# FLOWGUARD™ - Tunnel - Multibundle Cables

Multi micro-modules cable with dielectric FRP armour:

This FLOWGUARD™ (ref. SP1905) is designed for indoor/outdoor installation in railways/tunnel infrastructure.

The FRP armour provides a high rodent protection. This cable has an outstanding fire behaviour.

This cable can be operated under a wide temperature range.

FLOWGUARD™ is fire resistant (circuit integrity) following EN50200 during 120minutes.

Waterproof dry core structure.

## Design

The FLOWGUARD™ LSZH* cable has a central strength member (FRP : Fibre Reinforced Plastic), with bundles (maximum 12 fibres per bundle) around. The design is reinforced by a first layer of aramid yarns, a LSZH* inner sheath, a FRP composed armour and a LSZH* outer steath.

A ripcord is placed beneath the inner and outer sheath for an easy access to the micro-modules.

## Fibre type

The FLOWGUARD™ LSZH* cable is available with singlemode and multimode fibres.

## Technical performances

The cable performances are specified in the following tables.

## Additional details

## STANDARDS

EN 50200
EN 50399
IEC 60332-1
IEC 60332-3
IEC 60754-2
IEC 60794
IEC 61034

This cable is provided as a standard with a black sheath, other sheath colours are also available. Long exposure to UV with these other colours could generate colour fading.

## Euroclass

B2$_{ca}$ S1a a1 d0

* LSZH: Low Smoke Zero Halogen.

## CHARACTERISTICS

### Construction characteristics

| | |
|---|---|
| Colour | Black |
| Armour type | FRP |
| Halogen free | IEC 60754-1 |
| Metal free | Yes |
| Strength member | Central FRP |
| Additional strength member | Aramide |

### Dimensional characteristics

| | |
|---|---|
| Number of tubes | 2 |
| Approximate weight | 172 kg/km |
| Number of optical fibres | 24 |
| Nominal outer diameter | 12.4 mm |

### Mechanical characteristics

| | |
|---|---|
| Mechanical resistance to impacts | 10 impacts of 3 N.m |
| Maximum permanent tensile load | 2 kN |
| Crush resistance (IEC 60794-1-E3) | 300 N/cm |
| Maximum installation tension | 6000 N |

### Usage characteristics

| | |
|---|---|
| Rodent protection | FRP |
| Operating temperature, range | -30...60 °C |
| Fire resistant | UNE-EN50200 PH120 |
| Fire retardant | IEC 60332-3 |
| Flame retardant | IEC 60332-1 |
| Smoke density | IEC 61034-2 |
| Storage temperature, range | -30...60 °C |
| Installation type | Indoor/Outdoor |
| Installation temperature, range | -5...40 °C |

## Selling & delivery Information

# Standard Marking

Aginode FLOWGUARD FIBRE OPTIC CABLE LSZH - SP1905 - XXxYY - FB - TN - metric

XX = Fibre Count YY = Fibre Type FB = Frameries, Belgium (manufacturing place) TN = Traceability Number

# Product list

| | Aginode ref. | Country ref. | Name | Colour | Number of tubes | Number of optical fibres |
|---|---|---|---|---|---|---|
| ⛏ | 10563593 | - | FLOWGUARD LSZH 24XSM G652D SP1905 BK | Black | 2 | 24 |
| ⛏ | 10565775 | - | FLOWGUARD LSZH 48XSM G652D SP1905 BK | Black | 4 | 48 |
| | | | | 📞 = Make to order, ⛏ = In Stock | | |

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