Hynds PERFECT® Manhole Base

Technical Guide D4.14

Date Issued: 04.20

The Hynds PERFECT® Manhole Base is a watertight pre-benched flanged based manhole that can be customised to suit a variety of diameters, depths and inlet/outlet configurations. This watertight plug and play system is **the PERFECT® manhole for any job.**

Applications

- Stormwater Manholes
- Wastewater Manholes
- Pipeline junctions

Product Attributes

- Target zero water infiltration
- Minimise construction effort on site
- Highest levels of safety and quality

Approvals/Standards

- Designed and manufactured in accordance with AS/NZS 4058 Precast Concrete Pipes
- Designed and manufactured in accordance with AS/NZS 3109, Concrete Construction

Quality

- Full quality controls throughout automated manufacturing process
- ISO 9001:2008 Quality Management Standard
- Manhole to Pipe sealed connections manufactured to British Standard "Kitemark"
- CE-Marking (rubber seals for connecting pipe)

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

HYNDS PIPE SYSTEMS

The multi depth with custom benching and sealed connection capability is a world first - made from one piece of concrete.

Introduction

The Hynds PERFECT® Manhole System range is a revolution in manhole technology. It is a brand-new and improved range of Concrete Manholes from our state-of-the-art, world leading concrete manufacturing site in Pokeno, Auckland.

The Hynds PERFECT® Manhole is a pre-benched manhole base with already cast-in pipeline inlet and outlets. Full height and benching flexibility is available from our automated production range with a separate fabricated range available for extra large diameters or connections, or non-standard loading conditions. (Refer to Hynds Technical Services for non-standard conditions eg.extra high loadings or hydraulic requirements, etc). PERFECT® is suitable with Concrete, PVC, PE, and Bosspipe pipeline connections.

The PERFECT® Manhole is manufactured using a highly automated process utilising the latest European manufacturing technology. This state-of-the-art process helps ensure that a high-quality manhole is produced consistently, with smooth surface finishes and precision dimensional accuracy.

The Hynds PERFECT® Manhole range incorporates Hynds' new Pinnacle® PE encapsulated Manhole steps.
The Pinnacle® Manhole Step offers a wide range of benefits to both the asset owner and the installer. They are completely watertight, safer to install and use, and provide increased durability. Refer to Technical Guide D4.15 Hynds Pinnacle® Manhole Steps for further product details and installation guide.

The Hynds PERFECT® Manhole range features a new universal joint design to connect the manhole base to extension risers and the manhole lid. The universal joint offers a range of sealing options including traditional methods as well as a rubber gasket seal.

Some advantages of the Hynds PERFECT® Manhole Base include:

Safer construction.

Less work within the excavation zone. No requirement to bench the manhole in a confined space. No requirement to haunch a pipe connection outside the manhole base. No need to thread steps through the wall and bolt externally.

Target Zero Infiltration.

The Hynds PERFECT® Manhole is specifically designed to prevent external water infiltration. The combination of rubber gasket riser and pipe connector seals, and the Pinnacle® Step System ensure a watertight structure.

Minimise Effort On Site.

Preplan your manhole structure build programme to minimise construction effort. Complete the Hynds PERFECT® configurator and reserve your order date.
The modular solution eliminates the need for wet trades (benching and haunching), resulting in rapid construction compared to conventional methods.
The PERFECT® Manhole Base is available with or without manhole steps - you choose whether steps are required.

Quality construction.

Robotically factory made. Homogeneously poured using high strength purpose made concrete and on site machine welded reinforcing steel cages.

Design freedom.

All designed monolithic PERFECT® Manhole Base characteristics such as location of the inlets and outlets and invert configuration can be manufactured individually and exactly in accordance to the requirements of the customer.

PERFECT® Hydraulics – everything flows.

Optimised flow characteristics by customised base configuration of all inlets and precise drop in channels and pipe connections.

Flexible Connections.

The PERFECT® Manhole Base can connect to a wide range of drainage pipe materials supplied by Hynds

Standard Design Specifications

The Hynds PERFECT® Manhole Base can be manufactured with any practical channel inlet/outlet configuration. Inlets are possible at every angle from 90 degrees to 270 degrees from outlet.

When ordering a Hynds PERFECT® Manhole Base consideration should be given to the base diameter; base height (depth); individual diameter, material type, and location of each connection; internal fall (angle of incline passing through the benching).

It is important to supply this information at the time of order (to ensure the correct configuration is manufactured while allowing a short lead time for custom manufacture and unit delivery).

Ordering

To order a Hynds PERFECT® Manhole Base follow the process below:

1. Complete the Hynds PERFECT® Manhole product configuration Order Form. A manual version of the Order Form is found on the back of this Technical Guide or on our website: www.hynds.co.nz/product/perfect-manhole
2. When you have completed the Configuration Order Form take a photograph or scan and send an email to: perfect@hynds.co.nz or your local Hynds Sales person.
3. A representative from Hynds Pipe Systems will be in touch with you to provide a quote and to confirm the order and any neccessary details.
4. Complete a seperate form for each unique manhole configuration and location within your planned pipeline network.
5. The Hynds PERFECT® Manhole is manufactured to your specific requirement. For identification, a label is applied to each PERFECT® Manhole for easy onsite indentification.

Manhole Base

The automated PERFECT® range covers all standard manhole heights (depths) for DN 1050 and 1200 chamber diameters.

Both 1050 and 1200 diameter Flanged bases have the riser and base cast in one pour, eliminating the joint between base and riser.

PERFECT® Manhole Flanged Bases have 150mm thick internal floors with a 150 mm thick by 150 mm wide external flange.

For a full list of PERFECT® Manhole Base heights see Table 2.

FIG. 1 Hynds PERFECT® Manhole pipe connection and benching selection

Manhole Riser

The PERFECT® Manhole Base is used with our standard range of Pinnacle® risers. Pinnacle® risers are manufactured to AS/NZS 4058:2007 and are suitable for most installations.

