Load weights for underwater PE pipelines, the "U-weight".

The majority of load weights have, in terms of design, been unchanged since the seventies. Today we can see several reasons for higher requirements on load weights:

1. The modern PE materials, PE 100, have a greater elongation than previously used PE materials. Along with the increased acceptance for material tension, i.e lighter weight body at equal pressure class, this gives a greater radial expansion of the pipe (compare to problems at pressure tests) at internal pressure. A tightly enclosing load weight can in such cases either crack, or cause unwanted impact on the pipe.

   The "U-weight" mounted to the pipe so expansion does not give rise to tension in either the tube or the concrete weight.

2. Higher demand for a load weight that interferes as little as possible, i.e it has a shape that minimizes impact from powerful underwater currents. The shape also minimizes impact from fishing gear.

   The "U-weight" is designed according to demands from fishing authorities as well as demands from flow technology, and therefore it has a smooth rounded shape. This is especially beneficial when working with a weighted floating pipe during the construction phase.

3. The center of gravity when using a square enclosing load weight is at the center of the pipe.

   In order to increase stability, the "U-weight" places the center of gravity beneath the pipe. The positioned pipe will then benefit from increased stability, always with a large basal surface towards the ground surface.

4. The concrete construction needs to be self-supporting with no use of reinforcement. In a reinforced construction there is a high risk of corrosion on the reinforcing bars, thus limiting the lifetime of the load weight.

5. To protect the pipe and increase friction, a spacer have traditionally been used between the pipe and the load weight. Inspections on older pipes have revealed that spacers, made of various rubber materials, have changed characteristics over time. Some spacers have hardened, and along with pipe expansion, caused unwanted impact on the pipe. Other spacers made from expanding materials have completely vanished.

   The "U-weight" is piece cast in plastic molds with specific technology and choice of concrete, and has a completely smooth surface. This means that spacers entirely abolished on the U-wieght.

6. In general, bolting is used for attachment of larger load weights. Except for all kinds of corrosion problems, this method also causes tension in the load weight and/or a pressurized pipe. Smaller load weights are usually attached with various plastic bindings. Even some larger load weights are attached with plastic binding (Nylon). Such bindings have proved to have a very limited lifetime.

   The U-weight is mounted with textile bands where the lifetime must not be inferior. Similarly, locking element off completely corrosion proof materials.

7. The "U-weight" is VERY EASY TO MOUNT – a fast and secure mounting process gives a reduced project time.