GEOTUB

assembly manual

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Description

FOREWORD

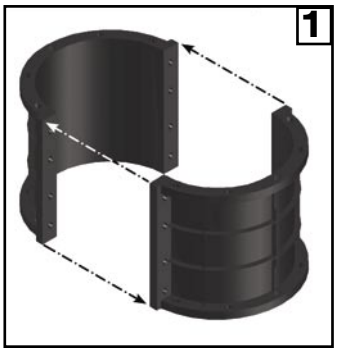
GEOPLAST's line of Geotub formwork is a comprehensive casing system for concrete casting circular columns and square or rectangular pillars in both civil and industrial applications.
The main features of the formwork system:

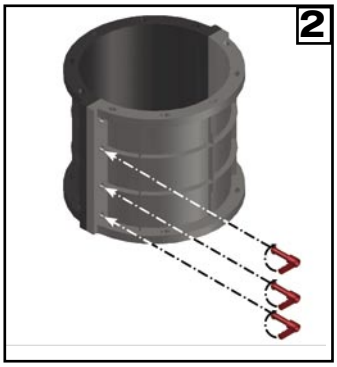
- **Modular**
- **Lightweight**
- **Rapid assembly and plumb lining**
- **Easy storage**
- **Good reuse**
- **No release agents required**
- **Good surface finish of cast**

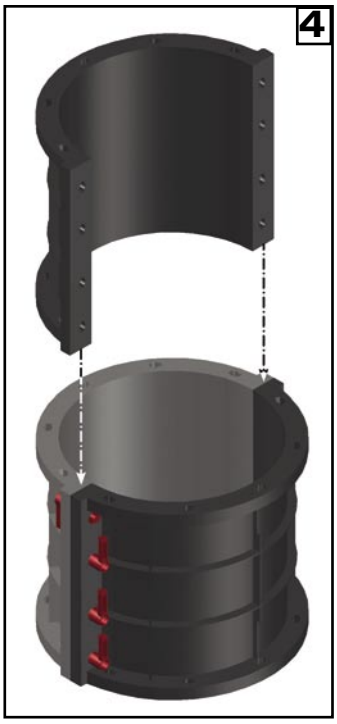
MAIN CHARACTERISTICS

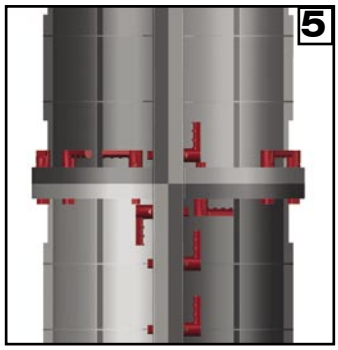
Geotub is an ABS moulded panel, it is UV stable and resists chemical agents, modulating in height by 60 or 75 cm sections.
The panels are so lightweight that they can be easily handled and mounted by just one person.
It is estimated that they can be reused about 100 times when respecting the recommended assembly and dismantling procedures provided in this manual.
The inside surface is very smooth and, added to the nature of the material, not only gives a good surface finish to the cast, but also eliminates the need for release agents or oils when constructing pillars and columns. When the casting is completed, clean off any areas where concrete has spilled and then just wash down the panels with water when dismantling.
The edges of the panel elements have holes to make them quick and easy to join by the special nylon handles.

Mounting Geotub









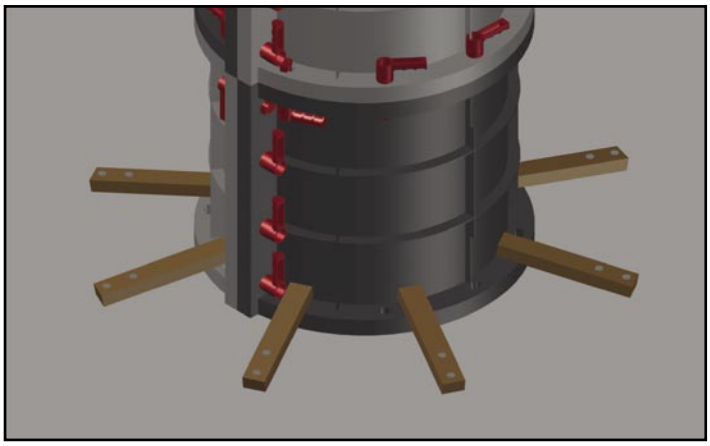
For a correct, rapid assembly of the Geotub formwork, follow these simple steps:

1. Fit together the two semicircular Geotub elements
2. Working from bottom to top, fit the nylon handles in the holes along the two vertical rims, then lock them tight by giving the grip a quarter turn upwards.
3. The last handle of each column section has to be inserted in the opposite side of the joint and locked by a quarter-turn downwards.
4. When the first two elements of the column are in place continue with the next section, which should be attached to the first by the handles
5. The grip of the handles along the joint between two sections can be turned either upwards or downwards, so long as they do not interfere with the other handles (figure 5 illustrates the handles in a typical assembly)

Continue to erect the Geotub modular sections until the required height is reached.

