

# World of Coats *protos*

COATS  
*protos*



FIRE RETARDANT  
STAPLE SPUN  
PARA-ARAMID

Product Information



Coats *protos* is a high strength, high modulus fire retardant sewing thread made from 100% spun Kevlar® or para-aramid fibre. Coats *protos* offers exceptionally high strength retention even at elevated heat ageing temperatures and can be used to stitch durable protective seams that can withstand burning flames, ballistic resistance and exposure to high temperatures. Coats is the only thread manufacturer that spins, twists, dyes and finishes the para-aramid fibre in a vertically integrated aramid manufacturing system to produce threads with excellent sewability and in difficult-to-dye colours.

#### Main Uses:

- Mattress tape edge seams
- Fire resistant and cut and slash industrial gloves
- Insulation and engine covers
- High temperature air bags
- Aerospace
- Bullet-proof vests and ballistic body armour
- Military protective garments



#### Features and Benefits:

- Made from 100% Kevlar® or para-aramid fibre with a high melting point of 450°C
- Stronger than steel, para-aramid is a high tenacity, high modulus fibre
- High retained strength after heat ageing at elevated temperatures
- Unique spinning capability for low fault para-aramid yarn
- Low elongation
- One of the few thread manufacturers that can dye para-aramid and hence deliver thread in a range of shades

## World of Coats

- Coats is the world's leading industrial thread business with a 200 year history of pioneering innovation.
- Providing complementary and value added products and services to the apparel and footwear industries.
- Applying new techniques to manufacture and supply engineered threads and yarns to a wide range of speciality segments.
- With manufacturing plants in over 70 locations and sales and distribution in many more, Coats is uniquely placed to serve your thread needs anywhere in the world.
- Our range of value adding services and tools is being expanded to help customers adapt and meet the challenges of our industry today. For example, the award winning 'Coats Colour Express' sampling service enables a fast and accurate global thread sampling capability and is backed by Coats' well known advanced colour management systems.

#### One colour range. One specification. Worldwide.

Coats operates to a global specification for Coats *protos* with quality audited by a centrally located team.

[www.coatsindustrial.com](http://www.coatsindustrial.com)



**Product Guidelines:**

Tex No.	Ticket No. (Nm)	Ply	Average Strength		Elongation % Maximum	Recommended Needle Size*	
			cN	Grams		Singer	Metric
40	70	2	2,671	2,723	6	11 - 14	75 - 90
45	60	2	3,773	3,847	6	12 - 14	80 - 90
60	50	3	5,292	5,396	6	14 - 18	90 - 110
80	35	4	7,105	7,245	6	16 - 19	100 - 120
90	30	5	8,428	8,594	6	18 - 22	110 - 140
105	25	6	9,776	9,968	6	19 - 23	120 - 160

\* Needle size recommendations are a guide only and ultimately depend on the sewing application. Since conditions and applications vary considerably in the use of thread, the thread user should assure herself or himself by preliminarily testing that the thread is suitable for the end use intended. Technical information listed above is based on current averages and should be taken only as indicative.



**Physical and chemical properties of fire retardant staple spun para-aramid:**

**Thermal Properties:**

- Decomposes at 450°C - Does not burn but self-extinguishes on removal of flame
- High modulus low elongation fibre
- Stronger than steel
- Low ultra violet resistance, loses strength on exposure to prolonged sunlight
- Excellent cut and slash resistance

**Chemical Properties:**

- Excellent resistance to oils and petro chemicals
- Excellent chemical resistance

**Coats *protos* fastness properties:**

- Washing at 95°C (ISO 105 C04 (DIN 54011)) Grade 3
- Rub Fastness (ISO 105 X12 (DIN 54021)) Grade 3

These fastness grades represent minimum performance levels and, in practice, the majority of shades will exceed these levels.

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