

**UNDERGROUND** Drainage System

**Aquaflow**





# The Company

**KALSI GROUP** manufactures high quality maintenance-free plastic building products at its manufacturing and extrusion plant in Birmingham.

**It supplies all markets from new build to refurbishment.**

An extensive range of rainwater, underground, soil and waste systems and PVC-UE cellular foam building products are produced to British Standards and above using the latest machinery and tooling. The company also holds ISO 9001:2008 Quality Management System and BBA accreditation is achieved (ref: BBA 09/4705).

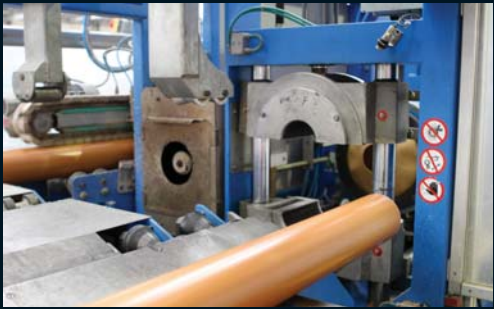
All Kalsi Group products are easily available from a network of stockists throughout the UK and Ireland.

A dedicated and flexible delivery fleet guarantees every item arrives on time and in pristine condition – catering for all customers, from the single stockist to multi-branch operations.

Our highly efficient telephone sales department is friendly and responsive. All are extensively trained and can provide assistance and advice on all Kalsi Group products.

Ongoing commitment to product innovation and support is at the core of the Group's philosophy as it strives to continually meet and exceed customer expectations.

BS EN 1401-1 BS4660..2000	110mm	160mm
HEPWORTH	✓	✓
OSMA/WAVIN	✓	✓
POLYPIPE	✓	✓
MARLEY	✓	✓
HUNTER	✓	✓
FLOPLAST	✓	✓
BRETT MARTIN	✓	✓



# Transport Handling & Storage

**KALSI** pipes are stored and supplied in bales, bound within timber frame units. It is recommended that bales of ninety are moved using a forklift or similar, and are stored stacked at a maximum of three high.

Accompanying fittings are supplied in boxes and should be stored away from direct sunlight. If stored outside, the boxes should be opened to prevent temperature build-up and condensation.

**APPLICATION**  
Kalsi Underground Drainage Systems are designed for use in gravity drainage and sewerage applications, up to a depth of 10m.

**COMPOSITION**  
All Kalsi drainage pipes and the majority of fittings are manufactured from Polyvinyl Chloride (PVC-U). Inspection chambers, and gully grids are manufactured from polypropylene.

**COLOUR**  
All pipes and fittings are manufactured in brown unless otherwise stated in the Product Guide.

**Terms & Conditions of Sale**  
The Company will not accept responsibility for the malfunction of any installation which includes components not supplied by Kalsi Plastics. Goods are sold subject to Company conditions of sale.





# Kalsi Aquaflow Inspection Chambers

Aquaflow Inspection Chambers in 320mm and 470mm are suitable for depths of 600mm for the 320mm UGMBS and 3000mm for the 470mm UGMBL.

Kalsi Aquaflow Plastic Inspection Chamber Covers are designed to withstand loads up to 35Kn. Stainless steel screws are supplied with the cover and frame to ensure secure fixing to the risers.

All risers are supplied complete with a fully lubricated sealing ring, benefiting both stockists and installers.

## INVERT DEPTH:

320 BASE UGMBS 185MM

320 RISER UGRS 140MM

470 BASE UGMBL 225MM

470 RISER UGRL 235 MM

## PVC-U BACK INLET BOTTLE GULLY WITH SQUARE OR CIRCULAR GRID TOP

A durable bottle gully that is easy to clean, allows for removal of the dip tube and offers height adjustment up to 80mm. The addition of 160mm piping provides increased height, to a desired level.



Aquaflow 470mm Inspection Chambers are able to be fixed to a level invert depth of 1200mm.

For compliance with Building Regulations 2000 Approved Document H (Drainage & Waste Disposal) a 350mm reducing ring is required for heights above 1200mm, to a maximum of 3000mm invert depth.

Kalsi Aquaflow Inspection Chambers hold BBA certification and all products are marked accordingly. For further information please visit: [www.kalsiplastics.co.uk](http://www.kalsiplastics.co.uk)

Kalsi Plastics recommends that reference should be made to the appropriate Codes of Practice for underground drainage systems.



