



DOWN LEAKAGE SOLUTION



Say no to down leakage



**To produce down jackets,
we all want:**

- ✓ Best product at the best price
- ✓ Right first time
- ✓ High productivity
- ✓ Fewer rejections
- ✓ Lower end user return rates

**But when down leakage appears,
issues come out:**

- ✗ Quality defects
- ✗ High in-line repair rates
- ✗ Low productivity
- ✗ Returns from brands (Rtm's)
- ✗ High end user return rate

What can We do?



Coats knows better

Top 10 reasons for down leakage



Filling



Fabrics



Sewing speed



Factory conditions



Sewing tension



Sewing thread



Needle



Filling pressure

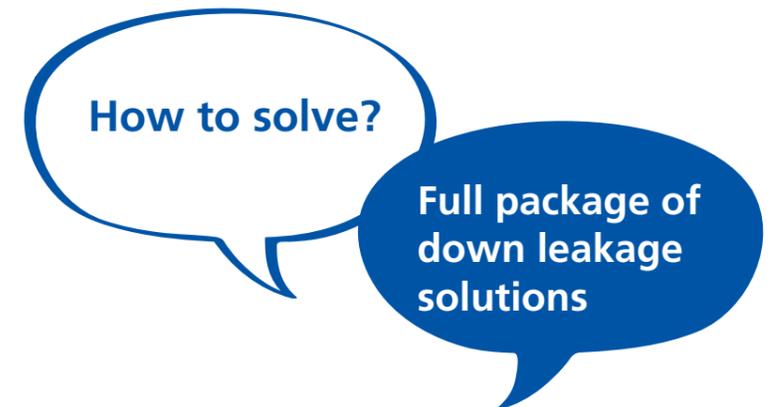


Stitch density



Machine

To resolve down leakage issues, we cannot only rely on sewing thread or any other single factor. It's about improving the combination of all factors that are relative to down leakage issues.



Increase productivity with Coats

Global Presence

Our global presence enables us to build close relationships with our customers wherever they are located, leverage our expertise from around the world and develop local market opportunities.



**COATS Brings you
PEACE OF MIND**



Technical Support and Guidance

Coats' expertise to locate and prevent down leakage issue.



Sewing Trials and Recommendations

Testing report and R&D for continuous improvement.



Onsite Training

Factory floor onsite training to share knowledgeable solutions to achieve improvements.



Threads for outdoor and performance



Keeping you dryer for longer, outdoors



The Coats AS range of thread is designed to meet the needs of outdoor performance sportswear, woven outerwear and fashion jackets.

In drier atmospheric conditions the lower static and lower dynamic friction values of Gral AS and Epic AS minimise the attraction of down towards the needle, helping to prevent down leakage through needle holes. The lower dynamic friction values of Gral AS and Epic AS also enhance the uniformity of the stitch formation allowing neat, well balanced seams.

Coats presents a new range of anti-wick sewing threads that are free of perfluorinated compounds (PFCs). The anti-wick PFC-free threads for apparel end-use are offered in the Coats polyester thread brands Epic and Gral.

This leading development is one of the many positive actions taken by Coats to demonstrate its commitment to sustainability and safety. The threads have a PFC-free anti-wick finish which prevents the capillary action of water transportation through the thread in the seam.

Coats anti-wick PFC-free threads are the very best thread choice for no-compromise, premium water-resistant outdoor wear.



Epic AS is a highly versatile sewing thread made from 100% polyester. The construction of the thread, with the continuous filament polyester core and soft staple polyester wrap, delivers high seam strength and excellent performance.

Gral AS is a 100% polyester continuous filament sewing thread with a smooth surface, creating a clean seam appearance.



Epic AWF is a versatile, durable, precisely engineered sewing thread made from 100% polyester with a PFC-free anti-wick finish. The construction of the thread, with the continuous filament polyester core and soft staple polyester wrap, delivers high seam strength. The fibres on the surface of the thread help to "lock" the thread in the seam, limiting thread movement and helping to prevent runback.

Gral AWF (100% polyester continuous filament) has an especially smooth surface and clean seam appearance. The PFC-free anti-wick finish inhibits the capillary effect, thereby ensuring that no water is taken up by the thread.

