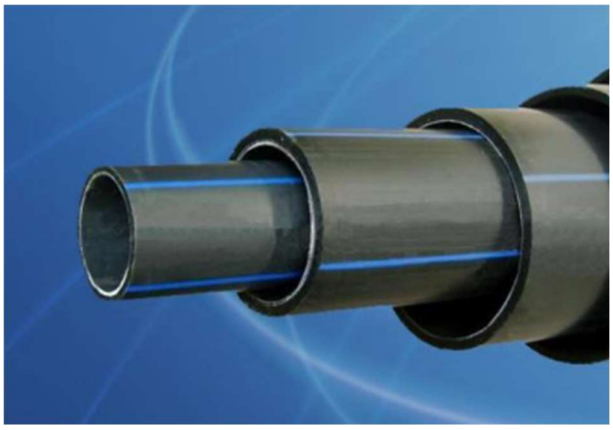
HDPE AND GRP PIPES COMPARISONS

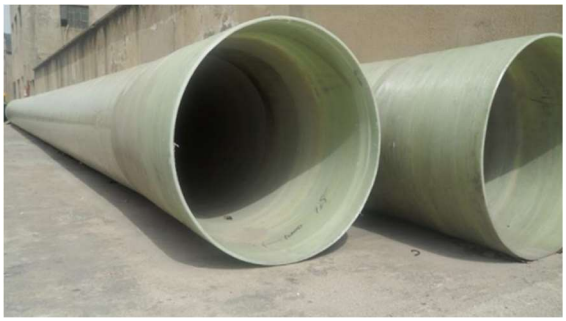


ADVANTAGES OF HDPE PIPES

- 50-100 years lifetime.
- No corrosion and microorganism formations.
- Pipe type which least affected by chemicals.
- Good resistance to flow and pressure fluctuations. Fatigue resistance is very high.
- Life weight and easy to carry. They can be carry nested and this is means easy to transport.
- It fits very well to terrain shapes. It is the type of pipe that is least affected by eartquakes and other soil movements. Because, these pipe's elasticities are very high. It is capable of breaking elongation up to 600% .
- Aseembly methods are simple. They can be assemble at channel's inside or outside.
- Butt welding and electrofusion welding options are easy to thightness.
- Reduces the use of fittings due to its ability to bend up to 18-20 times the pipe diameter. So, this means that it reduces to cost.

DISADVANTAGES OF HDPE PIPES

- Since the raw material is of petroleum origin, it is supplied by imported means and and therefore prices may vary periodically.
- Since the raw material is of petroleum origin, it has more flammable properties.
- They are sensitive to cutting bumps and scratches.
- HDPE pipes creates application diffuculties in large diameter and high pressure lines.



ADVANTAGES OF GRP PIPES

- Robust and durable pipe type.
- İnternal surface friction is low.
- Hafiftir, taşıma ve nakliyeleri kolaydır.
- Life weight and easy to carry. They can be carry nested and this is means easy to transport.
- 50 years warranty.
- Can be installed in existing of pipes internals for he renovation of old lines.
- It has practical assembly methods with options of sealing and sleeve joining methods in straight lines.

DISADVANTAGES OF GRP PIPES

- Maintenance and repairs are diffucult.
- Due to it low elasticity properties, it is diffucult to adapt to the S' s required in the fiedls. Therefore, small angles and large number of fittings icrease the use. So, cost increases.
- Due to it's fragle properties, they can be affected by soil movements and eartquakes quickly.

ASSESSMENT

- Both pipe types have long life.
- Both pipe types have a high resistance to chemicals, corrosion and other chemical activities.
- Both pipe types are lightweight and easy to carry .
- Both pipe types have the advantage for transport that can be nested.
- Depending on the terrain conditions(For example: ‘’Special Crossings, S’ s …), HDPE pipes have the advantage of having good elasticity compared to GRP pipes with the ability to bend easily. GRP pipes are brittle and not ductile . Therefore, small angles and large number of fittings icrease the use. So, cost increases.
- Both pipe types have practical and fast assembly methods. However, tightness of HDPE pipes will be more convenient and precise with electro-fusion or butt welding methods.
- Both pipe types were applied in earthquake zones and successful results were achieved. However, due to the elasticity of HDPE pipes, it is less likely to damage soil movements. In such cases, maintenance and repair of GRP pipes will be more diffucult since it is a more fragile group of pipes. But, HDPE pipes creates application diffuculties in large diameter and high pressure lines.
- Finally, the table showing the average abrasion values of the most known pipe types in unit lengths is follows: