

## FIRE FIGHTER PRODUCT RANGE



# MADERA

### FIRE FIGHTER bobbin thread strongly recommended.

When using FIRE FIGHTER, don't forget to ensure the bobbin thread is also suitably flame resistant.



MADEIRA offers a special 100% aramid bobbin thread on 5000 m cones and it is recommended for use with FIRE FIGHTER. Available in black and white.

### FIRE FIGHTER Backing

Highly flame-resistant embroidery backing for flame retardant protective clothing. A light, breathable, form-stable and tear-resistant special fabric combines maximum comfort with maximum safety.



### FIRE FIGHTER Special-Scissors

These durable, professional scissors ensure smooth, precision cutting of the FIRE FIGHTER backing and similar strong materials.



### FIRE FIGHTER 40 available in following 24 colours



for a real colour definition please use MADEIRA Fire Fighter Colour Card, printed colours may vary from original product.

## FIRE FIGHTER 40

100% Aramid



△ max. 20g Aktivchlor/l - max. 30°C - max. 30 min.

Art. No. 929  
10 x 2500 m

Art. NO. 922  
10 x ca. 950 m

dtex 130 x 2  
den 120 x 2

75/11 - 80/12

24 COLOURS



## POLYNEON FR

100% Polyester Filament



△ max. 20g Aktivchlor/l - max. 30°C - max. 30 min.

Art. No. 933  
10 x 2500 m

dtex 135 x 2  
den 120 x 2

60/8 - 75/11

30 COLOURS  
4 FLUORECENT  
COLOURS



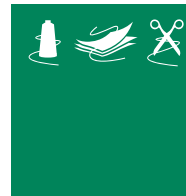
## Flame resistant embroidery thread

You can always count on MADEIRA ...  
... especially when it gets **hot!**

**ACG NYSTRÖM**

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## PHYSICAL PROPERTIES

## Our products help to meet following standards:

## POLYNEON FR

**FIRE FIGHTER bobbin thread strongly recommended.**

When using POLYNEON FR, don't forget to ensure the bobbin thread is also suitably flame resistant.

MADEIRA offers a special 100% aramid bobbin thread on 5000 m cones and it is recommended for use with POLYNEON FR. Available in black and white.



**POLYNEON FR available in following 34 colours**



**PANTONE® COLOUR MATCH OF ALL POLYNEON FR COLOURS.**

*for a real colour definition please use MADEIRA POLYNEON Colour Card, printed colours may vary from original product.*



Product	FIRE FIGHTER
Material	Nomex®
Temperature resistance for long-term application	< 175 °C
Change in condition by long-term application	> 200 °C
Softening point	none
Melting point	none
Flash point	self-extinguishing
Decomposition temperature	> 420 °C
Self-igniting temperature	no ignition
Burning behaviour	no burning
LOI (limiting oxygen index)	~ 28

Product	POLYNEON FR
Material	FR POLYESTER
Temperature resistance for long-term application	< 80 °C
Change in condition by long-term application	> 120 °C
Softening point	< 200 °C
Melting point	< 240 °C
Flash point	liquefies
Decomposition temperature	liquefies
Self-igniting temperature	> 450 °C
Burning behaviour	no afterflame, smoke & gas forming possible
LOI (limiting oxygen index)	~ 28



FIRE FIGHTER



POLYNEON FR

Product	FIRE FIGHTER Nomex®	POLYNEON FR FR POLYESTER
DIN EN 469 Protective clothing for firefighters - Performance requirements for protective clothing for firefighting	✓	✗
DIN EN ISO 14460 Protective clothing for automobile racing drivers - Protection against heat and flame - Performance requirements and test methods	✓	✗
DIN EN ISO 11612 (replaces EN531) Protective clothing - clothing to protect against heat and flame	✓	✗
DIN EN 61482-1-2 K1 Live working - Protective clothing against the thermal hazards of an electric arc	✓	✗
DIN EN 13034 K1 Protective clothing against liquid chemicals - Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals	✓	✗
DIN EN ISO 11611 (under development 2015) (replaces EN 470-1) Protective clothing for use in welding and allied processes	✓	✓
DIN EN ISO 14116 (replaces EN 533) Protective clothing - Protection against heat and flame - Limited flame spread materials, material assemblies and clothing	✓	✓
DIN 4102 Part 1, B1 * Fire resistance tests - Elements of building construction, e.g. curtains	✓	✓
Oeko-Tex® Class I	✗	✓
Oeko-Tex® Class II	✓	✓
Washing temperature 95 °C	✗	✓
Washing temperature 60 °C	✓	✓
Colors available	24	34

\*Or other national standards: NF P92 503.4.5, BS 5867, UNI 9177, NFPA701, IMO FTPC part 2

### Flame resistant properties and application areas

Testing standards for protective clothing as well as fire safety standards for elements of building construction specifies requirements of end product, thus test specimen should be end product. Thread can not be tested according to these standards. Accessories such like thread or button can be tested according to ISO15025 as trimmings of part of fabric, but it is not essentially required. The information are from fiber manufacturer refers to end product made from same raw material.

Viscose, cotton and wool for example could burn out quickly, but these materials have no self-extinguishing feature, therefore they will not be chosen for fire protection products.