Nylex DownUnda™
Underground
Rainwater Tank

Installation Instructions
Introduction

Congratulations on your purchase of the Nylex DownUnda™ Underground Rainwater Tank.

Your Nylex DownUnda™ Underground Rainwater Tank is constructed of robust materials so it will provide you with a water storage solution for many years. So that you get the most out of your Nylex DownUnda™ tank, it is important to ensure that it is installed correctly.

Nylex recommends that a licensed plumber must be used to install your tank, even when this is not mandatory under law.

Ensure that your plumber receives a copy of these instructions and a copy of your local government approval (where applicable) before he or she commences any work.

Nylex recommends that the water from your tank is only used as directed by your local water authority.

**You must carefully read and follow these instructions as the Nylex warranty on this tank does not apply unless you install the tank as per the manufacturer’s instructions.**

Warranty

The Nylex DownUnda™ Underground Rainwater Tank is guaranteed against faulty workmanship and materials for a period of 10 years. Should it fail to perform, you should advise Nylex or the place of purchase.

The warranty is void if the tank is not installed as per the manufacturer’s instructions.
Diagram of Nylex DownUnda™ Underground Rainwater Tank
The Nylex DownUnda™ Underground Rainwater Tank may be installed for either:

- Light Residential – capable of bearing loads up to 2,500 kilograms (AS1170.2.2002 Table 3.1)
- Medium Residential – capable of bearing loads up to 10,000 kilograms (AS1170.2.2002 Table 3.1)

Please choose the installation process appropriate for your proposed application. If in doubt, Nylex recommends that you install the ‘Medium Residential’ application or speak to a suitably-qualified engineer.

The Nylex DownUnda™ Underground Rainwater Tank is modular in design, allowing for multiple tanks to be installed together providing additional rainwater storage capacity. If you are installing multiple tanks, please ensure you follow the additional instructions relating to the installation of multiple tanks.

Before commencing work, you should complete the following checks:

- Check with your local municipal council and water authority to determine if any:
  - Permits are required for the installation or use of this tank;
  - Minimum set back distances from buildings and boundary fences apply;
  - Additional backflow prevention products are required to be added to mains supplied water
- Ensure the proposed tank location complies with loadings specified in AS1170.2:2002 Table 3.1 (either Light Residential or Medium Residential)
- Ensure there is adequate access for the heavy equipment required for the installation. Access of greater than 2.5 metres is recommended but you should check this distance with the excavator and concrete suppliers.
- Check the location of services (electricity, gas, mains water and storm water). You should be able to obtain plans of these services from your local authorities.
- Check the site for soil type and for the presence of rock. Your municipal council or local excavator should be able to assist.
- Check that a downpipe can be suitably diverted to the proposed tank location and the overflow returned to the storm water.
- Check that the tank is not to be installed in a low region that is prone to flooding or pooling of stormwater
- Your tank has been thoroughly inspected prior to leaving the manufacturing plant. However, you should make a thorough visual inspection of the tank to ensure there are no leaks caused by damage to the tank structure during transportation or installation.
• Seek specialist geotechnical advice for any potentially complex site installation issues

• Check that the weather conditions are appropriate to commence installation.
  You should not install if:
  
  • Rain is forecast for that day
  • Forecast temperature is greater than 32 degrees Celsius

• You will require a pump system to pump the water from your tank. Nylex strongly recommends that you install a submersible pump with your tank, but it is possible to use an external pump system. If the tank water is to be used in toilets, washing machines or high-pressure applications a pressure pump with a working pressure of above 300kpa is recommended. You should speak with a pump manufacturer for the most suitable pump for your particular application. You should purchase your pump prior to commencing the installation.

• You will need to have concrete ordered and available for the installation of the tank. The concrete used for this installation must be 25 MPa, 80-90 slump with 19mm aggregate. The volume required for the installation is dependent on the type of installation (Light Residential or Medium Residential), and the slope of the land, but 5 cubic metres will be sufficient for most Light Residential installations. It is recommended that 5.5m³ be ordered to ensure there is sufficient concrete to fill any irregularities in the excavation.