## UNDERGROUND DRAINAGE SYSTEM

Installation and Product Codes

## 110mm Pipe and fittings 110mm Underground Systems

- Kalsi Socketed Underground Pipe combines reliable connections with the latest in blown end technology.
- A plastic circular insert holds the rubber seal in place during transit and also provides an ideal connection for jointing.
- All Kalsi underground fittings utilise seal and snap technology, avoiding sharp edges and allowing for an easy fit connection. The seal is double ribbed, whilst the sockets incorporate a recess that provides space for the rubber seal to locate as the pipe is inserted.

Full range available from the price guide.

Reference available from the sales office.

Contact detail as rear cover.

## Why Choose Kalsi 110mm Underground Systems

- Effective means of waste water drainage and foul discharge from above ground drainage
- Strong and durable, products are also lightweight, aesthetic and easy to install
- Suitable for extreme environments including temperature and waste discharge
- Push-Fit joint achieved using a 'cap and seal' system
- A range of fittings available, suiting most installations and can be integrated with all Kalsi above and below ground drainage products
- Available in Terracotta Brown
- All ranges are compliant with British Standards



## Trench Detail & Backfill Material

Trenching should be constructed 300mm wider than the diameter of the pipe being installed. Where the residue material from the dig is suitable, the bottom of the trenches can be trimmed to form the pipe bed. The material can also be used as side and backfill. Additional backfill materials such as pea shingle, used in accordance with the recommendations of BS5955 Part 6: 1980 Appendix A, having an average particle size not exceeding 10mm, should be used up to and over the pipe, as required. When this has been achieved the residue 'dig' material can be replaced into the trench. The surface can be mechanically compacted once a depth of 300mm of material has been replaced.

## Testing

All testing, either air or water should be carried out in accordance to the requirements of the appropriate approving authority. Kalsi recommends that the current editions of Building Regulations Approved document H, BS EN: 752: 1997 and BS Eng: 1610: 1998 are referenced and acknowledged. Where drainage appears internally BS EN 12056 should also be consulted.

## Jointing Preparation: Pipes

When cutting pipes all ends are to be chamfered and are free of residual material, grit and dirt.

## Ring Seal Joints

Acting as both a seal and expansion joint, when installing the Kalsi Ring Seal Joint the following process should be carried out:

- Ensure that all ring seal sockets are in their recessed position
- Check that all spigots and ring seal sockets are dry, clean and free from both grit and dirt
- For an efficient and secure connection, lubricate all ring seal fittings
- Check that all pipes and fittings are in the correct position
- To allow for expansion insert the pipe fully into the socket and then withdraw by 12mm minimum

## Adapters

External rainwater downpipes can be connected directly to a surface water drain or via a gully trap to the underground drainage system, when applicable.

The diameter of Kalsi 110mm PVC-U above and below ground drainage systems are the same and so a direct connection can be achieved, without the use of an adapter.

Where rainwater pipes connect directly to a drain, one of the following reducers will be required:

- ADS6 110mm x 68mm Rainwater Adapter for a round downpipe. RDS2 should be used with SP96 for connection to 65mm square downpipe.
- UGRSA Universal Rainwater Adapter for square and round downpipe
- A choice of waste adaptors. UGW32, UGW32-32, UGW32-40, UGW40, UGW, UGW40-40 and rubber adaptors to fit boss fittings WA1.25 WA1.5 WA2. for 32mm, 40mm and 50mm waste pipe connection to 110mm soil/drainage

Connection to other materials such as cast iron, supersleve and hepsleve is achieved using a range of rigid and flexible adapters and couplings.

## Access & Rodding Points

Access is integral to the efficiency of a drainage installation, be it for testing, inspection or the removal of blockages and debris. Rodding in both directions can be achieved using a 320mm chamber UGMBS and 470mm chamber UGMBL in conjunction with access fittings.

Rodding points are more commonly used in storm water drainage systems where the rodding point is located at the head of the drain run connection to a chamber, being no further than 22m away from the chamber. The rodding point should be enclosed in a concrete surround to provide support and ensure that it does not become mislaid at ground level.





SERVING ALL YOUR BUILDING NEEDS

**A**quaflo

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