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May 2015

Ridgiform-XL

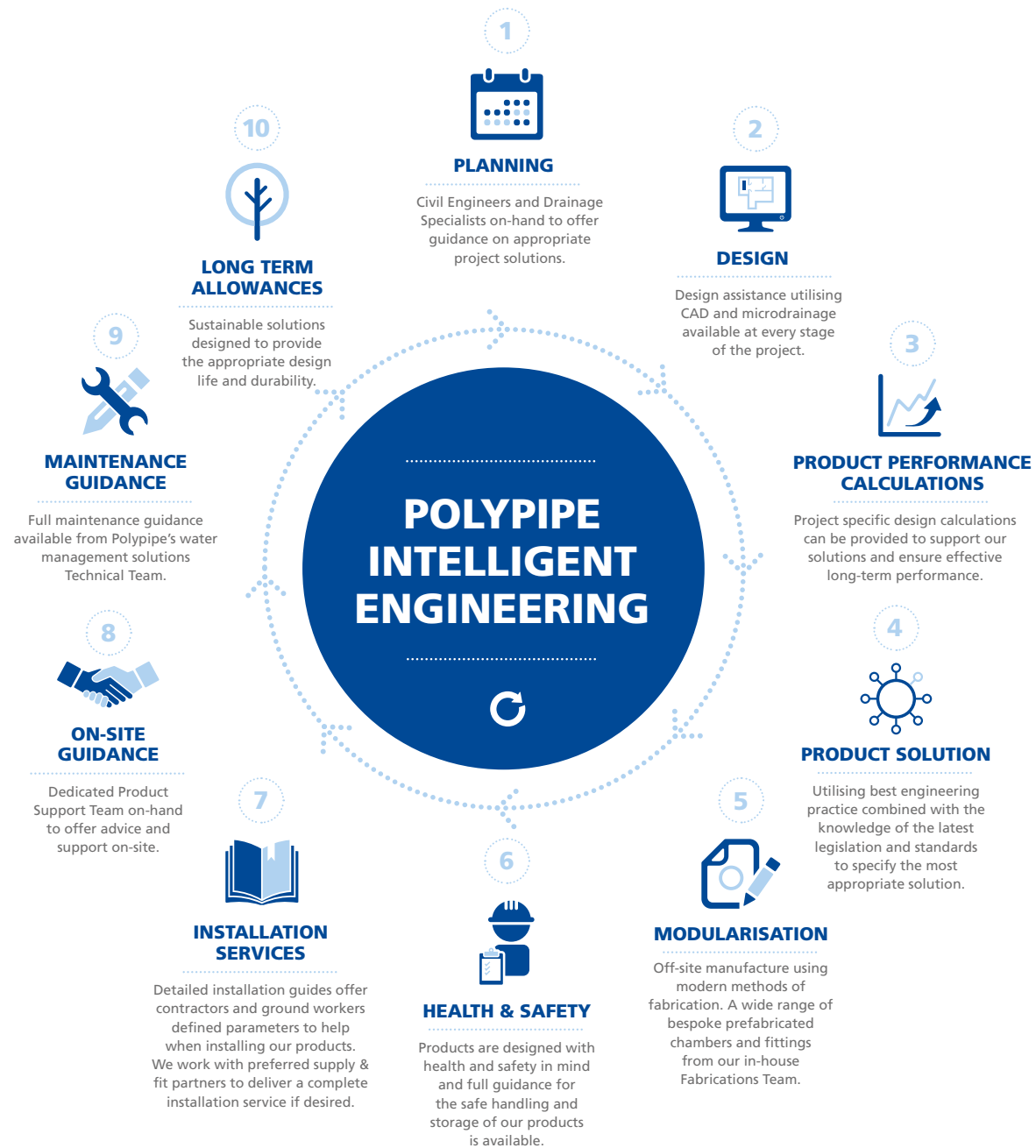


Product Support

Intelligent engineering

The market leaders in surface water management

Our team of fully qualified drainage specialists, civil engineers and technical support experts can offer invaluable experience and knowledge through each and every stage of a project. We can provide the most commercially viable solution for a project through our ability to be unbiased. Offering both pipe and geocellular systems, we can offer a truly holistic range of products meaning we can tailor our solutions to your needs. You can contact our team on **01509 615100** or arrange a visit from one of our commercial or technical specialists.



Ridgistorm-XL



Ridgistorm-XL is our most advanced HDPE large-diameter modular plastic pipe solution. Suitable for surface water, sewerage and combined sewer applications, it is also a crucial component in SUDS and stormwater management solutions.

A range of pipe diameters are available, with sizes from 750mm up to 3000mm on offer and the system also comes with multiple jointing options that give you extra flexibility in selecting the product for your specific project needs. It can also be cut and welded into complex shapes so an engineered modularised system can be pre-fabricated off-site and its high performance polymers and strong joints combine to make it a pipe that will last for at least a lifetime.

The level of design knowledge and technological expertise involved in creating Ridgistorm-XL has resulted in a pipe with a stiffness classification so versatile it can be adapted for your individual site, ensuring an engineered pipework solution that is fit-for-purpose.

For the latest version of this document please go to: www.polypipe.com/rxlproductsupport

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Health, Safety & Environmental Policy

Polypipe Group plc considers that the health and safety of its employees is an integral part of its business activities, and that it has equal status to other aspects of our business performance.

It is our intent that we minimise the lasting impact of our operations on the environment, and that we take account of sustainability in our product design and applications. Compliance with legal requirements is the minimum acceptable standard, and we are committed to progressive, cost effective, improvement towards best practice in health, safety and environmental management.



The Group shall, so far as is reasonably practicable, ensure that:

- We provide and maintain the working environment of all employees so that they are safe, and without risk to health, with adequate provision of facilities and arrangements for their welfare.
- We provide and maintain safe plant and equipment, and safe systems of work.
- Hazards arising out of the business of the Group are identified, and that the risks involved are assessed, and effective measures taken to remove, or where not reasonably practicable, reduce and control them.
- We provide sufficient information, instruction, training and support to all our employees, to enable them to work safely, without creating risks to themselves or to others.
- We use suitable and sufficient controls to ensure that visitors and others, who may be affected by our activities, are not exposed to risks to their health and safety.
- We clearly define and communicate organisational responsibilities for the management of health, safety and environmental protection.
- We communicate and consult with employees on all matters which could affect their health and safety at work; we expect them to be proactive, and we will always listen and act on any genuine concerns.
- We investigate all accidents, cases of work-related ill health, and environmental incidents, and take effective action to prevent recurrence.
- We monitor and review health, safety and environmental performance using appropriate measures and methods.
- We optimise the use of water and utilities and take steps to reduce waste generation and disposal, and increase recycling.
- We have constructive relationships with regulatory authorities, neighbours, customers, suppliers and stakeholders on health, safety and environmental matters.

