Installation Guide

Hynds Hypond Effluent Storage System

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HYNDS

The Hypond is a unique, site assembled, precast effluent tank that comes in 4 standard sizes.

The panels can easily be lifted into place with a suitable excavator. Hypond panel weight is approximately 1600 kgs. Each panel is 2400 mm high with a finished depth of approx 2135 mm to floor level. For high water table areas an Anti-Flotation floor design must be used. Please contact your local Hynds branch for more information.

Pre Construction Requirements

Hynds recommends employing the services of a suitably qualified local Consulting Engineer (CPEng) for site design and installation checking.

This will be necessary if you Council requires` Resource and or Building consents accompanied by Design (PS1) and construction monitoring (PS4) Producer Statements.

a. Select the site most approprate for the pond installation.

b. Check that the foundation material at the level of the bottom of the pond will be suitable to ensure a min. 100kPa safe bearing pressure uniformly across the entire area of the excavation.

c. Confirm that the water table will consistently remain at our below 1.8m from ground level. If this is not the case the pond must be constructed with an anti-flotation floor. This floor is much thicker and more heavily reinforced. Alternatively consider another site where the water table will remain at least 1.8m below ground level

TABLE 1 **Excavation & Preparation Dimensions**

Hypond Size	Nominal Internal Diameter	Minimum Excavation Diameter
HYPOND40	4324 mm	6900 mm
HYPOND65	5648 mm	8200 mm
HYPOND100	6953 mm	9500 mm
HYPOND140	8248mm	10700 mm

Note: *Refer to official Hynds quote for a full component list. Some of the installation products detailed in this guide may differ from final quote product specifications (based on new or improved specifications, or alternative components supplied), when the usual product supply is not available.*

1. Setting Out

a. Ensure that all your health, safety and environment policies are adhered to whilst excavating for the Hypond. Extra care is required if the ground is unstable.

b. Mark out the area on the farm that the Hypond is to be located on before excavation begins.

c. Accurate setting out of the finished levels will minimise the amount of excavation.

I. Set finished height of the top of the Hypond panels approximately 150–250 mm above finished ground level.
II. Top of the Hypond centreblock or Datum point to be 2790mm below finished height.
III. Diameter of excavation to provide clearance of approximately 1m from the inside edges of the Hypond panels (refer to Table 1 for appropriate excavation diameter details required).

FIG. 1 Step 2 *Note: Centre Block not used in Antiflotation Floor*

2. Excavation & Preparation

a. Excavate for the Hypond allowing for a minimum of 150 mm of compacted metal under the panels and floor.

b. Depth of excavation:

I. Minimum of 3240 mm at the centre.
II. Minimum of 2640 mm at the edge under the panels.

c. Where soft spots are identified in the excavation, over excavate by a minimum of 300mm and replace with well compacted GAP40 material.

d. Place a minimum of 150mm of metal (GAP40) around the perimeter of the excavation to suit the width of the panel footing and flanged base. Compact to a bearing capacity of 100kPa. Ensure the finished compacted level is within 5mm – 10mm around the entire circumference of the Hypond.

e. Place a minimum of 150mm (GAP40) metal under the centre block (approximately 1500mm diameter) and compact to a bearing capacity of 100kPa.

f. Shape the floor to allow a minimum of 150mm compacted GAP40 metal under the concrete slab. Place and compact a minimum of 150mm (GAP40) metal over the full extent of the concrete floor slab. Placing and compacting of this metal can be done at this stage or after the wall panels have been installed.

FIG. 3 Step 3c

FIG. 2 Step 3b

3. Installation

a. Place the precast concrete datum block (LDHYPOND) in the centre of the Hypond to use as a datum block as per the geometry drawings.
(Note Datum Block is not used with antiflotation Floors)

NB: *The contractor may install their own concrete pad but this must have 661 or SE92 mesh extending 500mm into the floor in all directions.*
For Projects requiring Antifloation floor please refer to your specific project Drawings

b. Mark out the Hypond circumference on the compacted metal using the central datum / Centre block for setting out.

c. Accurately place two Hypond Foundation blocks in position under the joint at each end of the first Hypond panel. This will ensure that adjacent panels are installed at the same level and provide a level base for the first panel.

d. Place the first Hypond panel into position and accurately level both horizontally and vertically. Ensure that appropriate and stable propping is used to maintain the panel in place. Ensure all HS&E requirements in line with your company policies are adhered to.

e. Apply a high strength Construction Spray Adhesive to the ends of the panel before fixing a continuous strip of MSR (black) sealant down one side of the joint face along the buttom and back up the other side of the panel (as shown in the picture) Ensure that it is placed accurately to get full compression.