Art / Tkt	Tex	Ticket	Length	Strength cN	Elongation % Min - Max	Needle Size Metric
2S94 180	18	180	5000m	780	17 - 22	65 - 75
2S94 150	21	150	5000m	980	17 - 22	65 - 75
2S94 120	24	120	5000m	1190	17 - 22	70 - 90
2S74 100	30	100	4000m	1490	17 - 22	70 - 90
2S74 080	40	80	4000m	1960	18 - 24	70 - 90
2S93 050	60	50	3000m	3530	18 - 25	100 - 120

* Please contact your local Coats office should you require additional thread sizes.

Art / Tkt	Tex	Ticket	Length	Strength cN	Elongation % Min - Max	Needle Size Metric
13SK 200	12	200	3000m	920	16 - 22	65 - 75
13SK 120	21	120	3000m	1420	16 - 22	75 - 90
13SG 080	35	80	2000m	2170	16 - 22	75 - 90

* in EMEA markets please contact your local Coats office should you require thread samples of Gral AS in Tkt 200, 120, 080.

Please refer to the Product Information sheets for Gral (apparel) and Epic for the complete product details:

<https://www.coats.com/Products/Threads-and-Yarns/Gral/Gral-AS>
<https://www.coats.com/Products/Threads-and-Yarns/Epic/Epic-AS>

Since conditions and applications vary considerably in the use of a product, the customer and/or user should assure herself or himself that the product meets end customer requirements and is suitable for the intended end use. Coats accepts no liability for unsuitable or improper use or application of products.

Information provided above is based on current averages and should be taken only as indicative. Coats accepts no liability for the preciseness and correctness of the information provided.

Product information sheets are updated from time to time, please be sure you are referring to the most recent publication. Coats supports customers with advice on individual applications on request; if you have any questions or concerns, please contact us.



COATS epic as & gral as

Art / Tkt	Tex	Ticket	Length	Strength cN	Elongation % Min - Max	Needle Size Metric
F994 180	18	180	5000m	780	17 - 22	65 - 75
F994 120	24	120	5000m	1190	17 - 22	70 - 90
F994 100	30	100	5000m	1500	17 - 22	70 - 90
F994 080	40	80	5000m	1960	18 - 24	90 - 110
F993 030	105	30	5000m	4790	18 - 25	110 - 130

* Please contact your local Coats office should you require additional thread sizes.

Please refer to the Product Information sheets for Gral (apparel) and Epic for the complete product details:

<https://www.coats.com/Products/Threads-and-Yarns/Gral/Gral-AWF---apparel-size>
<https://www.coats.com/Products/Threads-and-Yarns/Epic/Epic-AWF>

The new range of anti-wick PFC-free threads use distinct product article codes to ensure there can be no contamination in the production process. When the cone label reads "awf" you can be confident the thread is free of perfluorocarbon chemicals.

Since conditions and applications vary considerably in the use of a product, the customer and/or user should assure herself or himself that the product meets end customer requirements and is suitable for the intended end use. Coats accepts no liability for unsuitable or improper use or application of products.

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COATS epic awf & gral awf

About COATS

Coats is the world's leading industrial thread manufacturer and a major player in the Americas textile crafts market. Revenues in 2017 were US\$1.5bn.

Coats' pioneering history and innovative culture ensure the company leads the way around the world: providing complementary and value added products and services to the apparel and footwear industries; applying innovative techniques to develop high technology Performance Materials threads and yarns in areas such as automotive, composites and fibre optics; and extending the crafts offer into new markets and online.

Headquartered in the UK, Coats is a FTSE 250 listed company on the London Stock Exchange. It is the Official Thread Supplier to the Royal Shakespeare Company.

- Each year we make enough thread to go into 8 billion pairs of jeans – that is one for every person on the planet
- Every month Coats produces enough thread to stretch all the way to the sun
- More than 450 million pairs of shoes are made every year using Coats' thread
- More than 100 million car airbags are made using Coats' Performance Materials thread every year
- In 1879 Thomas Edison used Coats' thread in his experiments to invent the light bulb
- Our Red Heart knitting and crochet yarn brand has been named 'America's Most Recommended' by the Women's Choice Award for three years running
- Our flame retardant Performance Materials threads can withstand temperatures as high as 1,000 degrees Celsius

**We are Coats, helping to connect
and form the fabric of daily life on
our planet for over 200 years.**



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