Established in 1975, Novacavi provides expertise in designing and manufacturing an extensive range of high performance custom cables to be suitable in any harsh environment conditions. Specifically engineered to perform in presence of:

- Size constraints
- Fire
- Pressure effects
- Water presence
- Mechanical Stress
- Floating and buoyancy constraints
- Electromagnetic disturbances
- High acceleration and speed
- Aggressive agents, oils, moisture and mildew
- Standards demanding low or zero smoke and aggressive and poisonous gas emission
- Extreme temperatures and environmental conditions
- Particular flexibility demands

All Novacavi’s cables act as the most reliable, robust long-term efficient solution in highly demanding applications such as:

- Defence & Security,
- Extreme Temperatures,
- Geo-survey & Seismology, Oceanography,
- Subsea Telecommunications & Research,
- Oil & Gas Exploration and Production.

Considering electrical requirements, mechanical and environmental performance, Novacavi applies specific cable configuration that can be chosen among:

- Power/Signal/Coaxial/Fiber Optic/Composite eventually combined with
- Aramid fiber braid or rope
- Glass fiber
- Galvanized steel, stainless steel or other alloys armour
- Fiber optic suitable for heavy duties

Whatever their application, cables can be provided longitudinal or radial water blocked, gas migration resistant, buoyancy controlled, torque balanced with high breaking strength, in optimized diameter and long customized single length.

From early concept through reliable production, Novacavi offers:

- Custom cable design & development
- Materials knowledge and manufacturing expertise
- Engineering versatility and production flexibility
- In-house capability to build all cable elements that allows shortened lead-times and tight quality control
- Fit for purpose quantity, lengths and packaging

Quality system certified in compliance with ISO 9001

Here a selection of realized custom projects. Individually designed and manufactured to be suitable for their specific application, they can all be adapted as necessary to meet other special requirements.

For cable design, expertise, performance and support: tech@novacavi.it
**Defence & Security**

**ROV hybrid power & data cable for subsea mine hunting**
- Neutrally buoyant
- High flexibility
- Low friction coefficient
- Ruggedness in small diameter
- High breaking strength

**Rubber watertight shielded instrumentation cable for use in submerged hydrophone arrays and for other underwater instruments**
- Single mode fiber optic tight buffered
- Tinned copper conductor
- Braid strength member
- Foamed TPR sheath
- Hydrolysis UV resistant high friction PUR outer sheath
- Nominal outer diameter 11,50mm
- Polypropylene insulation
- Tinned copper braid individual shield
- Thermoplastic rubber sheath
- Waterblocking compound
- Thermoplastic rubber sheath
- Tinned copper braid overall shield
- Thermoplastic rubber outer sheath
- Nominal outer diameter 24,50mm

**Armoured multipolar hybrid cable for use in hostile environments and potentially explosive atmospheres**
- Crosslinked polyethylene insulation
- Crosslinked flame retardant LSZH compound
- 1 X COAX 75 ohm
- 1 X LAN cable
- Tinned copper braid
- Crosslinked flame retardant LSZH compound sheath
- Galvanized steel braid overall shield
- Crosslinked flame retardant LSZH compound outer sheath
- Nominal outer diameter 20,00mm

**Key features**
- Prepared for Ethernet, video, I/O and telemetry connections
- Oil, flames and UV resistant
- Designed for potentially explosive zones

Ref. 4GAX107
Ref. 20R3445
Ref. 19AZT972
Coaxial data transmission cable in use in ion pumps in nuclear research laboratory

Custom rugged armoured cable for logging downhole equipment in geothermal power plant

Special low temperature multi core power cable for research station on the Antarctic Plateau

**Technical description**

- Multilayer Polyimide tape
- Copper braid
- Glass impregnated braid
- Nominal overall diameter 4,3 mm
- Nickel plated copper conductor
- Multilayer sintered PTFE tape insulation
- High temperature glass woven-PTFE tape
- Preformed galvanized steel wire armour
- Nominal overall diameter 12,10mm
- Extra flexible tinned copper conductor
- PFA insulation
- Nominal outer diameter 23,85mm