FIG. 4 **Step 3e**

FIG. 5 **Step 3i**

f. Insert the Hypond 10 mm spacer into the top and bottom tapered bolt holes. This spacer ensures a uniform gap for the MSR sealant and will ensure a uniform joint when the connecting bolts are tightened.

g. Place the next Hypond Foundation block accurately in position and ensure that it is at the same level as the previously installed block.

h. Apply CRC Ados Ultra High Stength Adhesive to the panel edge without sealant, ensuring good adhesion to the MSR on the adjacent panel.

i. Carefully install the second Hypond panel, ensuring that the MSR sealant is compressed on both faces of the joint and that the bolt holes align.

j. Fit and tighten the four bolts between the adjacent panels.

k. Continue by repeating the sequence of placing the next foundation block, applying the MSR sealant to the next joint being made, fitting spacer blocks, installing the next panel and fitting the bolts across the joints.

l. Keep checking the diagonal dimensions to ensure that the panels are being correctly installed and that the last panel will fit correctly.

FIG. 7 **Step 3f**

FIG. 6 **Step 4b**

4. Preparation For Concreting

a. Ensure the floor of the Hypond is still in good order and attend to any parts that may have been damaged during the panel installation.

b. Fit the reinforcing bars through the holes in the bottom of the panels (4 per panel).

c. *Place 661 or SE92 mesh on the compacted foundation using 100 mm spacer chairs. Ensure that the mesh panels overlap the reinforcing bars at the perimeter, the mesh extending from the centre block and between adjacent mesh panels.
Or refter to project drawing for reinforcing design to be used in Antifloation Floor.

d. Glue Hydrotite CJ 2007 swellable sealant continuously around the full perimeter of the tank just above the reinforcing bars projecting through the precast concrete Hypond panels. A locating line is provided on the panel for accurate placing (Fosroc primer 13 is a suitable glue).

e. Glue Hydrotite CJ 2007 around the perimeter of the centre block, approximately 150mm below the top.

5. Concreting

a. *Cast the 150 mm thick floor using 30 MPa concrete (at 28 days curing) in a continuous pour, including the flanged base.
Or refer to project drawings for Antifloation Floor dimension and specificed Thickness.

b. *Ensure that the concrete flows under the panels for forming the 400mm wide x 300mm deep flanged base without any air voids forming under the panel.
Or refer to project drawings for Antifloation Floor dimension and specificed Thickness.

c. Finish the concrete floor ensuring that there is a minimum 100mm cover above the Hydrotite CJ 2007 sealant (A second line on the precast panel provides guidance to the finished floor level adjacent to the panel.

d. As soon as practical apply curing membrane or covers to the concrete floor to ensure that the concrete is kept moist for a minimum of 7 days after casting. This will aid the curing process and prevent shrinkage cracking.

