



 **Durapipe**  
fuel systems

Specialist pipework for safe fuel transfer





# Durapipe Fuel Systems – Delivering a safer future

## ● Durapipe Fuel Systems range

### Durapipe P-LX

Suitable for 10 bar pressure and vacuum applications, Durapipe P-LX has a smooth polyamide lining that offers minimal resistance to flow with maximum protection against permeation.

### Durapipe Secondary Contained P-LX

For additional security against accidental losses, Durapipe P-LX is also available in coiled lengths with an integral close fit outer sheathing. Complemented with a full range of electrofusion fittings and closures to facilitate interstitial monitoring.

*Durapipe Secondary Contained P-LX fully satisfies DEFRA requirements in respect to protecting buried fuel lines against accidental damage while providing a means of leak detection.*

### Durapipe P-LVX

Designed for gravity filling underground storage tanks (UST) and venting applications, polyamide lined Durapipe P-LVX has a larger bore that offers even less resistance to liquid and vapour flow under minimal available head.

## ● Durapipe Fuel Systems -

### Protect the environment

- Smooth polyamide lining
  - Resists fuel permeation
  - Optimum flow rates
- Polyethylene composite structure
  - Resists corrosion
  - Strong and ductile
  - Easy to install
  - Maintenance free
- Permanent fusion welded joints
  - Protects the environment
- Secondary containment
  - Interstitial monitoring
- Pressure and vacuum applications



## ● Durapipe Fuel Systems P-LX & P-LVX

Specially developed to offer total security in permanently filled fuel lines, Durapipe P-LX and P-LVX have a proven international record in fuel distribution systems.

Co-extruded using virgin grade materials, Durapipe P-LX fuel systems have a wholly polymeric structure that combine the strength and ductility of polyethylene with the chemical resistance associated with polyamides.

## ● High performance and corrosion resistance

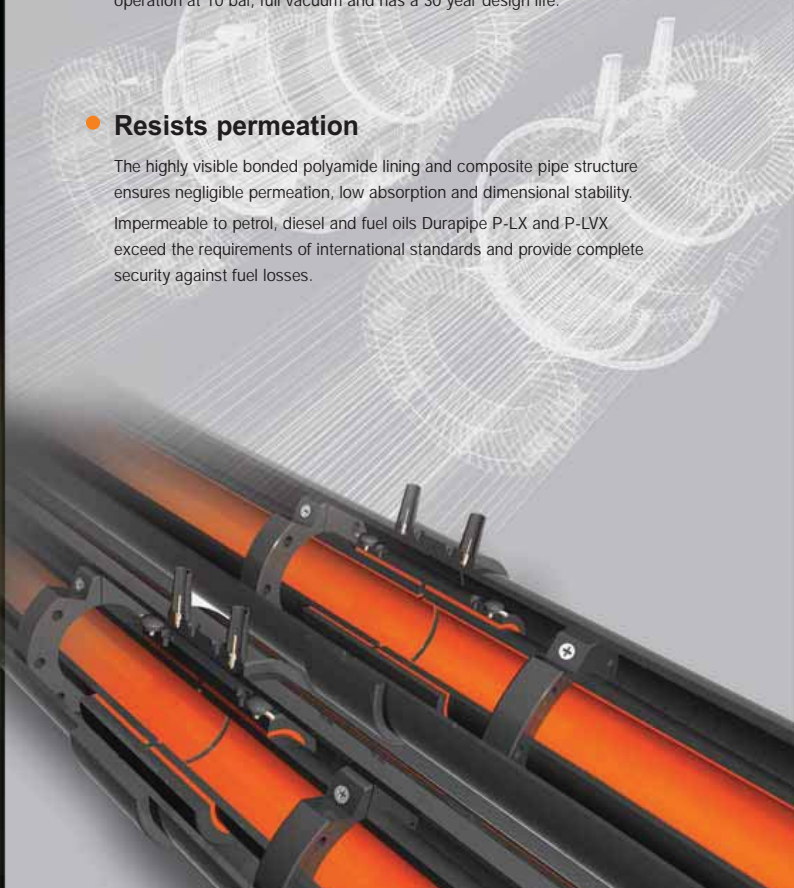
The sophisticated composite structure of Durapipe P-LX optimises the mechanical and physical properties of polyethylene and polyamide. The tough polyethylene outer layer provides excellent resistance to abrasion, mechanical and physical abuse and is corrosion and maintenance free.

