Installation Manual – Lofts

PlayCo

Congratulations on selecting PlayCo equipment for your playground.

This manual provides you with easy-to-follow instructions that will enable you to install the equipment correctly. Installing your own playground can be a simple and rewarding task and it is satisfying to be able to stand back when the job is finished and say “We did that!”

As a quality-assured company, our equipment complies with the following standards for play equipment as a minimum, to ensure the safety of your children.

- AS 4685:2021, (Set), Playground equipment (Safety requirements and test methods)
- AS 4422 (Int):2022 Playground surfacing – Specifications, requirements, and test method
- AS 4685.0.2017 Playgrounds and playground equipment – Part 1: Development, slide installation, inspection, maintenance, and operation

This installation manual should be kept for future reference and to help you with your maintenance program.

Good luck with your installation.

Contents

Prepare the site

Before any installation you should be familiar with the requirements of AS 4685 (Set) – 2021 “Playground equipment – safety requirements and test methods” (particularly relating to fall zone requirements), AS/NZS 4422 (Int):2022 “Playground surfacing – specifications, requirements and test method” (relating to the type and depth of your soft-fall surfacing), and AS/NZS 4685.0:2017 “Playgrounds and playground equipment – development, installation, maintenance and operation” (dealing with your site requirements and ongoing maintenance).

1. This equipment is designed for rubber surfaces only.
2. This equipment is normally designed for installation on a flat level surface so you should ensure that your play area is prepared correctly.
3. Check that the site is clear of underground power and services before you commence digging.
4. Measure the site to ensure that it is large enough to allow for the correct fall zones between the equipment and the outside of the soft-fall surface and correct distances between various items of equipment. If you are unsure of these requirements you should check with your Forpark representative.
5. For ease of installation, do not put the rubber surfacing in until after the equipment has been installed. Ensure that you allow for the required rubber depth when excavating the site. Any excavation should take place before commencing the installation of the equipment.

Equipment required for installation

1. Ratchet (or socket set) with 1/2” driver
2. Ratchet (or socket set) with 3/8” driver
3. Cordless drill
4. Shovel for digging holes (preferably long-handled)
5. If digging in hard ground, you may need a 300mm auger and a crowbar
6. Spirit level
7. ‘G’ clamps (for holding items in place before bolting)
8. String line or laser level
9. Wheelbarrow
10. An axe (for cutting tree roots if they are in the way)
11. Concrete for footings
12. Crane
13. Cherry Picker
14. Mechanical lifting aids
15. A basic first aid kit for emergencies
16. ‘Occupational Health and Safety’ plan and procedures if applicable including relevant crane and working at heights equipment and certifications

Check the contents of the crate

In addition to the equipment itself, you should also have the following: -

1. Plans of the play structure
2. Materials or packing list
3. Tri-lobe driver (driver with a rounded triangular head that fits onto your ½” socket)
4. Post Torx Driver (driver with a star-shaped head that fits into the ¼ inch socket)
5. Tech Screw Driver
6. Nuts and bolts, etc.
7. Touch up paint
8. Loctite

Securing the site while work is in progress

You should ensure that the worksite is clearly defined by some sort of barrier or a temporary fence to ensure that children or onlookers are not in danger of injury while you work. The concrete footings will need at least 7 days to set, so a barrier or fence will keep people off the equipment until it is ready to be used and until adequate soft-fall surfacing has been installed

Preparation for installation

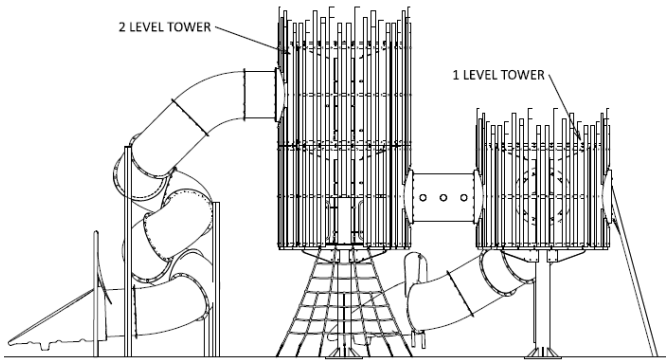
1. Before you commence installation, you should familiarise yourself with the general instructions of this manual.
2. Once ready to commence installation you should lay out the equipment and ensure that you have all items detailed on the materials or packing list. (Some items listed on the packing list, such as caps, may already be attached to other components.)
3. Determine the proposed finished surface level and use a string line to set this level. This will help in ensuring that the items are set at their correct height above ground level.
4. Use normal-class concrete with a strength grade of N32.

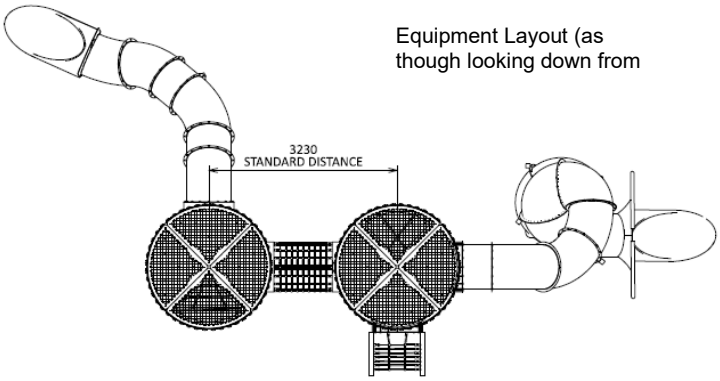
Reading the Plans

You have been supplied with a plan showing the actual layout of the equipment.

The plan shows the position of each of the components in the structure and items attached on each level (1 or 2-story structure).

You have also been supplied with a set of drawings and images that indicate the position of the items for each level and an isometric image of the full structure.





Equipment Layout (as though looking down from

Installation

Footings

Check the job plan for the right position of holes in the ground. Measure and mark up the ground for the footing excavation. Excavate a hole in the ground according to the region and the number of levels. Compact soil. Refer to the information below. Cure following the standard. Concrete is to set for several days as per the table below. Fill gaps between bottom plates and concrete with about 30mm grout/mortar (1 part cement and 3 parts sand mixed with water).

Footings:

6.00 to 7.00 m high poles - 3300 x 3300 x 500 mm deep

5.00 to 5.99 m high poles - 3000 x 3000 x 500 mm deep

3.50 to 4.99 m high poles - 2750 x 2750 x 450 mm deep

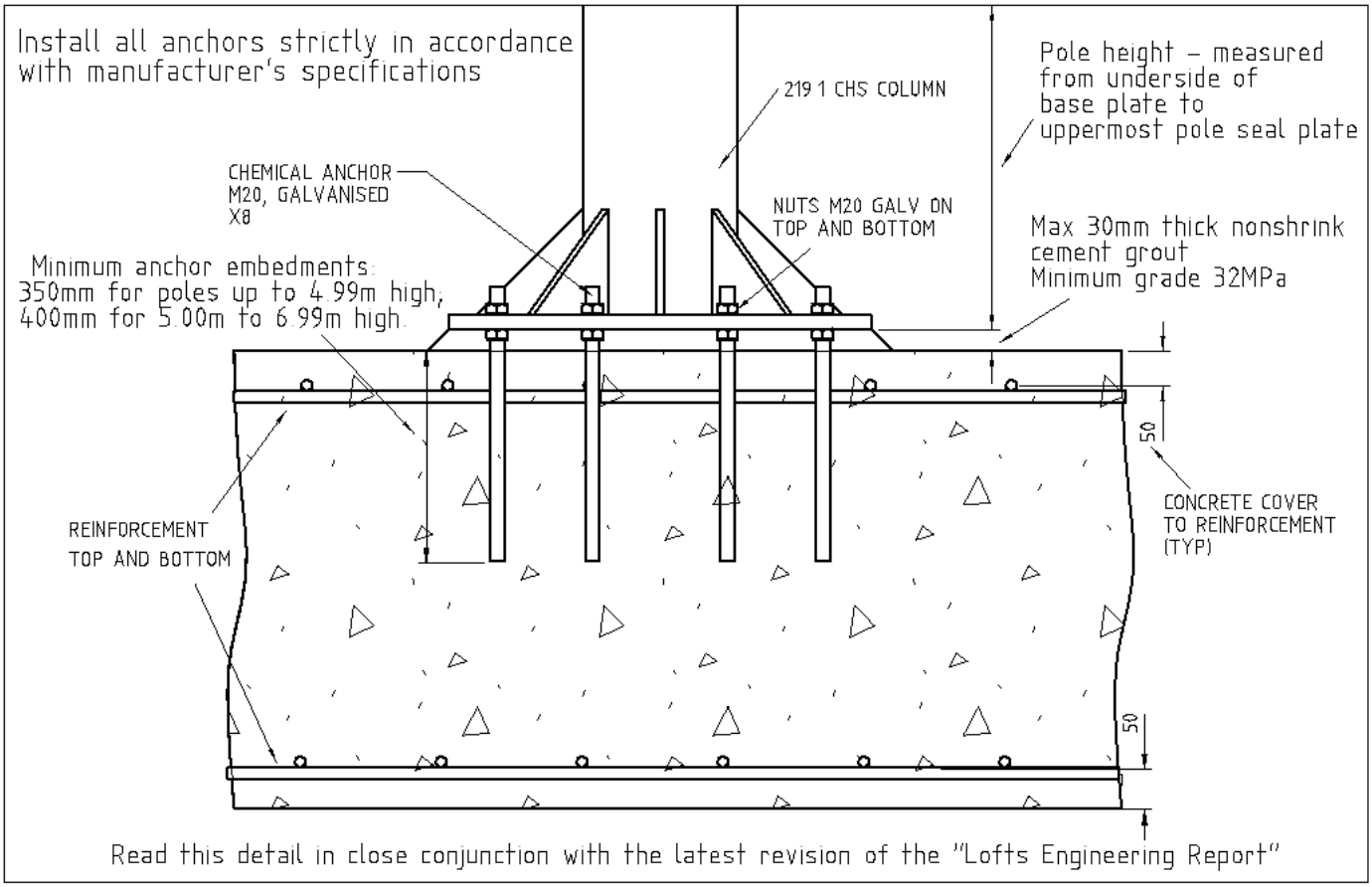
All footings' concrete - grade 32 MPa to AS3600; quality 32/20/80

All Reinforcement - N20 bars (Fy = 500 MPa yield stress) @ 200 mm centers, both ways, top & bottom

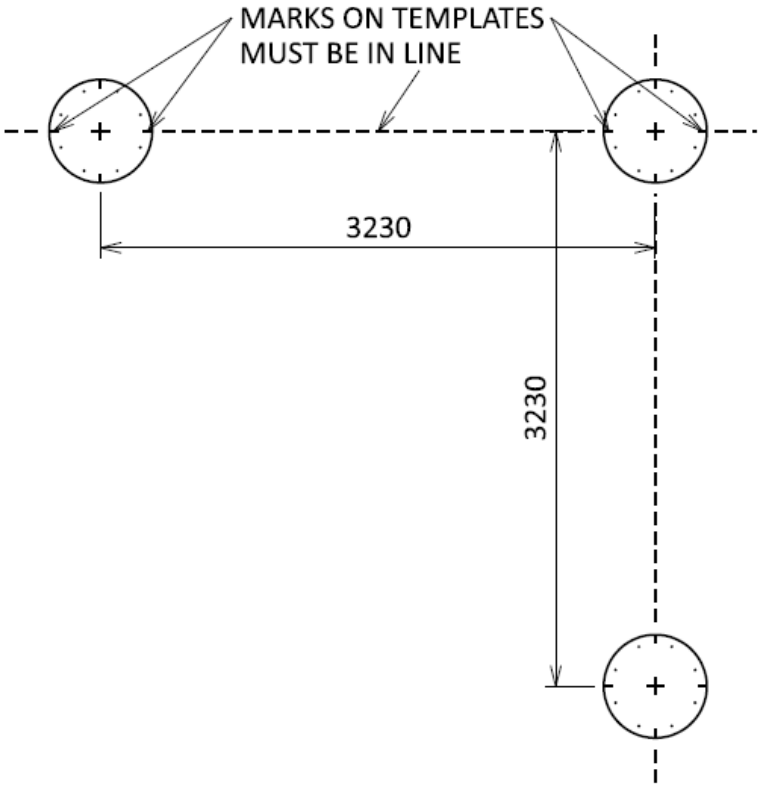
Clear concrete cover to bars - 50 mm top, bottom and sides

Soil bearing capacity - assumed minimum 120 KPa, working (unspecified soils)

HILTI anchors: - M20, minimum 300 mm embedment, installed to HILTI's specs



Step 1 - Poles



Poles are to be positioned in the centre of the footings unless 2 or more footings are joined.

When 2 or more poles are in the structure, the standard distance between the centre of poles is 3230mm.

Then, an offset of the centre is allowed to maintain 3230mm between poles.

Here is a plan of the 3-tower structure as an example.

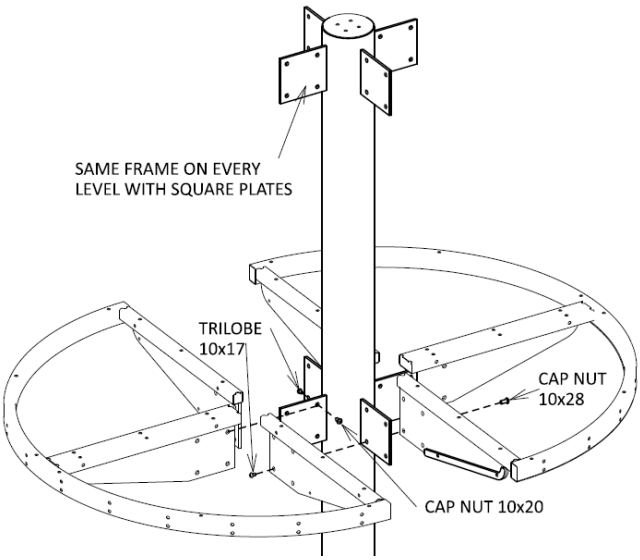
Mark the areas for the templates before the concrete is fully set up and correct the surfaces to be sure they are on the same level. Allow the concrete to cure for 2 days.

Secure the template plates in the correct position according to the structure top view plan and drill 5mm pilot holes in the concrete.

Remove the templates, and use the pilot holes to drill 24mm diameter holes, a minimum of 300mm deep in the concrete.

Install the chemical anchors, keeping them in the middle of the holes.

Step 2 - Frames



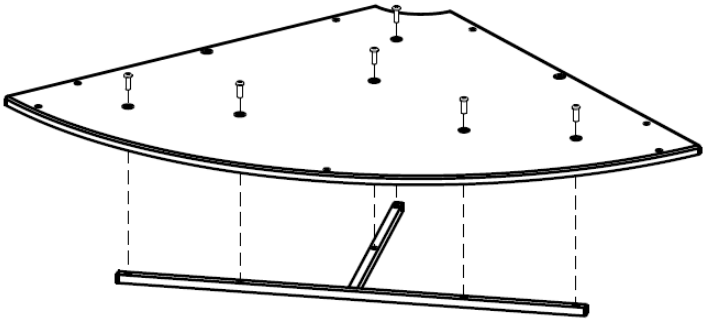
Install the first pole and use the upper and lower nuts for the vertical pole position. Tighten the nuts.

