



Manufacturing Guidelines

Get materials as described in the table or similar products with the requested specs.

Part	Dimensions/Information	Weight	Cost	Source/Proximity	Required Specs.
750L Water Tank 	100cm x 100cm (H x Φ) 750L 10.5cm inlet	Max. 750 kg	173 + 20 delivery = \$193	https://www.vidaxl.com.au/e/8718475874478/vidaxl-collapsible-rain-water-tank-750-l Delivery price based on postage to Cairns	<ul style="list-style-type: none"> - Tank that stores atleast 750L of water. - Fit within cube metre space. - Same size inlet to match other components.
Submersible pump and cable + switch box + control unit	Pump- Grundfos SQFlex 2.5-2N, 3" diameter	10kg	3750+ 2300= \$6050	https://www.waterborepump.com.au/ includes postage price to Cairns.	<ul style="list-style-type: none"> - Submersible pump that can pump at the least 10L/minute. - Include a control unit from which the pump can be turned on and off as well as having the ability to change the rate of pumping.
Solar Panels	Panels- Cheetah 60M, 4 x 330w panels. 1665 x 1002 x 35mm	19kg per panel = 38kg	\$1500	https://www.waterborepump.com.au/ includes postage price to Cairns.	<ul style="list-style-type: none"> - Solar panel system that provides 900W at 135.2V DC.
Battery	Waeco CoolPower Battery Pack 12V 44AH	13kg	\$380	https://www.bcf.com.au/p/waeco-coolpower-battery-pack-12v-44ah/523582.html	<ul style="list-style-type: none"> - A battery that can store enough energy for the pump to run for an adequate amount of time. - Rechargeable

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				BCF Cairns	via solar panels.
Hose	Hose- Flexibore 100 Series 100m x 32mm	33kg	\$1355	https://www.waterborepump.com.au/ includes postage price to Cairns.	- Flexible, PVC cased hose. - 100m long.
DC Isolator + connections and pre-wiring	IO50 DC Isolator	>2kg	\$88	https://www.waterborepump.com.au/ includes postage price to Cairns.	- DC Isolator with correct connections to other components.
Windable hose reel 	Can be carried off the tray to the borehole if required.	70kg	\$2226	http://www.realeazy.net.au/Product/Detail.html?&PR_ID=46&N=Real%20Ezy%20Hose%20Reel%20-%20100%20x%2032	- Windable hose reel. - Must hold 100m worth of hose and cable. - Manual winding is recommended.
Suspension Bed (all its components)	1x aluminium sheet 5mm thick (1700x1200mm) 1x Grade350, 5mm steel sheet (1700x1200mm) + foam layer (6cm of closed-cell polyethylene foam) Fits within the underside of the frame.	8kg	100 +200 +45 = \$345	https://www.hardingsteel.com.au/sheet-sheets-brisbane/	- Suspension bed that provides adequate suspension for design product to remain intact in off-road conditions. - Ability to be attached to standard ute tray and design product.
Frame	12m worth of steel square tubing welded together in	35kg	\$60	https://www.bunnings.com.au/meta	- Reliably strong. - Easily attachable to

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	Cairns.			l-mate-20-x-20-x-1-6m-3m-galvanised-steel-square-tube_p113046 7 bunnings, \$20 for 3m	standard ute tray. - Ability to weld/connect parts together easily for the frame. - Fits well around components.
	Total	997kg (maximum)	\$12201		

Create sketches not in scale, that show rough dimensions and locations of components.
 How the suspension bed is attached to the mainframe and itself.