Hynds Universal Manhole Joint

Hynds Pinnacle® Manhole Riser joint connections incorporate a new universal joint profile that allows a number of sealing methods. Between the base, manhole riser and lid components. These elements must be installed concentrically and evenly so as to compress the seals.

1. Rubber Gasket Seal – A purpose made continuous rubber gasket seal is available *(ordered seperately)* to fit within the top seal seating location *(Refer to Figure 2)* of the Universal Joint. This gasket has been designed to provide enhanced watetightness and avoid infiltration at manhole connections for typical installations.
2. Grey Butyl Manhole Sealant – Hynds *(SM9020)*. This product does not have a 'memory' and provides a flexible joint. It has a moderate amount of surface tack making it easier to pull the joint apart, if required.
3. Black Butyl Mastic Manhole Sealant – Hynds *(MSR)*. This has 'memory' and provides a more flexible joint. It has a stronger bond to the concrete faces, making it more difficult to pull the joint apart. Hynds recommends this sealant for installations with high water tables.
4. Epoxy Mortar – Hynds *(Hybond)*. This is a two part epoxy mortar which will result in a rigid joint. It is commonly used for patching concrete as well as to joint concrete components such as in bends and off-takes.

Manhole Steps

The Hynds PERFECT® Manhole is designed to accept a PE encapsulated galvanised steel step rung. Called the Pinnacle® Manhole Step, these are manufactured and tested to exceed New Zealand step specifications, AS4198 and EN13101. The Pinncale Manhole Step is designed for Stormwater, Wastewater and Industrial Sewer applications.

For the Hynds PERFECT® Manhole the steps are positioned at 300mm intervals within the riser sections, with the first step placed 150mm down from the top of the riser.

The PE encapsulated step is easily installed by pushing the step into the base unit's black insert connectors. The step is locked into place by a locking clip so there is no need to tighten nuts from the outside which makes installation much quicker and safer.

For more information and retrofitting guidance see Technical Guide D4.15 Hynds Pinnacle® Manhole Steps.

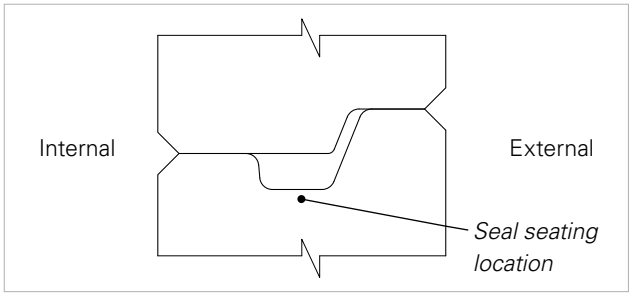


FIG. 2 Hynds Universal Manhole Joint Profile

FIG. 3 Hynds Universal Joint testing - Rubber Gasket Seal

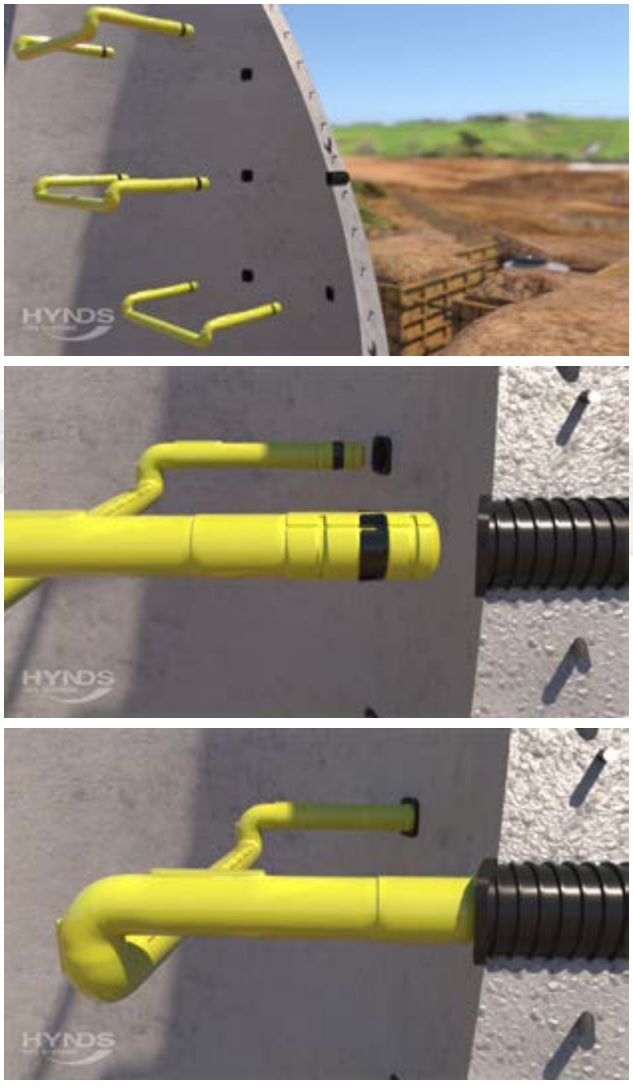


FIG. 4 Cross-section through the Manhole Base wall to show how the steps lock into position

TABLE 1 Manhole Steps to fit PERFECT® Manhole Base

Nominal Internal Diameter	PE Encap Galv. push in step
1050 Automated Range	STEPPENCAPGALV
1200 Automated Range	STEPPENCAPGALV
Larger diameters can be fabricated to order	STEPPENCAPGALV

Manhole Lid

The PERFECT® Manhole Base is used with our standard range of Pinnacle® Manhole Lids. Pinnacle® Manhole lids are designed and manufactured in accordance with NZS 3109 and the CPAA Guidance Note (NZ) Loads on Circular Precast Concrete Manhole and Access Chambers. Hynds manufacture a wide range of precast concrete manhole lids to suit manholes from 1050 mm Ø to 3200 mm Ø that are designed for the following specific load ratings:

Load Type	Description	Load rating (kN)
5kPa	Pedestrian- Footpaths, non traffic areas (1050 Ø only)	5kPa Wheel Load
LD20	Lightly Trafficked Areas – Driveways, light vehicle only	20kN Wheel Load
HD60	Residential and secondary roads where bridge rating design is not required	60kN Wheel Load
HN-HO-72	Bridge Manual loading. Major roads and state highways.	60 – 120kN Wheel Load

The standard lids vary in thickness from 100 mm to 225 mm depending on the manhole size and load rating.