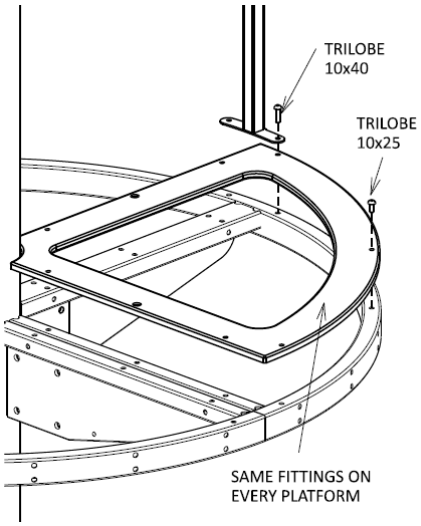
Install the rest of the poles, keeping the nuts loose.

Bolt the platform and roof frames to poles as shown.

Step 3 - Platforms

Install the platforms and vertical supports according to the structure plan with fittings as shown. The full-size platform has a support frame attached with 6 bolts 10x25 post torx. 4 platforms per level.



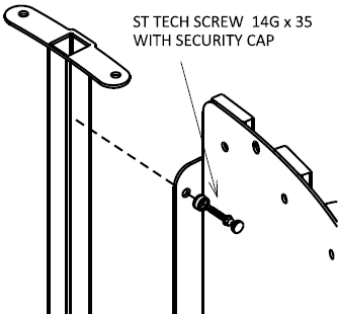


Step 4 - Walls

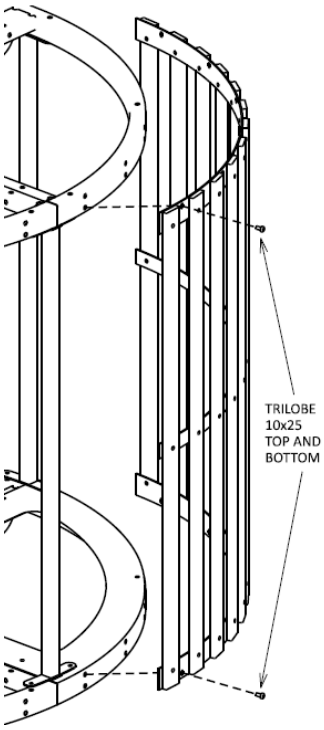
Install the walls. All walls are preassembled (battens to brackets and battens to aly sheet with tunnel flange).

Make sure walls go in the correct position, matching the structure plan.

4 walls per level.

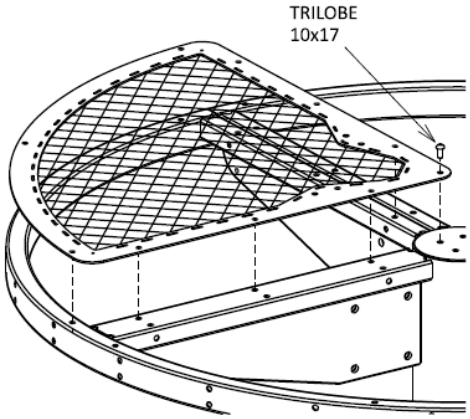


For the walls with tunnel flange, there is an additional screw attachment to the vertical supports. It needs to be done after the top and bottom attachments are done.



Step 5 - Roof Panels

Roof mesh is preassembled to the frame. Install the roof panels as shown. 4 panels per roof level.



Step 6

Access Items

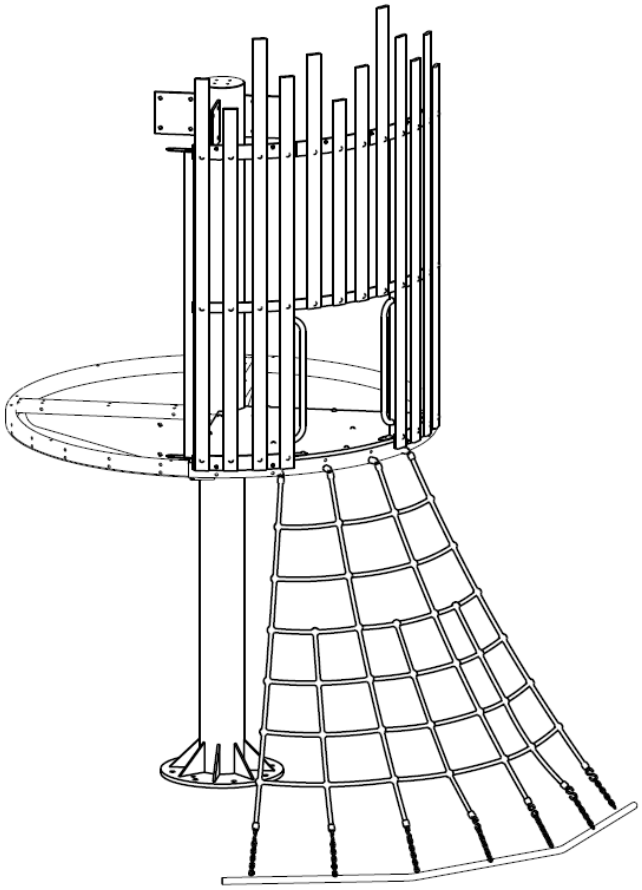
Curved Net

The wall panel is attached the same way as other walls. Use 4 studs M10x32 to attach 4 chain housings to the platform frame and attach the rope to the housing with bolts M8x28 PTS TRX.

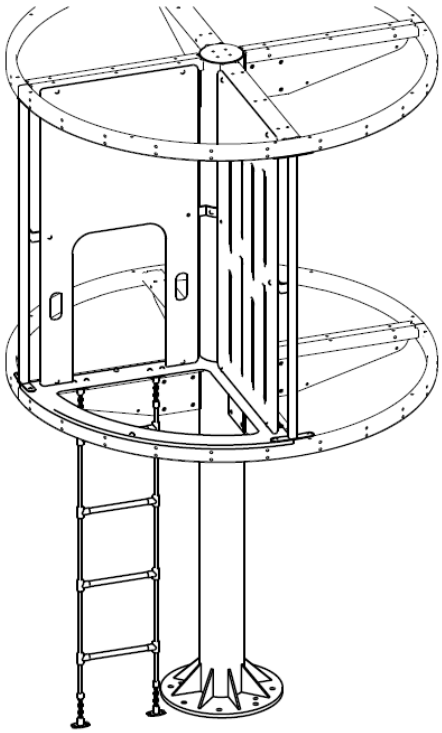
Stretch the net and locate the correct position of the anchor frame. Mark the anchor position and dig 200x200mm channel for anchor to fit in. Place the anchor and fill the channel with concrete.

Attach lower rope ends to the anchor chain with ‘S’ hooks.

Remove a number of chain links to have equal rope tension.



Rope Ladder



Use B1 brackets to bolt the lower part of the entrance and barrier panels to the platform.

Bolt the upper parts of these panels to the upper frame with bolts 10x030 post torx.

For the panels to pole bracket and panels to the 2 support brackets use T Nuts and bolts 10x20 post torx. Then, pole bracket to pole with st tech screw 14G x 35 with security cap. For L brackets to supports – mark and drill (13.5mm), nut insert holes and bolt brackets with bolts 10x20 post torx.