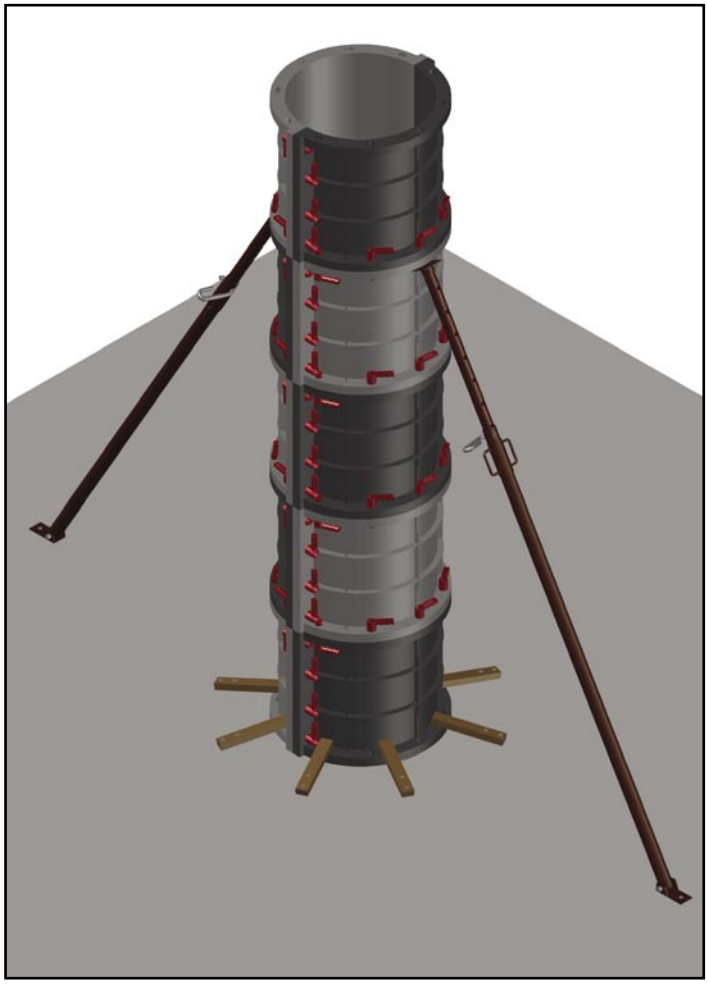
Locking all the handles tight not only guarantees a tight seal in the formwork joints, it also ensures that all the modular elements are aligned.

All the handles must be fastened and locked in the holes to ensure the formwork is perfectly sealed.
The side they are inserted and the direction they are turned have no effect whatsoever on the seal.

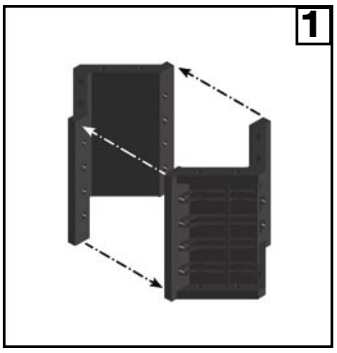


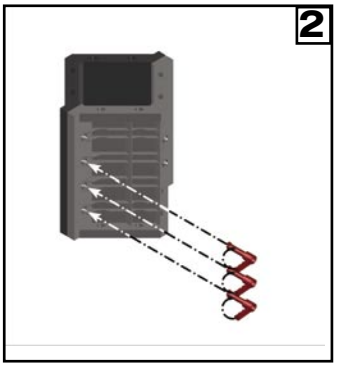
When the Geotub column has been completely assembled anchor its base to the foundation by simple wooden planks nailed into the ground

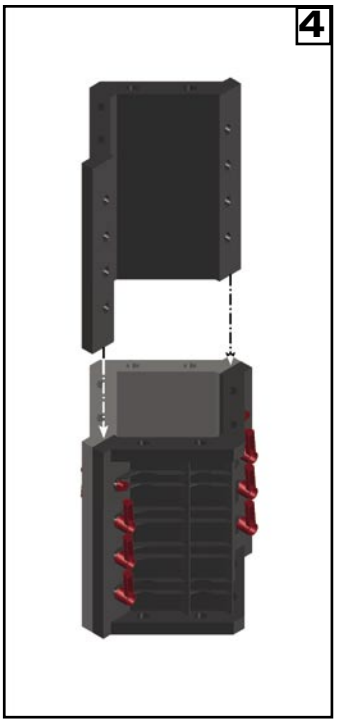
Plumb lining Geotub is quick and easy. Just strut the formwork on two sides, with normal adjustable flat-headed props. Geotub does not need release agents. To prevent the concrete seeping into the gap along the top lip of the last column section, just mask it off with simple adhesive tape. Geotub formwork is suitable for casting with pumped concrete and also its subsequent vibration.

