



Pipex px®

Retrofit Repair Systems For Concrete Manholes

Pipex px® is a registered trademark and the trading style used by the group of companies which includes Pipex Limited, Pipex Drainage & Civils Ltd, Pipex Composite Pipes Ltd, Pipex Structural Composites Ltd & Pipex Project Services Ltd and Structural Composites Solutions Ltd. The above (apart from Structural Composites Solutions Ltd) are registered in England, at the same registered office:- Pipex House, Devon Enterprise Facility, 1 Belliver Way, Roborough, Plymouth, Devon, PL6 7BP. Structural Composites Solutions Ltd registered office is:- 1 Ashley Drive, Bothwell, Glasgow, G71 8BS. Pipex Ltd Reg. No. 1203356, Pipex Drainage & Civils Products Ltd Reg. No. 5596520, Pipex Composite Pipes Ltd Reg. No. 5596521, Pipex Structural Composites Ltd Reg. No. 5073984, Pipex Project Services Ltd Reg. No. 6600308, Structural Composites Solutions Ltd Reg.No SC214446

Pipex px® Product Group: Manholes, Chambers & Tanks
Pipex px® Product Type: Retrofit Repair Systems for Concrete Manholes
Pipex px® Specification: PX-MH-SP-10



Pipex px® Retrofit Repair Systems for Concrete Manholes & Tanks:
Bespoke corrosion resistant thermoplastic liners manufactured with dimensions to suit, for the on site "no dig" in-situ repair, re-sealing and reinstatement of main chamber shafts within existing degraded, leaking or damaged brick, cast iron and pre-cast concrete chambers.

Suitable for foul water, surface water & chemical TEW drainage systems where the existing traditionally built concrete or brick manholes have suffered damage from either corrosive soils, concrete cancer, hydrogen sulphate attack, internal chemical attack or similar.

The bespoke liners will be factory constructed to provide a guaranteed fully welded, leak proof and watertight sealed chamber (shaft only, see product options), to prevent the ingress of ground water into the existing manhole & egress of aggressive effluents or gaseous wastes from the manhole into the surrounding environment and water table.

Manufactured to suit the existing drainage layout, each liner will be numbered with an indelible marker to correspond with the drainage layout drawings for fast-track site reinstatement.

Repair System Detail Drawings:

CAD detail drawings of each liner, based on the existing drainage design or client survey, will be submitted by Pipex px® for approval by the client prior to manufacture. Drawing details will indicate repair liner unit reference number, cover level, invert level, drain sizes and falls where applicable.

Thermoplastic Sheet Materials of Construction

Manhole liners can be fabricated from either of the following materials contact Pipex px® for technical support.

Homopolymer Polypropylene Din 8077 & 8078. (PP-H)

High Density Polyethylene Din 8075 & 8074 (HDPE)

Pipex Chemical corrosion guide is available on request.

Pipex thermoplastic waste material is 100% recyclable.

Methods of Construction

Thermoplastic welding completed under factory conditions in accordance with BSEN13067- Plastics Welding Personnel, under the Certification Scheme for Welding and Inspection personnel (CSWIP). Approved by the Thermal Welders Institute (TWI).

British Standard Specifications

Rectangular or circular liners as required will be fabricated in accordance to Pipex px® selected principles of BS EN 12573.

Technical Certification

British Board of Agreement (BBA) Environmental Profile Cert No. 11/EP1002

Manhole Access Steps/Ladders

Where required Pipex px® can supply the liners complete with either manhole access steps or ladders as required to comply with each sewage undertakers specific requirements.

Manhole steps will be bright yellow polypropylene steel core manhole steps to BSEN 13101:2002.

Plastic Encapsulated Manhole Steps WIS 4-33-01:1990.

Ladders will be either FRP or Stainless Steel to BS EN 14396:2004.

Access steps and ladders will be factory installed into the manhole with a welded water tight seal.