**Key features**

- Working temperature up to 300°C
- High radiation resistant
- Working temperature -60°C / +320°C
- High pressure and aggressive agents resistant
- High breaking strength
- Fluoropolymer insulated operating under freezing conditions
- Wide temperature range -100°C / +120°C
- Flexible

Ref. 1HRS338  Ref. 7SSA22  Ref. 4MT133
Specially conceived resilient data, signal and power armoured underwater cable connecting sea bottom with surface buoys equipped with sensors

Custom hybrid cable for submarine hydraulic digital profile meter to be laid on the seabed close to gas extracting platform

Hydrophone cable used in boreholes for seismic tomographic applications down to 400m

**Technical description**

- Yarn rope strain member
- Tinned copper conductor
- Polyethylene insulation
- Galvanized steel braid armour
- Hydrolysis resistant PUR outer sheath
- Nominal overall diameter 18.50mm

- Tinned copper conductor
- HDPE insulation
- FEP hose
- Waterblocking tape
- Hydrolysis UV resistant PUR outer sheath
- Nominal overall diameter 16.20mm

- Tinned copper conductor
- HDPE insulation
- Cores twisted in pairs
- LPC fiber strength member
- Hydrolysis and UV resistant matt PUR outer sheath
- Nominal overall diameter 16.00mm

**Key features**

- Hybrid ruggedized custom cable
- Dynamic permanent application

- Hybrid cable
- Working on seabed
- For fluid flow

- Tough and flexible
- Excellent moisture, abrasion & weather resistance

Ref. 16XM396
Ref. 21MC471
Ref. 122XM424
## Oceanography, Subsea Telecommunications & Research

<table>
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<th>Subsea cable with double stainless steel armour for extra heavy duties</th>
<th>Electro-optical ROV cable for instrumental survey and activities at depth up to 4000m</th>
<th>Power cable for subsea trenching machine</th>
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### Technical description
- FEP insulation
- Single mode fiber optic
- HDPE covering
- Hydrolysis UV resistant PUR outer sheath
- Double contra-helical AISI 304 stainless steel wire armour
- Nominal overall diameter 22,40mm
- Multi mode fiber optic
- Tinned copper conductor
- Polypropylene insulation
- Waterblocking compound
- Polyethylene sheath
- Strength member embedded in PUR sheath
- Hydrolysis UV resistant PUR outer sheath
- Nominal overall diameter 20,60mm
- Bare copper conductor
- Conductive compound
- HDPE crosslinked compound insulation
- Hydrolysis UV resistant PUR sheath
- Braid strength member
- Hydrolysis UV resistant PUR outer sheath
- Nominal overall diameter 43,50mm

### Key features
- High breaking load
- Maximized strength
- Weight and size reduction
- Waterblocked
- Highly flexible but extremely tough
- 4kW power cable suitable for heavy work
- High breaking strength
- Special thick and resistant sheath
- Abrasion resistant

Ref. 10SSA23
Ref. 46XM437
Ref. 6XM433
**Oil & Gas Exploration and Production**

Customized umbilical cable for subsea services. Specially designed and manufactured with durable materials to guarantee operational strength and dynamic requirements

**Technical description**

- Cross-linked polyethylene insulation
- Protective PTFE tape
- Hydrolysis UV resistant PUR sheath
- 3 Hydraulic hoses ½”
- Aramidic fiber strength member
- Hydrolysis UV resistant PUR outer sheath
- Nominal overall diameter 73,00mm

- Silicon rubber insulation
- Conductors twisted in pairs with waterblocking compound
- Galvanized steel braid armour
- Cross-linked halogen-free compound outer sheath
- Nominal overall diameter 21,60mm

- Crosslinked compound EPR insulation
- Waterblocking compound
- Tinned copper braid shield
- Halogen free thermoplastic rubber sheath
- Hydrolysis UV resistant PUR outer sheath
- Nominal overall diameter 27,50mm

**Key features**

- Oil and fuel resistant
- High breaking strength
- High pressure hydraulic hoses

- Gas blocked according to ATEX IEC60079-14 Annex E.1
- Fire resistant

- Longitudinal waterblocking pressure tested
- Oil and fuel resistant

Ref. 35OMB22
Ref. 24KK227
Ref. 3R3439