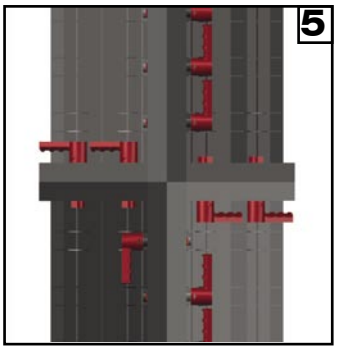


Mounting Geotub Square and Rectangular









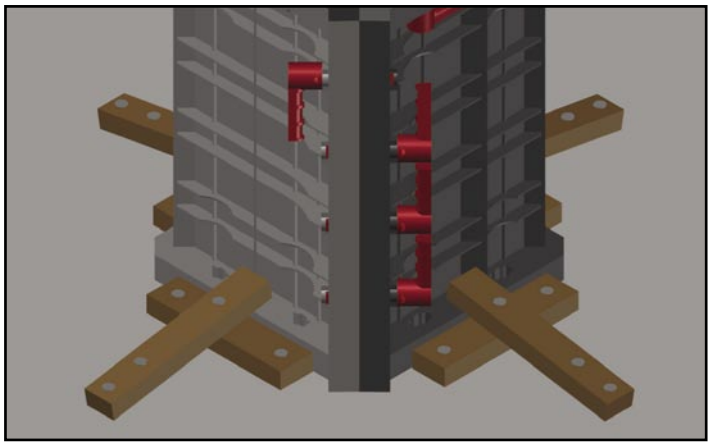
For a correct, rapid assembly of the Geotub formwork, follow these simple steps:

1. Fit together the two Geotub elements
2. Working from bottom to top, fit the nylon handles in the holes along the two vertical rims, then lock them tight by giving the grip a quarter turn upwards.
3. The last handle of each column section has to be inserted in the opposite side of the joint and locked by a quarter-turn downwards.
4. When the first two elements of the column are in place continue with the next section, which should be attached to the first by the handles
5. The grip of the handles along the joint between two sections can be turned either upwards or downwards, so long as they do not interfere with the other handles (figure 5 illustrates the handles in a typical assembly)

Continue to erect the Geotub Square or Rectangular modular sections until the required height is reached.

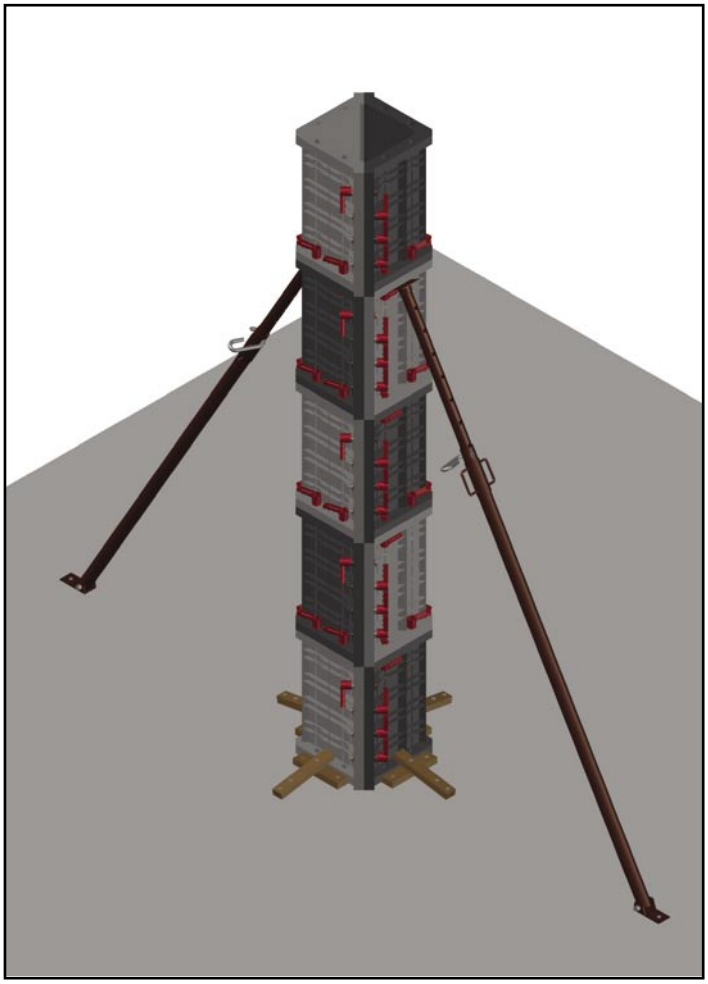
Locking all the handles tight not only guarantees a tight seal in the formwork joints, it also ensures that all the modular elements are aligned.

All the handles must be fastened and locked in the holes to ensure the formwork is perfectly sealed.
The side they are inserted and the direction they are turned have no effect whatsoever on the seal.