CDM Regulations 2007 - Confined Space Regulations 1997

Contrary to traditional manhole repair and construction methods, Pipex px® repair systems can eliminate the need for confined space working. By providing an alternative approach, foreseeable health and safety risks are reduced from the outset.

Site Handling & Installation:

For site handling & installation of the repair liners please refer to Pipex px® work instruction and detailed drawings.

The liners are retrofitted within existing manhole shafts by being placed within the existing chamber, external lugs welded to the liner provide a key for casting into the infill fast cure grout surround.

The annual void around the liner to accept the fast cure grout is normally 75mm, however this can be adjusted to suit project specific requirements.

Operation and Maintenance

When installed to Pipex px® installation instructions the liners and the reinstated manholes will operate with minimum future maintenance. Due to the nature of the thermoplastic construction materials, the liners will resist the build of Fat's, Oil's & Grease (FOG) and prevent any further concrete or brick particles from breaking off an entering the drainage system; as such future drainage surcharge events due to blockages can be eliminated. If rodding is required use polypropylene rods, alternatively the manholes can be pressure jetted to a maximum pressure of 180 bar 2600 psi in accordance with WRc jetting standard.

If alterations are required to the repair system, Pipex px® will be contacted to discuss the procedure.

Product Options:

Optional Benching & Branch Connections Liner "Sleeve"

For sealing and reinstatement of existing benching, branch connections and main drain Pipex px® can attend site to construct and weld an insitu benching liner to seal the existing manhole base parts to the Pipex px® main shaft. The benching liner shall be secured to the existing benching via polypropylene encapsulated chemical anchors and fully welded & sealed to the main liner.

Repair System Top Formwork and Access Turret

Optional reinforced top formwork with access turret with a clear opening to suit manhole cover and frame, welded to manhole to accept insitu poured concrete cover slab. Access turrets are adjustable to suit site cover level.

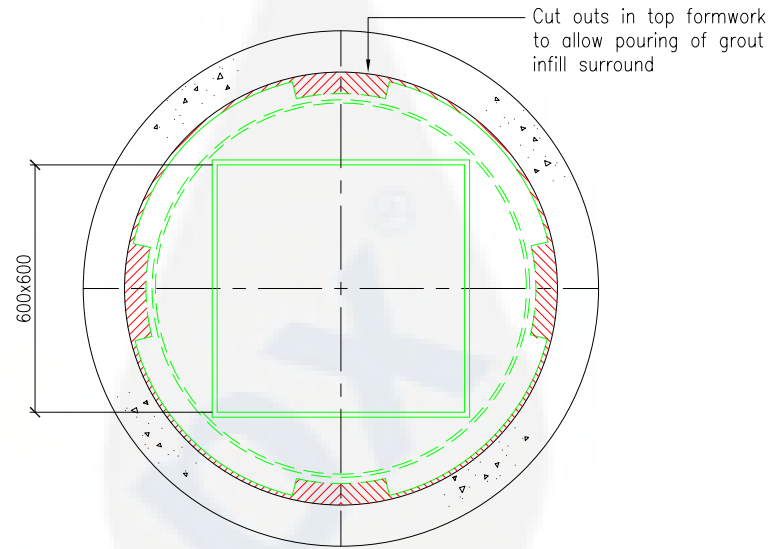
Internal Manhole Seals with access covers

Retro-fit internal liners with low level access covers positioned over existing drains to assist with preventing drain surcharge and or foul air emissions.

