

PAINTING OF CABLES

This guidance document outlines our advice regarding the compatibility of various paints and their application over Prysmian Group cables. It covers concerns such as the reactions of different paint types with cable sheaths, the effect on any LSOH properties and if applicable, their fire performance characteristics. It should be noted that the advice contained within this document is not intended to be exhaustive. If you have any further concerns or require further clarification, then we would recommend filling out the contact form on our website

<https://www2.uk.prysmiangroup.com/contact-us>.

We would always advise customers to verify the composition of the paint by referring to its Safety Data Sheet (SDS).

PAINTING OF PVC-SHEATHED CABLES

Prysmian's general rule of thumb is that water-based paints are suitable for use on our cables, whereas oil-based are not. Any solvents present in water-based paints will evaporate quickly and therefore be in contact with the cable for a very short amount of time. We would therefore not envisage any long-term adverse effects with their application.

Oil/organic solvent bases however, will accelerate leaching of the plasticisers within the PVC, which will decrease the mechanical strength of the cable and may cause cracking, increased brittleness and loss of flexibility. The inherent chemicals of oil-based paints may also exacerbate the smoke, acid gas and flame propagation properties of PVC cables furthermore.

The following compounds are particularly harmful to PVC; in addition to plasticiser leaching they can also cause swelling/softening and can dissolve PVC with even short-term exposure:

- Aromatic and chlorinated hydrocarbons (such as xylene, naphtha, toluene, petrol and trichloroethane)
- Ketones (including acetone and MEK)
- Aliphatic and aromatic nitro-compounds
- Aliphatic and cyclic ethers

PAINTING OF LSOH-SHEATHED CABLES

In general, water-based paints are considered suitable for use on our LSOH cables. Oil/organic solvent-based paints are likely to cause swelling and softening with short term exposure and potentially more serious degradation such as cracking in the long term. Their application is therefore not recommended.

In addition, one of the main concerns about painting over LSOH-sheathed cables is that the paint may well impact its low smoke and/or zero halogen characteristics in the event of a fire. Any paint which has chlorine-containing compounds will increase the amount of halogen gas produced by the cable in the event of a fire. The low smoke characteristics of the cable sheath may be impacted if

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there is a thick layer of paint applied to it, as the paint is likely to give off much more smoke than the cable when burnt.

PAINTING OF FIRE RESISTANT CABLES

It must also be advised that, in the case of fire performance cables, any cable which has been painted will not be in the same condition as when it was tested. As a result, we cannot guarantee the longer-term fire resistance properties regardless of whether or not the paint will have any material reaction with the sheath, either short or long term.

Intumescent paints should provide improved fire performance compared to normal paint, however the previous statements still apply. It should also be noted that intumescent paints can be either water or oil/organic solvent based and may include chlorine-containing compounds. The oil/organic solvent based intumescent paints are not recommended for use with our LSOH cables.

OTHER PRECAUTIONS/CONSIDERATIONS

- Ensure that pools of paint do not collect where they are in contact with the cable.
- Ventilate the space thoroughly so that the paint may dry as quickly as possible.
- Avoid applying standard paint too thickly on the cable.
- It is also worth considering that the marking on the cable sheath, which contains information such as the manufacturer, cable standard, size, voltage, 3rd party approvals and so on, would most likely be obscured should it be painted over – especially if it is printed on rather than embossed. If it is absolutely necessary to paint the cable, then this information should be reliably recorded for traceability purposes.

Once again, if your issue or query has not been addressed by this document, we would recommend filling out the contact form on our website <https://www2.uk.prysmiangroup.com/contact-us>.