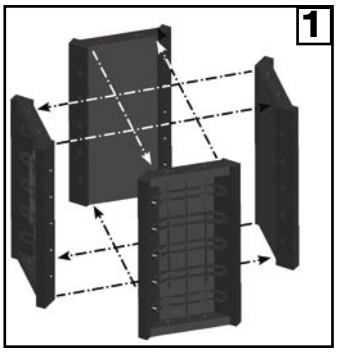


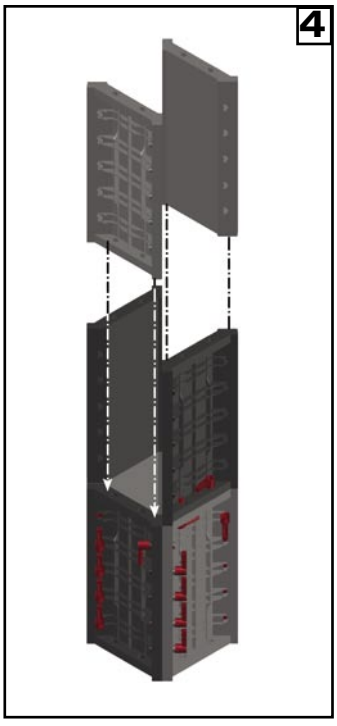
When the Geotub Square or Rectangular column has been completely assembled anchor its base to the foundation by simple wooden planks nailed into the ground (as shown in the diagram above)

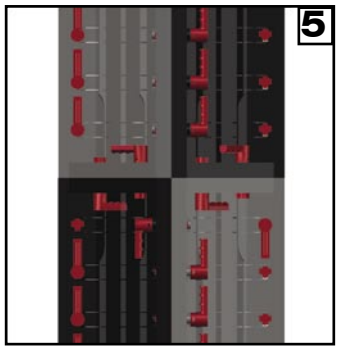
Plumb lining Geotub Square or Rectangular is quick and easy. Just strut the formwork on two sides, with normal adjustable flat-headed props. Geotub does not need release agents. To prevent the concrete seeping into the gap along the top lip of the last column section, just mask it off with simple adhesive tape.
Geotub Square and Rectangular formwork is suitable for casting with pumped concrete and also its subsequent vibration.



Geotub panels (without holes)







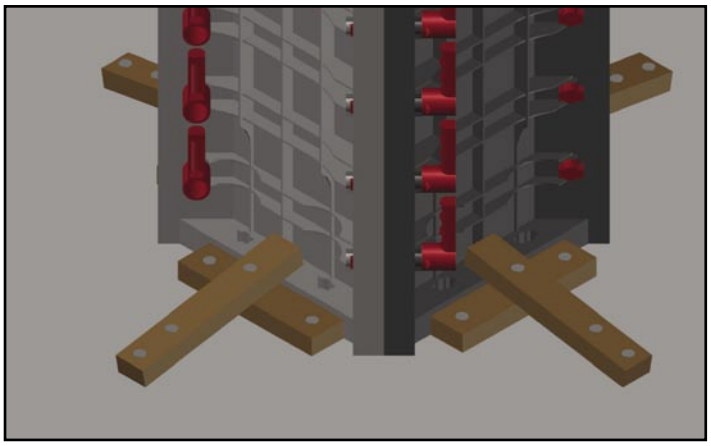
For a correct, rapid assembly of the Geotub Panel formwork, follow these simple steps:

1. Fit together the 4 sides of Geotub Panel elements
2. Working from bottom to top, fit the nylon handles in the holes along the two vertical rims, then lock them tight by giving the grip a quarter turn upwards.
3. The last handle along the vertical rim of each column section has to be inserted in the opposite side of the joint and locked by a quarter-turn downwards.
4. When the first four elements of the column are in place continue with the next section, which should be attached to the first by the handles
5. The grip of the handles along the joint between two sections can be turned either upwards or downwards, so long as they do not interfere with the other handles (figure 5 illustrates the handles in a typical assembly)

Continue to erect the Geotub Square or Rectangular modular sections until the required height is reached.

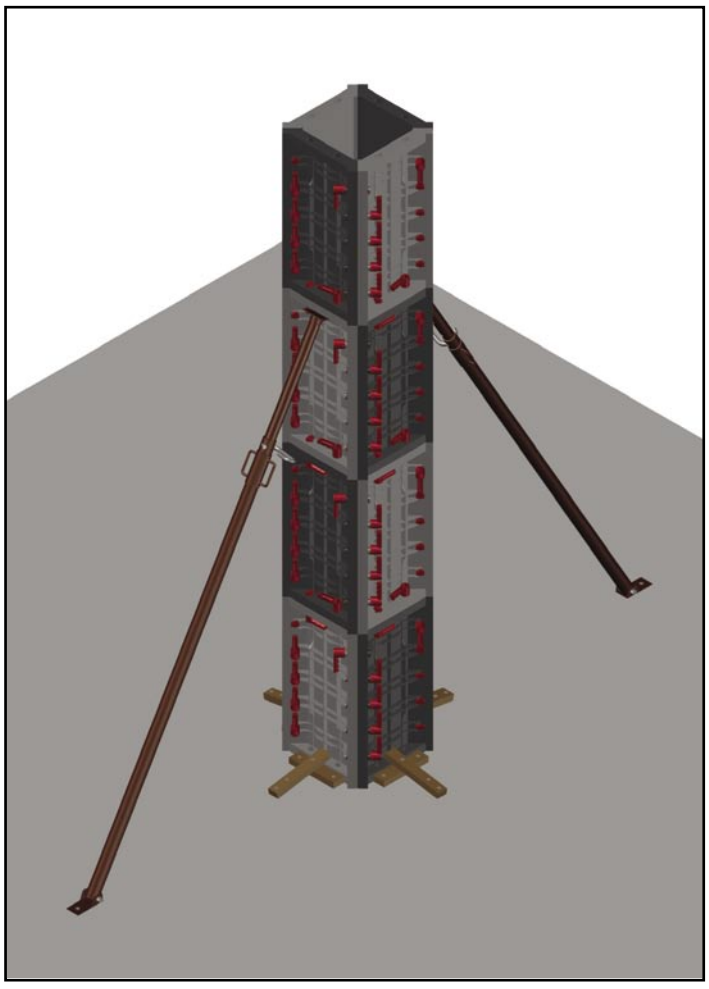
Locking all the handles tight not only guarantees a tight seal in the formwork joints, it also ensures that all the modular elements are aligned.

