

Hynds Hystor Storage Bunker

Technical Guide R3.6

An essential part of efficient farm dairy effluent management is to ensure that the by-products of the process are effectively stored for easy dispersal as required by environmental regulations.



03.15 | RURAL | R3.6 HYNDS HYSTOR STORAGE BUNKER

Applications

Storage of light-weight materials with a density lower than 1200kg/m³ (Hystor 900 & 1500): Manure- dry effluent matter, Firewood, Palm kernel powder and Silage

Aggregate storage (max. height 1200 mm)

Storage of light-weight materials with a density lower than 750 kg/m³ (Hystor 2100): e.g. Firewood, Palm kernel powder and Silage

Product Attributes

Robust assembled structure of pre-casted reinforced concrete

Numerous uses

Simple to construct

Cost effective containment

Quality

ISO 9001:2008 Quality Management Standard

We are the supply partner of choice for New Zealand's rural industry, specialising in water and infrastructure based solutions.

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Installation

- Prepare a level foundation area for the storage bunker, by excavating soil to required shape and depth.
- Lay a minimum of 150mm of compacted GAP 40 metal.
- Apply MSR gap sealant to tall end of side panels (which will butt up against back panel) prior to erecting structure.
- Lift back and side panels into position, ensuring that the top of the walls are level prior to bolting the panels together with supplied Reidbar fittings.
- Centrally place 661 mesh in the floor slab, ensuring a minimum 600mm overlap with starter bars projecting from wall panels.
- Cast concrete base - concrete to have a minimum of 30MPa strength at 28 days.
- Allow concrete floor to cure for a minimum of 7 days before filling bunker with storage material.



Note: Hystor storage bunkers are designed to be free standing structures storing light-weight materials on the inside of the bunker. DO NOT backfill the outside of the bunker with soil or any other materials.

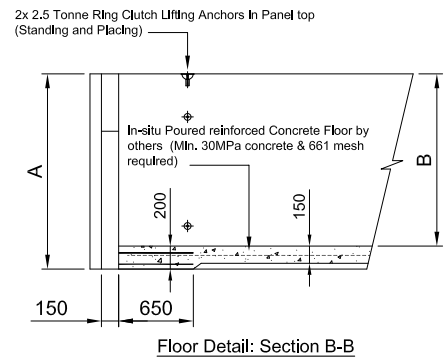
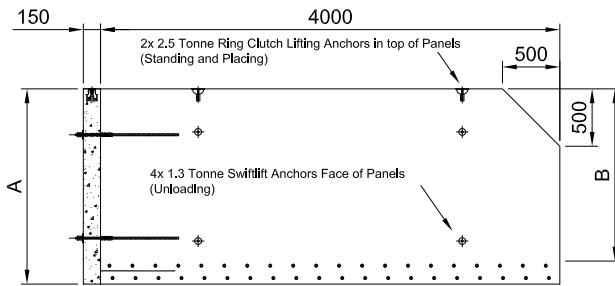
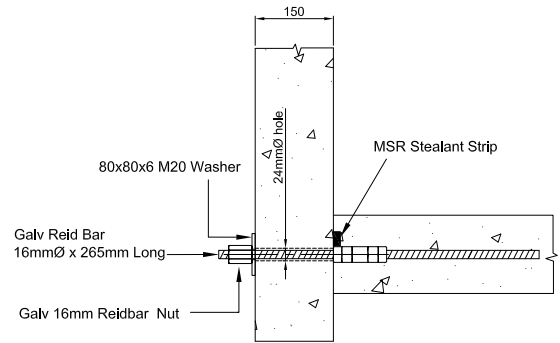
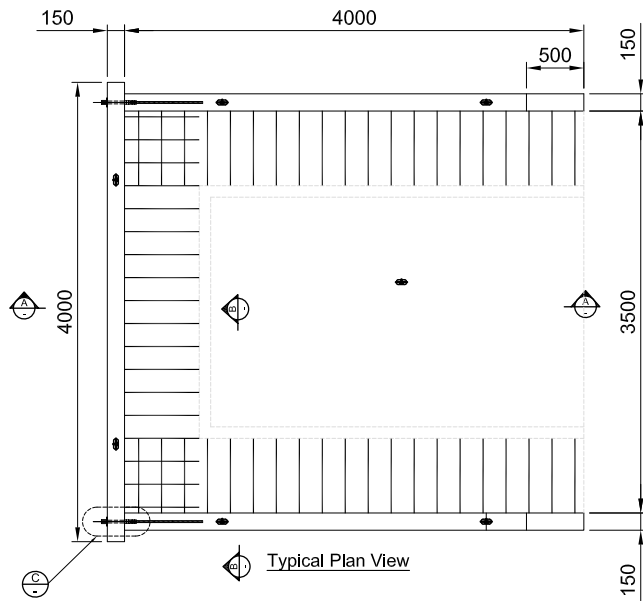
| Product Code | Precast Panel Kit | Internal Width | Internal Length | Internal Height | Total Weight (3 Panels) |
|--------------|---------------------------------------|----------------|-----------------|-----------------|-------------------------|
| HYSTOR09 | Solids Bunker 0.9 (Back & Side Walls) | 3.5 m | 4.0 m | 0.9 m | 4.86 |
| HYSTOR15 | Solids Bunker 1.5 (Back & Side Walls) | 3.5 m | 4.0 m | 1.5 m | 7.41 |
| HYSTOR21 | Solids Bunker 2.1 (Back & Side Walls) | 3.5 m | 4.0 m | 2.1 m | 10.05 |

