

**Product:**  
Plenum (CMP) Cable  
LSZH Cable

**Family:**  
Cabling

# Tech Tip 6

## Similarities and Differences between Plenum (CMP) and LSZH Cables

We have received many requests asking for a comparison between **Plenum (CMP)** and **LSZH** jacketed cables. **LanPro** carries both cable technologies and the purpose of this Tech-Tip is to explain some of the relevant details that could help our Clients or Distributors on selecting the best for their application.

Both cables are made with the latest technology available and are complex to produce and prices are representative of this matter. **Plenum** and **LSZH** cables design criteria centers on people's safety in case of fire.

We can highlight some aspects like the following:

### PLENUM (CMP)

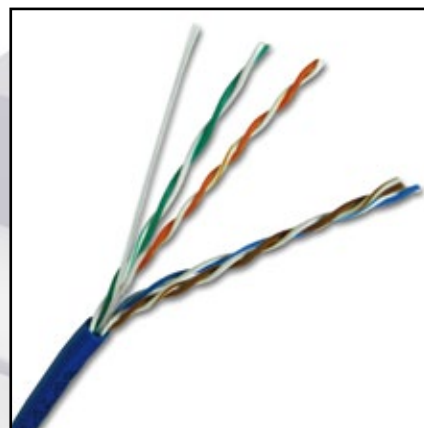
- **Is slightly superior to LSZH regarding the flame propagation performance.**

The Plenum (CMP) cable is more fire propagation resistant than LSZH and as a result, premises are better protected. Is an excellent performer cable, but costly and commercialized mostly in the USA.

- **Ironically CMP (Plenum) and CMR (Riser) are specified for Data Centers.**

This is done even knowing the toxicity for people and the damaging effects on hardware equipment. If you had to select an option, it would be and LSZH cable, with the added bonus of being lower in cost.

- **Comply the IEC 60332-1 flammability standard.** Besides that, the CMR cable complies with the IEC 60332-3 standard, which is more demanding as it requires that flame propagation to be vertical (in large bundles of cables). LanPro produces LSZH cable complying the IEC 60332-3 under special order and in container size batches. LanPro produces Plenum cable under special order container sized batches.



## LSZH

- **The LSZH has no exact NEC code equivalent.** The LSZH cable is based on compliance of IEC European Standards (International and European Code) IEC 60754 related to Halogen content and acid gases generation in the presence of humidity, and the IEC 61034, implying the generation of fumes when in combustion. Is a more widely applied cable.

- **The LSZH cable is definitively better in relation with human safety.** The LSZH has NO halogens like Chlorine or derivatives in its composition in contrast with Plenum, in which there is PVC (in the PVC the C is the element named Chlorine in the PVC material (Polyvinil Chloride)). Because there is no presence of Chlorine in the LSZH cable, it doesn't form Hydrochloric acid, a corrosive and toxic substance produced when the gases of combustion are mixed with water from sprinklers or hoses. Plenum cables have this problem in some degree. Installations in ships and planes require the use of LSZH cables in passenger sections.

Besides Hydrochloric acid, other substances like Polychlorinated Biphenyls (PCBs), Polycyclic Aromatic Hydrocarbons (PAHs) and Nitro Polycyclic Aromatic Hydrocarbons among others, are by-products produced when non-LSZH plastics burn. All are carcinogenic and Non RoHs substances.

The LSZH cable covers in excess the safety requirements of College, Stadiums, Theaters Cinemas, Discos and places where large people gathering places.

Even though the LSZH cable is still not commonly used in the USA, there is a trend that will increase in the near future for horizontal cabling of floors and in Data Centers.

LSZH Cables can be fabricated in any choice of colors but Purple is a very popular one used by the most important suppliers in the market. There is no standard or norm applicable but is a way to differentiate them in the field.

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