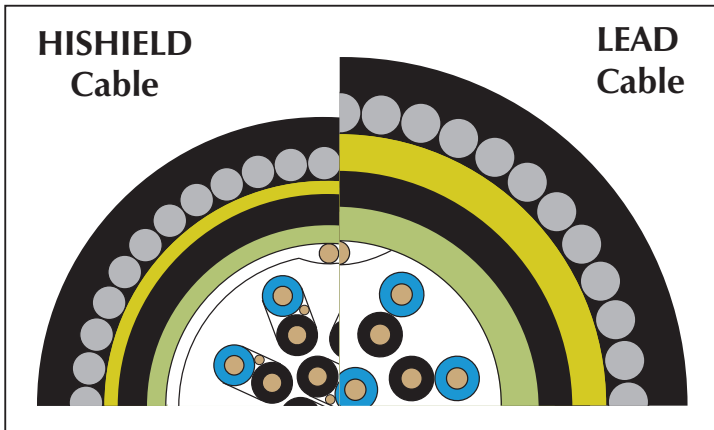


HISHIELD

HYDROCARBON RESISTANT CABLE

In applications where cables may be subjected to attack from oils, solvents, gases or other chemicals, designers and installers of critical cabling systems have historically relied upon using conventional lead-sheathed cable to provide maximum protection. However, the use of lead sheathed cable is often unsatisfactory due to its weight, large bending radius and cost.

For applications prone to hydrocarbon attack and moisture penetration, especially relevant to the on-shore oil, gas and petrochemical industries, Draka has developed a new generation of non-permeable cables, utilising a combination of modern materials allied to novel production techniques. This new Hishield® cabling system provides excellent resistance to hydrocarbons, its performance being similar to lead alloy, but with significant advantages.



Cable weight is reduced by up to 70%

Overall diameter is reduced by up to 20%

Bending radius is reduced by up to 25%

Termination time is reduced by up to 50%

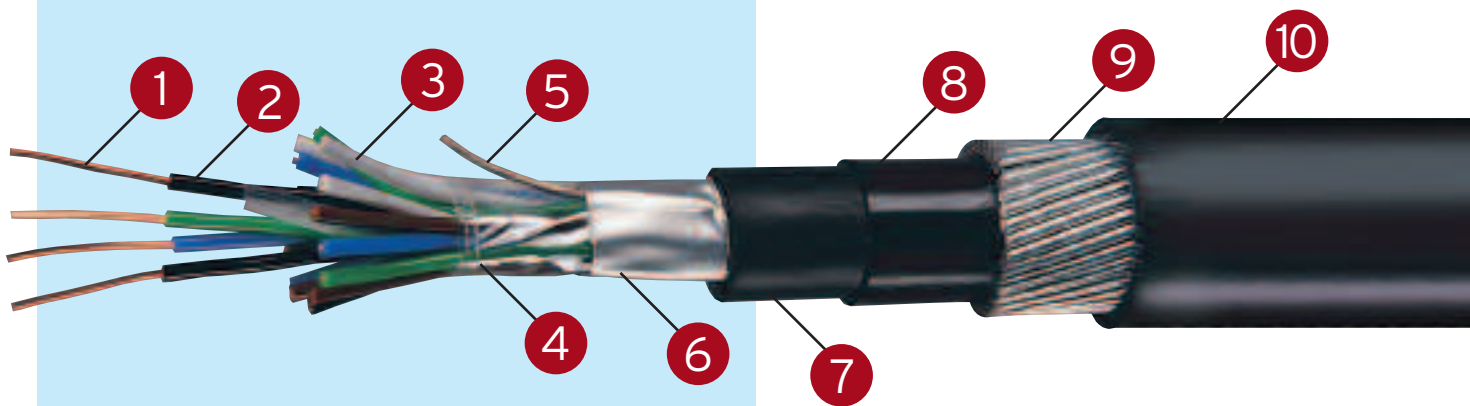
Less hazardous to health

In addition to mechanical abuse and attack by aggressive hydrocarbons, cables carrying important data signals and communications may in industrial environments also be subject to Electro-Magnetic Interference (EMI). Draka has recognised this problem and has, therefore, also included an effective metallic screening layer in all Hishield® cables.



TYPICAL CONSTRUCTION:

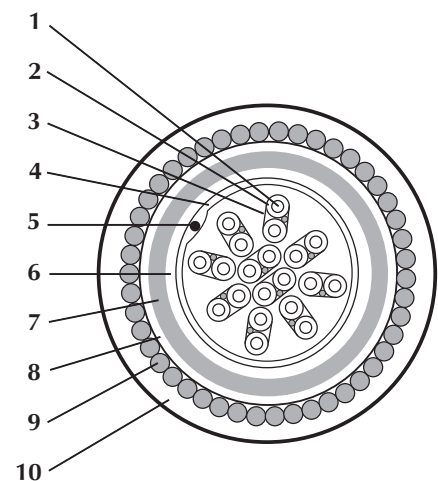
- 1 Plain annealed copper conductor.
- 2 PVC/Low Density Polyethylene/Cross-linked Polyethylene (XLPE) insulation.
- 3 Individual pair screen (optional).
- 4 Polyester tape.
- 5 Tinned soft copper drain wire.



- 6 Aluminium/Polymer foil tape,
- Impermeable to moisture.
- Protection against EMI.
- 7 High Density Polyethylene (HDPE) bedding,
- Resistant to inorganic chemicals.
- 8 Extruded polyamide layer (Nylon),
- Resistant to organic chemicals.
- 9 Galvanised steel wire armour.
- 10 HDPE/Fire retardant PVC.

HI SHIELD®

Protective Layers



CHEMICAL ATTACK

The often unseen, yet persistent assault from aggressive liquid and air borne chemicals can be a major cause of cable failure.

Chemicals can effect the cable in a variety of ways:

- (1) By attacking the sheathing and insulating materials leading to embrittlement and cracking, or causing swelling associated with a dramatic reduction in mechanical strength and physical properties. In both cases premature cable failure is the result.
- (2) By disrupting the electrical performance of the cable leading to corruption of transmitted information and ultimate electrical breakdown.

MOISTURE PENETRATION

The additional threat of moisture penetration to the cable core assembly may result in the corruption of transmitted information.

Moisture can cause corruption of the signal by:

- (1) Increasing the capacitance and deterioration of other electrical properties.
- (2) Increasing the mismatch of information due to the changing characteristic impedance.

ELECTRO-MAGNETIC INTERFERENCE (EMI)

This increasingly common form of electrical disturbance occurs when faulty equipment* switching or external interference causes spikes or electrical noise to appear in the power supply. This electrical distortion can effect vital transmission, leading to corrupted or even lost data. Although filters and suppression products are available to reduce the likelihood of EMI, additional protection is recommended to minimise its damaging effects and to help maintain signals free from electro-magnetic interference.

* some correctly functioning equipment also gives rise to EMI.

Draka's Hishield® advanced cabling system can be applied to most types of (BS 5308) instrumentation and control cables, offering non-hazardous protection from chemicals, water, solvents and also effective screening against radio frequency interference (RFI) and EMI. The same protective sheath combination can be applied to most types of control and light power cables.



Chemical attack is reduced by the introduction of the Hishield® protective system.



Moisture penetration is reduced by the introduction of the Hishield® system.



The Hishield® system reduces the effect of electro-magnetic interference on the cable.