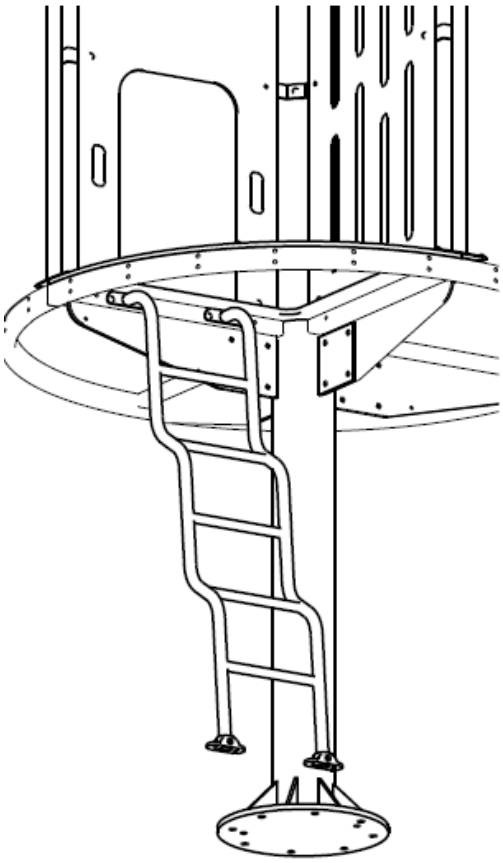
Bolt 2 chain flanges under the platform with T Nuts and bolts 10x20 post torx.

Keep the rope vertical and mark the position of the lower chain flanges on the concrete.

Use 4 DYNA bolts (M10x100 recommended) to secure the flanges to the concrete.

Remove chain links to keep the rope tight and bolt to flanges with BOLTS 08x28 post torx.

Steel Ladder



Attach the platform, entrance and barrier panels the same way as in step 6.2.

Rise the ladder and position it under the platform and in the middle of the entrance panel. Mark and drill the platform frame 4 holes 13.5mm, insert nuts and bolt with 10x20 post torx.

Insert the plastic flanges, mark and drill concrete for DYNA bolts.

Use 4 dyna bolts (M10x100 recommended) to secure the flanges to the concrete.

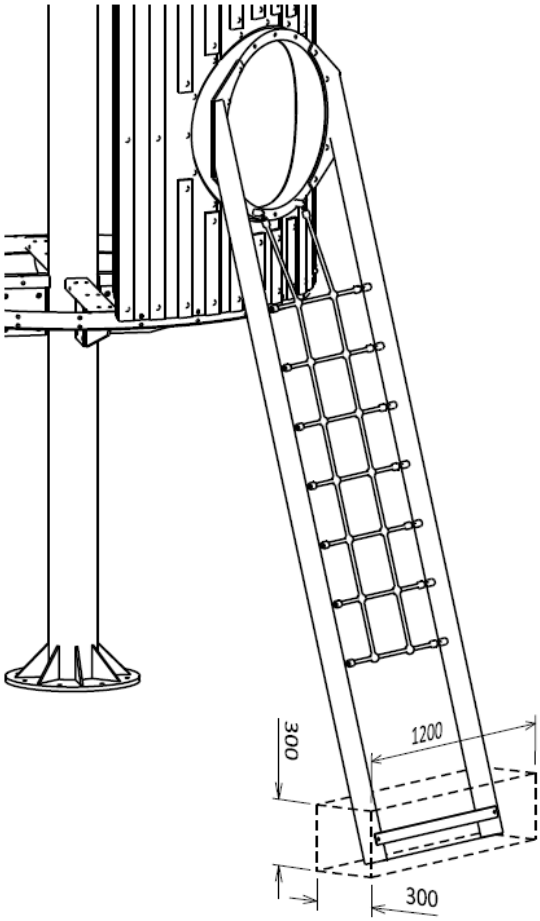
Use st tech screw 14G x 35 with security M6 caps to attach flanges to the ladder frame.

Net

Mark the position of the legs in the ground and dig a square hole 300x1200, 600 in the ground. The hole should be outside of the upright concrete slab.

Attach the frame to the wall with tube flange with 8 10x20 post torx and st chain housing-flat base to the tube flange with studs M10x32 for the rope net. Attach the rope net to chain housings with bolts 08x28 PST TRX.

Place the frame in the ground with 300x300x1200 concrete.



Cross Net

Start from the top and bolt the 2 flanges to the roof with bolts 10x016 POST TORX and T nuts.

Attach the ropes with BOLT 08x28 PST to flanges, hang them vertically and mark the flange positions on the platform below.

Place the 2 supports 675mm apart and symmetrical to platform, mark, drill, nut insert the holes and bolt using bolts 10x025 C/S post. Do the same under the frame for the 2 flanges with the big plates for the lower rope.

Drill the platform and bolt the 4 flanges (2 over and 2 under) with bolts 10x030 post torx and T nuts.

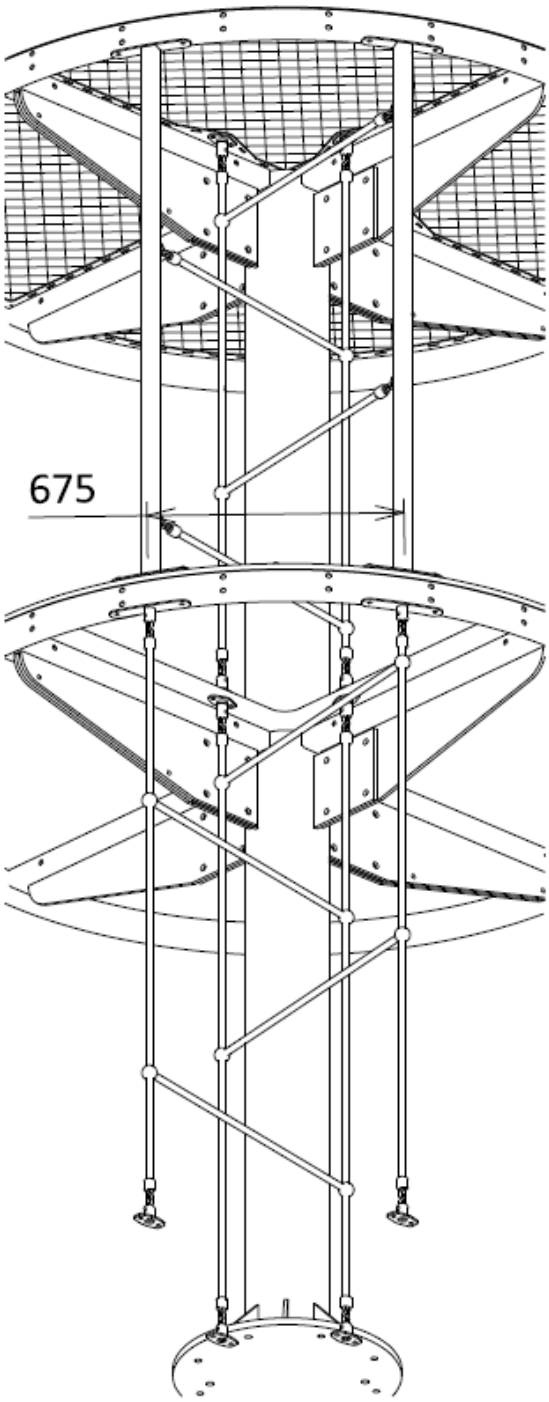
Remove chain links to get the ropes tight. Mark the horizontal ropes on the 2 support bars, drill them, place nut inserts and bolt the flanges with bolts 10x025 C/S post.

Attach the lower rope, hang it vertically and mark the holes for the flanges on the concrete.

