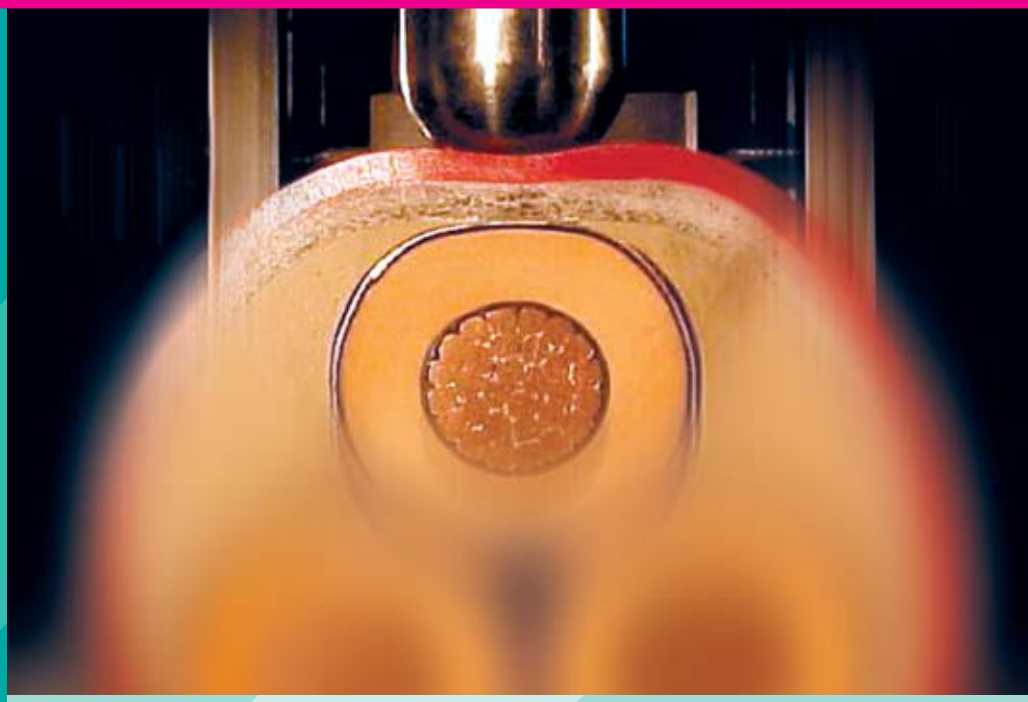
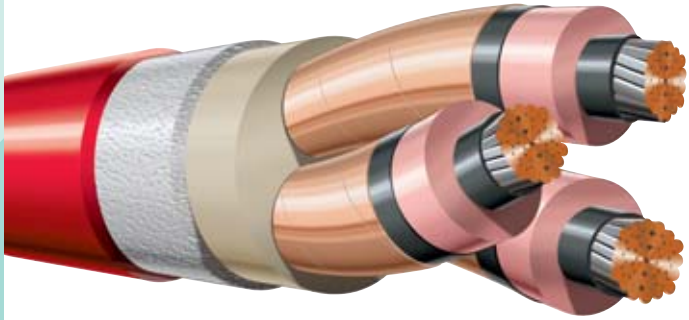
PRYSMIAN
CABLES & SYSTEMS



Airbag™

AIRBAG™ CABLE SYSTEM

A revolutionary system for all energy cable



THE AIRBAG™ REVOLUTION

Prysmian has designed and patented a revolutionary solution that provides better mechanical protection than traditional metal armoured cable at almost the same weight of a non armoured cable. It is a radically new design with an extruded plastic layer, placed under the outer sheath, that absorbs the kinetic energy of a shock by plastic deformation. In this way no residual energy is left to damage the "delicate" parts of the cable such as insulation and screens. Metal armouring doesn't behave as efficiently; part of the energy of a shock is transmitted to the inner layers of the cable, with a potential of compromising insulation integrity.

The level of protection achieved and, by consequence, the reliability is substantial. Additionally, the cable is much lighter, more flexible and easier to install than a traditional armoured cable.

The AirBag™ concept can be applied to virtually any type of cable, from building wire to high voltage, giving the same benefits in terms of reliability and weight reduction.