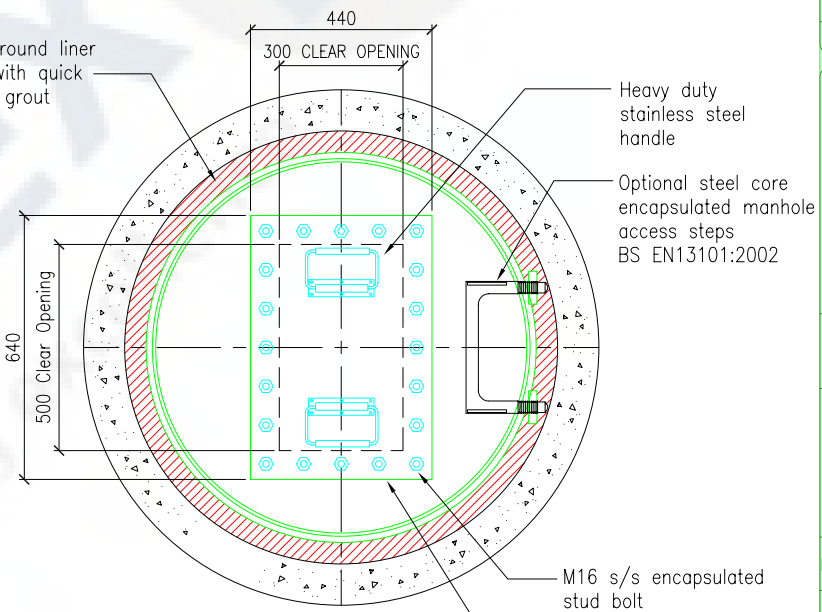
For Technical Assistance please contact Pipex px®

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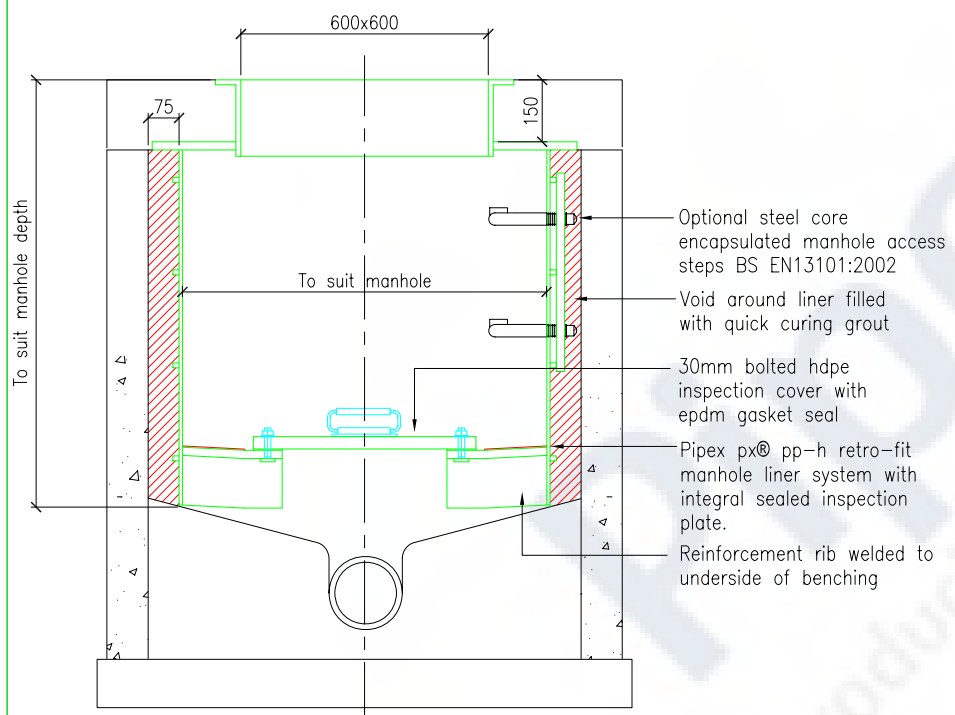




PLAN



LOW LEVEL PLAN



SECTION

NOTES

1. Pipex px® products are all entirely bespoke and are fabricated to suit individual requirements.
2. For specification for this type of manhole refer to Pipex px® specification Data Sheet PX-MH-SP-10

TOLERANCES UNLESS OTHERWISE STATED				
LINEAR	OVER 30 UP TO 30	OVER 120 UP TO 120	OVER 315 UP TO 315	OVER 1000 UP TO 1000
±0.5	±0.6	±1.2	±2	±3
HOLES - H12			THREADS - 6H/6g	
SQUARENESS ± 0.3° OR ± 4mm ON DIAGONALS				
REV	REV BY	DATE	DESCRIPTION	
F				
E				
D				
C				
B				
A				



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Reg. No. 5596520

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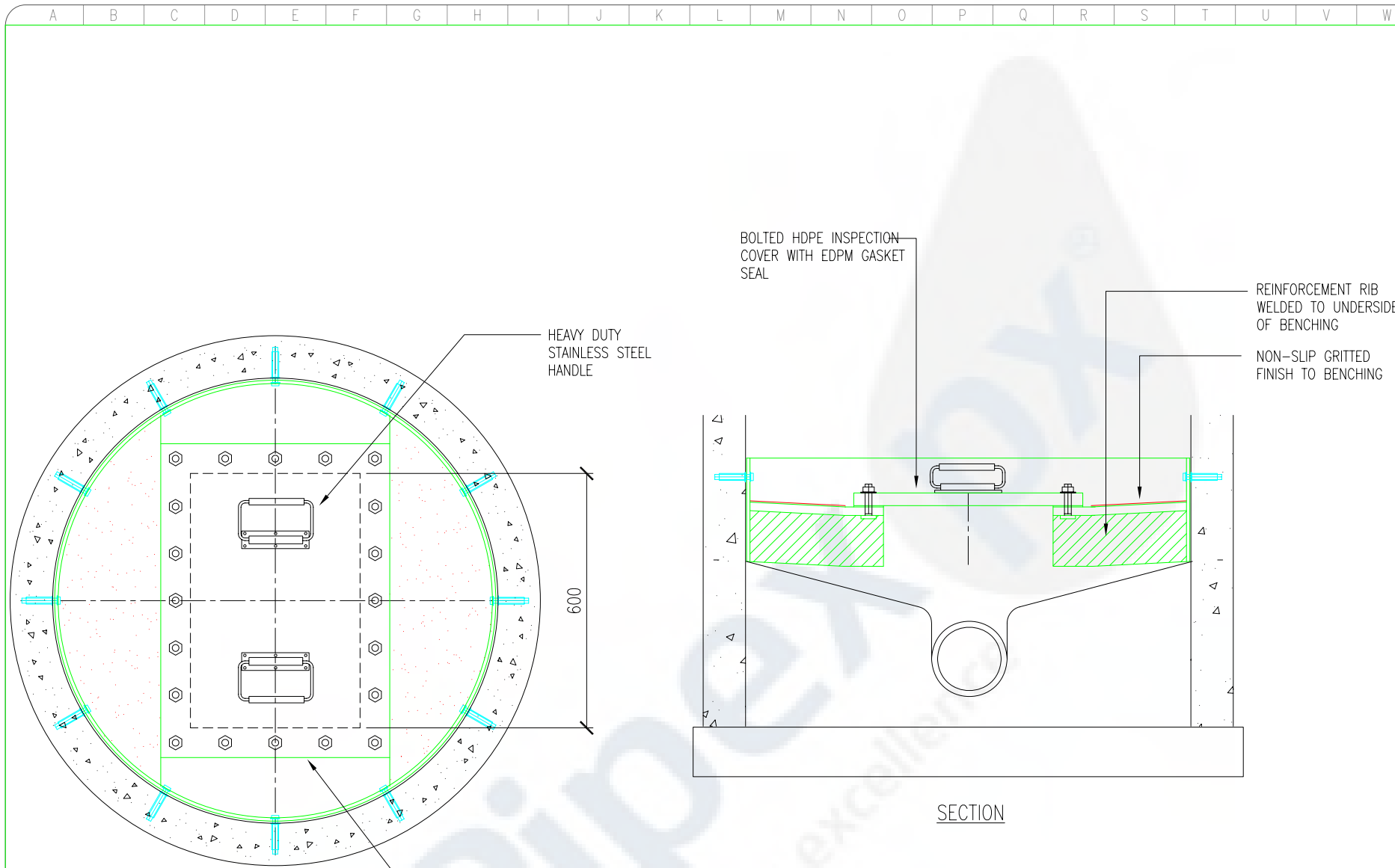
PROJECT
Pipex px® Manhole & Inspection Chambers

TITLE
Manhole Liner with Access Box

DRAWING NO.
PX-CMH-LAB

SCALE
NTS

PROJECT REF
DATE
03/02/2012



PLAN VIEW

SECTION

NOTES

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TOLERANCES UNLESS OTHERWISE STATED				
LINEAR	OVER 30 UP TO 30	OVER 120 UP TO 120	OVER 315 UP TO 315	OVER 1000 UP TO 1000
±0.5	±0.6	±1.2	±2	±3
HOLES - H12			THREADS - RHFG	
SQUARENESS ± 0.3" OR ± 4mm ON DIAGONALS				
F				
E				
D				
C				
B				
A				
REV	REV BY	DATE	DESCRIPTION	



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PROJECT
Pipex px® Manhole & Inspection Chambers

TITLE
Retrofit Manhole Seal

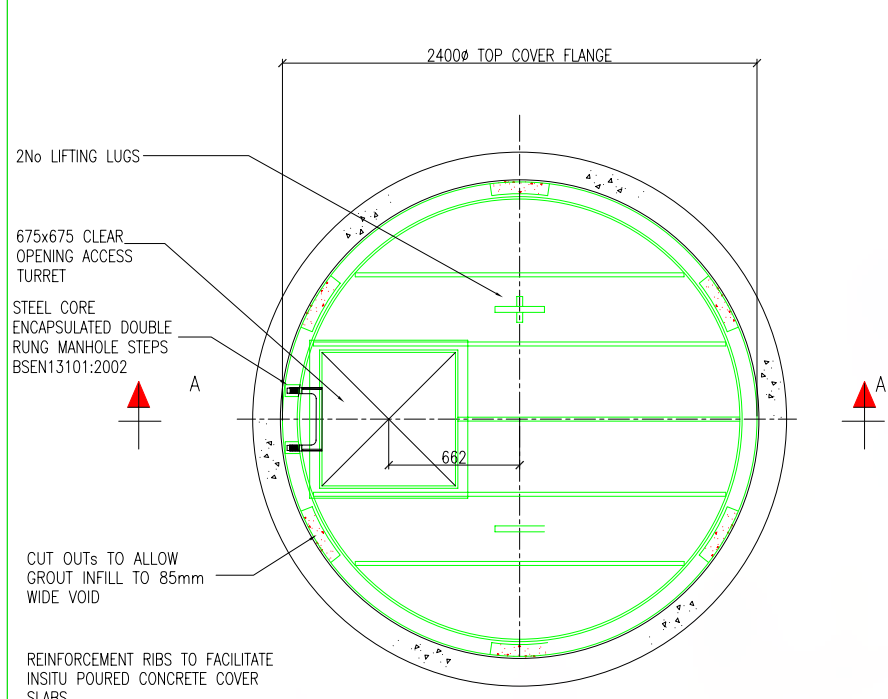
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PX-CMH-S