Sketch for locations of components (overall sketch)

Different oriental views (front, side, top)

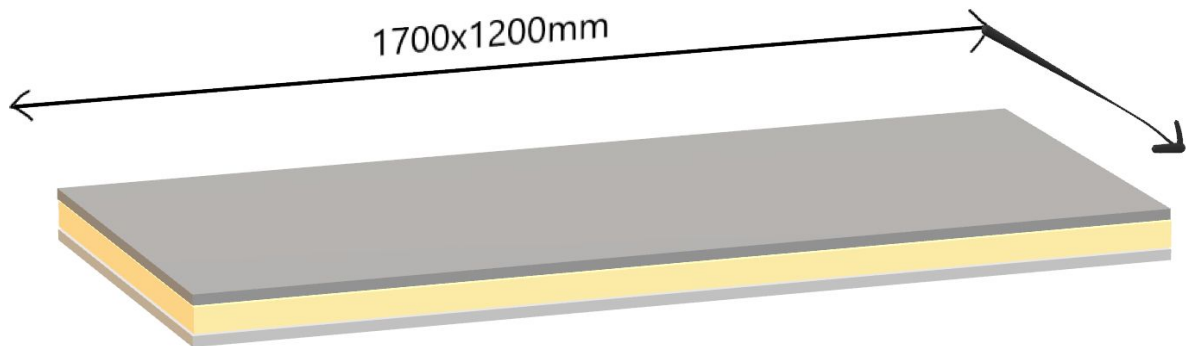
Isolated sketch of the suspension bed

Sketch of joins and base frame assembly

Sketch of box on top of suspension component that houses all parts

Types of joins (welds, bolts/screws) can be stated in a forward section with recommendations

List of required/recommended materials such as metal sizes, the pump pack etc.