Check the vertical ropes to be no closer than 230mm to the central upright.

Use 8 dyna bolts (M10x100 recommended) to secure the flanges to the concrete.

Remove chain links to keep the rope tight and bolt to flanges with bolts 08x28 pst trx.



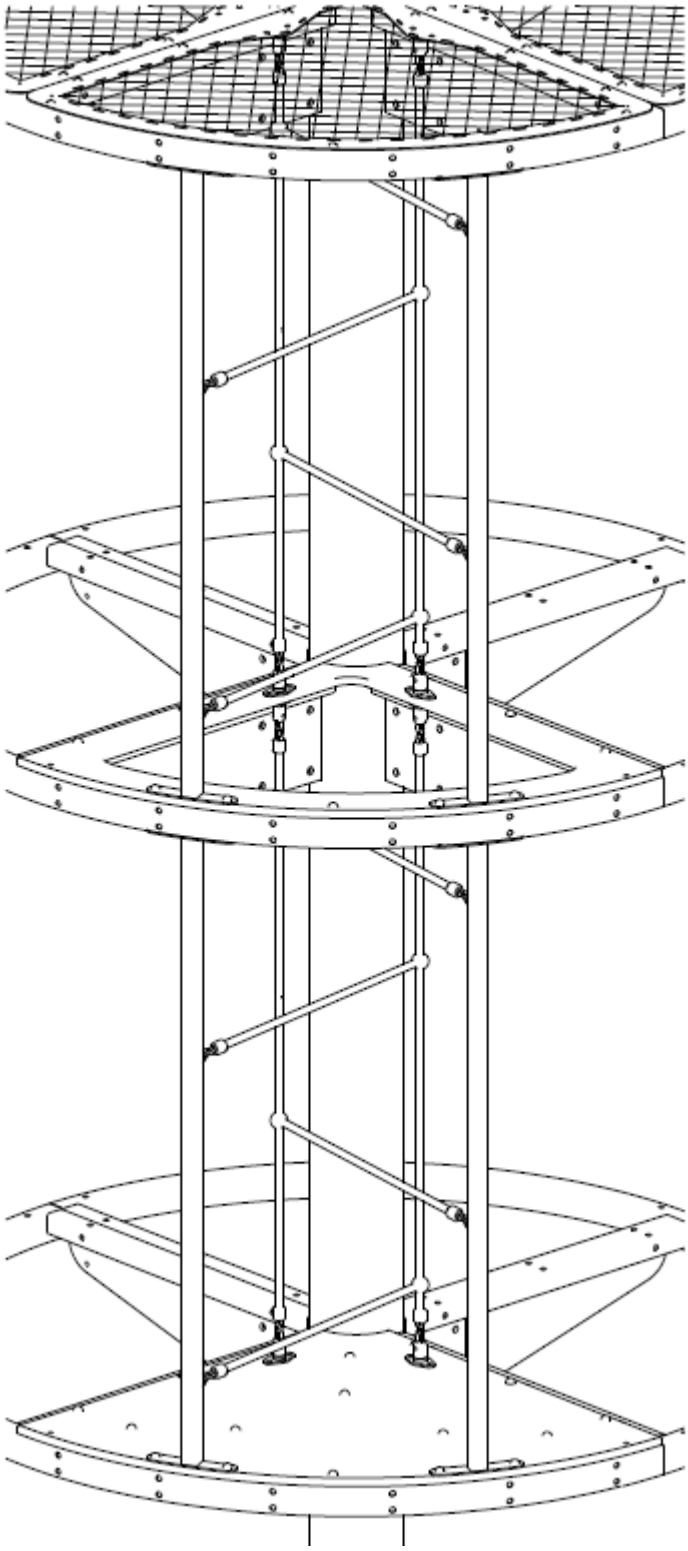
Step 7

Level-to-level items

Level to Level Cross Net

Follow the same steps for attaching the top net from step 6.

Then the same net goes under.



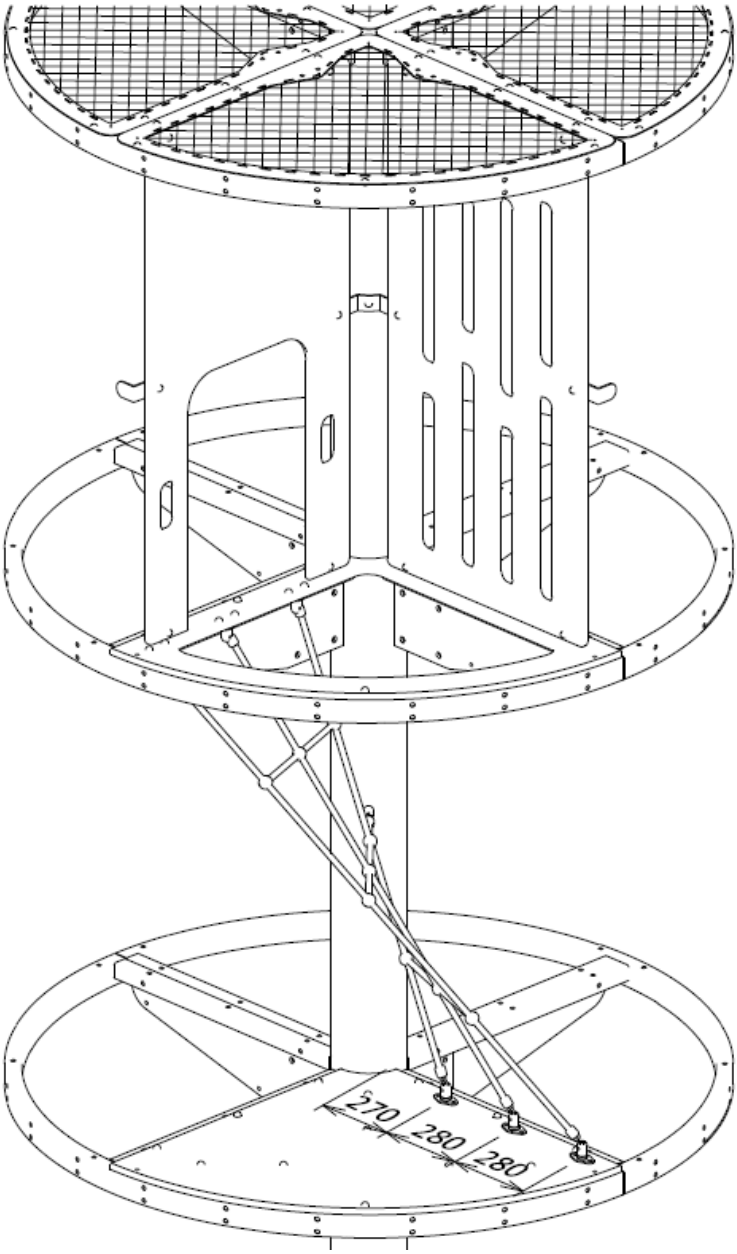
Twisted net

Attach the platform, entrance and barrier panels the same way as in step 6.

Mark the positions of flanges as per the image on the lower and the upper platform. Drill platforms and bolt the flanges with bolts 10x030 post torx and t nuts.

Attach the net. Remove chain links to keep the rope tight and bolt to flanges and middle horizontal rope to chain housing with bolts 08x28 pst trx.

The middle horizontal rope needs to be bolted to the uptight. Mark the hole position, drill, nut insert and attach the chain housing with stud m10x32.