Custom design manhole lids, and lids with cast–in covers, grates and frames are also available made to order.

Note: Refer to Technical Guide D4.12 Pinnacle® Manhole System for a full list of Manhole Lids which also suit the PERFECT® Manhole Range.

Manhole Covers and Frames

Standard manhole covers and frames are manufactured from strong and durable ferrous iron in ductile and cast iron options.

A full range of cover and frame types, diameters, loadings, and safety grill options, are available from your local Hynds sales branch. Load ratings range from 10kN to 900kN and are designated in classes. The rating of the cover and frame is not the same as the rating of the manhole lid.

Note: *For the full range of access safety grilles, covers and frames please contact your local Hynds Branch or see the Hynds Streetware Catalogue on our website.*

FIG. 5 Sequence of assembling manhole riser rings to finish level of the ductile iron cover. Butyl Mastic Sealant between each element as well as a Safety Grill are shown.

FIG. 6 Tripod lifting beam required for PERFECT® Manhole Base (available for sale)

FIG. 7 PERFECT® Manholes are individually labelled to identify the customer name, project name and manhole location within the pipeline network.

TABLE 2 PERFECT® Flange Base Geometry

Nominal Diameter (mm)	**Nominal Height** (mm)	**Internal Diameter** (mm)	**External Diameter** (mm)	**External Height** (mm)	**Base Thick-ness** (mm)	**Wall Thick-ness** (mm)	**Swiftlift Lifting Clutch Size (3x per Base)** (Tonne)	**Hynds Product Code**	**Standard/ MTO**
1050 Automated Range	900	1050	1270	1060.5	150	68	2.5	A unique Product Code is generated to distinguish the difference between configurations. A Product Code will be provided when the order is confirmed.	MTO
	1200	1050	1270	1360.5	150	68	2.5		MTO
	1500	1050	1270	1660.5	150	68	2.5		MTO
	1800	1050	1270	1960.5	150	68	2.5		MTO
	2100	1050	1270	2260.5	150	68	2.5		MTO
	2400	1050	1270	2560.5	150	68	2.5		MTO
1200 Automated Range	1200	1200	1420	1360.5	150	70	2.5		MTO
	1500	1200	1420	1660.5	150	70	2.5		MTO
	1800	1200	1420	1960.5	150	70	2.5		MTO
	2100	1200	1420	2260.5	150	70	2.5		MTO
	2400	1200	1420	2560.5	150	70	2.5		MTO
1350, 1500, 1800, 2020	Fabricated Range. Larger diameters can be fabricated to order								MTO

Notes:

1. Internal height and weight can vary depending on type of pre-benched channel required.

2. The load group specifies the maximum lifting capacity or Working Load Limit (WLL) of the lifting clutch expressed in tonnes.

3. For additional information please refer to Reid Safe Lifting & Propping of Precast/ Tiltup Concrete Panels & Precast Guide.

4. Product mass will be provided once benching configuration is confirmed. Product mass depends on the type of channels and benching.

FIG. 8 Pinnacle® Concrete Lid Geometry

FIG. 9 Manhole Lids are often delivered in stacked form

TABLE 3 Pinnacle® Concrete Lid Geometry

Lid Diameter (mm)	Opening Type	Thickness (mm)	Loading	Mass of Lid (kg)	Swiftlift Lifting Clutch Size (Tonne)	Hynds Product Code	Standard/ MTO
1050	Ø535 Hole Offset	100	5kPa	269	1.3	MHL10100P5W	MTO
	Ø535 Hole Offset	200	HN-HO-72	548	1.3	MHL10200HN5W	Standard
	Ø605 Hole Offset	150	HD60	353	1.3	MHL10150HD6W	Standard
	Ø605 Hole Offset	200	HN-HO-72	516	1.3	MHL10200HN6W	Standard
	Ø535 Hole Centre	100	5kPa	269	1.3	MHL10100P5HCW	MTO
	Ø535 Hole Centre	200	HN-HO-72	548	1.3	MHL10200HN5HCW	MTO
	Ø605 Hole Centre	200	HN-HO-72	516	1.3	MHL10200HN6HCW	MTO
	Closed	100	5kPa	326	1.3	MHL10100PCLW	MTO
	Closed	150	HD60	493	1.3	MHL10150HDCLW	MTO
	Closed	200	HN-HO-72	662	1.3	MHL10200HNCLW	MTO
1200	Ø535 Hole Offset	200	HN-HO-72	716	1.3	MHL12200HN5W	Standard
	Ø605 Hole Offset	150	HD60	509	1.3	MHL12150HD6W	Standard
	Ø605 Hole Offset	200	HN-HO-72	684	1.3	MHL12200HN6W	Standard
	Ø535 Hole Centre	150	HD60	533	1.3	MHL12150HD5HCW	MTO
	Ø535 Hole Centre	200	HN-HO-72	716	1.3	MHL12200HN5HCW	MTO
	Ø605 Hole Centre	150	HD60	509	1.3	MHL12150HD6HCW	MTO
	Ø605 Hole Centre	200	HN-HO-72	684	1.3	MHL12200HN6HCW	MTO
	Closed	150	HD60	619	1.3	MHL12150HDCLW	MTO
	Closed	200	HN-HO-72	831	1.3	MHL12200HNCLW	MTO
1350, 1500, 1800, 2020	Fabricated Range. Larger diameters can be fabricated to order						MTO
2300, 2550, 3000, 3200	Extra large diameters part of the Pinnacle® Manhole Range						MTO

Notes:

1. The load group specifies the maximum lifting capacity or Working Load Limit (WLL) of the lifting clutch expressed in tonnes.

2. For additional information please refer to Reid Safe Lifting & Propping of Precast/ Tiltup Concrete Panels & Precast Guide.