Manufactured to ISO dimensions Durapipe P-LX is suitable for continuous operation at 10 bar, full vacuum and has a 30 year design life.

## ● Resists permeation

The highly visible bonded polyamide lining and composite pipe structure ensures negligible permeation, low absorption and dimensional stability.

Impermeable to petrol, diesel and fuel oils Durapipe P-LX and P-LVX exceed the requirements of international standards and provide complete security against fuel losses.



- **Secondary Contained Durapipe P-LX and P-LVX pipe**

Additional security against accidental fuel losses is achieved by using Durapipe P-LX Secondary Contained pipe systems. Durapipe systems exceed the industry requirements regarding secondary containment of pressurised fuel delivery systems and provide an opportunity for continuous interstitial monitoring.

Manufactured in-line, coiled Durapipe P-LX Secondary Contained pipe combines the integrity of P-LX primary pipe with a robust close-fit polyethylene outer sheathing. Colour coded green for identification the 4 bar rated secondary containment pipe incorporates internal self-centring ribs that enhance the system's combined strength while maintaining the interstice.

Fabricated straight lengths of Secondary Contained Durapipe P-LX and P-LVX are available. The system is internally centralised and fusion welded inside and out.

- **Secondary Contained fittings**

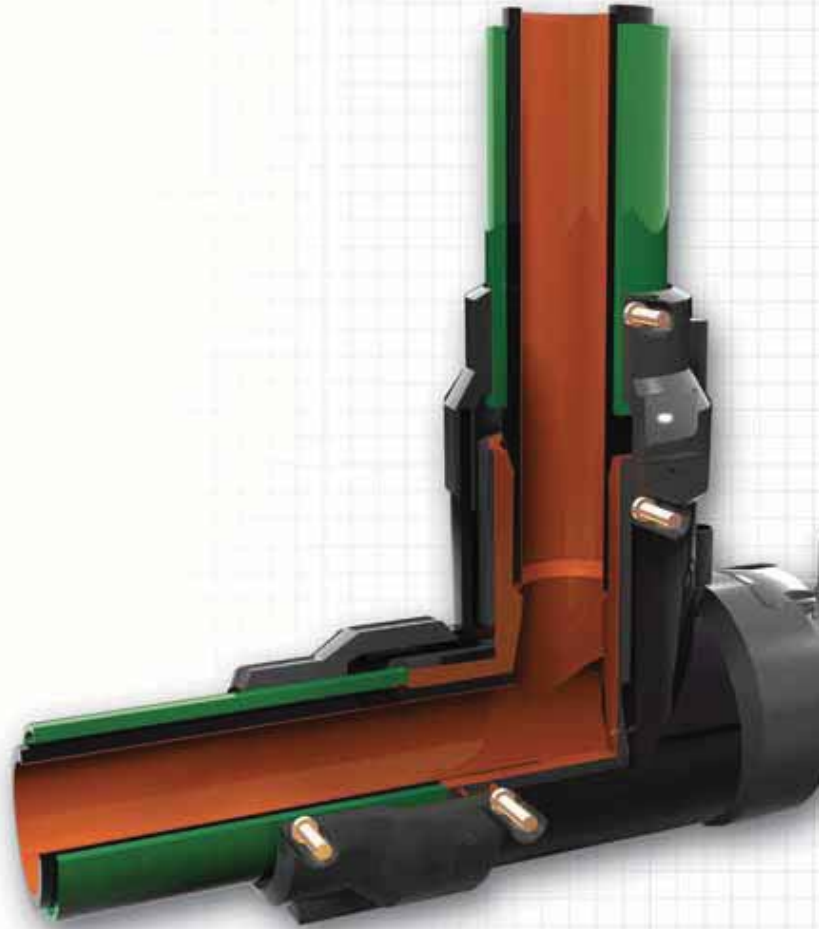
Total system security is maintained with Durapipe P-LX Secondary Contained fittings combining the reliability of the electrofusion primary fittings within a moulded polyethylene shell.

Fully encapsulated to give continuity of the interstitial path, the primary and secondary systems are installed simultaneously but can be fused and pressure tested independently.

