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Pipe Network Solutions

2024 Heat Networks

Content

This presentation will provide a background to pre-insulated pipes.

We will review and compare the isoplus portfolio of Rigid and Flexible solutions.

The outcome will be that you will understand the basic differences between the two product offerings.

1 About Us

2 What is District Heating

3 What is a Pre-insulated Pipe

4 Choosing the right solution

5 Project support

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ISOPLUS – About Us

About Us

- Leading European producer and supplier of energy-efficient pre-insulated pipe systems

Eight manufacturing sites in Europe producing products to EN253 / EN15632

Production volumes 2023:

- Single & Double Steel pipes (KMR): 4,000 km
- Single & Double flexible pipes (PEX): 1,000 km
- Fittings & Joints: 680,000 pieces

- ISOPLUS UK

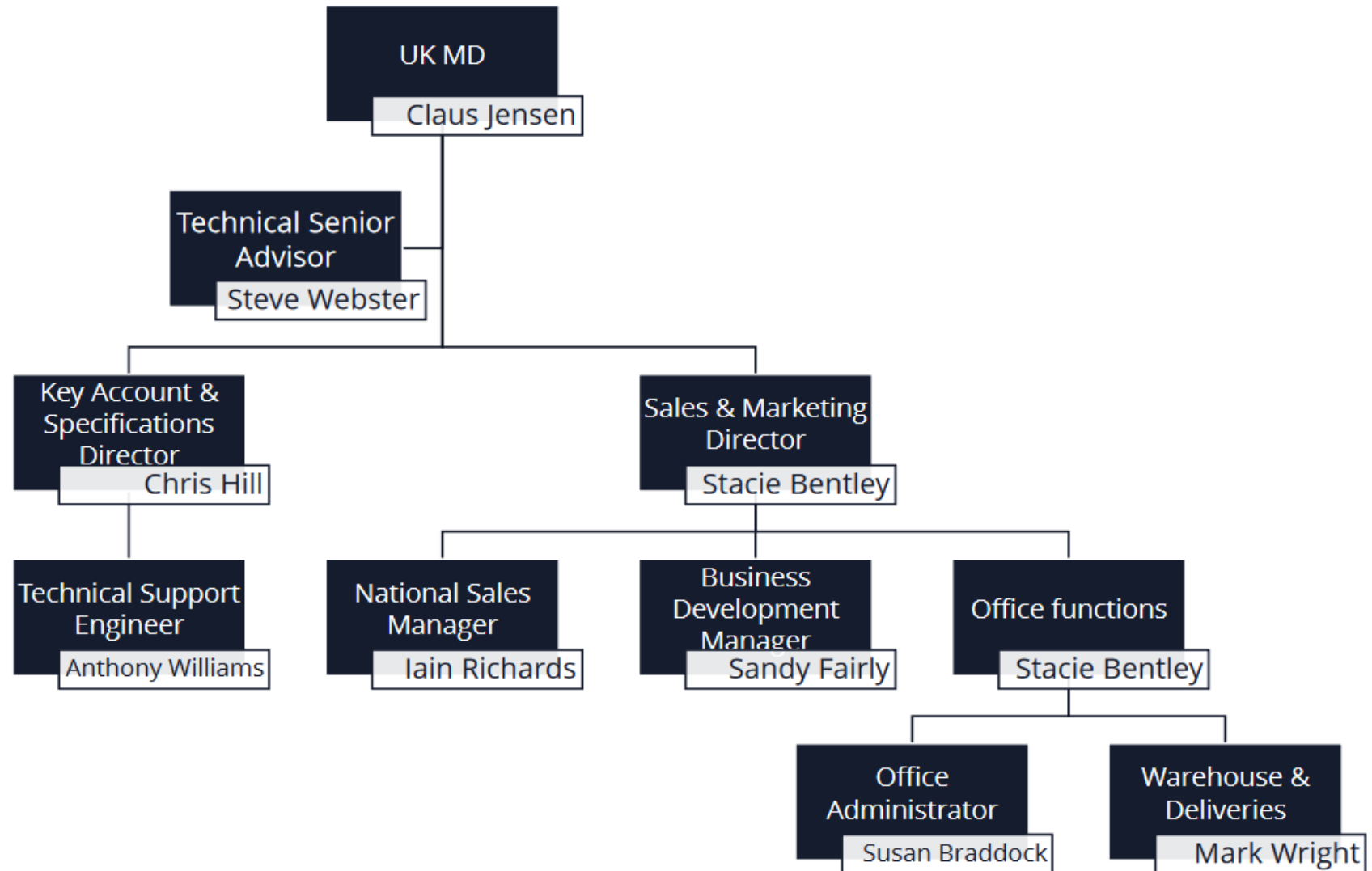
2 UK offices in Doncaster & Livingston

Technical support and training in Doncaster



Doncaster HQ and Training Academy

UK organization



Supporting growth in the UK

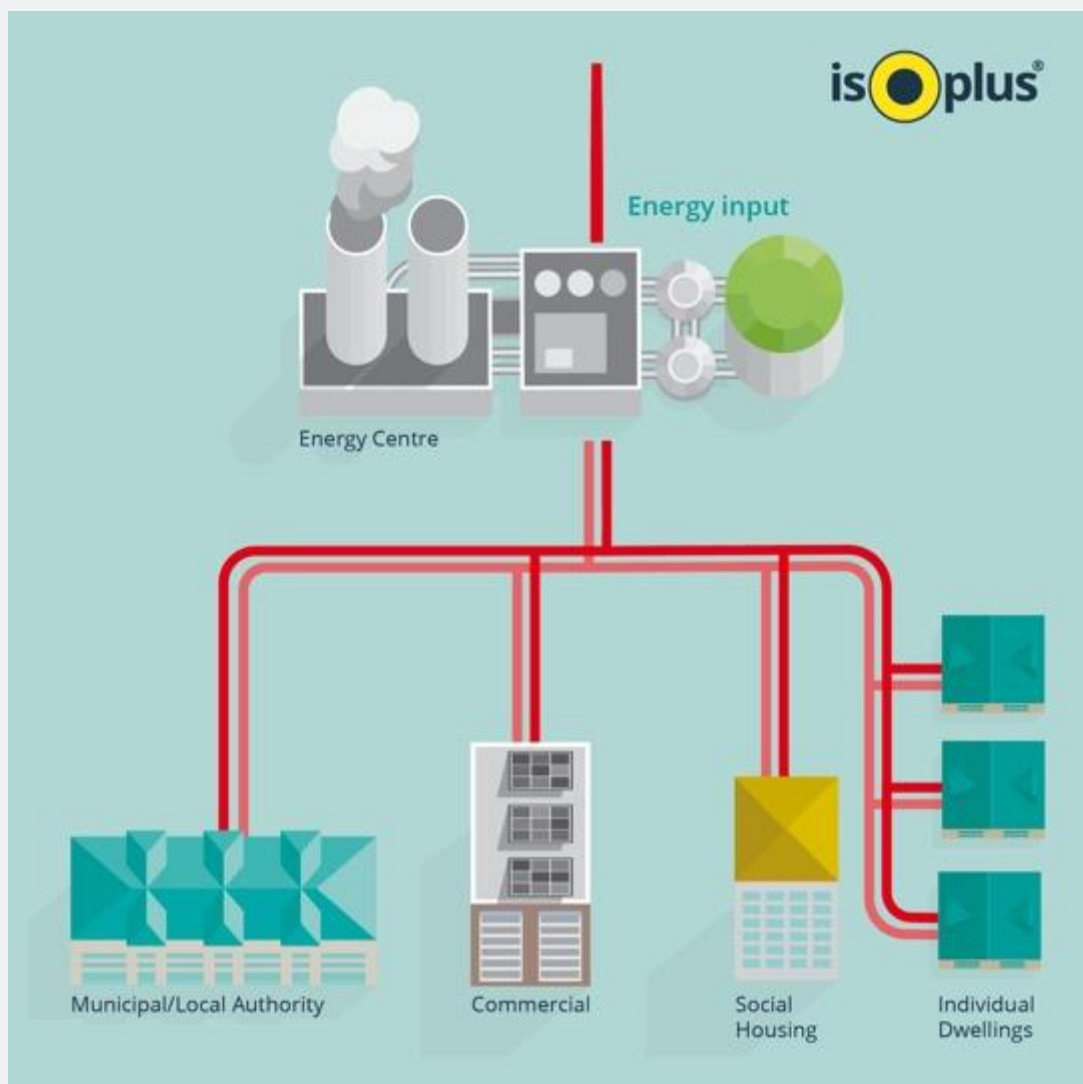
- Moving to larger premises - Larger stock holding
- Development of a dedicated Training Academy to support the growth of Heat Networks
- Service Team – On site support
- New software development
- New office in Scotland (Livingston)