TABLE 4 Pinnacle® Riser Geometry

Nominal Diameter (mm)	**Nominal Height** (mm)	**External Diameter** (mm)	**Internal Height** (mm)	**Standard Wall Thickness** (mm)	**Mass of Riser** (kg)	**Swiftlift Lifting Clutch Size** (Tonne)	**Hynds Product Code**	**Standard/ MTO**
1050	150	1186	150	68	89	1.3	MHR100150M	Standard
	300	1186	300	68	181	1.3	MHR100300M	Standard
	600	1186	600	68	361	1.3	MHR100600M	Standard
	900	1186	900	68	544	1.3	MHR100900M	Standard
	1200	1186	1200	68	727	1.3	MHR101200M	Standard
	1500	1186	1500	68	908	1.3	MHR101500M	Standard
	1800	1186	1800	68	1091	1.3	MHR101800M	Standard
	2100	1186	2100	68	1274	1.3	MHR102100M	Standard
	2400	1186	2400	68	1454	1.3	MHR102400M	Standard
1200	300	1340	300	70	212	2.5	MHR120300M	Standard
	600	1340	600	70	426	2.5	MHR120600M	Standard
	900	1340	900	70	637	2.5	MHR120900M	Standard
	1200	1340	1200	70	851	2.5	MHR121200M	Standard
	1500	1340	1500	70	1065	2.5	MHR121500M	Standard
	1800	1340	1800	70	1279	2.5	MHR121800M	Standard
	2100	1340	2100	70	1491	2.5	MHR122100M	Standard
	2400	1340	2400	70	1705	2.5	MHR122400M	Standard
1350, 1500, 1800, 2020	Pinnacle® Range Available							Standard

Notes:

1 The load group specifies the maximum lifting capacity or Working Load Limit (WLL) of the lifting clutch expressed in tonnes.

2 For additional information please refer to Reid Safe Lifting & Propping of Precast/ Tiltup Concrete Panels & Precast Guide.

Connecting pipes to the PERFECT®® Base

The PERFECT® Manhole System can be manufactured with any practical channel inlet/outlet configuration. Inlets are possible at every angle from 90 degrees to 270 degrees from outlet. This eliminates on-site benching in confined spaces and reduces construction time.

Below is a range of pipe types that can be used with the PERFECT® Base.

Concrete Pipe Connection

Concrete pipe connections into the PERFECT® Manhole Base are made with the Forsheda 910 (F910) seal.

Forsheda 910 is a rubber seal for flexible connection of pipes to manholes. It can be used with both prefabricated and core drilled holes. The triple lip design allows ease of jointing and provides excellent resistance to transverse shear load whilst allowing a high level of angular deflection in the joint.

The PERFECT® Manhole Base can be made with a DN225 or a DN300 concrete pipe connection. A larger manhole may be required for larger pipe diameters.

To install a concrete pipe into the PERFECT® Manhole, follow the instructions below.

1. Follow the neccessary health and safety procedures applicable to your construction activity. *(This technical guide is not able to cover hazards and on site safety requirements that are the responsibility of the installer)*
2. Determine if it is possible to lay the pipeline from the upstream end first *(site dependant)* because it is easier to install the first manhole and lay away. To position the manhole in correct position determine the centre line of the pipeline to be constructed and locate the manhole accordingly.
3. Excavate to the correct the level taking into account allowance for compacted hardfill to support the manhole structure to be installed above it.
4. Ensure that the preformed connections are clean so that the pipe shorts can be securely installed eg. a DN225 Concrete Pipe Connection.
5. Fit the F910 connector into the pre-formed hole in the orientation shown below. Do not use lubricant.
6. Chamfer the edge to at least a 45° angle.
7. Apply a small amount of lubricant around the end of the pipe, this will allow a easy fit. Oatey Pipe Lubricant can be used.
8. Align the concrete pipe and push the pipe into the seal until it is flush with the wall.