Step 8

Joiner Items

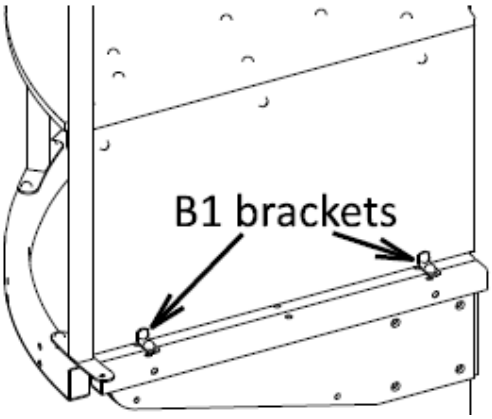
Decks

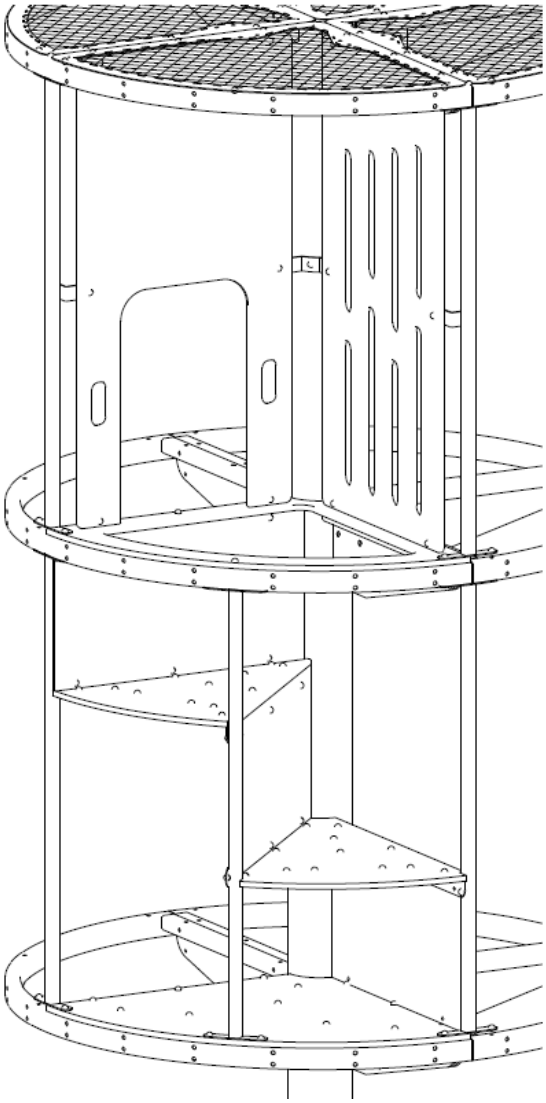
Attach the platform, entrance and barrier panels the same way as in step 6.

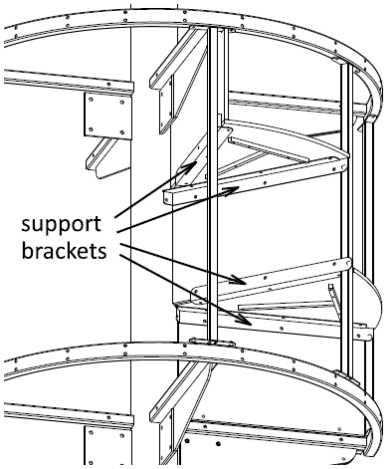
Use B1 brackets to attach the bottom vertical panels with bolts 10x016 post torx to the frame and bolts 10x025 post torx with T nuts to the panel.

Attach the rest of the step panels using the 4 brackets with bolts 10x025 post torx from the panel side and t nuts from the bracket sides. 2 of the brackets are to be attached to the upright. Mark the hole position, drill, attach nut insert and bolt with bolts 10x025 post torx. Do the same to attach brackets to the vertical supports. When the middle vertical support is attached to the panels, mark, drill, nut insert and bolt the support to the top and bottom frame.

The horizontal panels have t supports (see step 3 – platform).





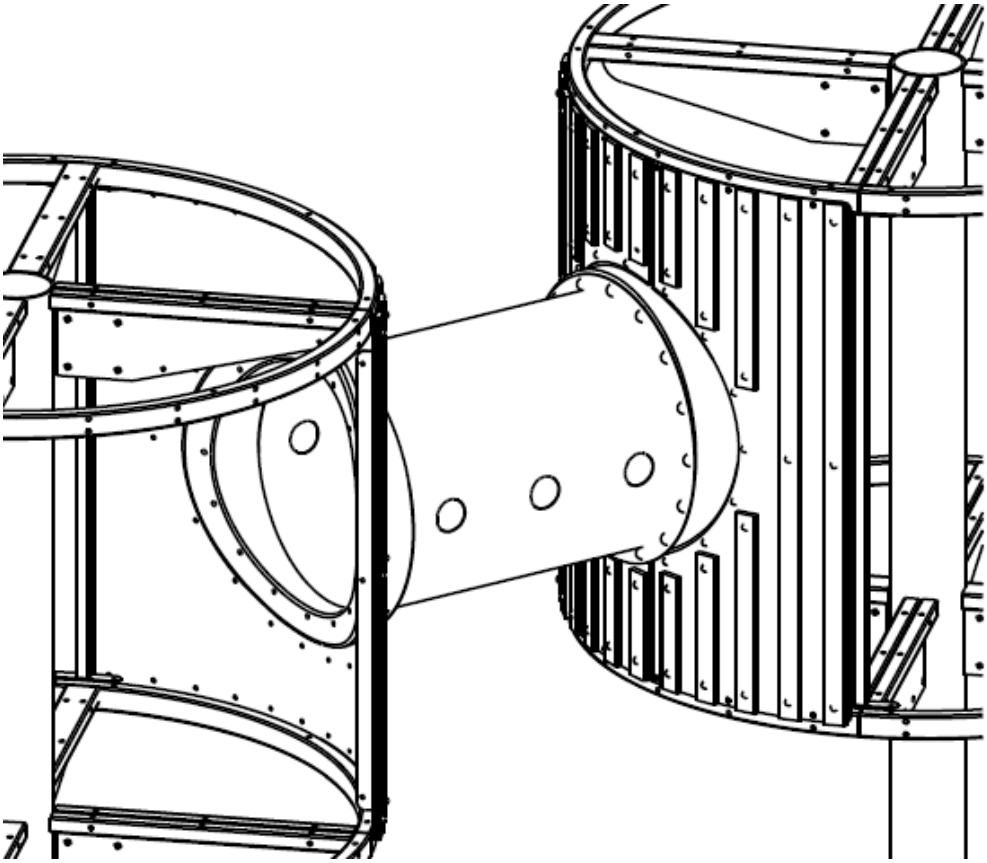


Tube

Use the tube to join 2 towers.

If the distance between towers is correct and they are vertical, the tube should fit.

