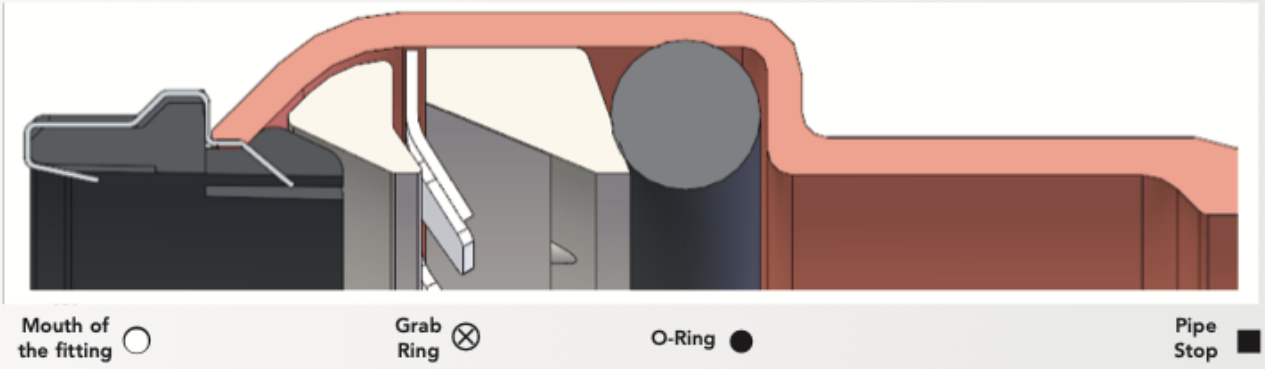
Insertion Force

Each Line on the graph illustrates the force required to insert a tube into the fitting. Starting at the left hand side of the graph where the tube enters the mouth of the fitting and continuing towards the right hand side past the grab ring, then the o-ring until the tube contacts the pipe stop where there is a sharp rise in force at the

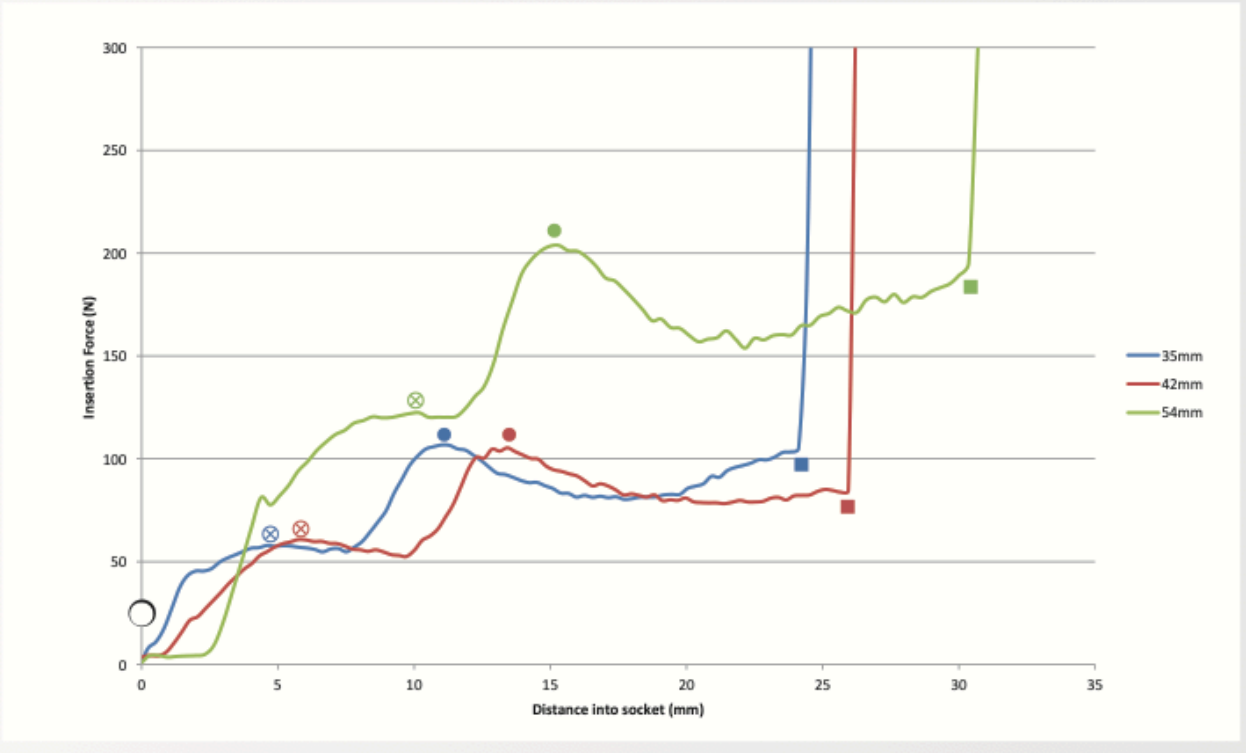
The force is given in N (Newtons), to convert this to Kg force a rule of thumb is to divide the force in Newtons by 10 (e.g. 200N = 20kg force).

Note: In practice the insertion force experienced by a typical user will be significantly lower than these graphs indicate as these laboratory tests do not take into account the twisting action used in 'real life' installation.