The objectives of this policy can only be achieved with the support and commitment of all employees. This is not simply a management obligation: all employees have a duty, whilst at work, to take reasonable care for their own health and safety, and that of other people who may be affected by their actions or omissions. We expect employees to make their own 'dynamic' assessment of risk and be actively involved in ensuring our activities are undertaken safely: compliance with health and safety rules, policy and procedures is a condition of employment.

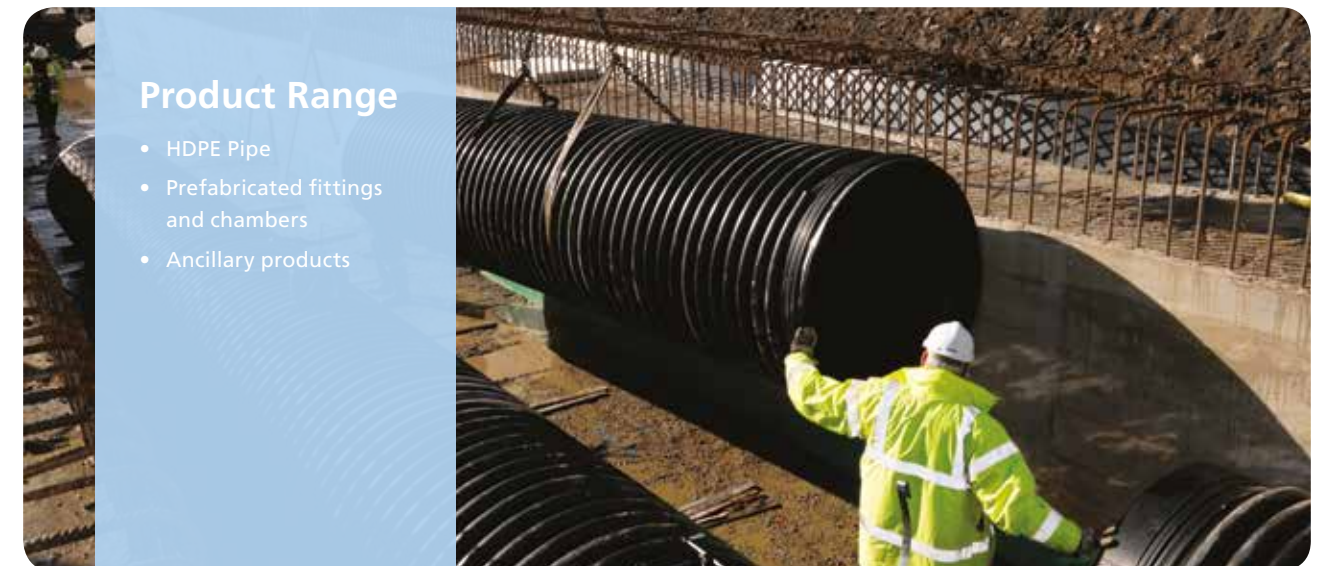
The arrangements for implementing this policy statement are contained in the Health & Safety Policy and Procedures files, which are available on the Company intranet, and from site Safety Co-ordinators: they will be monitored for effectiveness and compliance and will be reviewed annually.

A handwritten signature in black ink that reads 'David Hall'.

David Hall, Chief Executive

Date: May 2014
Next Review: May 2015

Safety data sheet



Product Range

- HDPE Pipe
- Prefabricated fittings and chambers
- Ancillary products

Manufacture

Ridgistorm-XL is an extruded structured wall pipe system, manufactured using High Density Polyethylene.

Risk Identification

Ridgistorm-XL is classed as non-hazardous in accordance with COSHH Regulations 2002 and the Environmental Protection Act 1990. This information has been provided for guidance only and does not substitute the operators own assessment as required by Health and Safety legislation. Indirect hazards may exist in the handling and cutting of Ridgistorm-XL pipework, fittings and chambers.

Off Loading

A method statement for off-loading of Ridgistorm-XL should be prepared before delivery. It is recommended that products be offloaded using mechanical means with the use of either cranes or forked vehicles. Refer to pages 14-15 for more information

Handling

Manual handling of Ridgistorm-XL should not take place without the prior completion of a risk assessment as required by the Manual Handling of Loads at Work Regulations 1992. Personal Protective Equipment (P.P.E) should be utilised at all times such as protective gloves, safety footwear and hard hats when handling and lifting products to minimise risk of minor injury. Refer to page 16

Cutting

Ridgistorm-XL is an engineered spigot/socket pipe, therefore cutting either end of the pipe will mean the pipe cannot be jointed at the cut end. Where cutting is required on-site, the correct power tools should be used by competent operators. Refer to page 6 for more information about jointing. Correct P.P.E (i.e. gloves, goggles, face mask) should be worn to minimise risk of minor injury.

Storage

Ridgistorm-XL should be stacked on timber supports and placed on flat ground free from sharp projections, stones and other protuberances. It is recommended that the timber supports are placed at 2m centres and that maximum pipe stacks should not exceed a maximum height of 2.4m. Protection should be given to Ridgistorm-XL pipes, fittings and chambers from prolonged exposure to direct sunlight. Refer to page 16

Fire Fighting Measures

Use water spray to cool fire exposed surfaces and to protect personnel. Block the air supply to the fire. Extinguish by cooling with water spray.

Waste Disposal

Ridgistorm-XL pipes are 100% recyclable and should be disposed of, subject to local authority requirements.

Product support site services - jointing

Polypipe offers a range of product support services, including internal or electro-fusion welding and post-installation services such as inspection equipment or repair work. Through it all we aim to be efficient, reliable and considerate of your project needs.



Internal welding

Working in confined spaces, especially in submerged pipe systems, presents real health and safety challenges for construction crews. Where internal welding is necessary, however, our teams are fully trained and proficient in the use of welding technology and have all the required confined space qualifications.



Electro-fusion Welding

Our patented electro-fusion welding process is a unique service providing integrity of joints within the Ridgistorm-XL systems. Pipe sections arrive on-site with electro-fusion elements embedded within the socket ends, ready to be joined by our specialist teams. Typically, each section has a unique barcode containing the exact settings and installation parameters for that particular joint. Using these settings, our operators apply the specific amount of pressure and electrical current.

