



TINY HOUSE
— DESIGN DETAILS —
TRAILER

WWW.UBERTINYHOMES.COM.AU

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About Uber Tiny Homes

Uber tiny homes is construction company based in NSW Australia. we focus on custom made builds and Operate a online building school teaching people worldwide how to build their own tiny house.



Any question ? contact us
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THIS DOCUMENT IS A GUIDE TO BUILD A TINY HOUSE TRAILER

There are numerous ways to build a tiny house trailer, we will share how we build them that work with our build system.

We prefer not to have wheel arches in our homes for aesthetics and also for insulative purposes so all our trailers are flat tray.

The trailers are rated to max 4.5tonne which means (in Australia) that it is not a commercial grade trailer that requires engineering.

By giving this document to a trailer manufacturer or a steel fabricator and telling them the size of your trailer they should be able to make your trailer.



TRAILER HEIGHT

Getting the correct trailer height is important as tiny houses have height restrictions when your building. In Australia its (4.3m (14ft)) high, this means that the lower the trailer height the higher your building can be which equates to more head room in your upstairs lofts.



We aim for a height of 620mm (24.5 inch) to top of trailer unloaded. Once the house is built on top it should then sink to 600mm (23.5 inch) height.

This requires stiff suspension to prevent excess sinking once loaded.

Really important is to use small 13inch wheels with low profile tyres. They measure 540mm (21.2 inch) high. We also allow the wheel to go in between the cross members and have 80mm clearance to top of cross members which will sink to 60mm or so.



THE WHEELS WE USE

The wheels we use are a brand called KOYA and are rated to 850kg each. they are a aluminium light truck rim.