Bolt to the plastic flanges on walls with bolts 10x20 post torx and security caps m10



Net

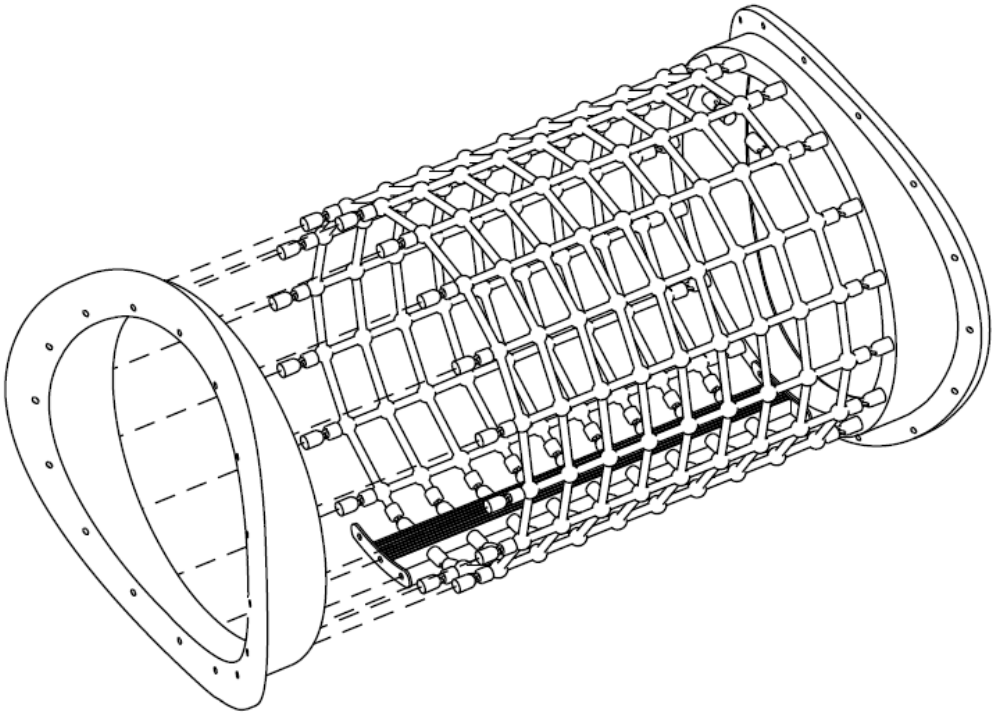
It is the same size and purpose joiner as the step 8 - tube.

Attach first the chain housings with studs M10x32 to the plastic flanges on the walls.

Attach then the chain housings with studs M10x110 to the horizontal support.

Bolt the horizontal support to the wall's flanges with BOLTS 10x120 C/H and Security caps M10.

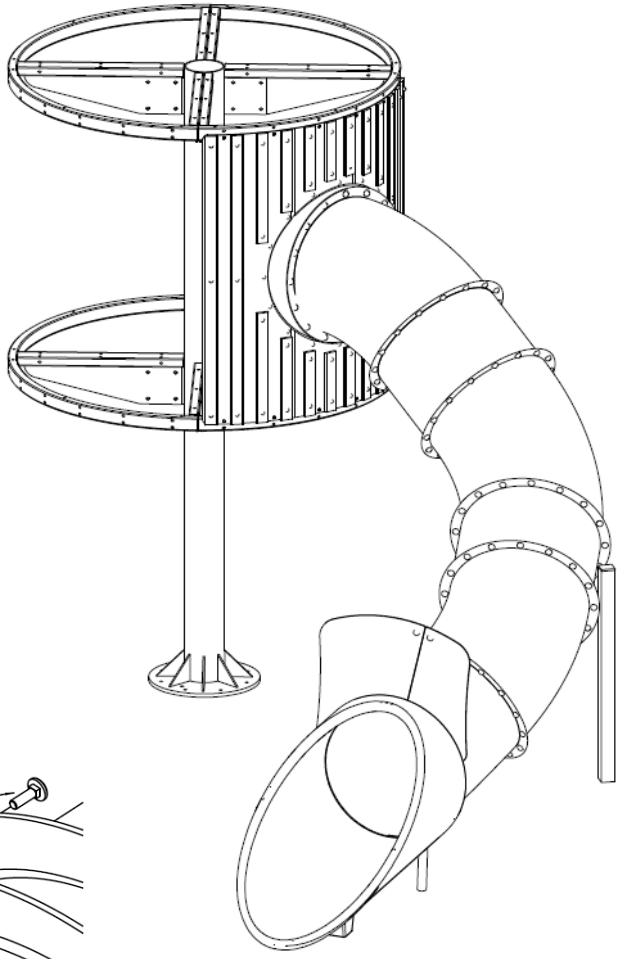
Attach the net to flanges and support with BOLTS 08x28 PST TRX.



Step 9

Slide Items

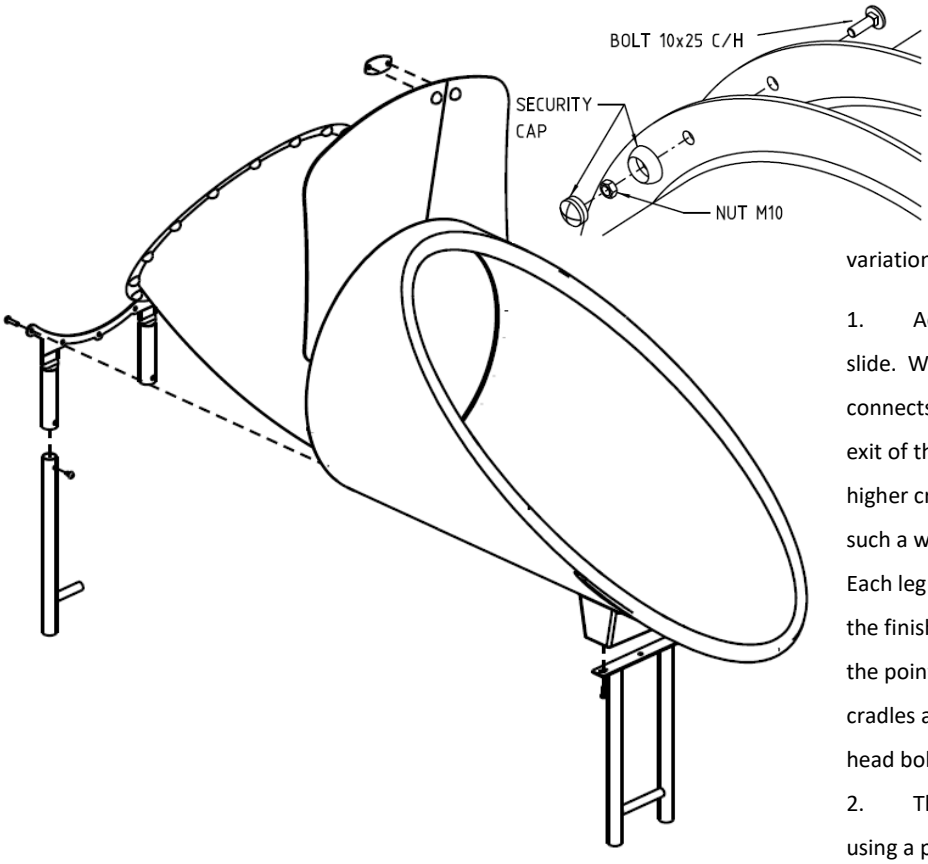
Slide Level 1, Left And Right



Left or right is by facing the slide from the entrance point. The image shows the right option.

Locate the slide in its approximate position to determine the position of the holes for the slide's front support legs and dig the holes. The slide has a support upright halfway up the slide. Attach the front slide legs to the underside of the base of the slide using a 40mm post torx. Attach barrier panels with 40mm post torx on the flange and use the same fittings section to section for the plate connection.

It is advisable to place a brick or a block of wood below each leg to provide additional stability. Concrete the legs into the ground.



The slide is installed with the following variations.

1. Additional support legs are used to support the slide. Where two tunnel sections connect the cradle connects to the lower side of the flange. The cradle at the exit of the slide connects on the underside, while the higher cradles attach to the side of the tunnel flanges in such a way that the support legs will point vertically down. Each leg should be installed with the base 600mm below the finished ground level. Use this as a guide to determine the point on the tunnel that each cradle attaches. All cradles are attached to the tube flanges using 30mm cup head bolts, nuts and security caps.
2. The orientation of each tunnel section is determined using a process referred to as “cranking”. Cranking consists of placing the flanges of both sections together with the seams of the section to be attached and aligned to the seams of the previous section, and rotating it either clockwise or anti-clockwise by the required number of bolt holes in the flanges. (For example, 3 cranking steps would involve rotating the section by 3 bolt holes.) Note: Clockwise is determined while standing on the ground, facing up the slide.