Doncaster HQ and Training Academy

2

What are Heat Networks



A Heat Network is a centralised network that distributes heat from a single source to multiple buildings or dwellings.

Pre-insulated pipes are used to carry the hot water to the point of use and return to the energy source for re-heating

Pipe Material choice is determined by

- Temperature
- Pressure
- Distance
- No of Endpoints

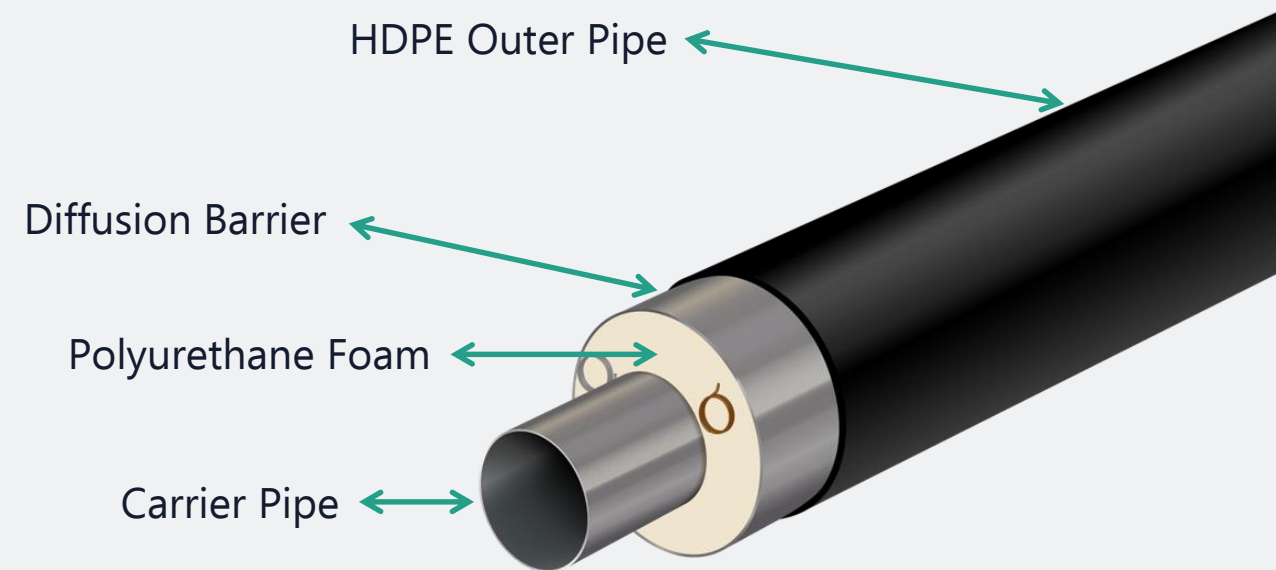
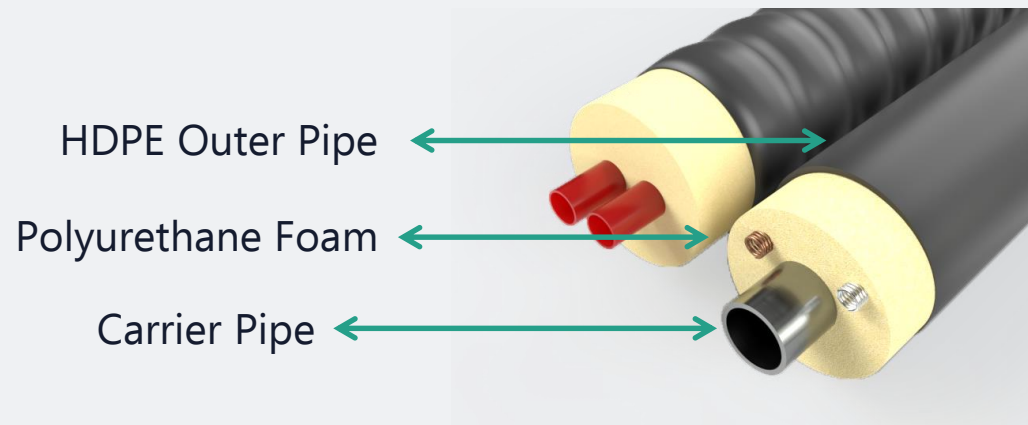
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What is a Pre-insulated Pipe