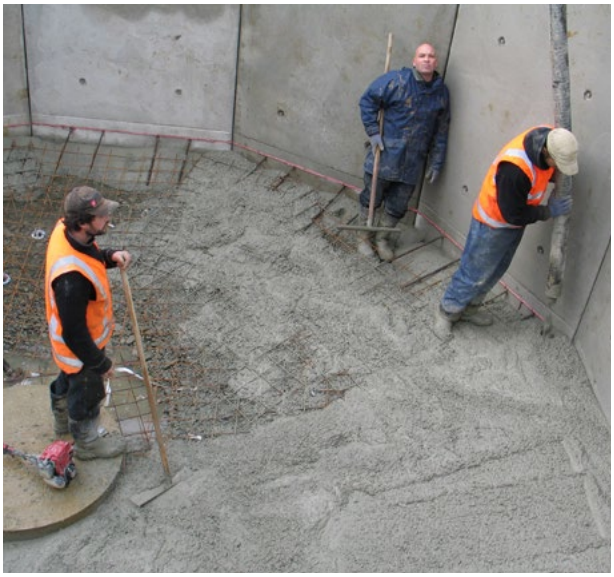


FIG. 10 **Step 4d**

FIG. 11 **Step 5a**

FIG. 8 **Step 5b**

FIG. 9 **Step 5c**

6. Finishing

a. Backfill around the completed Hypond, a minimum of three days after concreting, using suitable well draining material.

b. Ensure backfilling is carried out in 150–200mm layers evenly around the perimeter of the Hypond.

c. After backfilling is complete and prior to grouting, check that all the bolts are tight and that there are no gaps between the MSR and the vertical faces of the precast panels.

d. After completion of backfilling apply grout to the shear keys in the joints.

e. Mix SikaGrout 212 to manufacturer's specification. Fill all joints with the grout slurry, slowly and steadily into the shear key between the panels. Pour the grout in 3 stages to minimise hydraulic pressure on the MSR20. A small steady pour will ensure that the joints are filled without airpockets.

f. All swiftlift recesses and any exposed threaded inserts should be filled with epoxy mortar to prevent corrosion of any exposed metal fittings.

g. Install safety fencing if required.

7. Site Clean Up

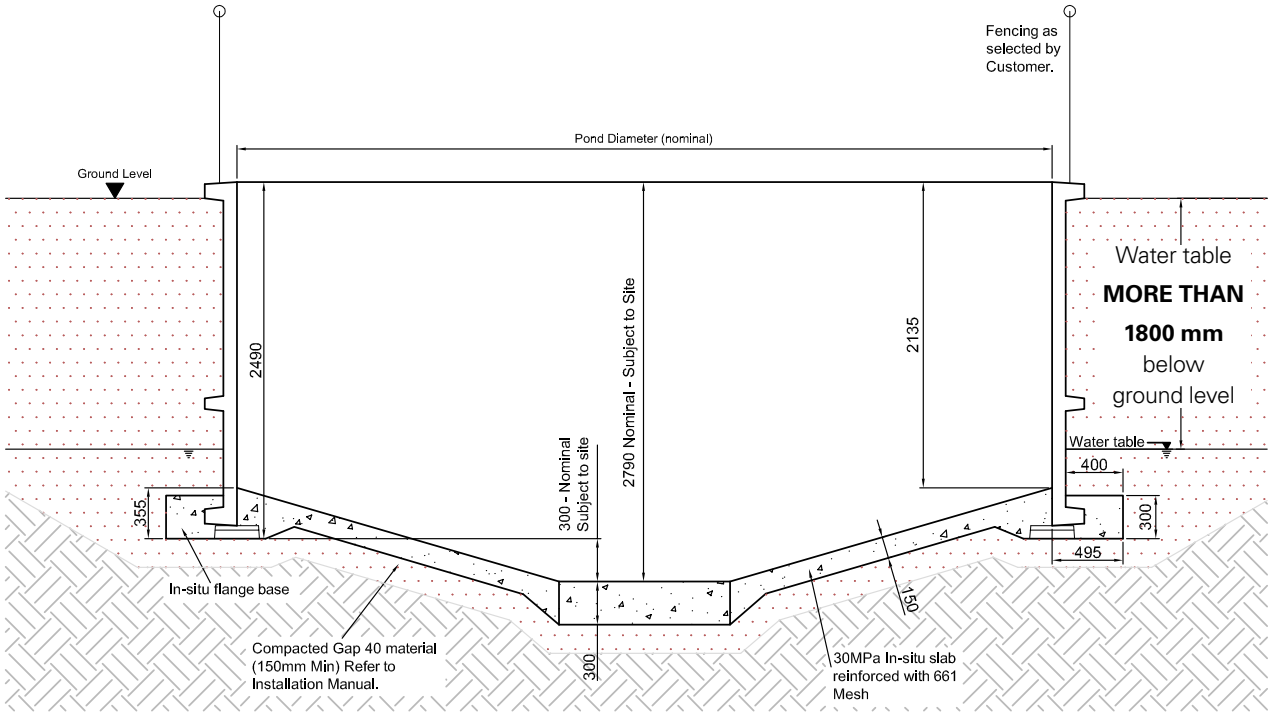
a. Site clean up is an important aspect of any major construction project, to eliminate potential harm to people or animals from any un-used or cut of metal materials left from site.