- **Easy, flexible installation**

For ease of assembly and increased system integrity, Durapipe P-LX is supplied in single wall and integral close-fit secondary contained coils and straight lengths.

Lightness in weight, and ductility even at sub zero temperatures ensures Durapipe P-LX is easy to handle in all site conditions.



## ● Interstitial monitoring

Electrofusion pipe closures seal the secondary and primary pipes and allow periodic pressure testing of the interstice.

On remote or unattended installations leak detection systems can be installed to continuously monitor for accidental losses and system damage.

Detection systems can be designed for either over-pressure or under-pressure operation and fitted with a variety of alarm and warning devices.

Multi-port manifolds are used to simultaneously monitor a number of fuel lines.

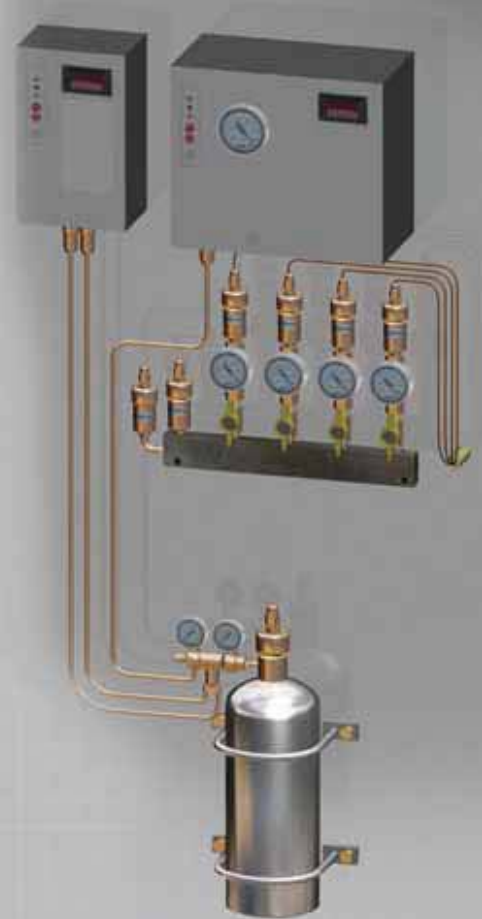
## ● Ancillary equipment

The integrity of Durapipe P-LX fuel systems is assured with careful pipe preparation and electrofusion jointing.

Consistent quality is made easier with the Durapipe mechanical pipe preparation tool and safe low-voltage electrofusion control unit (ECU) to synchronise the fusion cycle. Several models of the ECU are available ranging from the 110 voltage supply, manual and barcode units to the portable battery operated Nomad unit.

The barcode unit offers the added benefit of retrievable quality control data through the electronic storage feature.

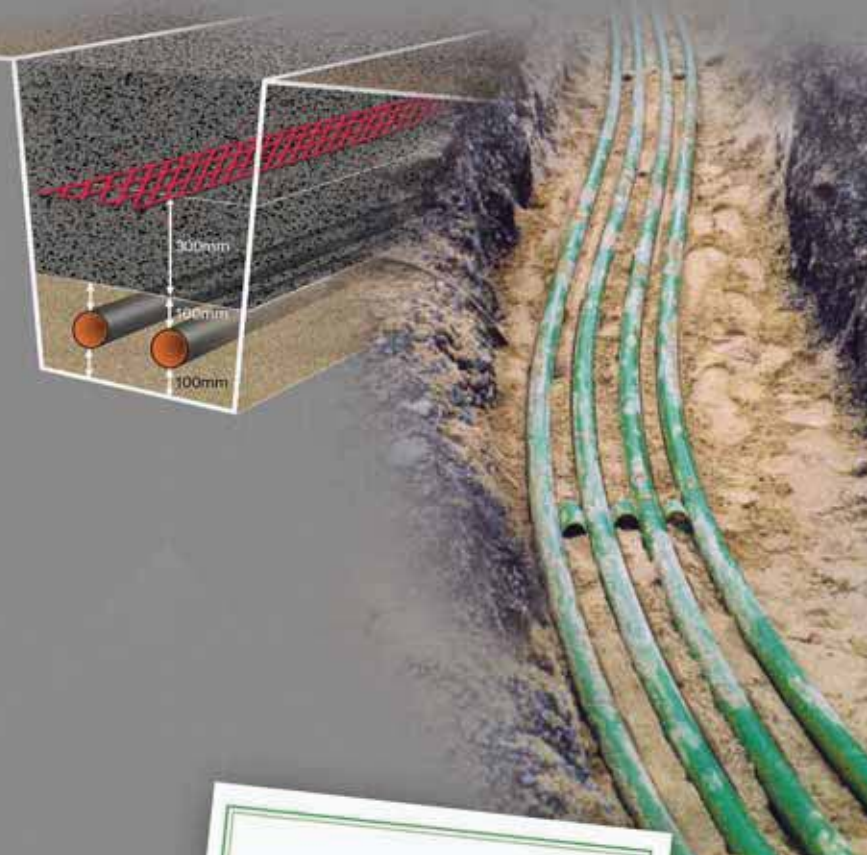
The portable Nomad is ideal for small projects that can generally be completed with just one charge of this battery operated control unit.