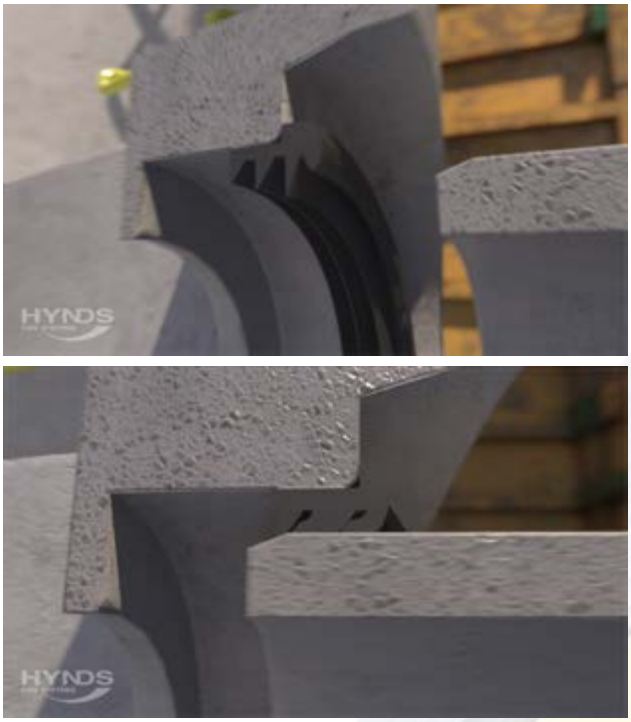


FIG. 10 Schematic cross-section of rubber gasket capability

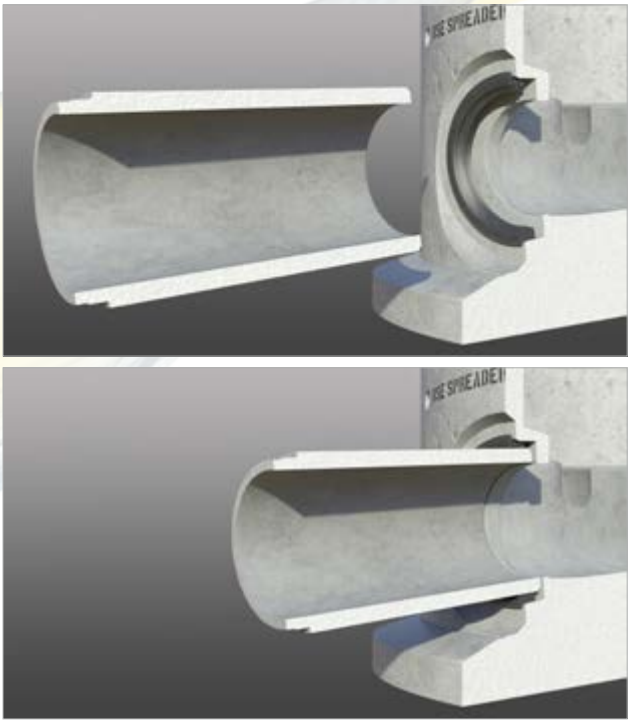


FIG. 11 Concrete Pipe aligned and fitted into F910 connector

PVC Pipe Connection

PVC pipe connections into the PERFECT® Manhole Base are made using integrated gaskets that are cast into the wall of the PERFECT® Manhole during manufacture.

The PVC pipe is then pushed into the integrated gasket which creates a watertight seal. This connection is available for PVC pipes from DN110 to DN300.

To install a PVC pipe into the PERFECT® Manhole, follow the instructions below.

1. *(Repeat steps 1 - 4 as stated in the previous Concrete Pipe Connection description, as these are the same regardless of material type).*
2. Ensure that the correct pre-formed hole is formed in the PERFECT® Manhole e.g. a DN110 PVC Pipe Connection.
3. Align the PVC pipe to the integrated gasket and push the pipe until it is flush with the wall of the manhole.

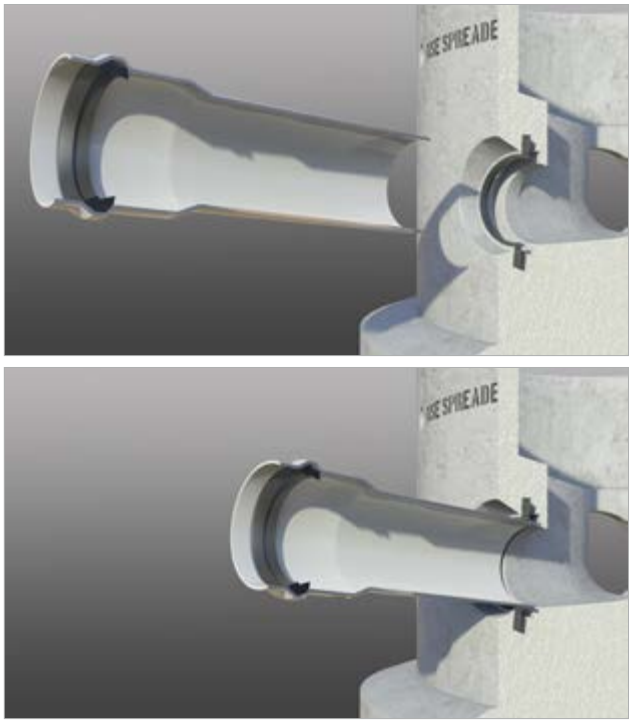


FIG. 12 PVC Pipe fitted into integrated gasket

Bosspipe Connection

BossPipe (also referred to as CivilBoss and FarmBoss) is connected using a rubber ring.

The rubber ring is used to allow flexibility and is fitted onto the end of the pipe between the last ribbing. The connection is available for 225 and 300mm diameter BossPipe.

To install a BossPipe into the PERFECT® Manhole, follow the instructions below.

1. *(Repeat steps 1 - 4 as stated in the previous Concrete Pipe Connection description, as these are the same regardless of material type).*
2. Ensure that the correct pre-formed hole is formed in the PERFECT® Manhole e.g. a DN225 BossPipe Connection.
3. Fit the BossPipe rubber ring onto the end of the pipe between the last ribbing.
    a. BRR225.8 - DN225 BossPipe Rubber Ring Code
    b. BRR300.16 - DN300 BossPipe Rubber Ring Code
4. Align the BossPipe to the pre-formed hole and push the pipe until it is flush with the wall of the manhole.

For more details on connections for precast concrete manhole chambers, download the "Guidance Note for loads on Circular Precast Concrete Manholes and Access Chambers" from the Concrete Pipe Association of Australasia's website.

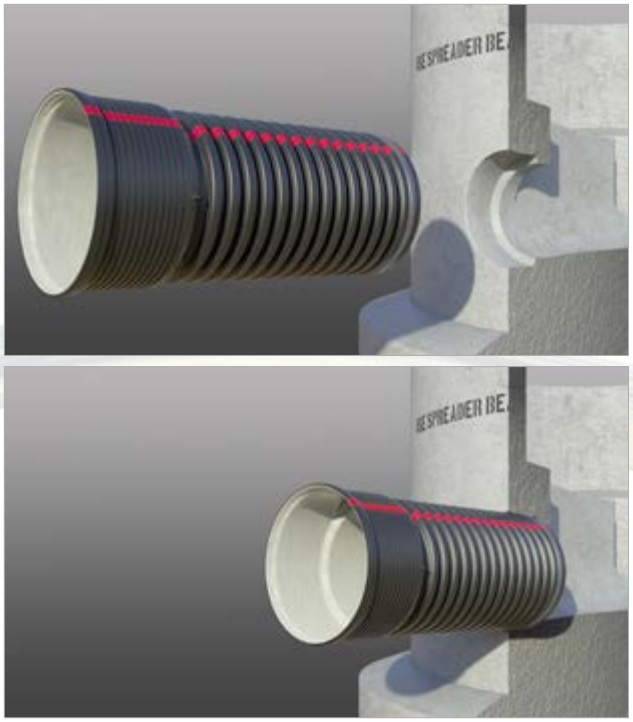


FIG. 13 BossPipe fitted with rubber ring fitted into pre-formed hole

Lifting & Handling

All manhole lids, risers and flanged bases incorporate Swiftlift lifting anchors for safe lifting and must be used with the correct lifting clutch.