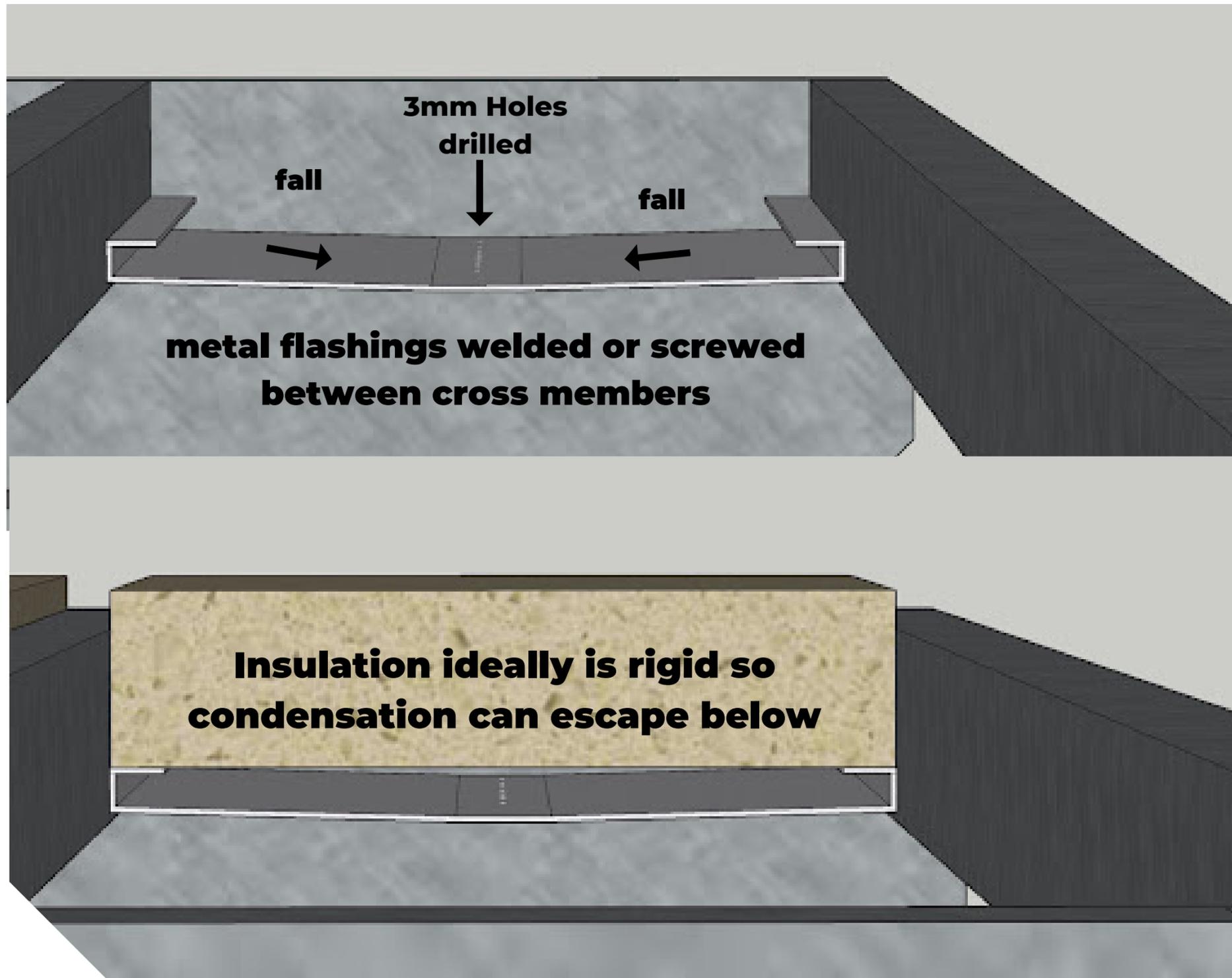


INSULATE WHEEL WELLS

Having the wheels go in between the cross members is good to keep the height of the trailer down but can cause problems with heat loss and moisture/condensation once parked up as its not insulated. To counter this we advise to make insulated rectangles that can screw inside the wells once parked up. If you plan to move your house regularly then you may chose to not have wheels go inbetween and insulate like the rest of the trailer.



INSULATE THE SUBFLOOR



We want to insulate the subfloor to help regulate the house temperature. We also need to allow for condensation that forms in the subfloor to escape.

We do this by installing 1mm thick gal sheet metal that's been folded in between the cross members as pictured. We have fall on the sheet metal so the condensation falls to the midline where we drill 3mm holes for water to escape.

Ideally the insulation is rigid so that there is a cavity below otherwise if using batts put a lightweight mesh in place to hold batts in place



TRAILER MEMBER SIZES

Cross members 75mm x50mm x2mm thick wall
-Enough depth to insulate and usually spaced at approx 500mm centres

Perimeter beam 100mmx 50mm x2mm thick wall
-I make it bigger so it hangs lower than crossmembers on bottom to help conceal water pipes below.

Chassis beam 150mmx 50mm x 5mm thick wall
-Wall is thicker as we dont want bracing below chassis to stiffen it due to us moving them primarily with super low loaders and brace would increase height of trailer causing problems

MOVING THE TINY HOUSE

We move a lot of our houses with a super low loader as its safer and fully insured. Especially for long distance travel.

The truck is licenced to 5m (16'4") high. The high part of the trailer that the bottom of our chassis sits on is 900mm (35.4inch) off the ground. That means we can build 4.1 m (13.5') high from the underside of the chassis to the top of the house, which means we can still build our standard 4.3m (14.1) high house overall that we must to comply with road standards.

This is also why we do not put bracing under our chassis to strengthen it which is a popular thing to do, as it would make the house sit higher on trailer. Instead we strengthen our chassis by using a 5mm thick wall steel member to make it more rigid and resist flex.



TRIPLE AXLE IS THE GO



Tiny houses that are made to Rv standards are classified as caravans. Depending on what country you're from there is usually a weight limit that you can go to before having to build a commercial grade trailer that is more expensive and requires engineering.