All the handles must be fastened and locked in the holes to ensure the formwork is perfectly sealed.
The side they are inserted and the direction they are turned has no effect whatsoever on the seal.

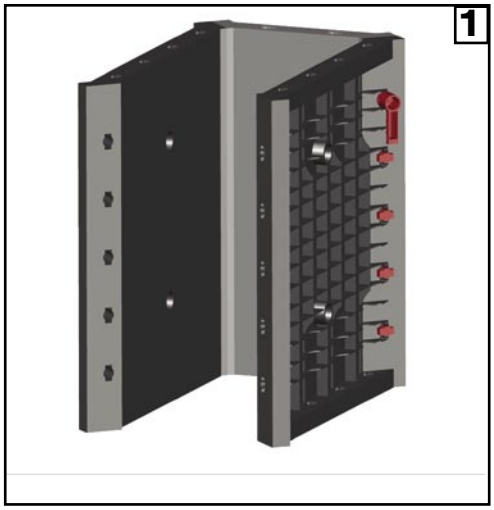


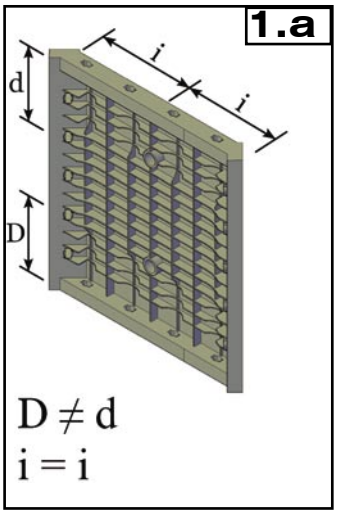
When the Geotub Panel column has been completely assembled anchor its base to the foundation by simple wooden planks nailed into the ground

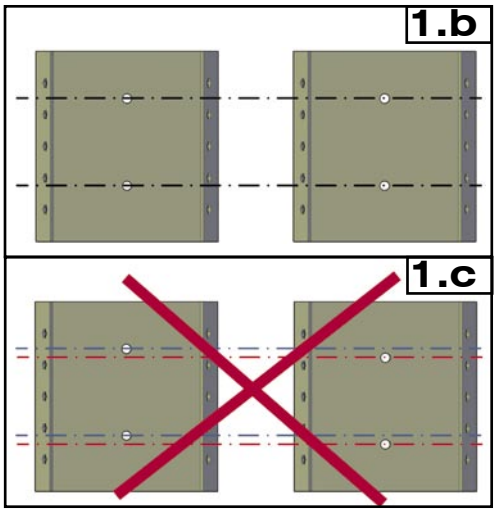
Plumb lining Geotub is quick and easy. Just strut the formwork on two sides, with normal adjustable flat-headed props. Geotub does not need release agents. To prevent the concrete seeping into the gap along the top lip of the last column section, just mask it off with simple adhesive tape. Geotub formwork is suitable for casting with pumped concrete and also its subsequent vibration.

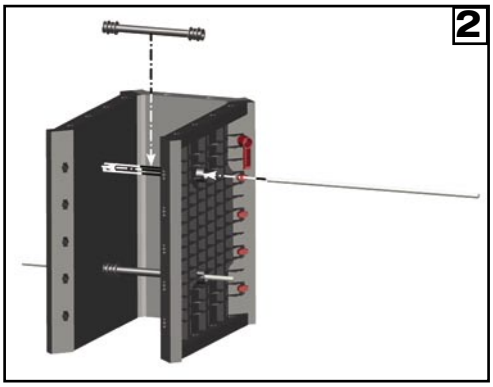


Geotub Panel (holes on two opposite sides)