Hynds Pipe Systems has designed and manufactured PERFECT® Concrete Manholes 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 manhole:

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 lids, risers or flanged bases over rough terrain and uneven ground may exceed designed safety factor load of the lifting systems. It is critical that care is taken during lifting and transporting as additional stresses could result in anchor failure.

Correct On Site Handling

Due to the weight of the pre-benched channels, the PERFECT® Manhole Base is manufactured with three Swiftlift Lifting Anchors for safe lifting. A special 3-legged spreader beam is available for purchase from Hynds and must be used to safely lift the PERFECT® Manhole Base and to prevent damage to the top of the manhole.

FIG. 14 Tripod lifting beam required for PERFECT® Manhole Base (available for sale)

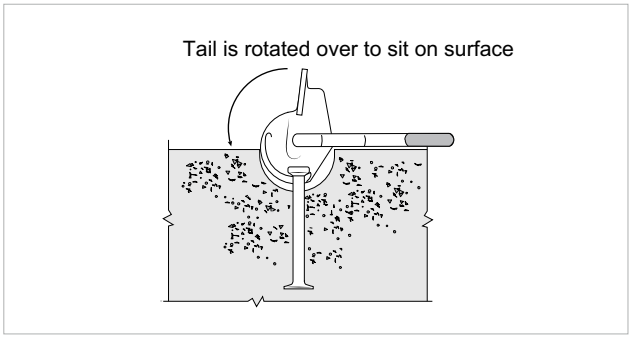
FIG. 15 Two point spreader beam required for Pinnacle® Manhole Riser

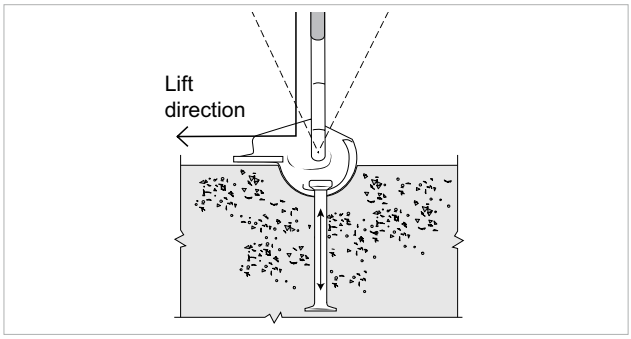
The Pinnacle® Riser is manufactured with two Swiftlift Lifting Anchors. Use a spreader between the 2 anchors and chains to ensure there is no damage to the top edge of the manhole riser. Ensure the angle between the chains is no more than 60 degrees.

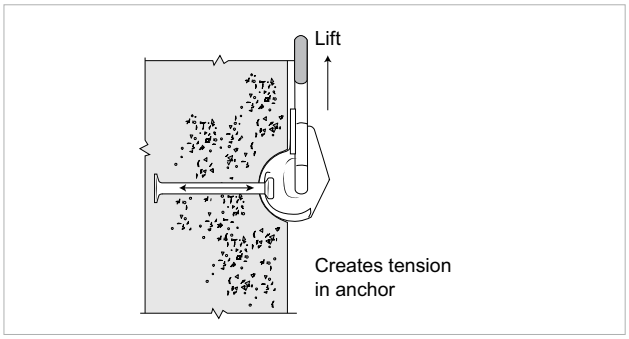
Effective Rigging and Sling Angles

How Swiftlift™ lifting clutches work:

- The lifting clutch is attached to the Swiftlift™ anchor by lowering the clutch slot over the anchor and rotating the clutch tab until it rests on the concrete surface.
- The tab is located on the side that will be uppermost when lifting.
- When the load is raised the anchor takes the full load in tension.
- As the load rotates or is lifted with the anchor in shear, the clutch comes into contact with the concrete.
- This transfers the lifting force into the concrete and the anchor prevents the clutch slipping out of the recess.
- Certified beams, chains, and clutches for anchor sizes should always be used.

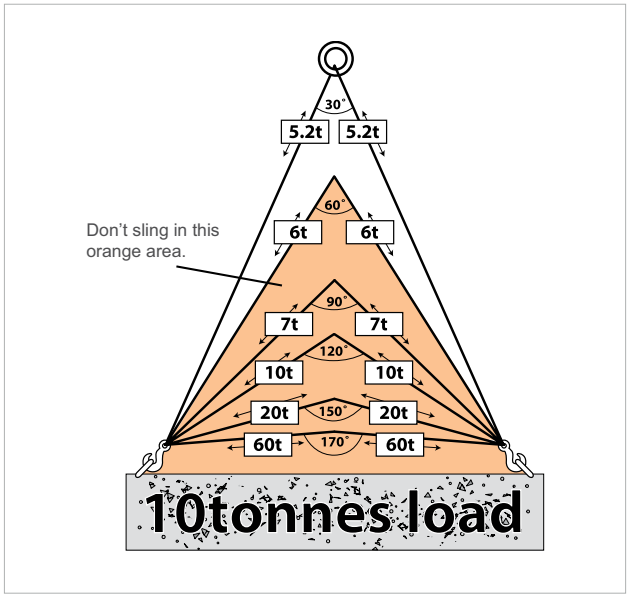






The larger the sling angle the higher the load on the chains. For example at an included angle of 170° the load on each sling is six times the weight of the actual load being lifted. Do not put more than the recommended safe working load on equipment. Hynds concrete manholes are fitted with Swiftlift™ inserts, thus providing a safety factor which is well over the industry standard of three, when slung in the correct manner. However, care still needs to be taken when lifting the Hynds concrete manholes, especially over uneven surfaces as shock loading may exceed the designed safety factor.

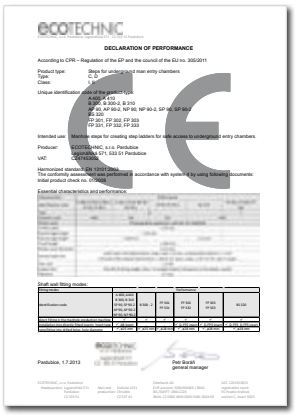
Please note: An insert with a nominal clutch size rating stamped on the head does not necessarily have the same safe working load limit because of the various insert lengths available.