In Australia its 4.5 tonne. To get that rating usually requires a triple axle setup especially if your using the small 13inch wheels that we do to keep the height down.

If you want to build a smaller house than say up to 5.4m than tandem axles may do but i would do triple axles any bigger than that



Indicator lights i like to keep dropped down at least 35mm from bottom of perimeter beam as i will usually have a flashing at the base of the wall covering the trailer beam and hanging over like a drip edge 30mm or so



I get 12mm holes drilled 200mm from each corner and 500mm along the perimeter beam. This is to tie down the wall frame or sip panel channel to the trailer using 10mm threaded rod

INDICATOR LIGHTS AND TIE DOWN HOLES

A skid plate or angle on the end of the chassis can be a good idea, as when moving the houses on site the back end can easy bottom out going over humps or dips in the ground.



A FEW CONSIDERATIONS



**Anything rated over 3.5t in Australia needs a 70mm tow ball instead of the standard 50mm.
also a breakaway break system handbrake and rated chains.**

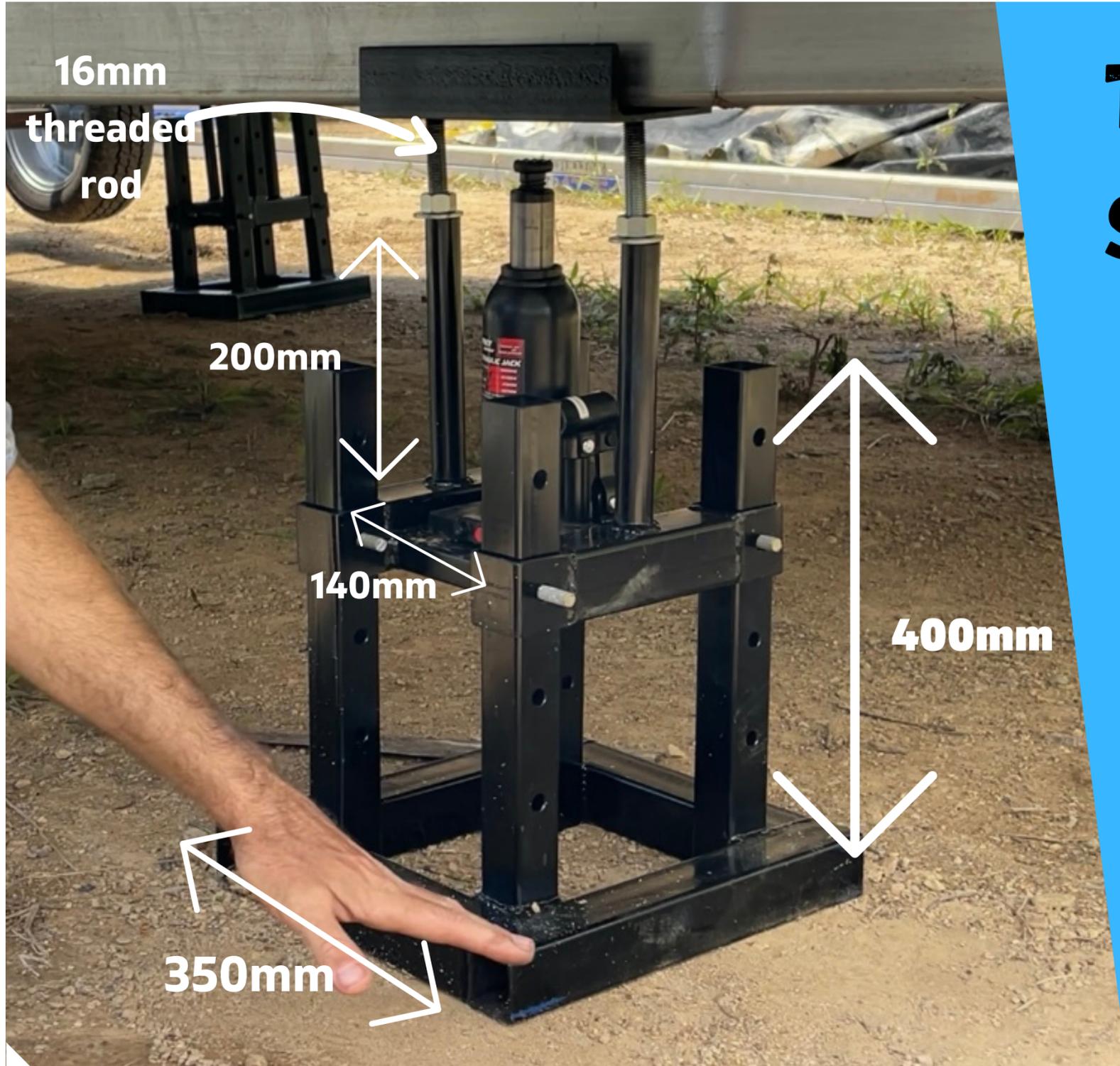
OTHER CONSIDERATIONS

The trailer should be constructed as per your countries design rules to be a road vehicle.

Australias rules are here:

- <https://www.infrastructure.gov.au/infrastructure-transport-vehicles/vehicles/vehicle-design-regulation/rvs/bulletins/vsb1/technical-requirements>