*Additional items to be allowed for

Product Code & Quantities

| Item Code | Description | HYSTOP09 | HYSTOP15 | HYSTOP21 |
|-----------|-----------------------|----------|----------|----------|
| RBG16.250 | Galv Reid Bar Ø16 | 4 | 4 | 6 |
| RBNG16 | Galv Reid Bar Nut Ø16 | 4 | 4 | 6 |
| RBFW2480 | Galv Square Washer | 4 | 4 | 6 |
| MSR | Mastic Sealant | 1 | 1 | 2 |

Note: Customers to allow for 661 Reinforcing Mesh for placement in cast in situ 30MPa Concrete Floor



| Product Description | External Height A (mm) | Internal Height A (mm) | Back Panel Weight (tonnes) | Total Weight (3 panels) (tonnes) |
|---------------------|------------------------|------------------------|----------------------------|----------------------------------|
| HYSTOR09 | 1100 | 900 | 1.65 | 4.86 |
| HYSTOR15 | 1700 | 1500 | 2.50 | 7.40 |
| HYSTOR21 | 2300 | 2100 | 3.38 | 10.05 |

Lifting Clutches required for Unloading and Installation



1LE Swiftlift Clutch (Unloading)



2ELALE Ring Clutch (Standing and Placement)

Lifting and Handling

All Hynds Hystor Storage Bunkers incorporate Swiftlift lifting anchors for safe lifting and must be used with the correct lifting clutch.

Hynds Pipe Systems has designed and manufactured Hynds Hystor Storage Bunkers with a minimum dynamic factor of 1.2. This dynamic factor requires that all the following conditions are observed when lifting, moving or placing the bunkers:

1. Lifting with mobile plant (*such as an excavator or similar*) where equipment is specifically exempt from the requirements of the PECPR Regulations 1999, subject to the conditions outlined in the New Zealand Gazette, No. 104, September 2015 and
2. Lifting, travelling and placing over rough or uneven ground where anchor failure is not anticipated to cause harm or injury, by adopting procedures such as:
 - a. Transporting the element as close as practical to ground level (300mm recommended)
 - b. Establishing and maintaining exclusion zones
 - c. Transporting only precast concrete elements that are unlikely to topple if they were to hit the ground
 - d. Inspecting lifting anchors both after transportation and before final lifting into place

Refer to "*Safe work with precast concrete - Handling, transportation and erection of precast concrete elements*" published by Worksafe New Zealand (October 2018)

Shock loads resulting from travelling with suspended Bunkers over rough terrain and uneven ground may exceed design, dynamic and safety factors of the lifting systems. It is essential that care is taken during lifting and transporting as additional stresses could result in anchor failure.

Branches Nationwide Support Office & Technical Services 09 274 0316

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.