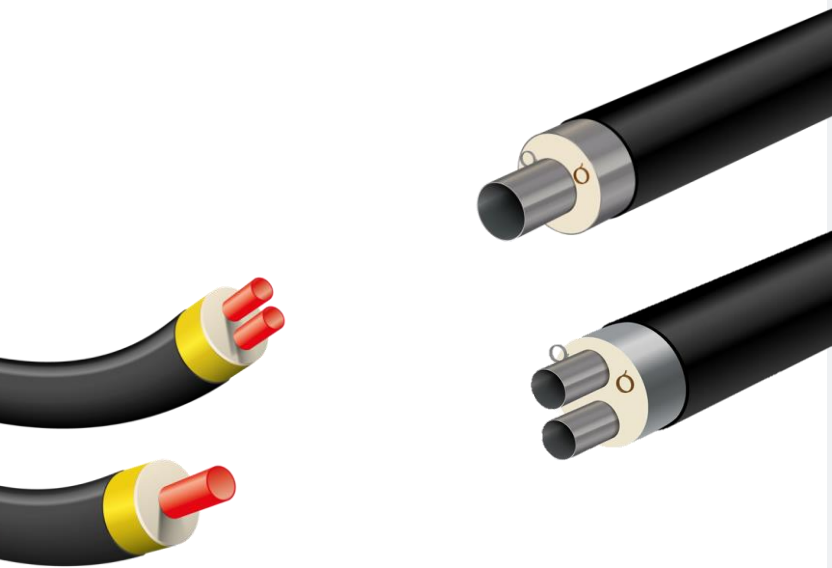
Pre-insulated Pipe *Constituent Parts*

Conti - with a diffusion barrier for increased heat retention

Traditional-without diffusion barrier



Two Main Types of Pre-insulated Pipes



Rigid Solution- Steel

- Carrier pipe material: steel
- Continuous operating temperature, single pipe max. 120°C with a peak temperature of 140 °C
- Continuous operating temperature, double pipe max. 130°C
- Max. operating pressure 25 bar
- Dimension range: 33-1220 mm
- Standard lengths: 6, 12 and 16 m
- Always delivered with a Nordic leak detection system

Best suited for:

- ✓ Transmission pipelines
- ✓ Distribution / Secondary networks
- ✓ House connections

Flexible Solution- PEX

- Carrier pipe material: PEX
- Continuous operating temperature up to +85°C with a peak temperature of 95 °C
- Available in single or double pipe, depending on the type
- Max. operating pressure up to 10 bar
- Dimension range: 20-160 mm
 - Standard lengths: Delivered in coils or cut-as-ordered
 - No leak detection system

Best suited for:

- ✓ Distribution / Secondary networks
- ✓ House connections

Comparison

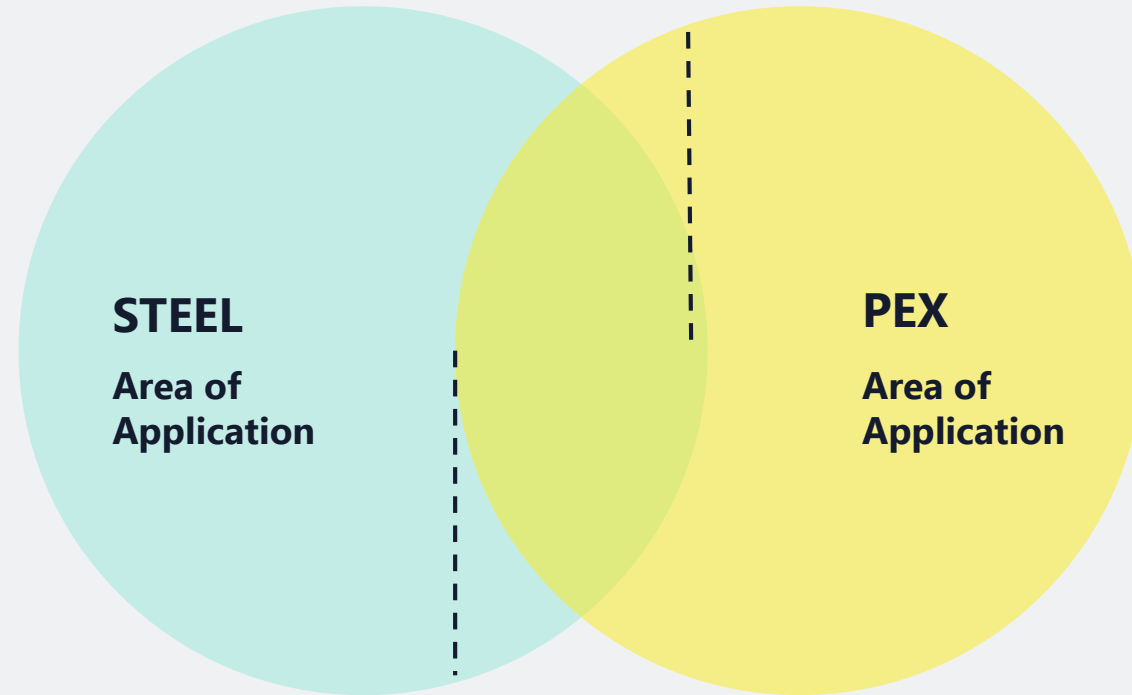
Application

LTHW

Low
Temperature
Hot Water

DHWS

Domestic Hot
Water System



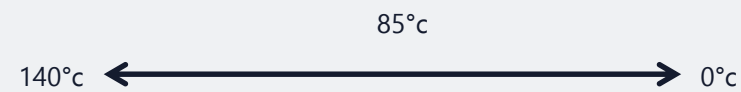
STEEL
Area of
Application

PEX
Area of
Application

Pressure



Temperature



Diameter



4

Choosing the right Solution

Expenditure Considerations

CAPEX (Capital Expenditure)