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Steel sheet 5mm thick

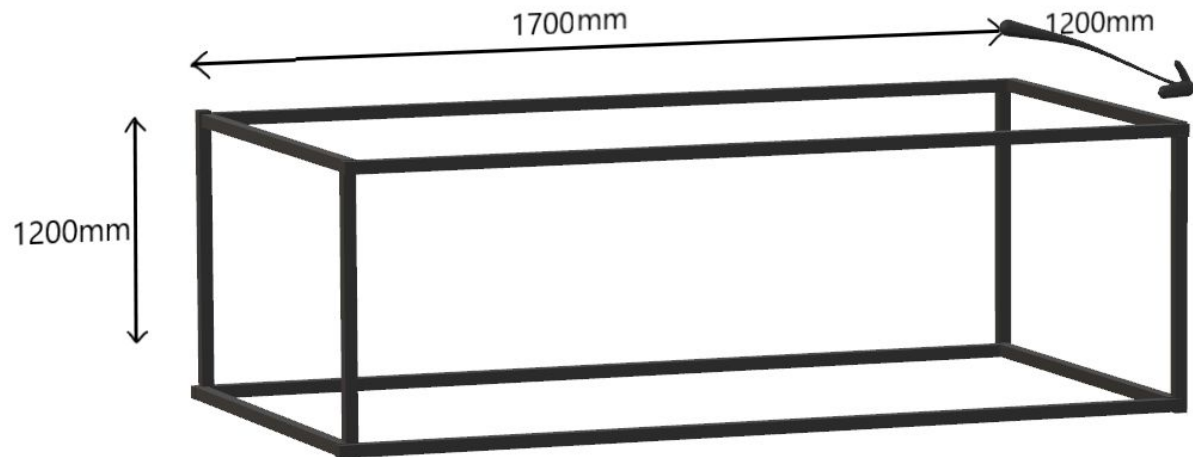


Foam layer 60mm thick

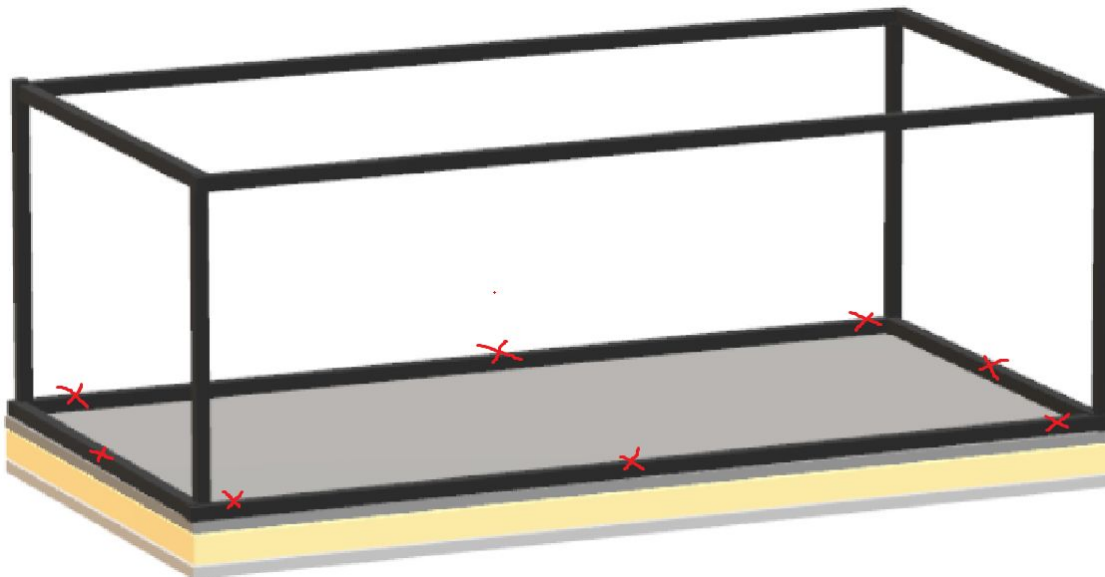


Glue together with industrial glue

Aluminium sheet 5mm thick

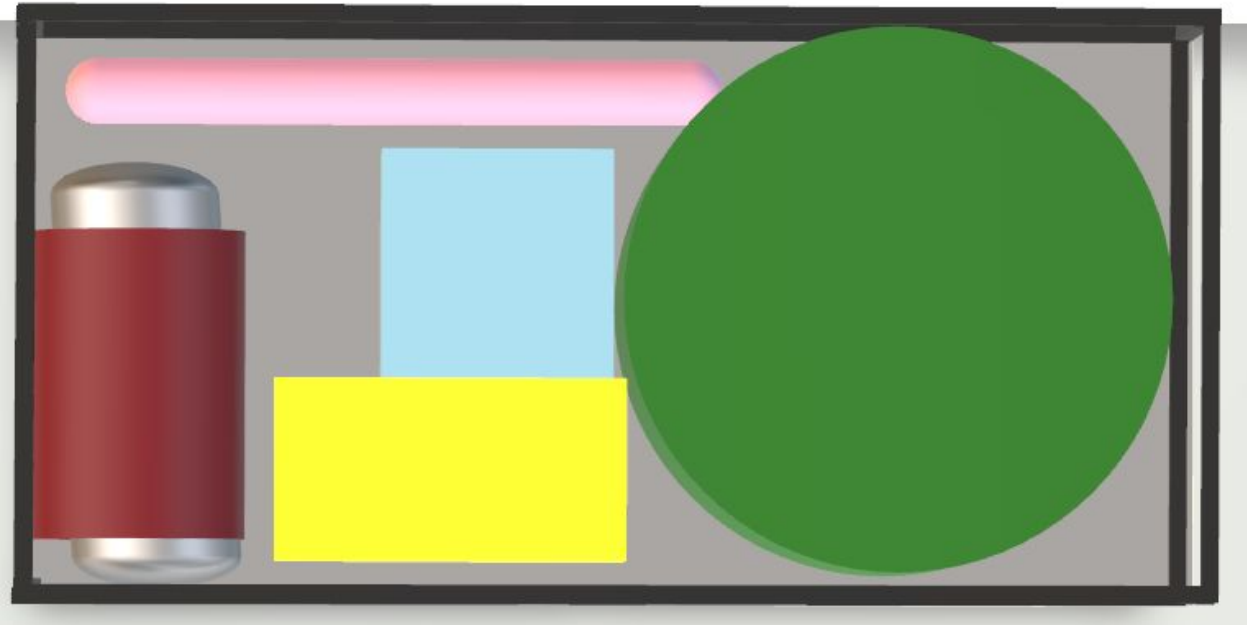
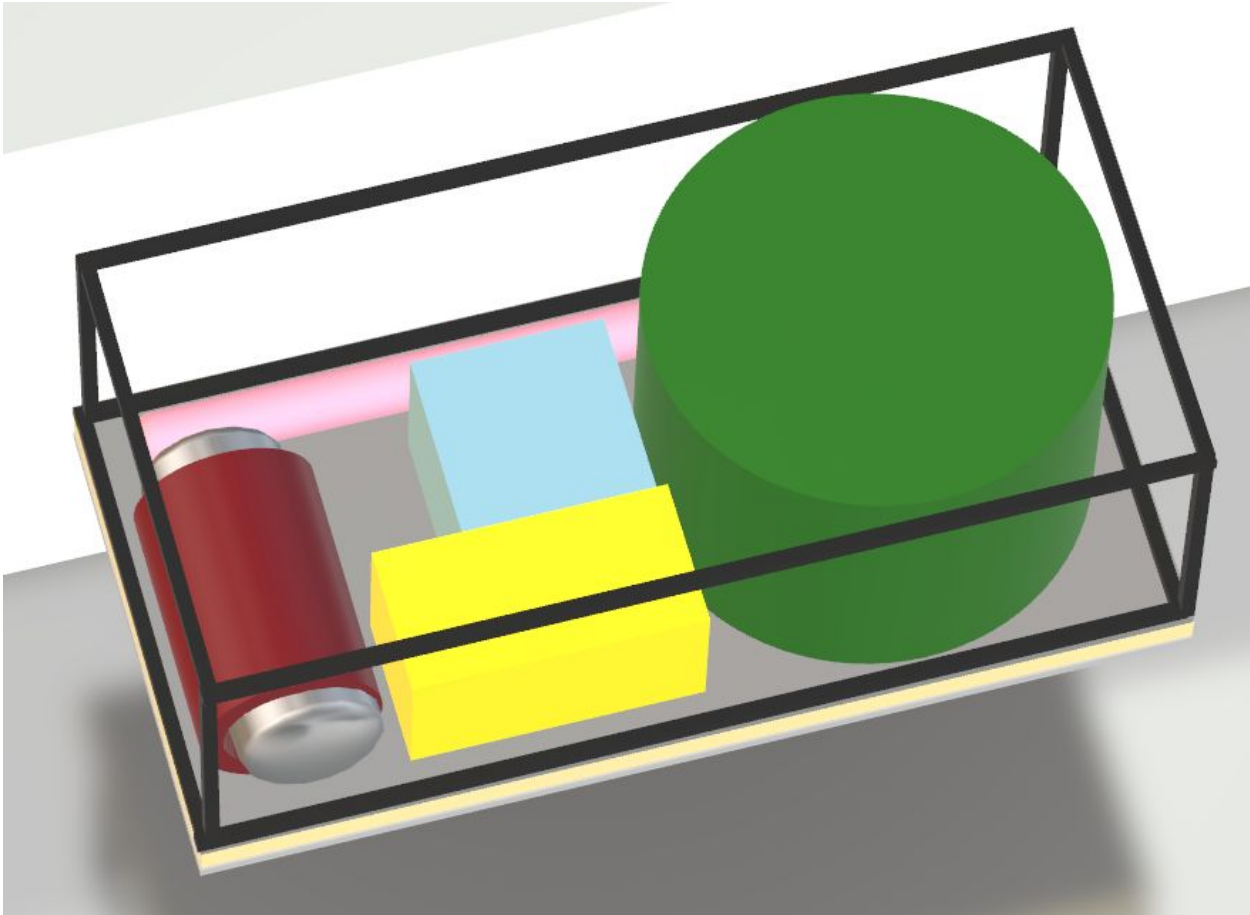


Welded together at the vertices to join steel square tubing.



The frame will be screwed down onto the suspension bed on at marked points. These screws must NOT join the steel and aluminium sheets. Therefore, shorter than 8cm, preferably shorter than 6cm.

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Where:
Pink tube = submersible pump
Green cylinder = water tank

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Blue box = control unit

Yellow box = switch box and DC isolator

Dark red cylinder = hose and cable around windable reel

Print out 'User's Guidelines' and cable tie to frame at accessible point.