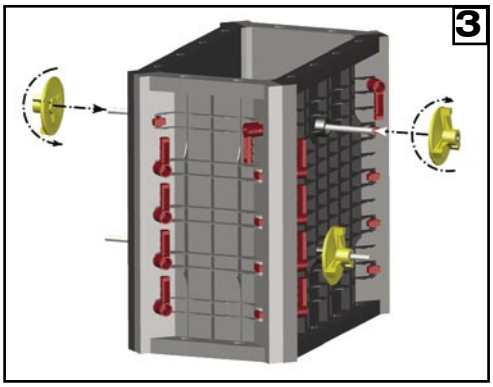


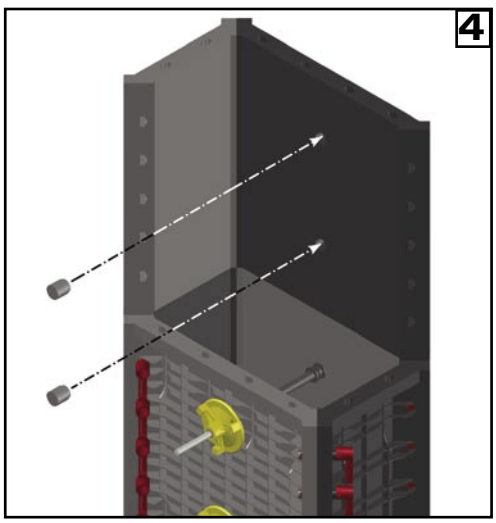






1. fit the Geotub Panel elements together to make a C shape, then joint them with the nylon handles as described earlier (one short panel and two long panels with holes)*
2. mount the spacers inside, then insert the threaded rods (two spacers and two threaded rods)
3. complete the square or rectangle by fastening the last Geotub Panel element to the others with the handles, then lock the two threaded rods mounted earlier with the flanged nuts.
4. Repeat points 1 to 3 until the required height is reached. There is no need to use the threaded rods in the last column section, just blank off the two holes in each panel from inside using the plugs, which have to be pressure fit with a normal rubber hammer.

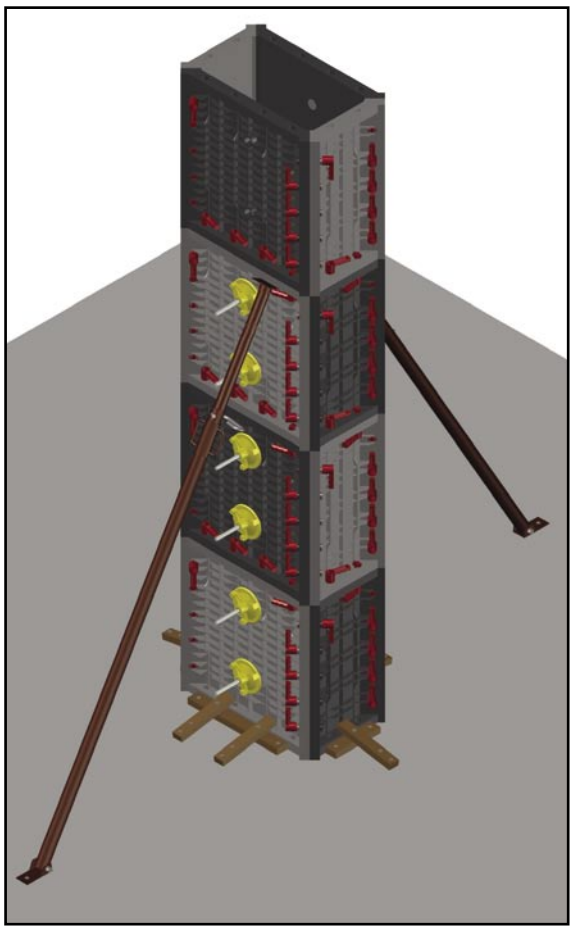




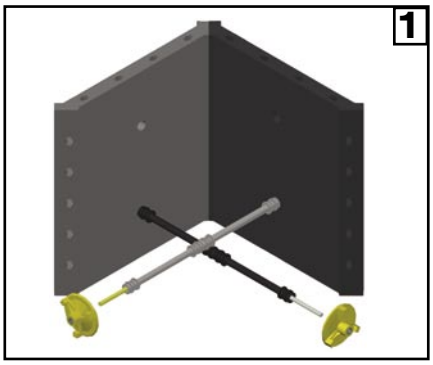
The threaded rods are essential in ensuring the elements are properly sealed. Only the last column section (i.e. the last two holes) does not need rods.

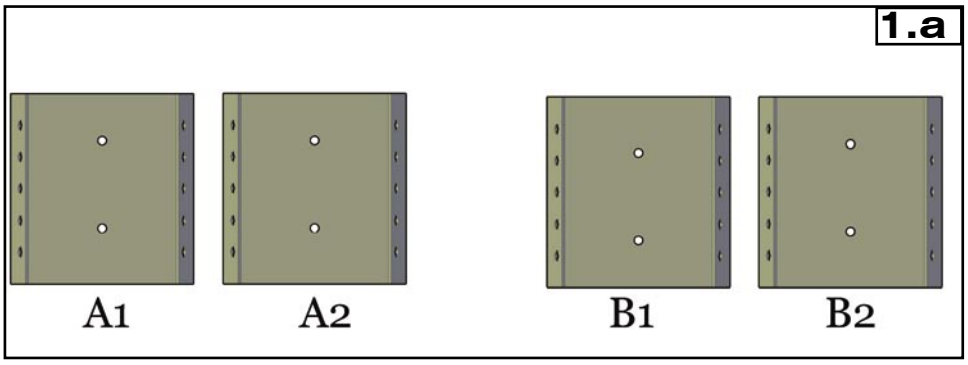
* The holes have different distances from the top and bottom edges of the 50, 55 or 60 cm Geotub Panel elements. Before joining the panels with the handles, make sure that the two opposite Geotub elements have been mounted the same way and the holes are aligned, otherwise the threaded rods cannot be inserted.