Pipe Material
Trench Excavation
Pipe Installation

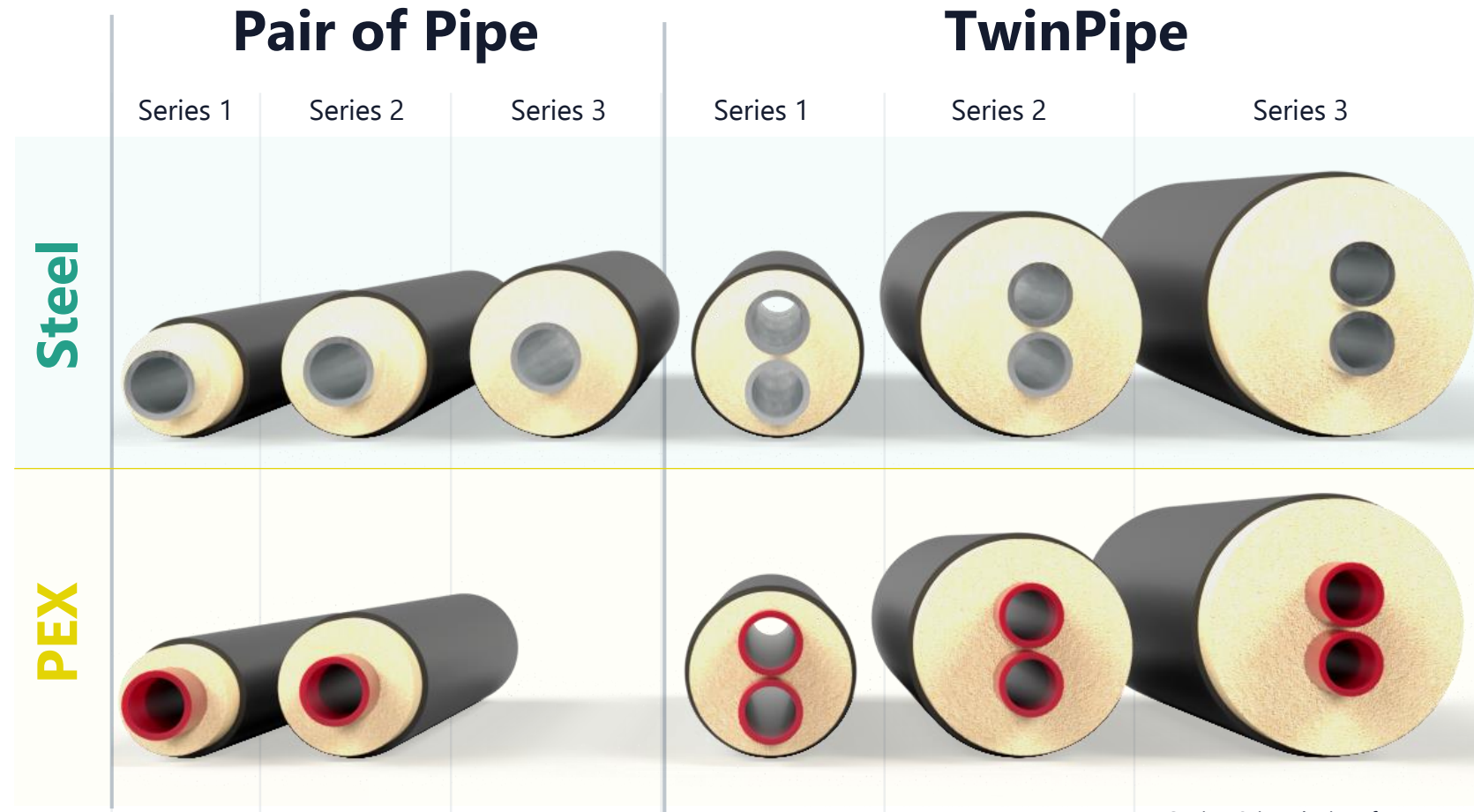
OPEX (Operational Expenditure)

Energy Losses

18 Distinct Options of Pre-insulated Pipe Systems.

You can choose from 18 variants, with or without a diffusion barrier.

The diffusion barrier ensures consistent heat loss properties throughout the network's lifetime.