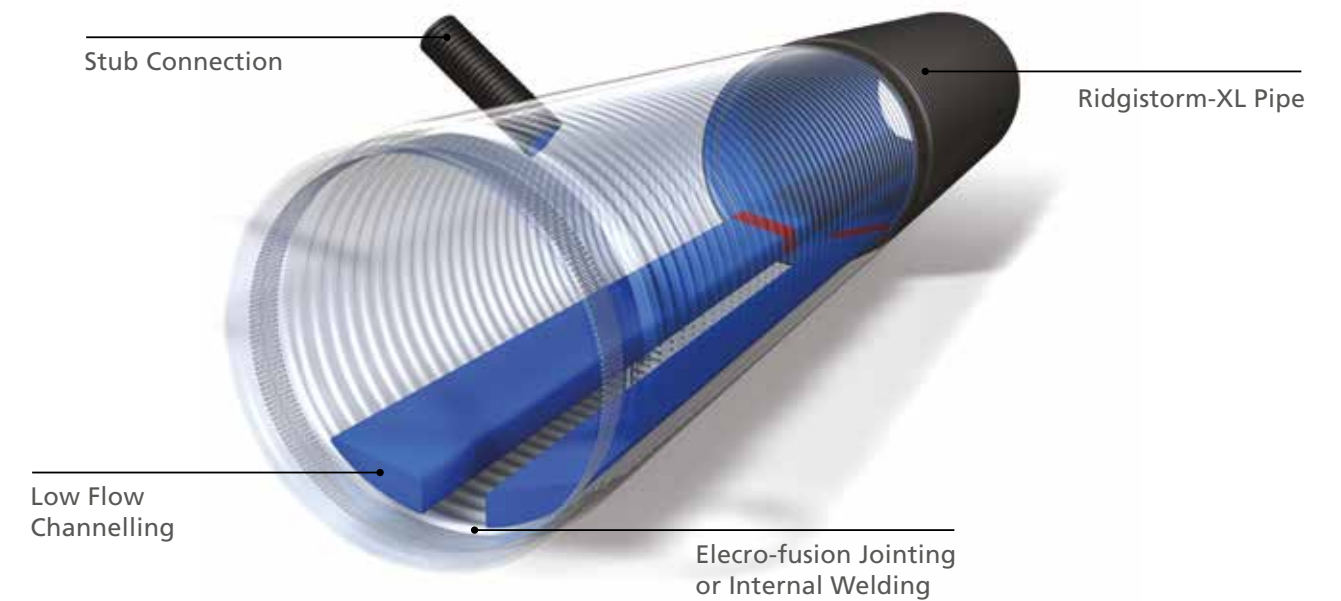
DIAMETER	WELDING TIMES	
	TIME IN SECS	NUMBER OF WELDING DEVICES
750	1020	1
900	720	1
1050	1200	1
1200	1260	1
1500	1020	2
1800	900	2
2100	1230	2
2400	1200	2
2700	800	3
3000	1080	3

For more information please call Polypipe Product Support and ask for our Technical Team on **01509 615100**

If you would prefer your own personnel to handle pipe jointing, on-site training in electro-fusion welding is available from our specialist teams.

Post-installation services

Once the system has been delivered, we can provide follow-up remedial services to account for any unforeseen circumstances (e.g. changes to connection size or levels). Any additional components or equipment can be provided on a supply-only basis or as a supply and fit package depending on your preferences. We are only able to provide supply and fit services with our own products.



Subject to site conditions, our post-installation services include:

- Ladders and/or steps
- Flow control systems
- Low flow channelling
- Connections
- Re-work and repair services

Although advanced testing and diagnostics are not part of our core offer, we do work closely with providers of such services so can also facilitate:

- Air Testing Services
- CCTV inspection



Should you have any other requirements please let us know by calling Polypipe Product Support and ask for our Technical Team on 01509 615100 and we will do our best to help.

Product support equipment & costs

At Polypipe, we strive to keep costs fair and reasonable, ensuring you get the best possible service for the best possible price.



Our Product Support Team will carry the specialist equipment required for welding and jointing procedures. We will work with you to ascertain what additional equipment, if any, is required to facilitate the works and arrange site visits at the appropriate time to ensure costs are kept to a minimum.

Below is a list of standard items that may need to be supplied on-site; alternatively, we can hire at a cost.

- Working at height access equipment*
- Confined space equipment (medium risk)
- Tripod & Winch
- Harness
- 10 minute Escape Set
- Gas Monitor
- Intrinsically Safe
- Lighting
- Walkie Talkie
- Top Man (Top Man cover can be supplied by our Product Support Team, additional costs will apply)

*We are unable to hire this on your behalf

In addition, for Electro-fusion welding we would require the contractor to supply:

- 1 x 15Kva generator (minimum constant output) for pipework up to 1200mm in diameter
- 2 x 15Kva generators (minimum constant output) will be required for pipework 1500mm - 2400mm in diameter
- 3 x 15Kva generators (minimum constant output) will be required for pipework 2700mm - 3000mm in diameter

If site welding is scheduled during periods when ambient temperatures are below 5°C or during periods of rainfall, the following additional items may be required:

- Welding Tent
- Tent Heaters

All operative costs including accommodation for overnight stays will be chargeable. On-site delays and standing time will also incur additional charges and if required alternative site visits may have to be arranged.

On-site training

Should you prefer your own personnel to carry out pipe jointing, we can offer on-site training* from one of our specialist teams in electro-fusion welding.

For full details please call Polypipe Product Support and ask for our Technical Team on 01509 615100.

Customer support

We are committed to the long-term support of all Polypipe systems. This means our expertise and support services are available before, during and after installation. We will advise and assist (where instructed) to ensure the installation, testing and handover of your system is carried out correctly following established procedures. To help deliver this high level of support, our Product Support Technicians are backed by a large team of qualified and experienced engineers, ensuring a nationwide knowledge base for our customers.

* chargeable

Loading

At Polypipe, we are aware of how important compliance with both the Health & Safety at Work Act and Construction (Design & Management) Regulations is. The information in this document is designed to explain the services we are able to offer in order to help you work with Ridgistorm-XL safely and give you all of the information you need to help you carry out the necessary risk assessments.



Loading:

- All drivers should report to Polypipe Civils transport office upon arrival at site
- Delivery notes provided by Polypipe will clearly state product details
- Bearing timbers will be placed on to the bed of the trailer/vehicle, with a minimum of 2 timbers per each 6 metre length of pipe
- Polypipe personnel will load the trailer/vehicle using a counter balance fork lift truck, by aligning the pipe in position and lowering carefully to ensure the pipe is cradled in position correctly before removing the fork lift truck

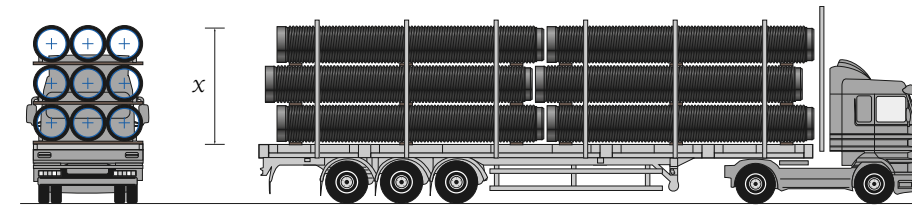
Before leaving Polypipe:

- The vehicle should not move until ratchet straps have been secured
- The driver should secure pipes using load security straps as supplied by the transport company
- All pipes to be secured using a minimum of two straps per pipe up to 6m including fittings and chambers
- The load is subject to a final visual inspection by Polypipe personnel to ensure the load is secure, the correct numbers of straps are used and the posts are in place
- This inspection does not remove the responsibility from the driver and the transport company for the security and the safe transportation/delivery of the load
- No load shall leave Polypipe without this Product Support document

Transportation

The Polypipe **standard** articulated delivery vehicle will accommodate a load 2.9m wide and 3m in height. The trailer bed is 13.6m long which is enough space for 2 standard 6m lengths of Ridgistorm-XL pipe.