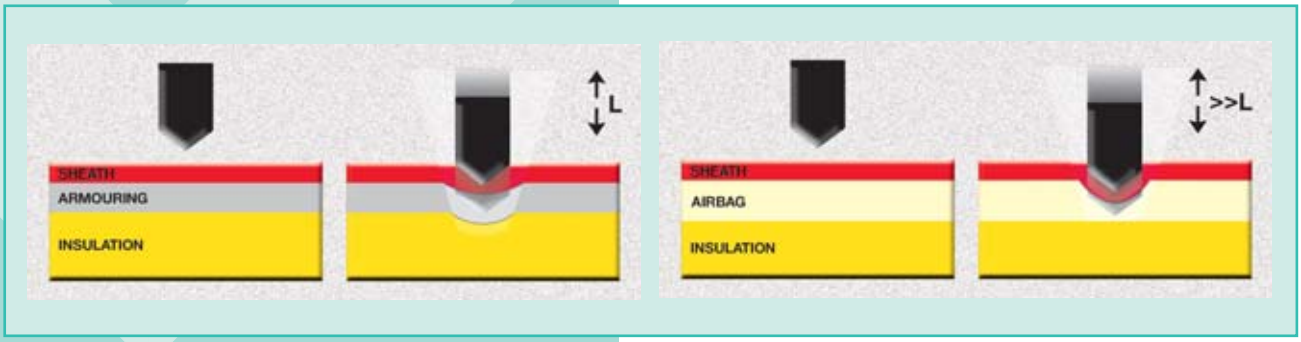
PROTECTION AGAINST MECHANICAL DAMAGE

Cables can be damaged in many different circumstances and in virtually all operative environments.

- In industry.
- During laying and digging operations.
- In civil works.

HOW IT WORKS

THE PRINCIPLE



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Mechanical abuse can often damage cable insulation and protective screens, leading to a premature and unexpected failure and, in any case, to a dramatic decrease of long term reliability. Economical consequences are easily recognised, as well as the disruption effects on service continuity.

Industry's response has been traditionally to protect cables with metal armouring (applied in tapes, wires, etc.) or installing the cable in a "protective" environment such as trays, pipes, etc.

Both solutions add a significant extra cost and make for longer installation time. In particular the traditional metal armoured cables, whilst providing good protection, show however a significant disadvantage in terms of weight, flexibility and difficult jointing compared to a standard non armoured cable.

BENEFITS

VS ARMOURED CABLE
Better impact performance: +10%
Reduced Diameter: -5%
Lower Weight: -30%
Longer cable length on standard drums
Improved flexibility
Same resistance to oils/chemicals
Same resistance to effects of water
Easier installation (easier jointing)
Lower sensitivity to stray ground currents (e.g. in installations close to electrified railway lines.)
Replaces traditional metal armour, giving even better impact performances, at weights and ease of installation close to an unarmoured cable.

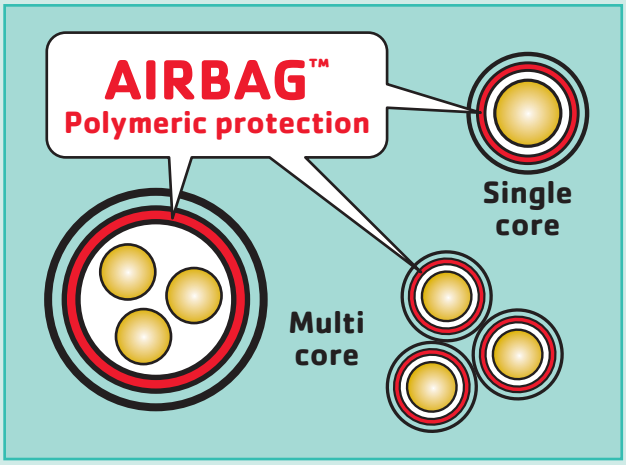
VS UNARMOURED CABLE
Better impact performance: +100%
Slightly larger diameter: +5%
Weight: +5%
Same flexibility
Same fire performances
Same resistance to oils/chemicals
Same resistance to effects of water
Same installation
Gives a dramatic improvement in mechanical resistance, with a very little increase of weight and rigidity.

ACCESSORIES

The AirBag™ range is fully compatible with traditional joints terminations. The installation procedures are the same as for traditional accessories.

DESIGN

The AirBag™ layer acts as a shock absorber. By the conservation of momentum rule, the plastic deformation of AirBag™ allows dissipation of the impact energy through a bigger deformation (i.e. longer time), thus with a low specific Force (mv=Ft): potential damage to inner layers of the cable is greatly reduced. Metal armouring has a much higher modulus, thus impact energy is dissipated with a lower deformation and a high specific force, dangerous for inner layers of the cable.



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