## ● Trench excavation

The below ground installation of Durapipe P-LX requires minimal excavation. Trench dimensions are governed by the pipe diameter and the site conditions. In general, trenches should be as narrow as possible but allow for soil compaction not less than the pipe(s) width plus 250mm.

While pipes can be laid in fine-grained soil, large stones and other hard objects i.e. temporary pipe supports should be removed. Ideally crushed gravel or sand should be used to bed and cover the pipe prior to backfilling and compaction.



### Minimum gap between buried pipes:

Pipe diameter	Gap
32 – 63mm	50mm
75 – 110mm	75mm
160mm	100mm

## ● Quality control

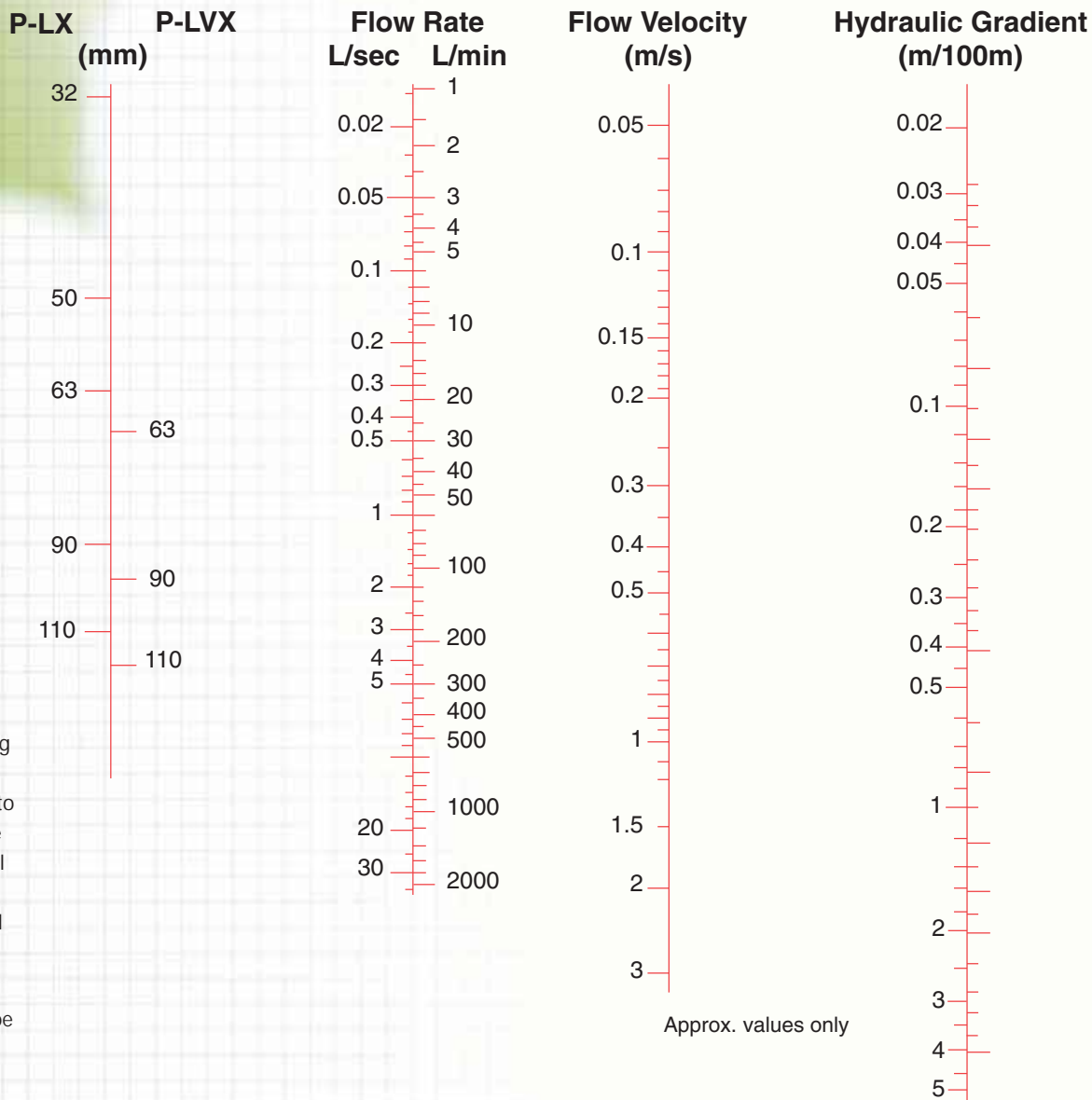
Designed and manufactured under a quality management system accredited to BS EN ISO9001, Durapipe fuel systems are rigorously tested during production to ensure compliance with in-house and external standards. Pipe lengths and fittings are clearly identified and batch/type tested to ensure dimensional conformity, cohesion and strength of the composite structure.

Durapipe P-LX exceeds the performance requirements of the Energy Institute (formerly the Institute of Petroleum) Specification for underground fuel pipes and is OFTEC approved.

Durapipe fuel systems have been independently assessed under the ERA Fuel Star Surveillance Scheme (Manufacturing Licence ERA 11109/MI01).



● **Flow nomogram**



● **System head losses**

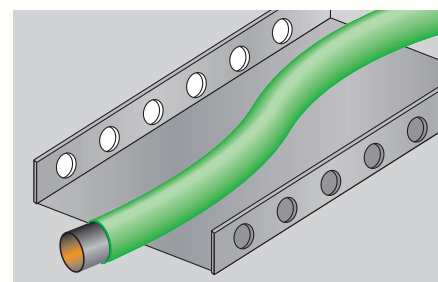
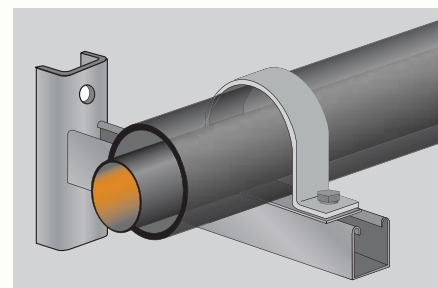
The smooth polyamide lining of Durapipe fuel systems offers negligible resistance to flow that will not deteriorate with use. Durapipe P-LX will maximise flow rates with greater pump efficiency and minimal operating cost.

The fully lined but larger internal diameter of Durapipe P-LVX improves the filling times of USTs and lessens the chance of tank pressurisation and over filling.

● **UV protection, insulation and pipe supports**

Durapipe P-LX Secondary Contained pipework systems provide excellent resistance to UV light and can be safely installed in some above ground applications. For the greatest protection against accidental damage and weathering, only straight (Black PE) Secondary Contained P-LX pipe lengths should be used above ground. Durapipe P-LX Secondary Contained close fit pipe coils are not suitable for above ground installations. Durapipe P-LX has good insulation properties and will resist freezing. To reduce the risk of waxing during operation in cold climates or for conveying viscous fuels Durapipe P-LX pipes can be supplied in pre-insulated and trace heated sections. This option is only available with straight secondary contained pipe lengths.

Rigidly fixed and used in conjunction with flat bar saddle clips pipe supports should be no less than 50mm wide. Pipe clips should permit free axial movement and should not restrict expansion or contraction. Coiled pipes can be installed in below ground formed pipe ducts but will require continuous support using electrical cable tray or similar.



**Durapipe P-LX Secondary Contained pipe support spacings:**

Pipe size	50#90mm	63#110mm	90#160mm	110#160mm
Support centres	1.1m	1.2m	1.5m	1.5m