SCALE
NTS

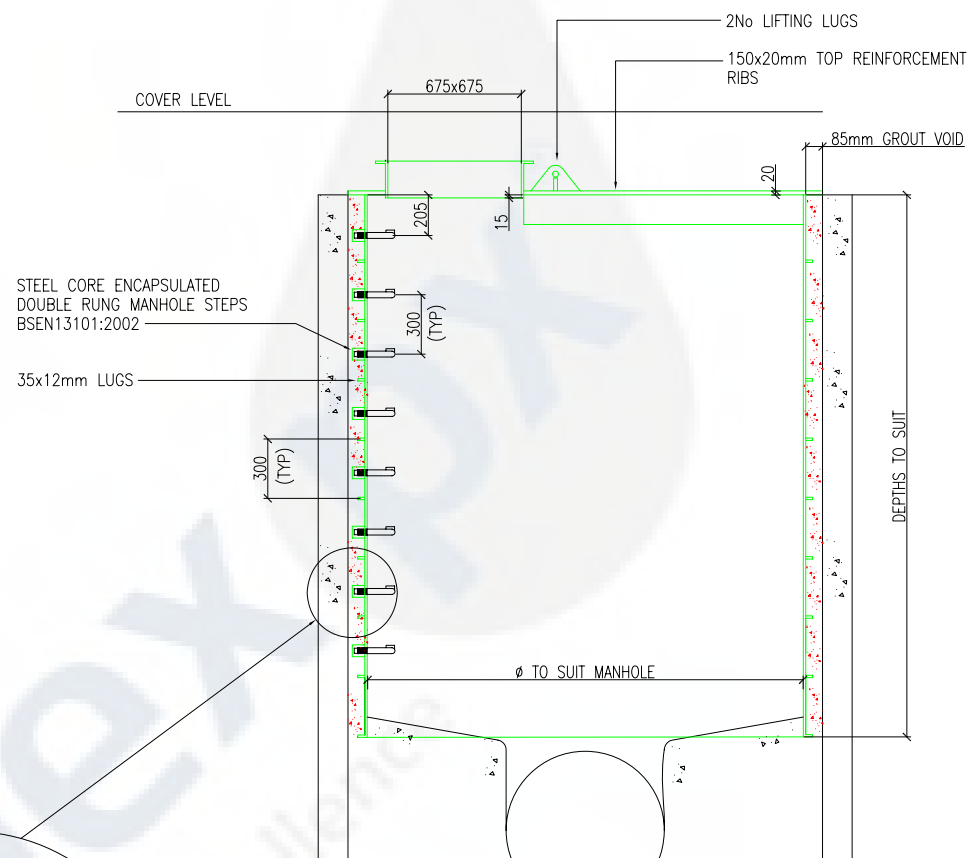
DRAWN BY
KLN

CHECKED BY
PJM

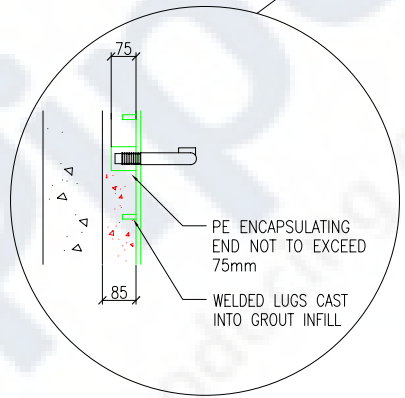
PROJECT REF
DATE
03/02/2012



HIGH LEVEL PLAN



SECTION A:A



NOTES

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- For specification for this type of manhole refer to Pipex px® specification Data Sheet PX-MH-SP-10

TOLERANCES UNLESS OTHERWISE STATED				
LINEAR	COVER 30 UP TO 30	COVER 120 UP TO 120	COVER 315 UP TO 315	COVER 1000 UP TO 1000
±0.5	±0.8	±1.2	±2	±3
HOLES - H12			THREADS - G1/8" to G1 1/2	
SQUARENESS ±0.3° OR ±4mm ON DIAGONALS				

REV	REV BY	DATE	DESCRIPTION
F			
E			
D			
C			
B			
A			

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PROJECT: -

TITLE: Retrofit Repair Systems for Existing Manholes

DRAWING NO. PX-RRS-MH SHEET NO. -

SCALE: NTS DRAWN BY: KLN CHECKED BY: PJM

PROJECT REF: DATE: 02/12/2011 REV: -