Usually the axles would be placed in a 40/60 ratio so that more weight goes onto the tow ball of the tow vehicle. although some other considerations may need to be taken into account. best to refer to the design rules of your country.



TRAILER JACK STANDS

As tiny houses are a lot heavier than caravans the typical jack stands that are available to level the house can not be strong enough.

So we now get our trailer manufacturer to make custom stands like the one pictured that can be adjusted with a bottle jack and then the weight sits on the threaded rods and nut.

This sits under the chassis beam.

Measurements do not need to be exact just a guide to what works with our trailer design.

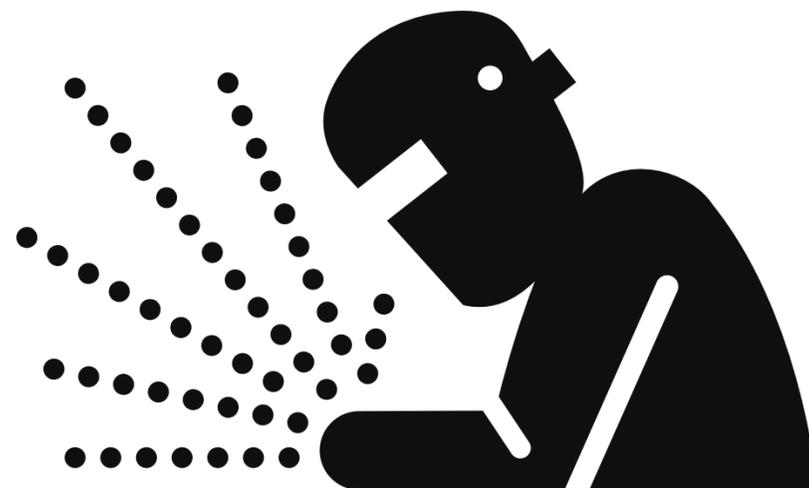


OVERSIZED TRAILER

Sometimes we build tiny houses that are “oversized usually wider than 2.5m meaning it cannot be a road vehicle. In that case the trailer is really just for the ease of transport of the house on top.

So to cut costs we do not put suspension, indicators, breakaway system or brakes on the trailer. Although we sometimes add an extra axle to deal with the weight. It will not be towed down the road, rather it will be moved by a super low loader and then moved in position by a tractor.

Although very important is that you still put the standard axle length on the trailer so that it will be able to go on the super low loader and just have the





UBER TINY SCHOOL

LEARN THE RIGHT WAY

If you would like step by step instructions on how to build a tiny house or maybe you would like to be a owner builder then we have online courses to teach you how to bring your dreams into reality.

[PRESS HERE](#)