• You will need to have approximately 0.5 cubic metre of washed sand available for placement at the base of the excavation hole prior to lowering the tank into the hole

• You will need to order the following reinforcement material for Stage 6 of installation:
  
  • REINFORCEMENT MESH: SL72 to cover area 4100 by 3100mm including any joins overlapping by 2 wires
  • REINFORCEMENT BAR: 8 by N12 bars 1200 mm long
  • BAR CHAIRS: 312 required to centrally locate the mesh in the 100 mm thick top slab

• You will need to have a H50 pin hex driver key for use in Stage 6 when adjusting the height of the Riser Assembly

You should ensure that you have a safe and secure worksite prior to commencing the installation:

• Barricade the site and install safety signs

• Comply with all relevant OH&S/environmental regulations and Codes of Practice, including issues such as risk assessment, supervision, safety signs, barricades, excavation and shoring, dewatering, safe excavation clearance from structures/services, and use of lifting & handling.
Installation Instructions – Single Tank

Stage 1. Mark Up the Excavation Area:

1. Clear all debris and obstructions from around the site
2. Prepare excavator and concrete truck access
3. Mark the rectangular excavation area as per the dimensions in Figure 1 or Figure 2 below
4. Remove the corners from the excavation area as per Figure 1 or Figure 2 below
5. Ensure that the tank will be positioned so that the riser – used for access and connection to services - is in the most convenient location
6. Ensure that all minimum setback distances from buildings and boundary fences etc are achieved. You should consult a suitably qualified engineer if the footings are to be underpinned

**NOTE:** Distances in millimetres.
Stage 2. Excavation:

1. Ensure that the necessary barricades are in place to ensure unauthorised persons cannot get close to the excavation area
2. Do not commence excavation if rain is forecast for that day
3. Excavate the hole as per the excavation drawing (Figure 3) and site mark up
4. Ensure the riser top will protrude 100 millimetres (mm) from the ground if the tank is to be installed in a garden. This will stop water run-off from entering the tank
5. Ensure the soil is removed to a safe distance away from the excavation hole and activity
6. Ensure the hole is square (i.e. the corners are 90 degrees) and has a level base
7. Angle the batter according to the soil conditions to ensure stability
8. Ensure the base of the hole is smooth by removing any protruding objects, such as stone or rock, which may damage the tank

Figure 3a. Light Residential Installation - Excavation Depths

Figure 3b. Medium Residential Installation - Excavation Depths

Figure 3c. Excavation depth on sloping sites

NOTE: Distances in millimetres.
Stage 3. Install tank:

Important Note:
Your Nylex DownUnda™ Underground Rainwater Tank weighs 400 kilograms. It is essential that the lifting equipment you use to install the tank must have a Safe Working Load that exceeds the sum of 400kg plus the weight of the lifting gear.

1. Safely sling the tank using D shackle in the 4 lifting lugs moulded into the tank
2. Lift and slowly lower the tank into the hole using suitable lifting equipment.
3. Centre the tank in the hole, ensuring the following minimum distances:
   a. A minimum 200mm gap between the battered wall and the tank wall for Light Residential installations;
   b. A minimum 300mm gap between the battered wall and the tank wall for Medium Residential installations;
   c. It is recommended that a wide shovel (or correct width) be used as guide and that the installer walks completely around the tank checking gaps – especially the corners
4. Cut the reinforcing mesh and steel bar as per Figure 4 to suit the installation and safely leave off to the side until required
   a. Note that the mesh should be cut 50 mm smaller than the excavation hole on all sides
   b. Wire stands in place to ensure the reinforced mesh remains central in the top slab

Figure 4. Diagram showing reinforcing mesh and steel bar dimensions.

NOTE: Distances in millimetres.
Stage 4. Connect services to the tank:

1. Connect services to the tank, as per the connection points in Figure 5:
   a. Connect downpipe to tank ‘Inlet’
   b. Connect ‘Overflow’ to storm water pipe
   c. Run a length of 50mm DWV to an external power point and run a string line through the pipe to allow you to draw the pump power lead through at a later stage
   d. Install a submersible pump in the tank and connect the pump outlet to the brass fitting on the inside of the riser
   e. Draw the pump power lead through the 50 mm DWV conduit and connect plug into the power socket. Seal both ends of the 50mm DWV with a PVC fitting or sealant
   f. Connect the ‘Pump Outlet’ to a tap or other plumbing as required
   g. Wrap all pipes in foam (such as Able Flex 10 mm) to provide flexibility in the even that the earth and concrete tank surrounds move

2. Carefully backfill these services with site soil or sand and carefully tamp down to protect the services from any later compression

3. Double check that all fittings and pipes are correctly fitted and sealed, as rectifying a leak later will be very time consuming and expensive

*Figure 5. Connection points on Riser Assembly*
Stage 5. Fill tank with water:

1. Fill the tank with water so that it is level with the base of the riser
2. High volume water is available from a water tanker or permitted fire hydrant license holder. Check with local council or water authorities

Stage 6. Fit the Riser Cover Assembly:

1. The complete Riser Cover Assembly will be supplied installed on the tank at the maximum height of the riser (400mm)
2. Do not remove the Riser Assembly prior to installation – early removal may allow unsafe and unauthorised access to the tank
3. If the riser needs to be lowered you will need a 6mm Allen key (supplied with the tank) and a H50 pin hex driver key (not supplied):
   a. Use a string line and/or level to determine where the top of the Riser cover should be located – this cannot be lower than the line indicating a minimum concrete slab of 100mm. If lower than this mark, your hole is not deep enough.
   b. Remove the Riser Assembly
   c. Squarely cut the Riser off 20mm below the marked level
   d. Install the sealing gasket and apply a generous bead of silicone sealant to the inside of the riser before sliding the Riser Assembly into position
   e. Secure the Riser Assembly ensuring that it is square within the riser using the 4 self-tapping screws provided
   f. Install the Riser cover and tighten with the fasteners provided
Stage 7. Pour Concrete:

1. The concrete used for this installation must be 25 MPa, 80 slump with 14 mm aggregate
2. Do not pour concrete if the forecast temperature is greater than 32 degrees Celsius or if rain is expected
3. Pour concrete slowly into the 6 central holes
4. Allow the concrete to enter the holes slowly so that no air is trapped and vibrate the concrete to ensure that it totally fills the voids
5. Pour concrete around the tank perimeter – again pouring and vibrating to ensure that the concrete totally fills the voids
6. You should require approximately 3 cubic metres of concrete to fill the hole to just below the top of the tank
7. Install the reinforcing mesh on bar chairs (not supplied) to ensure it remains central in the top concrete slab
8. Pour the remaining 2 cubic metres of concrete to form a slab of at least 100mm uniformly across the top of the tank. Check the depth of the concrete over the tank with 100mm gauges
9. Make a neat finish around the riser, ensuring that the warning label (refer Figure 7) is covered by the depth of concrete i.e. the label should not be visible.
10. Additional concrete may be required depending upon the excavation and site slope to ensure that a minimum 100mm slab is laid
11. If the minimum 100mm slab thickness is not achieved, the tank warranty is void and the tank could potentially fail. If you have insufficient concrete, you should order another load to ensure the concrete is laid to the required depth.

**WARNING**

Manufacturer’s warranty does not apply unless you install this tank according to Manufacturer’s instructions. Refer to Installation instructions for full details.

Do not remove this label

For correct installation, CONCRETE MUST BE UP TO THE LINE BELOW

Figure 7. Warning Label on Riser
Stage 8. Complete Installation:

1. Allow concrete to cure for at least 72 hours, or as per the supplier’s instructions
2. Lock the lid, and place the Allen keys in a safe and secure location
3. Complete the following checklist:
   a. Tank hole met the minimum excavation depth
   b. Minimum 200mm gap (or 300mm gap for Medium Residential installations) surrounded the tank on all sides, including the corners
   c. Concrete specification and volumes were correct
   d. Reinforcing mesh and bars were installed
   e. Minimum 100mm slab of concrete over the tank, and warning label on the riser is covered
   f. Connections have been double-checked for leakages and services have been protected with sand/fill
4. Obtain a Certificate of Compliance from the licensed plumber who installed the tank
5. Send the completed Warranty Card to Nylex
6. Do not apply vehicular loadings on the installed tank for at least 28 days
7. Once installed, your tank should not accessed by anyone other than a suitably qualified and trained professional. You should ensure they immediately replace the riser assembly after any required access.
Installation Instructions – Multiple Tanks

With its modular design, it is possible to join multiple Nylex DownUnda™ Underground Rainwater Tanks to provide additional water storage capacity.

DO NOT JOIN 2 STANDARD SINGLE TANKS – TANKS THAT ARE TO BE INSTALLED AS MULTIPLE TANKS NEED A SPECIAL FIT-OUT WHEN MANUFACTURED AT NYLEX

1. Two or more tanks may be linked at installation as per the Figure 8 below
2. Discuss your multiple tank installation with Nylex and suitable joining couplings will be added to your tanks in the most appropriate location along the long length of the tank
3. When connection pipes are run along the surrounding beam (the area between the side of the tank and the batter), increase the thickness of the beam by the diameter of the pipe

   Eg if the beam is 300mm and a 50mm pipe is run within the beam, increase the beam to 350mm

Figure 8 – Installation dimensions for Multiple Tanks

 NOTE: Distances in millimetres.
4. When installing multiple tanks, you must note the following points:

a. Multiple tanks are joined using the 50mm DWV sockets installed on your tank prior to delivery - connect using 50mm PVC DWV pipe

b. Ensure a minimum gap of 300mm between the tanks

c. Multiple tanks must always be installed at the same level – i.e. the base must be level under both tanks

d. You must wrap the joining pipes in foam (such as Able Flex 10mm)

e. Connecting pipework that follows the tank wall should be a maximum of 15mm away from the tank wall
For additional information, contact:

Nylex Water Solutions Pty Ltd
20 Purton Road
Pakenham Vic 3810
Ph: 1300 092 837
www.nylexwater.com.au