The diagram below illustrates a typical 3.00m high Geotub Panel formwork, fully assembled with all its accessories, plumb lined and anchored to the ground as described in the previous pages.



Mounting Geotub Panels (holes on all sides)



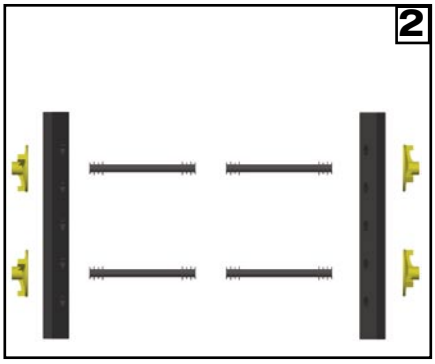


1. Fit together and use the nylon handles to join the Geotub Panel elements as described in the previous pages

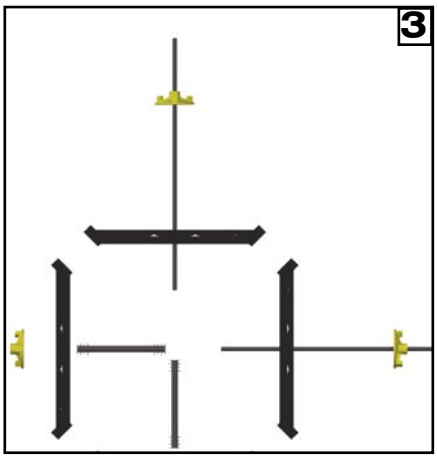
1a While assembling the panels it is very important that they are mounted in the right vertical direction. The two panels on opposite sides must stand with the holes perfectly aligned (see A1 and A2 above). The second pair of Geopanels (see B1 and B2 above) must be upturned with the holes inverted so that the threaded rods do not converge at the centre and can be inserted in both directions.

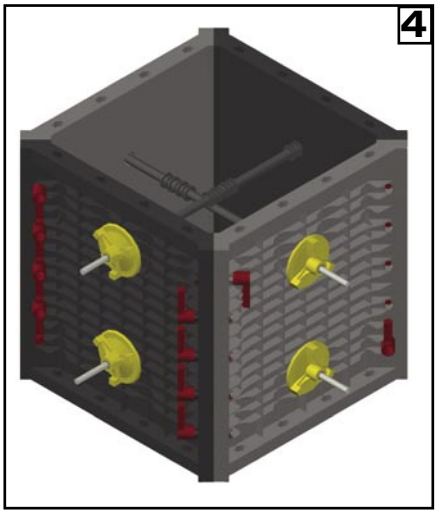
2. When the distance between two faces is over 40cm, since longer spacers are not available combine two shorter spacers until the required length is obtained (e.g. for a clearance of 55cm just use a 30cm spacer added to a 25cm spacer)

3. Each Geotub Panel has two holes to receive the threaded rods. Each column section (i.e. 75cm as height of the elements) therefore needs 4 x threaded rods, 8 x spacers (the clearance is always over 40cm so two spacers have to be combined for each rod) and 8 x flanged nuts



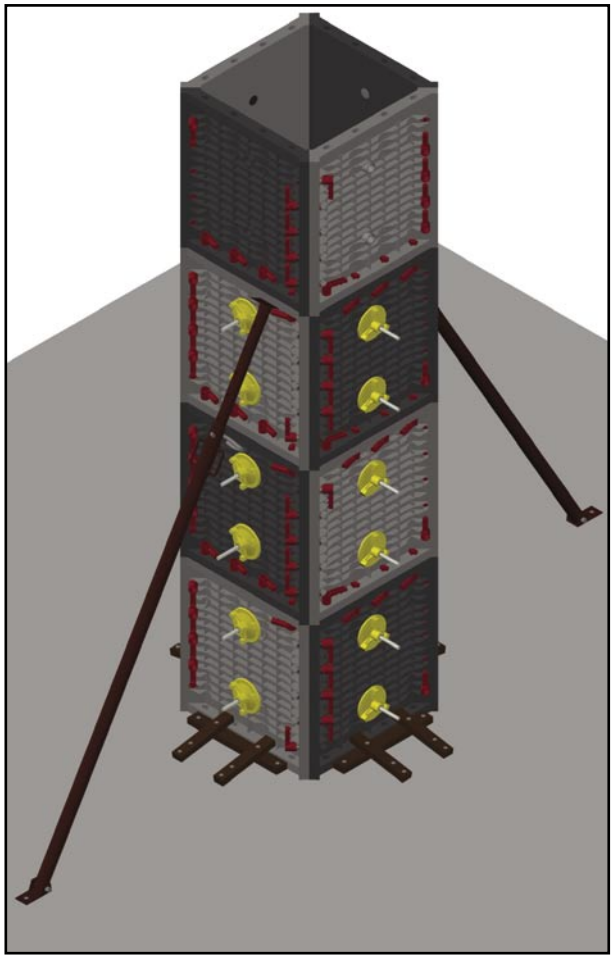
4. When the first column section is in place continue upwards, repeating the above instructions until the required height is reached (maximum 3m). There is no need to use the threaded rods in the last column section, however the holes in the four panels have to be blanked off by the plastic plugs.