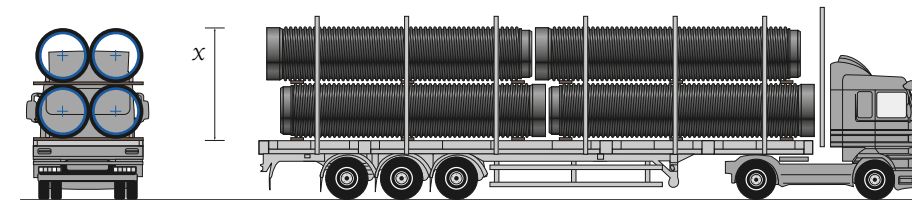
Load heights:



18 pipes on a single load

Pipe Size	Load height X
Ø750mm	2700mm

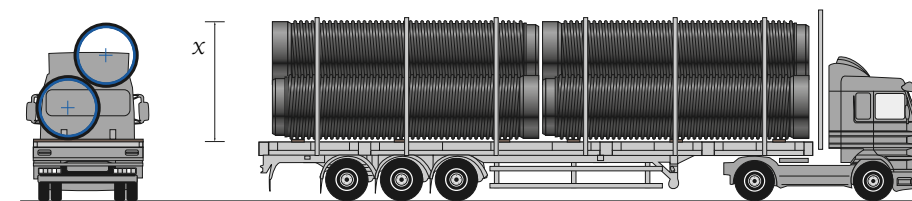
Load heights from bed of lorry to top of load



8 pipes on a single load

Pipe Size	Load height X
Ø900mm	2284mm
Ø1050mm	2592mm
Ø1200mm	2940mm

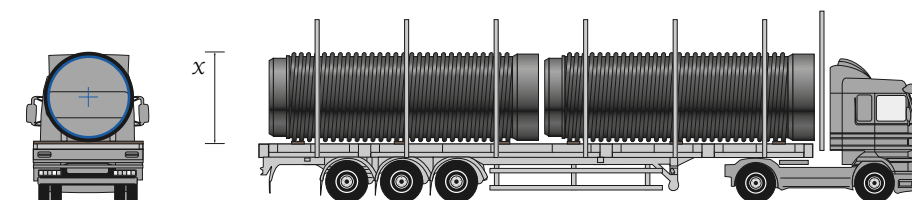
Load heights from bed of lorry to top of load



4 pipes on a single load

Pipe Size	Load height X
Ø1500mm	3000mm

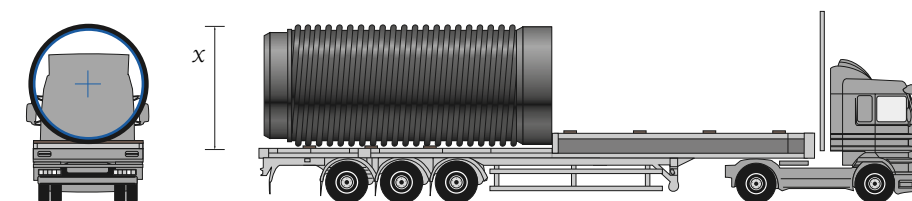
Load heights from bed of lorry to top of load



2 pipes on a single load

Pipe Size	Load height X
Ø1800mm	2104mm
Ø2100mm	2451mm
Ø2400mm	2722mm

Load heights from bed of lorry to top of load



3m pipe on a single load

Pipe Size	Load height X
Ø2700mm	3103mm
Ø3000mm	3420mm

Load heights from bed of lorry to top of load

Data is based on SN2 stiffness class and profile can vary. For details of the ODi of your pipe please contact Polypipe.

Delivery options

At Polypipe, we understand that different sites have different requirements for the delivery of Ridgistorm-XL. The information in this document is designed to assist you in choosing the right delivery option for your needs, including load configurations and vehicle options. Costs for the following vary according to your requirements.

Standard non-offload delivery

The standard delivery options means that Ridgistorm-XL pipes and fittings are delivered on a pole sided or curtain sided trailer. The contractor will be responsible for off-loading all pipes and components with this option and must ensure that all Health & Safety requirements are in place, a risk assessment has been completed and that the work is carried out by competent personnel.



Where a standard delivery is not suitable e.g. wider loads, low bridges etc. or where the contractor would like the driver to off-load, there is a choice of options to suit as detailed below. These options are chargeable. Costs vary according to your requirements and location in the country.

Moffat/HIAB

A Moffat vehicle is a trailer with the addition of a forklift truck which is situated at the rear. The driver will offload the pipes from the vehicle to the nearest hard-standing ground. Please note that a Moffat vehicle will be sent when offloading is requested. A HIAB is a specialist vehicle which is required for off-loading at the side of the road. Please specify if this particular vehicle is required.

Product order code: HRO

Low loader

As a low loader vehicle is lower to the ground allowing a load height of 4m, it is ideal for transporting Ridgistorm-XL chamber and fittings. It is also an option if there is an unavoidable low bridge on the site or delivery route.

Product order code: HLL

Wide load

Where a load width is going to be greater than 2.9m we can arrange a wide load delivery utilising any of the vehicles mentioned above.

The services we can supply are:

- Standard Wide: 2.9 – 3.5m (width allowance) - **Product order code: HWL**
- Abnormal Wide Load: 3.5 – 5.0m (width allowance) - **Product order code: HWL**

For wide loads greater than 5m wide please speak to us to make arrangements for this.

For orders of 3 metre pipes, please quote - **Product code: HSF**

Rigid

7.5t, 18t and 26t rigid vehicles can be arranged with the options of self-offload or Moffat offload. These vehicles allow for a load width of 2.9m and height of 3m and are 6m (7.5t) and 7.5m (18 & 26t) long.