PERFECT®® Base Installation

Manholes are installed using modern excavation equipment and techniques. Manholes are generally installed prior to the pipelines connecting into them. The manhole foundation should be prepared with compacted hardfill to prevent excessive settlement. A manhole structure may be constructed as follows:

1. Consider site specific health and safety requirements (check flanged/internal base does not contain water or any other items, which may increase the weight of the unit).
2. Fix steps into riser components.
3. Align holes for connections (see connections) and lower PERFECT® base unit into place using a spreader beam and appropriate lifting equipment.
4. Make and seal pipeline connections.
5. Place appropriate joint seal continuously around the joint circumference (collar end).
6. Place the next riser section (using a spreader beam and appropriate lifting equipment).
7. Place and seal the manhole lid.
8. Place and mortar seal lid adjustment rings to required level.
9. Position access frame and cover.


ECOTECHNIC

DECLARATION OF PERFORMANCE

Pardubice, 1.7.2013


Telarc.

Hynds Ltd

ISO 9001:2015

Telarc Registered No. 2641


bsi.

Kitemark™ Certificate

Hynds PERFECT® Manhole Order Form

Technical Form D4.14TF

Date issued: March 2020

TO BE COMPLETED BY CUSTOMER:

CUSTOMER DETAILS:

Customer Company Name: .....

Originator Contact Person: .....

Contact Mobile No: .....

Email: .....

MANHOLE DESCRIPTION:

Manhole Nominal Diameter: ☐ 1050 ☐ 1200 ☐ Other

.....

Manhole Internal Height: ☐ 900 ☐ 1200 ☐ 1500 ☐ 1800 ☐ 2100 ☐ 2400

.....

Note: *Full dimensions are shown in Table 2 of Technical Guide D4.14 Hynds Perfect Manhole Base.*

Pinnacle Manhole step is supplied pre-installed. ☐ Steps required ☐ Not required

Location of Manhole Step: ☐ 90° to outlet ☐ At the outlet

Description Information:
TO BE PRINTED ON LABEL .....

PROJECT DETAILS:

Customer Order No. Ref: .....

Project Name: .....

Site Delivery Address: .....

.....

.....

.....

CUSTOMER DELIVERY DETAILS:

Hynds Quotation No: .....

Requested Delivery Date: .....

Existing Planned Delivery/Customer Order Reference:

.....

CUSTOMER SIGNOFF:

Name: .....

Date: .....

Signature: .....

INTERNAL HYNDS USE ONLY:

Hynds Perfect® Configuration Reference Number: .....

Hynds Customer Order Number: .....

PERFECT

Once the form is filled please send it to perfect@hynds.co.nz

HYNDS PIPE SYSTEMS

NOTES:

1. Refer to Table 1 below to describe the pipe connections giving position, diameter, material, and internal fall.
2. Refer to Figure 1 overleaf to draw inlet locations. Starting from the Outlet at 12:00 o'clock position, then turning clockwise to locate the inlet(s).
3. There can be a maximum of 10% (1 in 10) gradient across the diameter of standard 1050 & 1200 PERFECT Manholes.

Table 1

Outlet/ Inlet	**Centreline position clockwise from outlet centreline**	**Outlets/ Inlet Pipe Diameters** *(mm)*	**Pipe Material** *PVC/ Boss/ Concrete*	**Pipe invert height from under the flange** *(mm)* ***(A)***
Outlet	0°			
Inlet 1				
Inlet 2				
Inlet 3				
Inlet 4				
Slope of benching	1:12			

Table 2

Pipe Material	**Pipe Diameter (mm)**
Concrete	225
Concrete	300
Bosspipe	225
Bosspipe	300
PVC	110
PVC	150
PVC	200
PVC	250
PVC	300

