

**TISA-FLEX® FR**

MECHANICAL PROTECTION

**-50°C +150°C**

## FEATURES AND ASSETS:

- **Expandable sleeve conform to UL94 VO**
- **Excellent abrasion resistance**
- **Excellent cutting resistance**
- **Flame retardant, low smoke harm degree, halogen-free**
- **Lightweight**
- **Insensitive to condensation and fungus**

## TYPICAL APPLICATIONS:

- **Protection of bundles of cables**
- **Places open to the public**  
(according to the directives in force)
- **Mass transit (railways)**
- **Aircraft industry**
- **Telecommunications industry**
- **Protection of underground cables**

**SPECIFICATIONS :**

**TISA-FLEX® FR** is a braided flexible and expandable sleeve made up of flame-retardant polyester monofilaments.

With its raw material flame retardant and conform to ul94 VO, halogen-free, this sleeve is mainly used in the railway industry.

This sleeve is particularly designed for abrasion protection of bundles of electrical cables.

**TISA-FLEX® FR** is therefore particularly recommended in applications such as public transport, aircraft industry, telecommunications, underground cables, etc.

Its expandable feature makes it easy to install while taking up significant differences in cross section, elbows, connections, etc., without bends or flattening.

Hot cutting to length means there is no fraying of the ends.

The wide range of sizes of **TISA-FLEX® FR** means it can cover all diameters thanks to its expandable capacity.

Supplied in coils or cut to length, **TISA-FLEX® FR** is an efficient and esthetic solution to protect your electric cables wherever there the risk of fire and harm from smoke to be controlled.



# TISA-FLEX® FR

CARACTÉRISTIQUE	MÉTHODES, NORMES, RÉGLEMENTATIONS	VALEUR
Chemical nature of monofilament		Polyethylene terephthalate CAS No: 25038-59-9
Melting point		250°C
Continuous working temperature		from -50°C to +150°C
Peak temperature		175°C
Flammability Toxicity and harm from smoke	<ul style="list-style-type: none"> <li>- Renault D45 1333 and FMVSS 302</li> <li>- NF EN ISO 4589 -2</li> <li>- ISO 3795</li> <li>- UL 94</li> <li>- FAR 25-853</li> <li>- NF F 16-101</li> <li>- NF X 70-100</li> <li>- NF EN 45545-2</li> </ul>	<ul style="list-style-type: none"> <li>- Complies Classification B, auto-extinguishing</li> <li>- Oxygen index: <math>\geq</math> 32%</li> <li>- Complies</li> <li>- Conform VO</li> <li>- Complies</li> <li>- Classification I2 F1</li> <li>- ITC = 24.3</li> <li>- HL3 R22 &amp; R23</li> </ul>
RoHS	Directive 2002/95/CE	Complies
Environnement	European regulations	Complies

REFERENCES		USE		CONSTRUCTION		STANDARD PACKAGING ***
BLACK	GREY	MIN (mm.)	MAX (mm.)	Number of wires	Weight g/100m*	
FR03-0	FR03-8	2	5	60	360	100
FR04-0	FR04-8	3	7	72	430	100
FR05-0	FR05-8	4	9	84	490	100
FR06-0	FR06-8	5	11	96	580	100
FR08-0	FR08-8	7	13	120	720	100
FR10-0	FR10-8	9	15	144	870	50
FR12-0	FR12-8	11	17	168	1030	50
FR15-0	FR15-8	13	20	192	1130	50
FR20-0	FR20-8	18	25	256	1310	50
FR25-0	FR25-8	22	30	288	1800	50
FR30-0	FR30-8	27	40	384	2180	50
FR40-0	FR40-8	35	50	480	2950	50
FR50-0	FR50-8	45	60	600	3610	50

\* Weight as guidance for 100 mm.

\*\* Recommended range of use

\*\*\* Coils: Sleeving packed in coil, attached with ties, covered with plastic film.  
Rolls: Sleeving packed in rolls

These references are those of our standard TISA-FLEX® FR range. Please contact us for any other construction, parameter, material, packaging, colour, etc.



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