Product order code: HRV



	VEHICLE TYPE	BED DIMENSIONS (m)		LOAD DIMENSIONS (m)		PRODUCT ORDER CODE	MOFFAT OPTION	HIAB OPTION
		WIDTH	LENGTH	WIDTH	HEIGHT			
	Standard Articulated Flatbed	2.4	13.6	2.9	3	Standard	Yes*	Yes*
	Curtain Sided Trailer	2.4	13.6	2.9	3	Standard	Yes*	
	Rigid 7.5	2.4	6	2.9	3	HRV		
	Rigid 18	2.4	7.5	2.9	3	HRV		
	Rigid 26	2.4	7.5	2.9	3	HRV	Yes*	Yes*
	Low Loader	2.4	13.6	2.9	4	HLL		
	Step Frame	2.4	6 (front) 6.5 (rear)	2.9	3 (front) 4 (rear)	HSF		
	Standard Wide Load					2.9 - 3.5	HWL	
	Abnormal Wide Load					3.5 - 5.0	HWL	

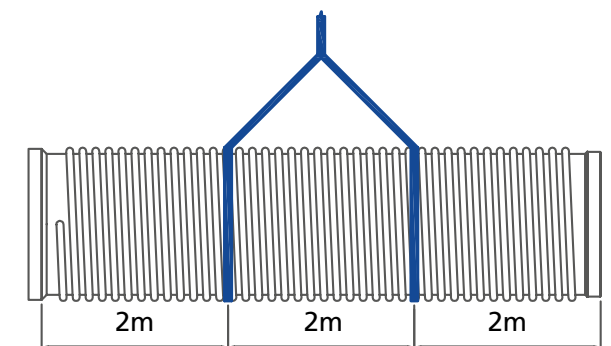
*Please note the product code for Moffat/HIAB options is HRO

Pipe pre-slinging

In line with Health and Safety guidelines, we do not recommend any operatives accessing the delivery vehicle to offload products. Also, please inform the Polypipe team if you require non-returnable single use slings to be provided with the delivery.

PLEASE NOTE: This is not standard therefore the supply of the slings will be chargeable.

Product order code: PSL



Offloading

Offloading on-site should be carried out by suitably qualified and trained personnel. No operative should be required to work from the back of the delivery vehicle.

- Prior to removing ratchet straps, check that all wedges are securely in place and ensure pipes and fittings can be removed individually
- Pipes should be supported at two points during lifting, ideally using web-slings
- When lifting fittings and chambers with slings, careful planning is required due to their size, weight and design
- When lifting irregular shaped fittings, chambers and pipes with slings, the addition of a spreader bar is highly recommended
- We would recommend that the use of chains for offloading and moving pipework and fittings is avoided



To assist with the handling of chambers the following two options can be pre-ordered prior to delivery. **Please note these options are not a standard item and therefore chargeable.**



Lifting points for chambers

For safer, simpler handling of Ridgistorm-XL chamber there is the option of having lifting points pre-welded to the chambers.

The Ridgistorm-XL Lifting Points are available in a standard, extended or heavy duty option and consist of three plastic lugs, which are welded into the shaft of the Ridgistorm-XL chamber by our in-house fabrications team. The lugs provide external points for the attachment of lifting accessories. Once all 3 lugs are fabricated into the chamber, a maximum safe working load (SWL) of ≤1500kg can be achieved with the standard and extended versions and ≤2500kg with the heavy duty version.

Product order codes:

- RSTLP - standard lifting points
- RSTELP - extended lifting points
- RSTHLP - heavy duty lifting points

For full details please request a copy of our Ridgistorm-XL Lifting Points datasheet.

Visit www.polypipe.com/toolbox or call Polypipe Product Support and ask for our Technical Team on **01509 615100**

Mechanical lifting for chambers

Ridgistorm-XL Chambers can be safely and easily lifted using a Probst SVZ Chamber lifting clamp. This allows components to be picked up without the operator having to climb up and manually attach any lifting accessories. The lifting clamp can simply be engaged on to the shaft via its automatic engagement procedure and disengaged by reversing this. By reducing operator involvement, the use of a lifting clamp has huge Health & Safety benefits as it removes the potential risks of working at heights and safe lifting normally associated with delivering materials to construction sites.

Probst SVZ Clamp Specification

Product Name: SVZ-uni-UK

Product Code: 5400.0020

Manufacturer: Probst

Internal diameters catered for (mm): 900,1050,1200,1500 and 1800 (please note 1800mm requires an adaptor)

Tolerance on stated nominal internal diameters: ± 10mm

Accessory weight: 96kg

SWL - Carrying Capacity: 2500kg



The Probst SVZ clamp is available to hire from the following companies:

- Speedy Services Lifting - National 01942 720000
Product code: 73/7020-h
- A Plant - National 0370 050 0797
- Gap Group Lifting - National 0141 225 4600

Handling and storage

It is necessary to take care to prevent damage when handling Ridgistorm-XL. Do not drag Ridgistorm-XL pipes, fittings or chambers over hard surfaces or ground containing sharp objects. If pipes are moved by rolling, it is necessary to ensure that they are adequately supported along their lengths. Pipes should be suitably supported in at least two places when being lifted for a safer and more controlled lift and to protect the integrity of the spigot/socket.

Site storage

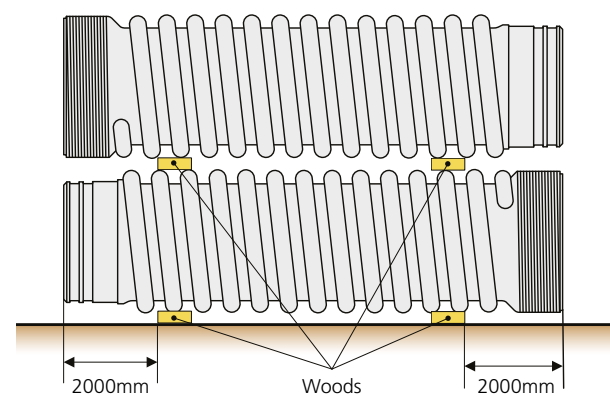
To avoid damaging both the pipes themselves and the accompanying fittings prior to installation, it's essential to correctly store them once they are delivered to site. Pipes should be stored on a flat surface with 45x150mm woods inserted between the pipes and the ground and between each layer (see diagram 1).

Pipes of 1800mm and above should be vertically braced within 500mm of both the socket and spigot with 45x150mm sized woods cut to a snug fit (see diagram 2). Rubber seals and lubricant should be stored out of direct sunlight or away from any heat source when not in use.

UV light resistance

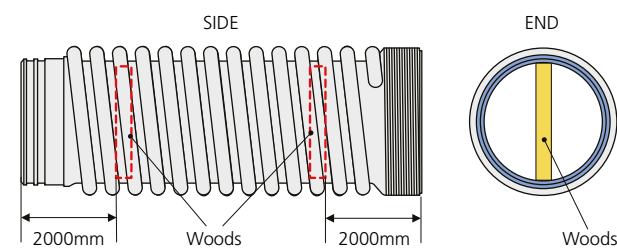
Ridgistorm-XL pipes are resistant to UV attack and can be safely stored on-site under Central European conditions without any damage or ageing effects for a maximum of 6 Months.

Diagram 1



Do not stack sizes Ø1200mm & above

Diagram 2



The following guidance relates to the storage of Ridgistorm-XL.

