- **Qual-Oil?**

Qual-Oil is made from PEX material so it's durable yet flexible and easy to install. It can be stored in the open as its UV stabilised. It's aesthetically pleasing with a green colour which is compatible with the outdoors. It's resistant to freezing (tested to -20ºC). When installing oil pipework inside, it is necessary to connect the external Qual-Oil pipe with copper pipe at the point of entry of the building, it is for underground use only. This can be done at the position of the fire valve, which should always be on the outside of the building. Qual-Oil should not be used on the boiler side of the fire valve

- **Can Qual-Oil be connected directly to a boiler?**

Qual-Oil should not be used within 1 metre of the oil burner / boiler. A minimum of 1m of flexible steel oil hose complete with fire valve (supplied as standard parts with oil burners) must be used between Qual-OIL pipe and the oil burner/boiler.

- **Qual-OIL recommended operating parameters**

The following is a guideline as to what the operating parameters of Qual-Pex are;

10 Bar	20 ºC
5 Bar	50 ºC

- **Expansion and Contraction of Qual-OIL?**

Qual-OIL has a high co-efficient of expansion (1.5×10^{-4}/ºC @ 20ºC to 2.8×10^{-4}/ºC @ 82ºC). You should allow for 1% expansion on the length when the pipe is installed at 20ºC for use up to 82ºC.

- **Can Qual-OIL pipe be bended?**

Yes. Slow 90º bends can be used angle brackets are utilised, otherwise standards joints (e.g. Elbow joints are used). The pipe shouldn't be heated with a blow lamp or hot-air gun. Minimum bend radii as follows:

  - 10mm Qual-Pex 45mm using pipe clips
  - 12mm Qual-Pex 60mm using pipe clips
  - 15mm (or ½") Qual-Pex 100mm using pipe clips (Or 90mm using angle brackets)
  - 22mm (or ¾") Qual-Pex 175mm using pipe clips
  - 28mm (or 1") Qual-Pex 300mm using pipe clips

- **What does the cross-linking do?**

Qual-OIL is manufactured from Silane cross-linked high density polyethylene. Cross-linking is a widely employed method of forging permanent links between polymer chains to form an interwoven three dimensional lattice within the pipe wall. This greatly reduces the ability of the polymer to creep with time and allows the burst resistance of Qual-OIL to be maintained almost indefinitely at high temperature. The cross-linking process is irreversible and is not lessened by continuous exposure to hot water.

- **Mechanical properties of Qual-OIL at 20º**

Tensile strength at break	20mPa @50mm/min
Elongation at break (minimum)	150%
Impact strength (notched Izod)	900J/m notch
Coefficient of linear expansion (20ºC)	1.5×10^{-4}/ ºC
Coefficient of linear expansion (82ºC)	2.8×10^{-4}/ ºC
Brittleness temperature	below -20 ºC

- **Can Qual-OIL be buried in concrete?**

Yes. Concrete doesn't have an adverse affect on Qual-OIL and the pipe maybe buried directly in concrete (subject to bye-laws). However, in order to prevent heat loss, it's advisable to thermally insulate the pipe. Fittings must be protected against direct contact with concrete, at all times.

- **Can pipe jointing compounds be used with Qual-OIL?**

Yes. Both Boss White and Foliac compounds have tested satisfactorily with Qual-OIL.

- **Flow characteristics**

The bore of the Qual-OIL pipe is slightly different to that of copper or steel pipe of the equivalent outside diameter. The consequent reduction in flow rate for a given pressure head should be considered when designing a system – design flow rates, head losses and velocities.

- **Connecting Qual-OIL**

Qual-OIL should only be connected with recommended compression fittings and metric size copper inserts.

- **Pressure conversions**

Bar	→	PSI	14.503861
PSI	→	Bar	0.068948