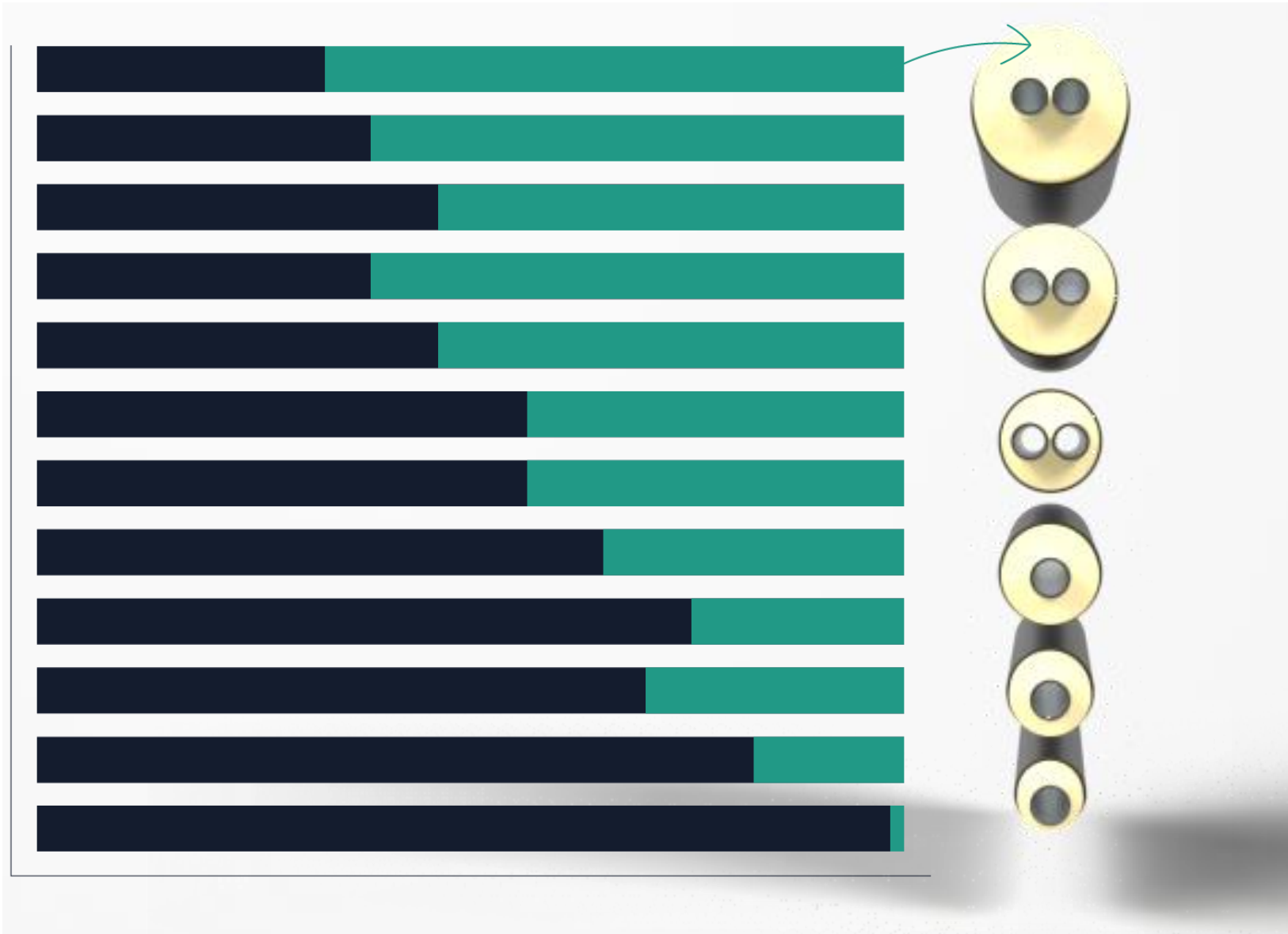


Series 3 insulation for PEX is available only in 20 & 25mm Twin)

Typical Thermal Performances

Example

Steel DN100



Casing Jointing Methods

Heat-shrink



Benefits

- Ease of installation
- Plant Requirements
- Quick to Install

Drawbacks

- Manual process
- None-welded (Mastic)
- Quick to Install

Welded



Benefits

- Higher quality reputation
- Automated – computer controlled

Drawbacks

- Labour intensive
- High plant costs
- Time consuming

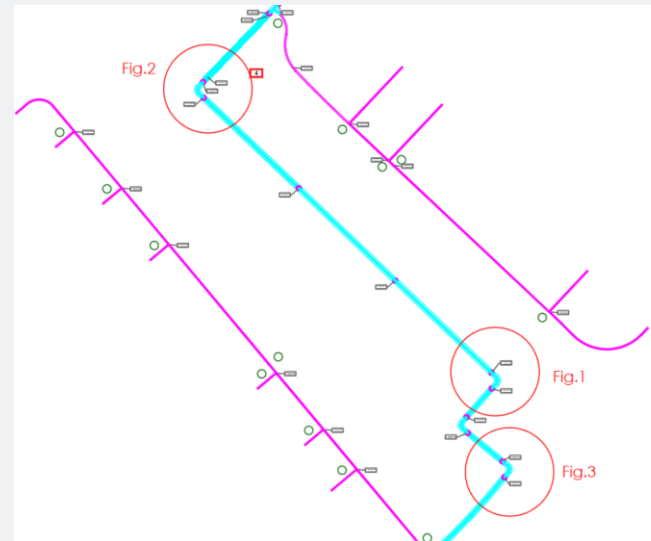
Bolt-on



- PEX / flexible solution
- Fibreglass

Project support

- Static Calculations
- Foam pad plans
- Leak Detection wiring diagrams
- Design validation
- Technical / product assistance
- Heat Loss calculations
- Total Cost of ownership
- Budget pricing (Feasibility)
- Training Academy (Supervision/Design/Joint installation)
- Site support (Leak Detection/Mechanical)
- Extensive stocks of pipe and fittings held in Doncaster



Product Code	Description	Qty
020551612076	76*76/250 Conti Steel pipe 12m w/a	2
020551612088	88*88/280 Conti Steel pipe 12m w/a	7
020551612114	114*114/355 Conti Steel pipe 12m w/a	23
110551090076	76*76/250 Bend 90° 1x1m Horizontal w/a	1
110551090114	114*114/355 Bend 90° 1x1m Horizontal w/a	8
170551202060	60*60/225 shut-off va w/2+2 vent. Broen w/a	1
170551202088	88*88/280 shut-off va w/2+2 vent. Broen w/a	1
270551076026	76*76/250 Branches straight 26*26/140 w/a	2
270551076042	76*76/250 Branches straight 42*42/180 w/a	1
270551076060	76*76/250 Branches straight 60*60/225 w/a	1
270551088026	88*88/280 Branches straight 26*26/140 w/a	5
270551088048	88*88/280 Branches straight 48*48/180 w/a	2
270551088060	88*88/280 Branches straight 60*60/225 w/a	1
270551114026	114*114/355 Branches straight 26*26/140 w/a	18
270551114033	114*114/355 Branches straight 33*33/160 w/a	2
270551114060	114*114/355 Branches straight 60*60/225 w/a	1
300551076060	76*76/250-60*60/225 Reducer w/a	1
300551088076	88*88/280-76*76/250 Reducer w/a	1
300551114088	114*114/355-88*88/280 Reducer w/a	1
504000700180	180 Weldable joint L=700 mm	3
504000700250	250 Weldable joint L=700 mm	9
504000700280	280 Weldable joint L=700 mm	16
504000700355	355 Weldable joint L=700 mm	53
511700180140	180/140 Heat-shrinkable reducer joint L=700mm	1
514700140110	140/110 Weldable reducing joint L=700mm	25
514700160125	160/125 Weldable reducing joint L=700mm	2
514700225200	225/200 Weldable reducing joint L=700mm	5
514700250200	250/200 Weldable reducing joint L=700mm	1
561000000015	Joint foam No.5.5	35
561000000008	Joint foam No.8	106
561000000018	Joint foam No.8.5	9
730000000041	Foam pad IIII - 1000x2000x40mm 35 cutting	41
850000001002	Crimp connectors (100 pcs)	3
850000001012	Wire holders (50 pcs) PA6	10
850000001053	Crepe-tape 50 mm (50 m)	4
850000001072	Solder paste	1
850000001082	Tin solder	1

Pipe system	Flow parameters		PUR	Forward		Return		Total				
	Series	L		U	Heat loss	U	Heat loss					
Steel pipe	Series 1	500	1000	0.026	0.242	0.7	969.8	0.3	944.8	6.8	6.8	57.8
Steel pipe	Series 2	500	1000	0.026	0.365	4.3	4254	0.7	709	5	5	43.8
Steel pipe	Series 3	650	1000	0.026	0.262	3.4	3384.3	0.8	564.1	3.9	3.9	34.2
Total											15.5	108.8

Thank you

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