- Pipes should be stored on flat ground free from sharp projections, stones and other sharp objects
- Ensure spigot/socket protective sleeves are in place until jointing
- If stacking in multiple layers ensure pipes in higher layers are rotated to 180° to those below so that the sockets of the upper layer are not lying directly over the sockets of the lower layer
- Do not stack Ridgistorm-XL pipes more than 2.4m high
- Use wood bearing supports between each pipe to ensure even load distribution and chocks to prevent pipes from rolling

Health and safety

Polypipe continually review and put in place suitable arrangements to account for Health and Safety. Reference is made to the following regulations:-

- The Management of Health and Safety at Work Regulations 1999
- Approved Code of Practice L21
- Managing for Health and Safety HSG65
- Managing Health and Safety in Construction. (Design and Management) Regulations 2007 Approved Code of Practice L144

To facilitate the regulations, we provide guidance to managers and technicians on how to prepare and work safely. Method Statements are prepared for the type of jointing method to be carried out and a Product Support Work Sheet is prepared for use by our operatives and the designated main contractor site supervisor.

See pages 18-25 for samples of:

- Product Support Work Sheet
- Risk Assessment & Method of Work
- Hazard Identification Checklist
- Point of Work Safety Assessment

Call Polypipe Product Support and ask for our Technical Team on 01509 615100



Product support work sheet



Product Support Work Sheet

Project Ref: _____ Site Operative: _____
 Order Number: _____
 Site Start Date: _____ Work Sheet Raised By: _____
 Number of Days: _____

Site Contact/Site Address: _____

Tel: _____

Detail of the works to be carried out: _____

Additional information/comments: _____

Downtime/Extra Work

Date	Comment/Reason	Customer/Signature

Final Inspection
 All works have been completed in accordance with the contract and inspired by Polypipe Product Support Technicians and the client's on-site representative

For Polypipe Civils

Signed	Print	Date	Title
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For Client

Signed	Print	Date	Title
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Risk assessment & method of work

Risk assessments need to be written to ensure the safe management, planning and working of site activities. The following documents are utilised to understand, identify and manage the works:

- **Project risk assessment & method of work**
- **Hazard identification checklist**
- **Point of work safety assessment**

Risk Assessment and Method of Work:				Risk Level
<p>Task: – To remove and replace a section of tank flooring which measures 57m in length, while working in a tank that measures a minimum of 1500mm in diameter by 57m long with two access points, one at each end. All equipment to be used will be 110V – Cutting Equipment, Extruder Guns, Lighting.</p> <p>Environment: - Work to be carried out on a Construction Site.</p> <p>Method Of Works</p> <ul style="list-style-type: none"> • Arrive on-site and comply with all site controls – site inductions, PPE requirements, confined space entry emergency plans and methods of communication with Top Man and Site Controller to be briefed. • Comfort breaks for confined space workers and Top Man to be agreed. • Agree terms of reference for Permit to Work, the Confined Space PTW, site to provide Top Man with appropriate confined space training and knowledge of emergency plan and site controls for the work area. • Engineers to undertake Dynamic Risk Assessment of task and area. • Open the tank both ends and carry out air monitoring, this to be carried out prior to entry. Once air monitoring is complete and clear entry can continue, if not measures to be taken to ventilate and retest. Any concerns Site Control and Polypipe Controlling Manager must be contacted. • Set up equipment Confined Space entry – Tripod, life lines, harness etc. • Set up generator at least 10m away from tank access points and run cables to tank. • Using Confined Space equipment – harness, life line and air monitoring equipment enter tank and review work, set out equipment and lighting. • Commence work cutting out and removing tank sections as required and replacing with new material to specifications provided. • Work could start at one end and then at an acceptable point stop half way and commence from the other end to reduce distance to the Top Man and Confined Space Exit. • On completion of work all equipment and waste to be removed from the tank and closed up. 				with existing controls in place
Item	Hazard(s) Present	Risk(s)	Existing Risk Controls	
6 8 9 16 17	Entering Confined Spaces	a) Previous contents b) Residues c) Contamination d) Oxygen deficiency and oxygen e) Physical dimensions f) Cleaning chemicals g) Sources of ignition h) Ingress of substances	<ul style="list-style-type: none"> • All Polypipe operatives carrying out the work are Confined Space trained up to medium risk and hold a current training certificate. Customer to inform Polypipe of risk level. • Prior to entry a Permit-To-Work must be issued by a Customer authorised person. • Polypipe operatives will carry out a Point of Work Safety Assessment BEFORE commencing the job; Polypipe staff will not start the job, if any risks remain uncontrolled. 	Medium

Risk assessment & method of work

Item	Hazard(s) Present	Risk(s)	Existing Risk Controls	
8 9 16 17		a) Poor communications b) Hazardous (toxic) gas, fume or vapour in atmosphere c) Poor ventilation d) Removal of residues e) Flowing materials f) Mechanical and electrical equipment g) Unsuitable equipment h) Use of portable gas cylinders and internal combustion engines i) Gas supply j) Access and egress k) Fire l) Static electricity m) Smoking n) Emergencies and rescue o) Length of working time	<ul style="list-style-type: none"> To be discussed with customer BEFORE commencing job (during completion of Permit-to-Work). Polypipe operatives will carry out a Point of Work Safety Assessment BEFORE commencing the job; Polypipe staff will not start the job, if any risks remain uncontrolled. Lone working is NOT allowed. 	Medium
5 8 18 45 51	Trench entry / Chamber Entry	a) Struck by flying or falling object (i.e. earth) b) Struck or run over by construction vehicles or plant c) Falling into an excavation from plant, materials, ladders or working platforms d) Contact with electricity e) Trapped by a collapse of earth, stacked material or plant f) Drowning by flooding of the excavation g) Asphyxiation caused by contamination h) Undermining nearby structures	<ul style="list-style-type: none"> All Polypipe operatives carrying out the work are Confined Space trained and hold a current certificate. Copies available from Engineers. To be discussed with customer BEFORE commencing job (during completion of Permit-to-Work). Prior to entry a Permit-To-Work must be issued by a Customer authorised person. Polypipe staff will not start the job, if any risks remain uncontrolled. Lone working is NOT allowed. 	Medium
20	Use of ladders (including step irons) to enter trench or product	a) Falling off b) Ladder slipping/moving	<ul style="list-style-type: none"> Any ladder used for access must be positioned at a 4 in 1 angle – ratio of 4 metres up to 1 metre out. Ladders must be secured at their highest point, with at least 1 metre above the point of landing in order to provide an adequate handhold. A safe means of egress is essential in case of an emergency, i.e. if the trench collapses, there is a build-up of fumes or the excavation suddenly floods. The means of egress must form part of any emergency plan for the site. Ladder access/egress will require three points of contact therefore equipment must not be carried in the hand. 	Low
23 29	Workplace transport i.e. diggers, dumper trucks etc.	a) Struck by moving vehicles	<ul style="list-style-type: none"> High-visibility clothing to be worn at all times. Careful planning of vehicle routes. Suitable distance between vehicles and excavation / installation, with vehicle protection barriers demarcating 'safe area'. Using stop blocks for dumpers. Competent drivers. 	Low
24	Sources of electricity; including generator 15kVa (minimum), extension leads	a) Electric shock b) Burns c) Damp and wet weather	<ul style="list-style-type: none"> Generators need to be earthed, by bonding the neutral to the frame and connecting the frame to the earth. The generator needs to be connected to an earthing rod. PAT testing and inspection certificates, as required. Seek specialist advice if unsure. 	Medium