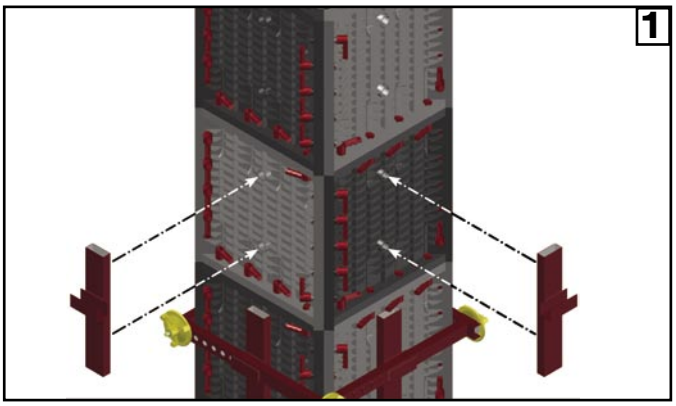


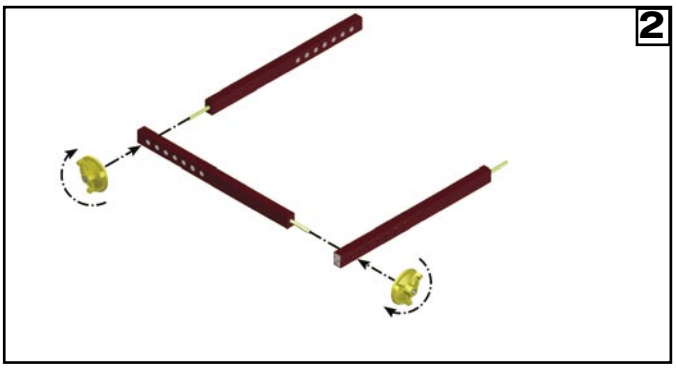
The threaded rods (in both directions) are essential in ensuring the elements are properly sealed. Only the last column section does not need rods.

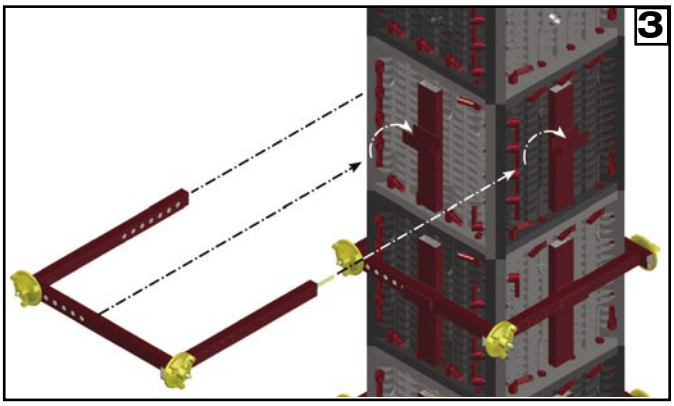
The figure below illustrates a 3m high Geotub Panel formwork assembled with all its accessories, plumb lined and anchored to the ground as described in the previous pages

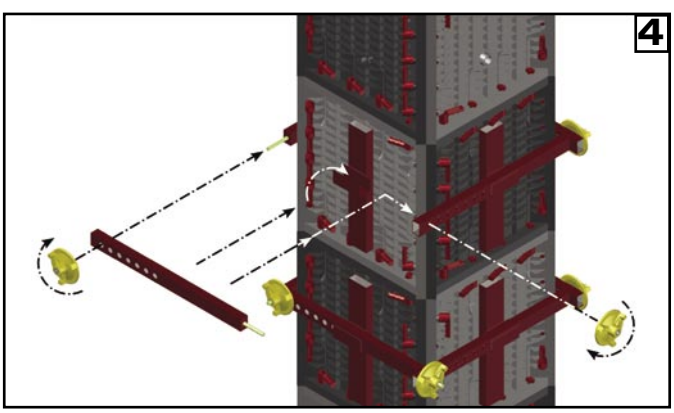


Mounting Geotub Panels with holes but no stays









If the threaded rods cannot be used when casting a column with Geotub Panel, for instance for restrictions related to the type of reinforcement, the Geotub Panel formwork can nevertheless be adapted using a special steel "hoop", which strengthens the column without leaving holes open.
The figures illustrate the correct procedure for mounting the "hoop":

1. before starting to assemble the panels blank off all the holes on the inside face with the plastic plugs, then erect the column locking all the handles (make sure all the panels are standing the same way up so the holes are aligned). When the column is completed press the support bars onto the outside face of the Geotub Panel (the two tapered pins on the back of the support bar will fit into the holes in the Geotub Panel)
2. mount three braces to make a C. Fasten the flanged nuts but do not tighten them
3. fit this "open hoop" on the brackets of the support bar
4. attach the last brace to complete the "hoop" and tighten all the flanged nuts
5. mount a hoop on each column section, apart from the last one.