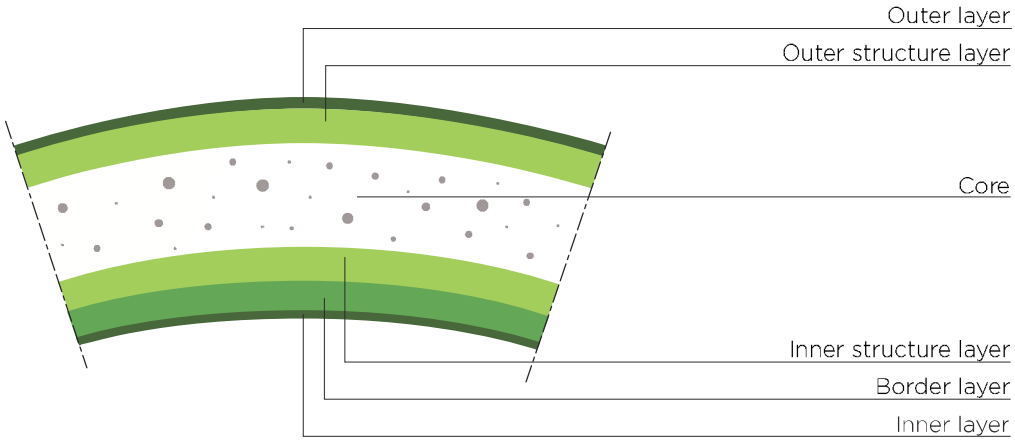
Wall structure of the pipe

LAYER	CONSTRUCTION	PURPOSE
Inner layer	Surface veil	Protection
Border layer	Cut Glass Fiber	Protection
Inner structure layer	Continuous glass and Cut Glass fiber	High coefficient of structure reinforcement
Core	Silica Sand, Cut Glass Fiber and Continuous Glass Fiber	Durable Hard Core
Outer Structure Layer	Continuous glass fiber and Cut glass Fiber	High Quotient of Structure Reinforcements
Outer layer	Surface veil	Protection
Note: Resin is implied in each layer		

Pipe wall structure



JOINING THE PIPES

There are many ways available to apply for joining the fiberglass pipes, both for applications with gravity flow and for pipelines under pressure. Joints have to provide tightness for fluids and to endure longitudinal forces on construction.

The pipes are connected in one of the following ways:

- With polyester "BETO" couplings (fig. 3);
- With metal coupling "Straub" or "Tee-kay" (figures 5 and 6);
- Butt-strap joint (fig.7);
- Flanges.

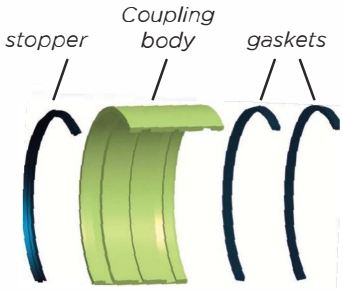


Fig 3 -"BETO" coupling

"BETO" COUPLING

"BETO" coupling is a symmetric, double - sided gliding coupling of reinforced polyester. It is delivered with rubber tightening rings and a rubber profile – stopper (fig.4) Tightening rings (provide tightness) and a stopper (secures a proper pipe and coupling position) are placed in chamfers of the coupling which are precisely machine processed.

Three factors contribute to efficient tightening by polyester coupling, and these are:

- Fin sealing
- Compression
- Wedge shaped groove.

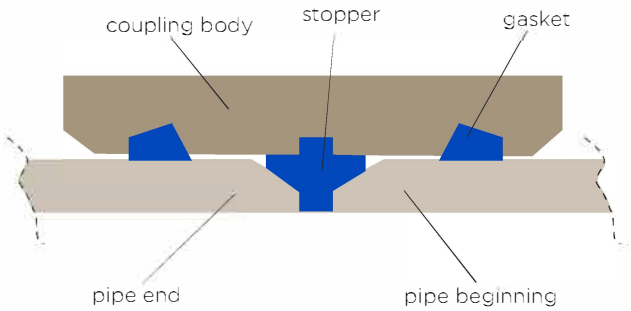


Fig. 4 –Joint with „BETO" coupling

METAL COUPLING

When pipes are to be connected to other pipes, this is the one of recommended joining meth-ods, also used in reparation on the damaged pipes. It can be fixed (firm) or with the opening.
It consists of a steel mantle with inner rubber gaskets. A mantle can be made of stainless steel, or coated with plastics. Joining with metal coupling saves time and money. The most famous manufacturers are TEEKAY and STRAUB (fig. 5 and 6).

Fig.5 -TEEKAY metal coupling with opening

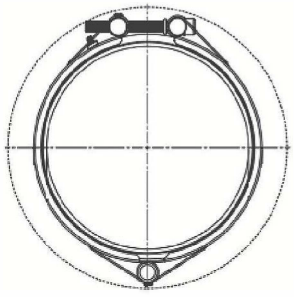


Fig.6 - STRAUB metal coupling fixed

BUTT-STRAP JOINT

Butt-strap joint (fig.7) is normally used for joints which are to withstand larger axial forces and where insepa-rable pipe connection is necessary. (For subaqueous pipelines e.t .c.) The length and thickness of the joint depend on usage conditions, pipe diameter, working pressure e.t. c.

Fig.7- Butt-strap joint