

Uponor

Uponor Q&E Shrink-Fit

The world's most popular PE-X system



Uponor Q&E (Quick & Easy Shrink-Fit)

The ideal solution for hygienic drinking water and heating

The result of more than 4 decades of experience

Uponor Q&E Shrink-Fit is manufactured from PE-Xa piping and connects to either PPSU or brass fittings, manifolds and a wide range of accessories. With over 4.2 billion metres of Q&E Shrink-Fit PE-Xa pipe installed around the world since 1972, Uponor has set a record that is unrivalled in the industry.

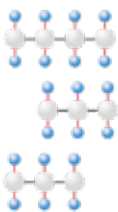
Your benefits:

- Lightweight and flexible. Perfect for modern building designs
- No corrosion or limescale accumulation
- Good resistance to most chemical agents
- Low friction losses, which maintains pressure and flow
- Reduction of water hammer- by up to 30%
- Durable material that is not affected by high water velocities or low pH water
- Joint free plumbing with manifold applications
- Full bore connections
- Clean, quiet and healthy
- Design life of over 50 years *
- 25 year warranty

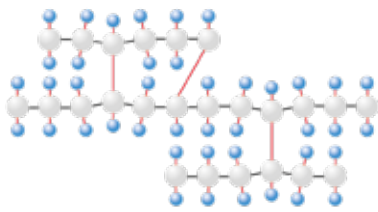
* (Studvik's durability tests in Sweden and BASF in Germany from 1973 to 2009 at 95 ° C / 12 bar. However, these are not our UK operating conditions which follow the conditions of EN ISO 15875 for temperature and pressure).

Temperature and pressure resistance through crosslinking

The crosslinked polyethylene (PE-Xa) pipes have molecular chains attached in a three-dimensional network, which makes them more durable within a wide range of temperatures and pressures. In turn, the cross-linking of Uponor PE-Xa pipe is above 82%, which gives our pipes a thermal-elastic memory. This high degree of crosslinking results in a more uniform product with no weak links in the molecular chain. The properties of PE-Xa pipe make it the most flexible PE-X pipe on the market and also offers a better resistance to stress than either PE-Xb or PE-Xc pipe materials.



Molecular structure of non-cross linked polyethylene



Molecular structure of cross linked polyethylene

Q&E Shrink-Fit connections

Q&E Shrink-Fit is a proven connection technology, with more than 500 million accessories sold worldwide. The connection concept is based on the elastic characteristics of the Q&E Shrink-Fit PE-Xa pipe and the Q&E Shrink-Fit Evolution Ring, to achieve a bond that is stronger than the pipe itself.

This unique system makes secure, permanent connections without the need for hot works, adhesives, fluxes or sealants. The elastic memory of the Q&E Shrink-Fit pipe forms an airtight seal around the fitting, creating a reliable and secure connection in seconds!

Available in sizes ranging from 12-63mm, fittings can be selected in either brass or PPSU to suit each application.



Your benefits:

- Quick and easy, making reliable joints in seconds. Saving installation time and costs
- Safe and clean installation. No hot works, adhesives or sealants required
- Corrosion free and no build up of limescale. Provides hygienic, clear and clean water
- Quieter installations. No noise produced by water velocity or hammer
- Reliability. Q&E Shrink-Fit is a permanent joint system that requires no maintenance
- More flow. The inside diameter of Q&E fittings provides more flow and reduces flow loss
- EVOH oxygen diffusion barrier
- Pipes and accessories from 12 to 63mm with adaptors to connect to any type of installation including copper and steel systems



Not all PE-X is the same

Depending on the production method, the degree of polyethylene cross-linking (PE-X) varies. The standard BS EN ISO 15875 specifies the designation of the cross-linked polyethylene tube (PE-X) based on its manufacturing process and the minimum level of cross-linking as follows:

Cross-linking method	Pipe type	Minimum degree of cross-linking according to EN ISO 15875
Peroxide	PE-Xa	70% (Uponor PE-Xa up to 85%)
Silane	PE-Xb	65%
Electron beam	PE-Xc	60%

A Q&E Shrink-Fit joint in 3 short steps!



Place the ring

Expand the pipe

Insert the fitting



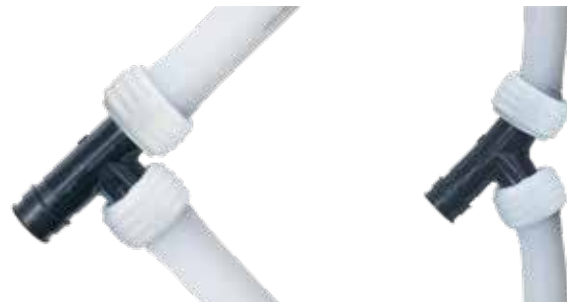
Features of the Uponor Q&E Shrink-Fit pipe

- Cross-linking of up to 85%
- Higher degree of three-dimensional molecular links
- Higher flexibility / Smallest bend radius
- Lower risk of kinking the pipe
- Thermal and elastic memory
- Higher stress performance capability
- Greater resistance to building materials and chemical agents

Q&E Shrink-Fit PPSU fittings are made of Polyphenylsulfone, a polymer that has been used successfully for many years in the most demanding environments such as medical, aerospace and plumbing industries. In fact, laboratory tests show that Uponor Q&E Shrink-Fit PPSU fittings are able to withstand up to 1,300 kg of extension force without failure.