Item	Hazard(s) Present	Risk(s)	Existing Risk Controls	
32	Use of lifting equipment	a) Items falling from lifting attachments and accessories b) Lifting equipment breaking	<ul style="list-style-type: none"> Customer to inspect equipment before use. All site personnel using lifting equipment should be trained. Contractor to appoint Lifting Supervisor. Do not stand under loads or lift loads over people. 	Low
11	Use of Polypipe Cleaning Fluid (during pipe preparation)	a) Irritant b) Highly flammable	<ul style="list-style-type: none"> Follow instructions in the Material Safety Data Sheet for the substance. Follow instructions on the container. Personal Protective Equipment – Safety Gloves – see Material Safety Data Sheet. 	Low
11	Use / exposure to Hazardous Substances	a) Inhaling exhaust fumes b) Inhalation of pipe welding fumes c) Inhalation / contact with pipe cleaning fluids	<ul style="list-style-type: none"> Avoid using petrol or diesel-engined equipment such as generators or compressors in, or near the edge of, an excavation unless fumes can be ducted away or the area can be ventilated. The use of forced ventilation should be considered. Extrusion welding process emissions are the 8hr WEL recommended exposure levels, where fumes are produced the temperature setting need to be checked and as a precautionary measure RPE can be used. For small cleaning operations emissions from cleaning fluids will be below 8hr WEL for the materials, where a container is spilt RPE must be used during clean up. As a precautionary measure RPE could be used - 3M™ 4251 -Organic vapour + particulate respirator -FFA1P2D – or higher specification (subject to confined space working requirements). 	Low
36	Hot / very cold surfaces (minimum of 210° C)	a) Burns from plastic around wire	<ul style="list-style-type: none"> Extruder gun heater and nozzle get very hot and contact must be avoided. If contact is required for cleaning then Heat Resistant Gloves must be worn. 	Low
37	Food contamination / poor hygiene	a) Contact with contaminated water b) Leptospirosis (through contact with rat urine)	<ul style="list-style-type: none"> Wash hands thoroughly before eating or drinking. Remove wet clothing as soon as possible after use. 	Low
40	Use of Extrusion Welding Gun	a) Access to moving parts b) Incorrect use of equipment c) Vibration White Finger d) Emissions from process	<ul style="list-style-type: none"> Pre-use inspection of equipment must be carried out and any signs of damage, cracks in outer casing, or damaged and / or exposed wiring must result in the equipment not being used. Suitable equipment provided for the activity. Polypipe operatives are competent, trained and tested in the safe use of equipment. Vibration levels generated for an 8 hour day are below Exposure Limit Value (5m/s²(A) or 400 points). Emissions from polypropylene and polyethylene are very low subject to effective temperature control. 	Low
30	Manual Handling	a) Poor manual handling (carrying, lifting) b) Poor posture holding, limited space	<ul style="list-style-type: none"> All Polypipe Operatives have received Manual Handling Training and are required to have 3 yearly refresher training. For long duration work where fatigue or poor posture are required then regular breaks will be required and where appropriate a second person may be required to assist or share work load. 	Medium
43	Adverse weather – extreme heat / cold weather	a) Skin damage through exposure to bright sunshine b) Heat stress c) Heat fatigue d) Dehydration e) Cold weather f) Rain / wet conditions	<ul style="list-style-type: none"> Increase the number of rest breaks during adverse weather. Drink plenty of water (cooled if possible). Wear sun block. Wear suitable PPE provided for working in cold weather. The use of forced ventilation should be considered. Operations must not be carried out in the rain or when equipment is wet. 	Low

Hazard identification checklist

HAZARD IDENTIFICATION: How can people get hurt? Use this as a check list, but put details of any you tick, plus other items unique to your work area, on the risk assessment form. Involve the managers, staff and where necessary the safety professionals in deciding what should be included.

Possible Hazards			
1. Access/egress obstruction	✓	14. Compressed gas, cryogenic, liquid (storage/use)	27. Lasers
2. Trailing wires/hoses	✓	15. Pressurised systems	28. Exposure to excessive noise
3. Uneven floors/steps		16. Confined spaces	✓ 29. Construction work on-site
4. Slippery floors/steps		17. Lack of oxygen	✓ 30. Manual handling
5. Unstable building	✓	18. Falling objects	✓ 31. Poor postures/ repetitive movements
6. Temporary workplace	✓	19. Multi-level working	✓ 32. Use of lifting equipment
7. Poor working environment (lighting, temperature, ventilation)		20. Working at height/use of access equipment	✓ 33. Use of display screen equipment (dse)
8. Dust/fumes	✓	21. Working at height - on the back of a wagon	34. Storage/stacking of goods (racks, shelves etc.)
9. Fire/explosion	✓	22. Workplace transport (fit's, cv's, tractors, jcb's, cars) - vehicle collision	35. Use of hand tools
10. Evolution of flammable materials (dust, vapour, gas, liquid)		23. Workplace transport and pedestrians in same area	✓ 36. Hot/very cold surfaces
11. Use/exposure to hazardous substances	✓	24. Contact with electricity (including portable appliances)	✓ 37. Food contamination/ poor hygiene
12. Exposure to lead containing materials		25. Excessive hand, arm, whole body vibration	38. Sharp objects/knives
13. Exposure to legionella		26. Radiation (rf, microwave, radio-active sources)	39. Exposure to asbestos
			40. Use of machinery/ equipment
			41. Access to moving/ unguarded machinery
			42. Entanglement/ entrapment (moving machinery/materials)
			43. Adverse weather (hot/ cold/lightning/ wind/rain etc.)
			44. Eye impingement (chemicals, dust, impact, flying object)
			45. Deep water
			46. Communication difficulties
			47. Working patterns and organisation (lone working, working time)
			48. Work-related stress
			49. Violence (attack and public disorder)
			50. Environmental contamination or release
			51. Other (notes): Trench entry ✓ Underground services ✓

Any ticks require a Risk Assessment to be completed and a specific, more detailed assessment may be required for hazards shown in blue.

