



TYPES OF SHIELDS

- Aluminum/Mylar tape plus drain conductor for single pair shielding and/or for total shielding of the stranded cable.
- Copper tape.
- Shield in bare or tinned copper braid.



SCHIELDING

The shield is used to protect the cable from internal (single pair/triad shield) or external (total shield) interference.

SINGLE PAIR/TERNA INTERNAL SHIELD

- Internal interference is transmitted via capacitive or electromagnetic induction, when pulsating direct current signals or alternating current signals are transmitted in the various pairs/triples of the cable.
- To avoid this interference (which in the case of intrinsically safe signals could even be dangerous), the individual elements of the cable are wrapped with Aluminium/Mylar tapes with a tinned copper drain conductor which runs in contact with the Aluminum part of the tape and is used to ground the screen itself which will take place on a specially provided ground bar and in a single point which is usually in the switchboard in a safe area.

TOTAL SCREENING OF THE CABLE AGAINST EXTERNAL INTERFERENCE:

- In the case of interference generated from outside, the type and material of the screen must be suitable for the type of interference;
- In the case of electrostatic interference (ex. induced by a power line) this coupling causes a disturbance signal which is superimposed on the signal transmitted in the conductors.
- To eliminate this risk, the cable is wrapped around the whole with Aluminium/Mylar tapes with a tinned copper drainage conductor which runs in contact with the Aluminum part of the tape and serves to ground the shield itself which will take place on a bar of earth affixed and in a single point which is usually in the switchboard in a safe area.
- In the case of high intensity electrostatic discharges which usually originate outside the cable, the screen that lends itself best is that of Aluminium/Mylar tape + copper braid where the aluminum and the braid are in contact with each other.
- In the case of particular cables where a low impedance is required (data cables, computers) or a low resistance value of the shield (power supply to motors from inverters) or for mobile cables, copper braid shielding is recommended as it is mechanically more resistant .