b. Lightly rake over the adjacent topsoil in case any metal or concrete material has been partly buried in this loose material. If necesary, the ground should be recompacted back to a neat tidy finish.

c. It is also recommended that warning signs are placed around the pond area highlighting all on going health and safety information pertaining to the pond and its function.

FIG. 14 **Step 6**

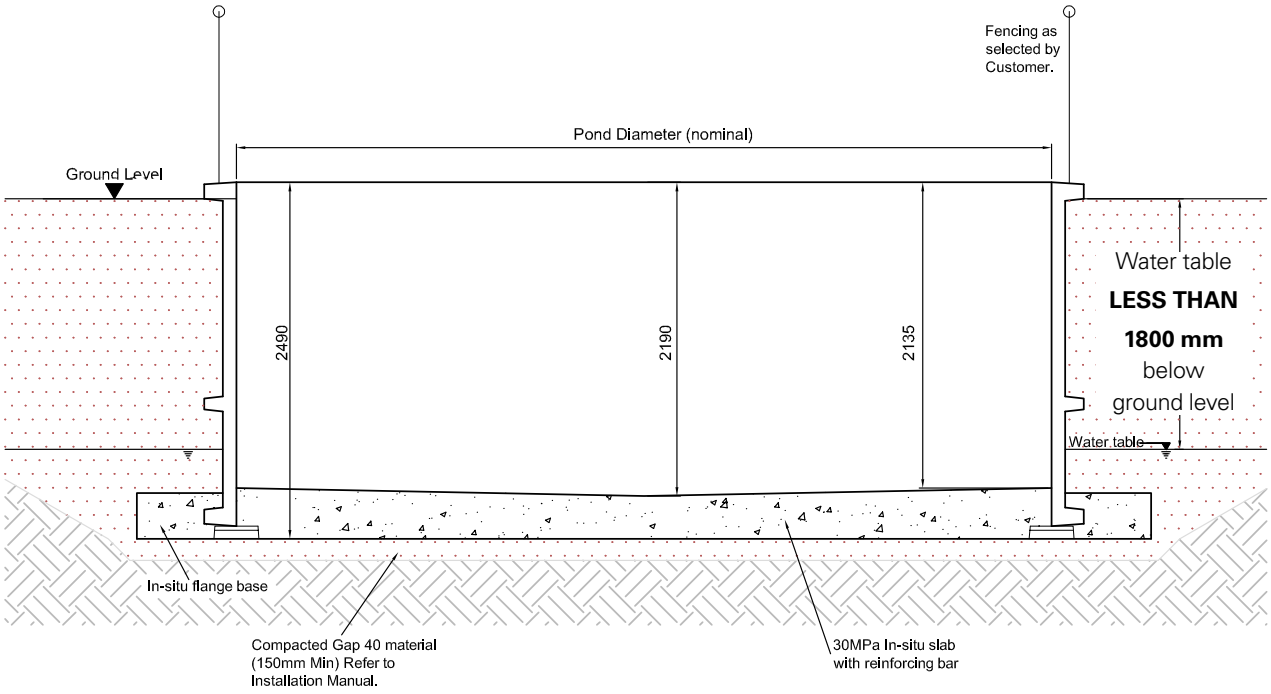
FIG. 15 **Step 7**



Sectional View

with standard floor slab

Scale: N.T.S.



Sectional View

with anti flotational floor slab

Scale: N.T.S.

*Refer to your Project Drawings for site and project specific Antiflotation floor slab dimensions and refinforicng

Branches Nationwide *Support Office & Technical Services 0800 93 7473*