Death. Closure of business. Environmental catastrophe.	7	14	21	28	35	42	49
Unable to work/permanent major incapacity. Fractured spine or skull, major amputation, chronic health disorders. Major long term effect on the business/environment.	6	12	18	24	30	36	42
Long term sick/permanent slight incapacity. Fractured major bones or minor amputation, serious health disorders. Extensive damage/loss. Considerable environmental damage.	5	10	15	20	25	30	35
Absent up to 4 weeks - total recovery. Broken minor bones, WRULD, back strains, acute health disorders. Substantial damage/loss. Serious environmental impact.	4	8	12	16	20	24	28
Injury/health disorder - absent up to 3 days. Sprain, deep cut, bad bruising. Moderate damage/loss/environmental impact.	3	6	9	12	15	18	21
Minor Injury/health disorder - no lost time. Minor cuts, scratches, bruises. Minor damage/loss/environmental impact.	2	4	6	8	10	12	14
No injury/health disorder. Trivial damage/loss. Insignificant breach of environmental rules.	1	2	3	4	5	6	7
	Almost impossible	Unlikely - exposure/occurrence once every 1 - 3 years	Possible - exposure/occurrence every 3 - 9 months	Even chance - exposure/occurrence 1 - 2 times a month	Probable - exposure/occurrence 1 - 2 times a week/ regular exposure	Likely - short periods of exposure most days/ frequent exposure	Certain - constant exposure

RISK RATING	ACTION TIME SCALE
EXTREME (31 - 35)	Stop process: put in <u>effective</u> controls before re-commencing. Upon completion of controls, re-assess within 1 week.
HIGH (16 - 30)	Unacceptable: take IMMEDIATE action - completed within a week. Upon completion of controls, re-assess within 1 month.
MEDIUM (9 - 15)	Poor: important to take action - completed between 1 week and 3 months. Upon completion of controls, re-assess within 6 months.
LOW (5 - 8)	Adequate: action taken within 3 - 9 months or improve at next review. Re-assess after 1 year.
NEGLIGIBLE (1 - 4)	Acceptable: where reasonably practicable, take action within 1 year or just monitor current controls.

Point of work safety assessment

Date:	Time:
Customers Name and Address:	Site Contact Name:
	Contact Number:

If any of the checks result in a red box being ticked, **DO NOT** start the job - *if there's a red, don't go ahead.*

General				
NO.	Check to be made	Yes	No	n/a
1	Is the working environment tidy?			
2	Is all appropriate protective clothing and equipment available?			
3	Will additional lighting be required?			

Confined Spaces				
NO.	Check to be made	Yes	No	n/a
1	Can communication be made with somebody outside the confined space?			
2	Are there any hazardous (toxic) gases, fumes or vapours in atmosphere?			
3	Are regular tests for gases or fumes being carried out?			
4	Is there adequate ventilation?			
5	Are there any residues inside the confined space, likely to give off gas, fume or vapour?			
6	Is there possibility of fire starting from flammable vapours, excess oxygen?			
7	Are flowing materials likely to enter the area?			
8	Is all mechanical and electrical equipment isolated?			
9	Is all equipment suitable for working in a confined space? (e.g. in an explosive atmosphere)			
10	Are there portable gas cylinders and internal combustion engines in close proximity?			
11	Is there safe access and egress into the confined space			
12	Are precautions taken against electric shock (and static electricity) by bonding and earthing?			
13	Are there signs of smoking?			
14	Are there adequate emergency and rescue procedures? (i.e. lifeline)			
15	Will the length of working time require additional controls i.e. forced ventilation?			

Excavation / Trench				
NO.	Check to be made	Yes	No	n/a
1	Is the person directly supervising the work fully experienced and competent in the support of excavations?			
2	Is the surface clear of plant, spoil heaps, materials etc. for at least 1.5m from edge of excavation?			
3	Are spoil heaps being properly controlled and will they stay like this in wet weather?			
4	Is the space between the trench and spoil heaps clear of pipes, bricks, stones and tools etc.?			
5	Is the work properly fenced off and 'signed', guarded and lit during the night?			
6	Is access adequate without anyone having to jump across the trench; i.e. foot bridges with guard rails available?			
7	Are there sufficient and suitable ladders available for access to and from the excavation?			
8	Is the supervisor ensuring that no one climbs on the timbering?			
9	Is the trench safe from exhaust gases from machines working in the trench or nearby?			
10	Does everyone know where buried surfaces are and are they clearly marked?			
11	Is there any movement or deterioration of the ground that may put adjacent services, roads or structures at risk?			
12	Is there excessive ground water?			
13	Are there proper sumps?			
14	Are un-sheeted faces safe, with no sign of peeling away etc.?			
15	Is timbering/shuttering in good condition?			
16	Are stops provided for mobile plant?			
17	Is visibility adequate in the trench?			
18	Has the customer completed (and able to demonstrate) a daily inspection?			
19	Is the excavation within the site boundary (inside the hoarding area), or are special precautions necessary to protect the public?			
20	If the excavation is a trench, what are the maximum depths to be supported and what size and length of pipes have to be handled? Can pipes be tested in short lengths or does the specification require testing manhole to manhole?			

Work Equipment (including electrical)				
NO.	Check to be made	Yes	No	n/a
1	Are all electrical items PAT tested			

Vehicles				
NO.	Check to be made	Yes	No	n/a
1	Are there barriers between the working area and vehicles?			

	Yes	No
Safe to proceed?		

Literature and website



Extensive information available online

We have further information on the Polypipe Group on our website, where you can keep up to date with the latest of our products, news and activities, and find answers to any questions you may have regarding our company as a whole.

We also have a comprehensive library of supporting literature available to download online. Going into extensive detail on every product and system, it is your one stop shop for information on our range and service offerings.

Water Management Solutions Literature



Water Management Solutions 'Roof to River' Brochure



Water Management Solutions Product Selector

All literature available at:
www.toolbox.polypipe.com

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Associated products



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Modular cell solutions for use in landscaped, pedestrian or other non-loaded applications.



Polystorm / Polystorm-R

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Polystorm Xtra

Modular cell solutions designed for use in deeper burial depths, or heavily trafficked and heavy loaded applications.



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Engineered pipe solution for large scale attenuation schemes.



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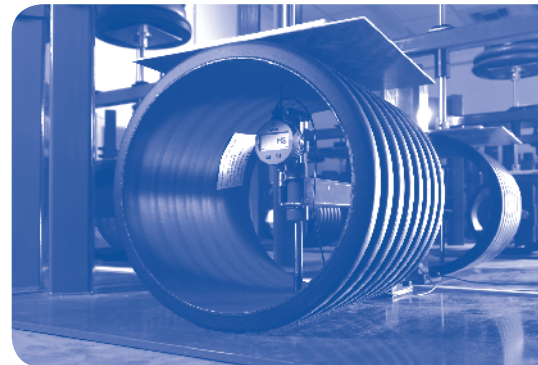
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