FITTING COMPONENTS



FORCE GRAPH



Designation	Black EPDM Tectite/XPress
Maximum service temperature °C	180
Low service temperature °C	- 50
Water/Steam Resistance	
Water/Steam resistance <40°C	✓✓✓
Water/Steam resistance <80°C	✓✓✓
Water/Steam resistance <150°C	✓✓
Water/Steam resistance >150°C	✓

Designation	Black EPDM Tectite/XPress
Fluids Resistance	
Acid	
Acetic 10%	✓✓✓
Formic	✓✓✓
Hydrochloric 20%	✓✓✓
Nitric 30%	✓✓✓
Phosphoric 20%	✓✓✓
Sulphuric 30%	✓✓
Alkalis	
Barium hydroxide	✓✓✓
Calcium hydroxide	✓✓✓
Sodium hydroxide	✓✓✓
Alcohols	
Butyl alcohol (Butanol)	✓✓
Ethyl alcohol (Ethanol)	✓✓✓
Methyl alcohol (Methanol)	✓✓✓
Amines	
Ethylene diamine	✓✓✓
Ammonia – cold gas	✓✓✓
Ammonia – hot gas	✓✓
Chlorides	
Ammonium chloride	✓✓✓
Calcium chloride solution	✓✓✓
Magnesium chloride	✓✓✓
Zinc chloride	✓✓✓
Gases	
Butane	X
Carbon dioxide (dry)	✓✓
Chloride (wet)	✓
Freon 12	✓✓
Freon 21	X
Freon 22	✓✓✓
Freon 134a	✓✓✓
Natural gas	X
Methane	X
Propane	X
Oils and Fuels	
ASTM No 1 oil	X
ASTM No 2 oil	X
ASTM No 3 oil	X
ASTM fuel A	X
ASTM fuel B	X
ASTM fuel C	X
Diesel oil	X
Diesel oil + RME (10%)	X
Mineral oil (low aromatic)	X

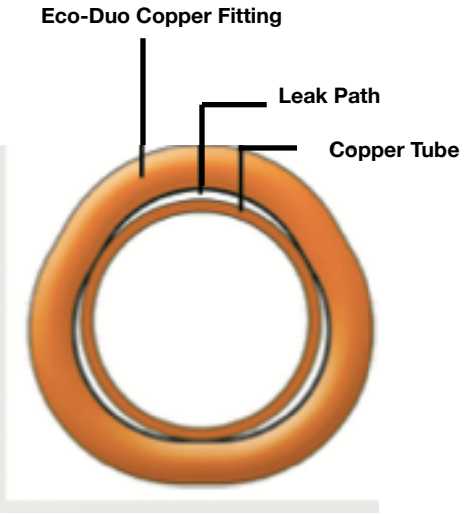
Designation	Black EPDM Tectite/XPress
Oils and Fuels cont	
Hydraulic oils (petroleum base)	X
Lubricating oils	X
Paraffin	X
Petrol	X
Silicone oil/grease	✓✓✓
Transformer oils	X
Vegetable oils	✓
Solvents	
Acetone	✓✓✓
Benzene	X
Carbon tetrachloride	X
Dimethyl formamide	✓✓
Ethyl acetate	✓✓
Methyl ethyl ketone	✓✓✓
Tetrachloroethylene	X
Toluene	X
Turpentine	X
Xylene	X
Miscellaneous	
Ethylene glycol	✓✓✓
Detergents	✓✓✓
Dioctyl phthalate	✓✓
Formaldehyde	✓✓✓
Hydrogen peroxide (90%)	✓✓
Phosphate esters	✓✓✓
Potassium nitrate	✓✓✓

Key to Media Table	
✓✓✓	**Excellent** – Recommended
✓✓	**Good** – Minor to Moderate effects
✓	**Fair** – Moderate to severe effects
X	**Poor** – Not recommended
•	Insufficient data available
* Conditions Apply	Temperature or other limitation affecting polymer choice

These tables refer to room temperatures tests. For other conditions and additional media advices please refer to Water Kinetics for advice

Leak Before Press

Water Kinetics Eco-Duo Copper fittings are manufactured with a subtle triangulation of the mouth of the fitting, this feature ensures joints will leak if inadvertently left un-pressed.
Any un-pressed joints can be identified during system testing and rectified.



Electrical Continuity

When installed correctly Eco-Duo COPPER will provide electrical continuity across joints and is suitable for supplementary equipotential bonding.

MATERIALS

Eco-Duo COPPER is made from robust engineering materials.

All Eco-Duo Fittings have a Black 'O' Ring	
Body	Copper or Copper Alloy
Seal	EPDM

Water Kinetics Eco-Duo fittings use the same O ring technology to provide the best and widest range of heat free jointing. It is important to check compatibility between the O Ring and the fluid in the system. The table below is a guide for the Contractor, Installer and Specifier, and shows the compatibility of the Black 'O'Ring with common fluid types and some gases.

EPDM - Ethylene Propylene Diene Monomer - This is the standard, **BLACK** O Ring that is used in Eco-Duo Copper ranges. This material is also used for the Leak before Press O Rings used in Eco-Duo fittings.