

**DeRegt**

**Discover different types
of terminations**

A SERCEL COMPANY

5 Types of Terminations

DeRegt works with each individual client to provide the perfect cable solution for their specific requirements. Each cable system by DeRegt is custom-made and this does not only apply to the cables themselves, but the terminations as well. DeRegt is able to design the termination to adapt to specific circumstances and to think outside the box to find the right solution for every situation. From deep undersea to high in the sky, terminations can be grouped into a few types which share similar features.

They usually consist of four main elements:

- ✓ Connector(s): the electrical and/or optical components in the cable are connected to a specific connector.
- ✓ Strength member termination: the strength member of the cable terminates in an element that transfers the load to the metal parts of the termination.
- ✓ Sealing mechanisms: water barriers to prevent water from entering the termination.
- ✓ Bend protection: this element protects the cable from excessive bending or kinking at the back of the termination.

There are five types of terminations:

1

Seismic source umbilical terminations

Source umbilical cables generally consist of a hose, a relatively large number of electrical components, and a steel wire armour. The wet end termination for a source umbilical cable for the seismic marine industry is robust, usually larger in diameter ($> \text{Ø}200 \text{ mm}$) and made of stainless steel metal work. Reliability is key. The sealed container (called the “bell house”) allows for space to route the cable components to the different connectors. The connectors are placed on a front plate (called “face plate”), together with a hose fitting.

The amount and type of connectors and the type of hose fitting is customer-specific. It is not rare to see eight connectors on a face plate. DeRegt can adapt the faceplate to fit the connectors of choice. A removable bend strain relief is added to prevent damage to the cable during handling. Re-termination of this type of product can be done on board of a vessel.



2

Seismic lead-in terminations

Lead-in cables are used in seismic exploration as well. The lead-in termination connects the tow cable to the streamer. For this type of termination, reliability is key. Like the source umbilical terminations, lead-in terminations have to be robust. The diameter is kept small in order to reduce the drag force and noise. Generally around 80 mm. The ultimate tensile strength of the termination is equal to the break strength of the tow cable itself and has a maximum value of 47T. It contains multiple sealing mechanisms for redundancy. The termination contains a removable bend restrictor. If necessary, this termination can be assembled in the field.



3

Flexible terminations

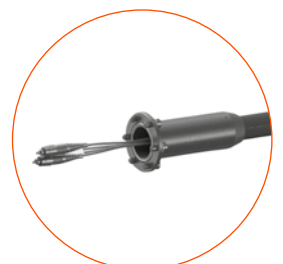
Slim, flexible and lightweight terminations are most commonly used in defence applications. Diameters can go down to 60mm and slimmer. It has a minimal rigid length allowing the termination to be spooled on and off the winch many times without issues. The terminations are usually provided with a long bend strain relief and the interlocking metal parts are normally made of titanium grade 5. These so called “shackles” transfer linear as well as bending forces. Arcs from 10° to 180° are possible. The termination also contains a pressure compensation system. The lightweight design is especially suitable for neutrally buoyant cables with a synthetic fibre strength element. For more details about flexible terminations please check out our previous blog on the subject [here](#)



4

Lightweight balloon tether terminations

Balloon or Aerostat tether cables are very small and lightweight. The circumstances under which these terminated cables are used are entirely different to underwater cable systems. Because they are used in air, no high tech sealing mechanisms are required, so lightweight is the key design parameter for this type of terminations. Generally the material of choice is therefore aluminium. For the sake of weight reduction, all dimensions are minimised. Interfaces can be designed according to the clients' requirements.



5

Seabed equipment terminations

Although every underwater tool or device is different, the terminations for seabed equipment do have some similarities. The strength member of the cable (steel or synthetic fibre) is mounted in the strength member termination. The cable core passes through and will be routed to a junction box, which will be fixed to the seabed equipment. The termination itself is fixed onto the tool with a mounting mechanism. This can be a (split)flange, a hook or an axle; all in accordance with the customers tool design. The materials are selected to avoid galvanic corrosion. Usually a sealed connector is assembled on the cable core and the cable core can be protected by a braiding and/or a spring to prevent damage.



About DeRegt Cables

DeRegt delivers the best possible solution for any given situation. We provide custom-engineered cable solutions that are built to last to all markets, ensuring maximum performance over many years. Our products range from umbilical subsea cables to tethers for balloons.



Do you want more information?

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