Uponor's cross-linking method makes Q&E Shrink-Fit pipe more difficult to kink than PE-Xb or PE-Xc pipes. However, if the tube is inadvertently pinched, it's shape can easily be recovered with a heat gun, without reducing the service life.

The strength of Q&E Shrink-Fit PPSU



Start of the test

Approximately 1,300 kg of force

Your benefits:

- Fast, innovative joints with minimal effort, reducing installation time
- 100% reliable
- No O-rings or other moving parts, which eliminates the possibility of leaks
- Colour coded Evolution rings for pipe identification
- Seals on the inside bore of the pipe
- Correct depth pipe insertion guides
- Fittings packaged in a way to protect hygiene
- FOC, certificated, on-site training available

Q&E Shrink-Fit Tools (Milwaukee)



M12
(12-25mm)

M18 VLD
(40-63mm)

M18
(12-40mm)

Why is Uponor Q&E Shrink-Fit the preferred system for everyone?

Characteristics	Uponor PE-Xa	Other PE-X*	Copper	Black steel	PB
Flexible, with a tight bend radius. Reduces the number of necessary connections which therefore, minimises the cost of installation and the possibility of leaks	Yes	Yes	-	-	-
Sealing connection without O-rings, moving parts or sealants	Yes	-	-	-	-
100% reviewable connections once made	Yes	-	-	-	-
The pipe is recoverable in case of 'kinks'	Yes	-	-	-	-
Full bore connections	Yes	-	Yes	Yes	-
Colour coded pipe identification (Evolution Rings)	Yes	-	-	-	-
Resistant to corrosion, scale build-up and stresses	Yes	Yes	-	-	Yes
Reduces the noise caused by water velocity and water hammer	Yes	Yes	-	-	Yes
Reduces the risk of condensation in cold water / cooling lines	Yes	Yes	-	-	Yes
Installation of plastics, more hygienic and healthy	Yes	Yes	-	-	Yes
Lightweight system	Yes	Yes	-	-	Yes
Sizes up to 63mm for commercial applications	Yes	-	Yes	Yes	-

(*PE-Xa, PE-Xb or PE-Xc with press-fit joint system)

Case studies

(Full case studies are available on request)

Country	Project	Building Type
United Kingdom	Addenbrooks Hospital, Cambridgeshire	Hospital
	NV Buildings, Salford	Residential
	Elmley HMP, Kent	Prison
	Royal Holloway College, Egham	Education
	PSV Building, Bury St Edmunds	Commercial Office
	Hotel Russell, London	Hotel
	Maiden Lane, Camden	Office



Hotel Russell, London
16,000m of Q&E Shrink-Fit



Maiden Lane, London
18,600m of Q&E Shrink-Fit



Royal Holloway College, Egham
25,000m of Q&E Shrink-Fit

Why choose Uponor?



Experience

With over 40 years of successful service and more than 4.2 billion metres of installed piping, Uponor PE-Xa has the longest record of performance in the industry.



Innovators

Uponor continuously delivers innovative new products for use with Q&E Shrink-Fit and to compliment other products within the solutions portfolio.



Quality

- 1) Products manufactured in Europe to the highest international standards
- 2) Proven track record of delivering high quality products in live applications
- 3) More than 80 certifications and approvals around the world



Support and Technical Service

The Uponor team offer a complete support package from initial client concepts, design and estimating through to project commissioning.



Warranty

We offer a 25 year product warranty* (* 2 years on valves and controls)



Complete solutions

Uponor's ability to partner with customers on projects is unrivalled. Our product ranges offer a single point of contact for planning complete projects and installations. Products for Building Services and Indoor Climate compliment each other to provide complete project solutions from 'off-site' heat generation, distribution, through to point of use:

- **Ecoflex**
Pre-insulated underground pipe for domestic services, heating and cooling applications
- **Ecoflex Thermo PRO**
Pre-insulated underground pipe for heat distribution
- **Multi Layer Composite Pipe system (MLCP)**
For domestic services, heating and cooling applications
- **HIUs and cooling units**
For local generation of domestic hot services, heating and cooling
- **Hygiene systems**
For the maintenance and delivery of hygienic water for domestic services
- **Radiant heating and cooling (UFH)**
- **T.A.B.S**
Thermally Active Building Solutions
- **Heating and cooling controls**
Including options for BMS interface

Tested and certified worldwide

Since 1972, Uponor have manufactured enough PE-Xa pipe to go around the world over 100 times.

Virtually all of our installed systems are still in service today in both commercial and domestic applications. Buildings such as domestic homes, hospitals, hotels and commercial properties all benefit from the length of service offered by the modern materials.

Over the last 45 years, our pipe has been rigorously tested and certified in many countries to ensure they are able withstand the demands and requirements of a modern building. For us, the final test is that we exceed the expectations of our customers.

Certifications worldwide

- WRAS • DVGW • DNV • VDE • DIN CERTCO • SVGW
- AENOR • Kiwa • CSTB • IPL • ACS • SITAC • SABS
- ETA • Green Building Council

Worldwide Regulations

- EN ISO 15875 • DIN 1988 • ASTM F876 y F877 • ASTM F1960 • CAN • NSF • ANSI • CSA • AS/NZS 2492:2007



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