



Are aluminum alloy cables a good alternative?

It is a fact that the price sensitivity of the structured cabling market makes it highly competitive in the current scenario.

For that reason, integrators, as well as end-users, in an effort to reduce installation costs, have resorted to using very inexpensive cables featuring aluminum clad copper conductors, known as CCA, as a way to deal with this type of issues.

Because these aluminum alloy cables do not comply with the international standards and regulations currently in effect, serious issues will come up in terms of network performance, which prove to be crucial considering that nowadays on any structured cabling infrastructure converge a wide range of integrated systems, like security, lighting, and automation, just to name a few.

Since the mechanical and electrical resistance of aluminum is lower than that of copper, these cables tend to crack or break more easily, with a bend-radius tolerance also lower than its copper counterpart.

In addition, oxidation of the aluminum on the termination connections of the RJ45 module in both, the work area and on patch panels, will decrease the conductor resistance, thus giving rise to weak connections and **NEXT issues, along with attenuation and return loss (RL)**.

Based on that, if you install, for instance, a CCTV system using an aluminum alloy cable, in over 90% of the time the quality of the images transmitted and stored will not be as expected, as their resolution and sharpness will usually be very low. **These features tend to worsen** as the distance between the connection points is increased. Another important factor to take into account in installations using this type of cables is that their transmission quality is greatly degraded over time, to the point where a total connectivity loss may also happen.

CCA cables do not comply with current international standards and neither had been certified by independent testing laboratories.