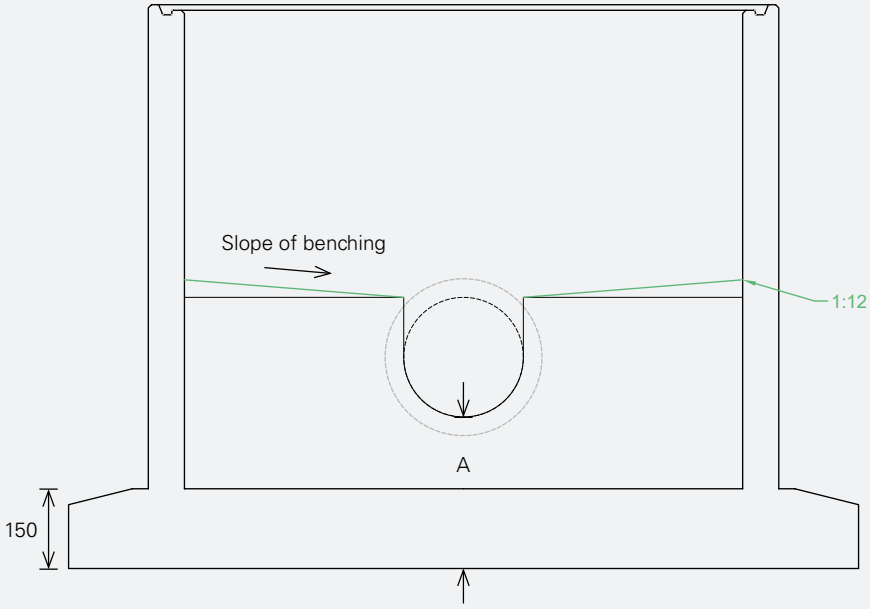
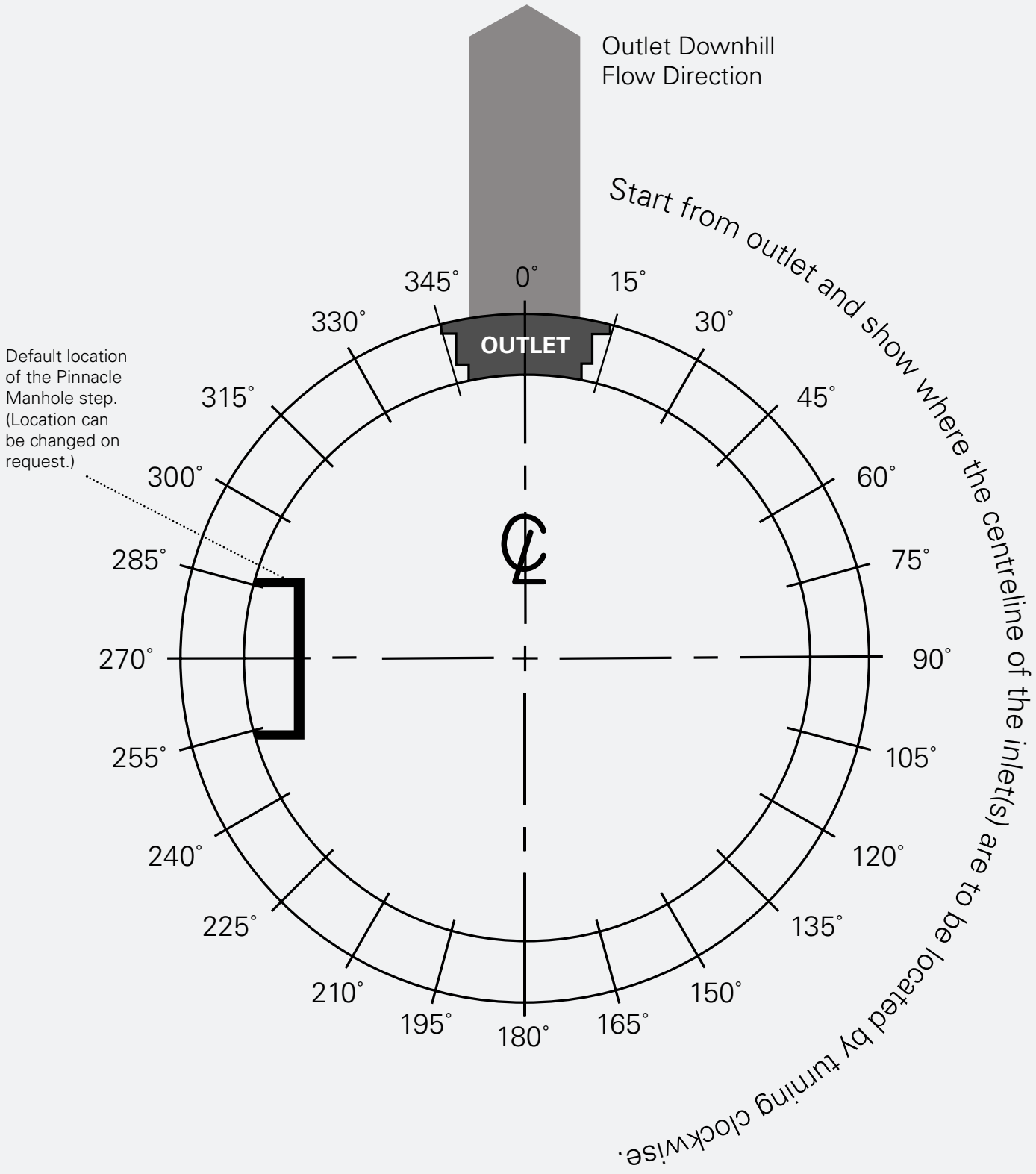


FIG. 1 Options for benching slopes

FIGURE 1:
Plan view looking down into Manhole Base with the Outlet at 0˚ (or 12:00 o'clock).



PERFECT Manhole
Order Form
Filled by Customer

The order form is available on our website at www.hynds.co.nz/perfect-manhole and can be filled in electronically or it can also be filled in by hand, scanned and emailed.

Please fill out the order form and send it to: perfect@hynds.co.nz

If you require more than one PERFECT Manhole then please fill in a separate form for each manhole location.

For help in filling the form out please feel free to contact any of our Hynds Pipe Systems branches or your local sales account manager.

Quote
Confirmation

A Hynds Pipe Systems representative will communicate the quote and date on which the PERFECT Manhole will be delivered to the customer and will confirm the order.

Order Placed

Once you are happy with the planned order, a manufacturing order will be placed to our factory and a lead time will be provided.

Customer receives
PERFECT Manhole

The PERFECT Manhole(s) is delivered to the customer and can now be installed quickly and safely.

Terms and Conditions in addition to Hynds Pipe Systems Ltd Standard conditions:

1. The quotation includes delivery unless otherwise stated. Offloading of material is contractors responsibility unless agreed otherwise.
2. Prices are based on contractor taking delivery of perfect manhole units as they are manufactured or within 40 business days
3. The Perfect Manhole items quoted are not standard and will be manufactured specifically to your order. Once signed approval is received, the product will have to be purchased and paid for.
4. Manufacture will only commence on receipt of signed Perfect Manhole order form.
5. Lead time to start of manufacture, and manufacturing programme to be confirmed at time of order.
6. 1hr unloading time has been allowed, additional standby time on site will be charged at $180 per hour.
7. If a pilot vehicle is required for delivery of oversized precast items, the pilot vehicle(s) will be charged at an agreed rate hourly rate (to variable for a standardised product)
8. All traffic management to be the responsibility of the customer.
9. Delivery during normal business hours only.
10. If Perfect manhole units are not dispatched within 40 business days Hynds Pipe Systems Ltd reserves the right to charge for storage. Storage will be charged at a rate of $15 per tonne per week plus any applicable transport and handling costs.
11. It is the customer's responsibility to ensure that products and quantities quoted are suitable for the intended application.
12. Prices do not include GST.
13. This quotation is valid for 30 days from date of quote and is subject to Hynds Pipe Systems Terms and Conditions of Supply, and is confidential to both parties.
14. The price is subject to variation for changes beyond our control and for changes in the drawings or specifications.
15. This quotation is based on no retentions or supply agreements.
16. After the order is placed, changes to the order are to be by negotiation only.

PERFECT

Once the form is filled please send it to perfect@hynds.co.nz

HYNDS PIPE SYSTEMS