-293	-3	1	
-120	-753	-8	1	
-189	-1187	-12	1	
-251	-1579	-16	1	
-305	-1916	-20	1	

Foundation		Notes	Cost ea	Cost
Width	1200 mm	This would typically be 200mm wider		
Depth	1400 mm	This would typically be 100mm longer		
Depth	900 mm	Required to get to solid base in location - this will vary, but it is essential a solid base be built		
Rebar	10000 mm	Two runs around base. Again, typically run reinforcing at 300mm centres throughout foundation	\$3.00	\$30.00
Concrete	38 25kg bags	This is a fair old foundation, but is holding alot of weight!	\$3.90	\$148.20
Subtotal				\$178.20

Oven Stand		Notes	Cost ea	Cost
Width	1200 mm			
Depth	1400 mm			
Hearth Thickness	100 mm			
Wall bricks	33 Blocks	Used 200mm by 400mm bessa blocks (need 4 end blocks) - used second hand.	\$2.25	\$74.25
Concrete to fill alternate cores	14 bags	20kg bags - bunnings	\$3.90	\$54.60
Mortar for bottom row of blocks	2 bags	20kg per bag (mix yourself from sand / cement or use premix)	\$7.00	\$14.00
Hearth Concrete	0.2 M3	This includes some to fill part of cores of wall blocks		
number of bags of concrete	20	20kg bags - bunnings	\$3.90	\$78.00
Reinforcing	14.4 metres	12mm rebar rods at 300mm centres max.	\$3.00	\$43.20
Cement Fibre sheet	1 sheet	Base of hearth to hold concrete. There are a number of ways to approach this - I though using a cement sheet to hold the hearth concrete up - this was the easiest way I found.	\$12.00	\$12.00
Bracing	4 pieces	90*35 timber, build bracing to hold up hearth base. This is temporary and is thrown away afterwards.	\$5.00	\$20.00
Framing	4 pieces	140 * 20mm timber, framing for hearth concrete. This is temporary and thrown away afterwards.	\$4.00	\$16.00

Render base - cement	1 bags	White cement. This is optional - I used it to match the back yard.	\$10.00	\$10.00
Render base - sand	3 bags	Sand for render (if used nice bricks would avoid this). This is optional - I used it to match the back yard.	\$7.00	\$21.00
<b>Subtotal</b>			<b>\$343.05</b>	

Oven Base		Notes	Cost ea	Cost
Vermicrete Insulation	120 litres	Needs 2 bags at 100 litres (the rest is used on oven). This is available from hydroponics stores (I got mine from Pooraka - but every hydroponics store will have this in 100 litre bags)	\$35.00	\$70.00
Cement - vermicrete	2 bags	use 1-6 mix of cement to vermicrete	\$7.00	\$14.00
Formwork for insulation	4 pieces	90mm * 1800 timber to make formwork for vermicrete, this is temporary and thrown away later. Use this to shape the vermiculite insulation into the right shape for the fire brick base of the oven.	\$5.00	\$20.00
Hearth bricks	44 Pieces	230*115 bricks. These form the floor of the oven, and NEED to be fire bricks. They are available from the Littlehampton Brick works, as are pretty well all other brick types.	\$6.00	\$264.00
Fire Clay mortar for base	1.5kg 4 bags	Use 1-1 mix of fireclay from Littlehampton Bricks and sand to set base to vermicrete. Note that you might be able to use sand for this if necessary.	\$16.00	\$64.00
Sand for base mortar	0.5 bags	needs 1-1 mix of sand and fire clay to level up oven floor bricks. You might be able to simply use sand for this.	\$6.00	\$3.00
<b>Subtotal</b>			<b>\$435.00</b>	

Oven		Notes	Cost ea	Cost
Oven wall Bricks	120 bricks	Used seconds 70mm pavers from Littlehampton Bricks - some people advocate using fire bricks. These are cut in half (ok I just used a bolster!) and used end on. Note comments on size - I built a modest oven, which is 800 by 750mm rather than 900 by 900mm. Would need probably another 20-30 bricks at a guess for larger oven.	\$0.65	\$78.00
Refractory Mortar	2 bags	From Bianco Hardware, Istra 40, requires 1-2mix of cement sand. This is very important! Alternative is to use mix of fire clay, lime and sand (1:1:4)	\$45.00	\$90.00
Sand	4 bags	For dome mortar - I used every last drop of this, and my oven is rather smaller than recommended by Forno Bravo (mine is 800mm deep by 750mm wide rather than 900 by 900mm).	\$7.00	\$28.00
Vermicrete insulation	80 litres	Use leftover from base - expect 50mm thickness. This is not essential provided you use the fire blanket below, which is essential.	\$0.00	\$0.00
Cement for insulation	1.5 bags	need 1-6 mix of cement / vermiculite again. Refer above - non essential.	\$7.00	\$10.50
Fire blanket insulation	1 bag	Fibretex 620 blanket, I got mine from CSR - though you need to pay for it through an agent. One blanket is pretty well exact for the oven. This part is ESSENTIAL if you want to bake in the oven. You need 50mm thickness as there is 30-50mm of vermiculite on the oven already.	\$130.00	\$130.00
chicken wire	1 piece	To cover insulation (put paper, alfoil or something under chicken wire to stop insulation drying outer render as it is applied over the insulation layer).	\$19.00	\$19.00
Render finish - cement	4 bags	to make 50mm thickness on dome (about 0.12 cu metre) - plan to use white cement at least for outer layer	\$8.00	\$32.00
Render finish - sand	10 bags	For 1-3 or 4 mix for render	\$4.50	\$45.00
Subtotal				\$432.50
<b>Oven without base</b>				<b>\$867.50</b>
<b>Total</b>				<b>\$1,388.75</b>