3. In some instances, the exit section and legs may not finish in a vertical position, in these instances the plastic tunnel sections will need to be drilled to match the vertical position of the exit legs. Place the cradle flange with legs in a vertical position, mark and drill 5 new holes on plastic tubes and use these holes to join the cradle and tubes.

Begin by attaching the 35° section to the plastic flange facing down. Connect each following section in turn, aligning the seams to the previous section then rotating the section by the number of cranking steps as detailed below.

Slide Level 1 Right (Reverse Direction for Slide Left)

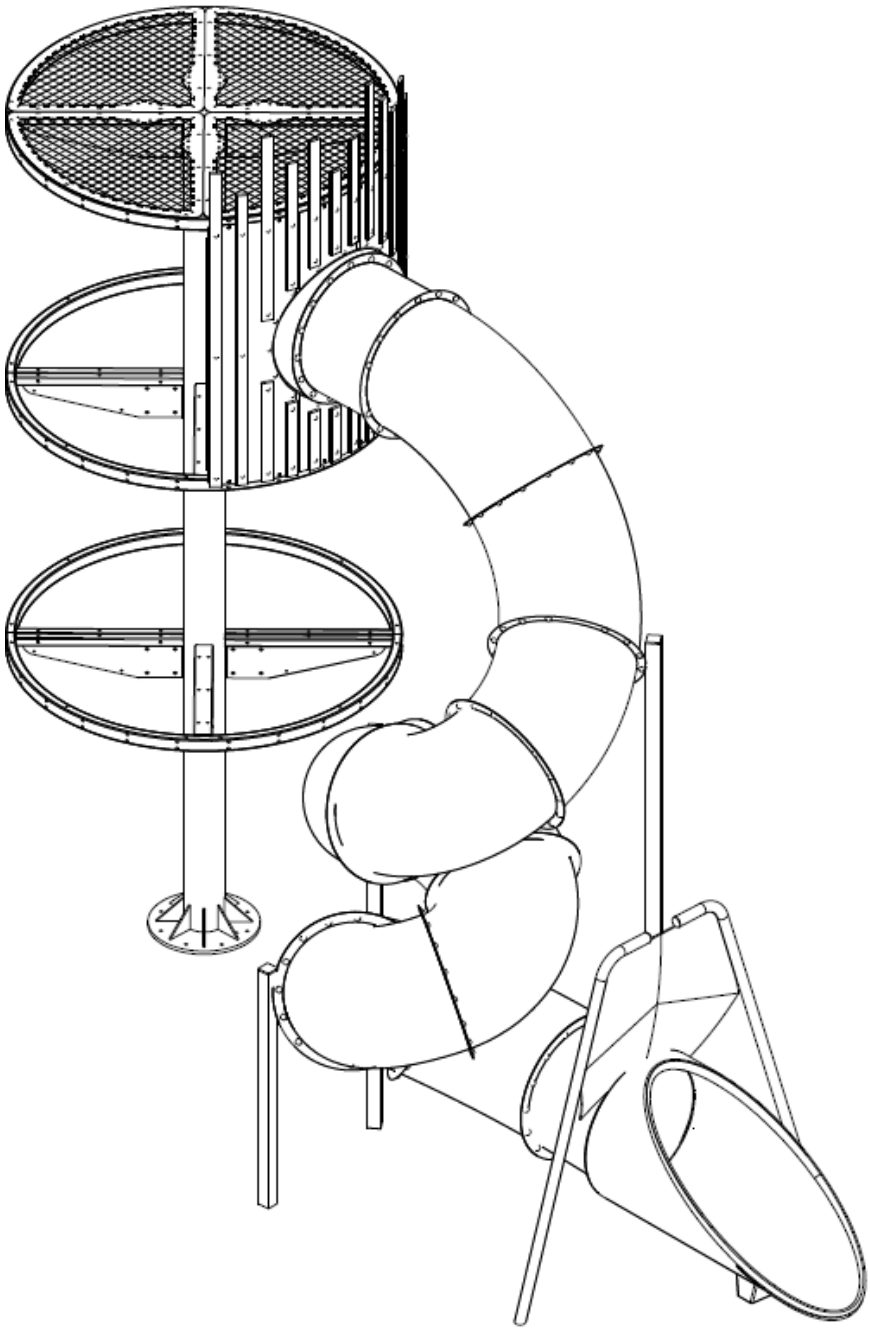
Piece Number	Description	Cranking Steps	Direction
3	45° elbow	4	Clockwise
5	1st 35° elbow	2	Anti-clockwise
6	2nd 35° elbow	6	Clockwise

Slide Level 2, Left And Right

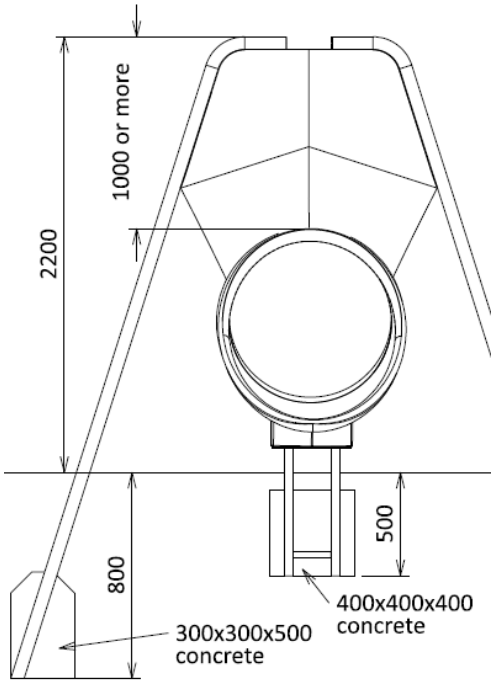
This slide has a different barrier panel and 3 support uprights. See the images.

Use the same way of assembling the rest of the parts as the slide level 1.

Attach rubber membrane to both supports with cup head bolts and security caps. Rise and position the frame above the tunnel flange you will attach the rubber to. The flexible rubber will allow for both legs to keep a minimum distance of 250mm to the tunnel tube (no part of the tunnel should come closer than 250mm to the barrier support legs). The rubber should be tilted slightly toward the exit as shown (check the dimensions). Mark the position of the holes in the ground. Dig the holes, insert the frame and bolt the rubber to the flange. If the last holes on the flange of the rubber don't match the holes on the tube's flange, drill the needed hole on the tube's flange.



Concrete, keeping the frame vertical



Slide Level 2 Right (Reverse Direction for Slide Left)

Piece Number	Description	Cranking Steps	Direction
3	45° elbow	4	Clockwise
4	1st 35° elbow	1	Anti-clockwise
5	1st 90° elbow	2	Anti-clockwise
6	2nd 90° elbow	2	Anti-clockwise
7	3rd 90° elbow	2	Anti-clockwise
8	4th 90° elbow	2	Anti-clockwise
9	5th 90° elbow	2	Anti-clockwise
10	6th 90° elbow	2	Anti-clockwise

Tunnel Slide – Supports

Check the plan for the position and number of supports.

Attach the joining plate to the upright with tri-lobes 10 x 17.

Position the upright from either under or on the outside section of the flange and attach the cradle in a suitable position. Join the plug to the cradle with a loose bolt. Insert the plug on the plate's pipe and secure it with the Tec Screw.

Tighten the bolt and place the cover on the caps.