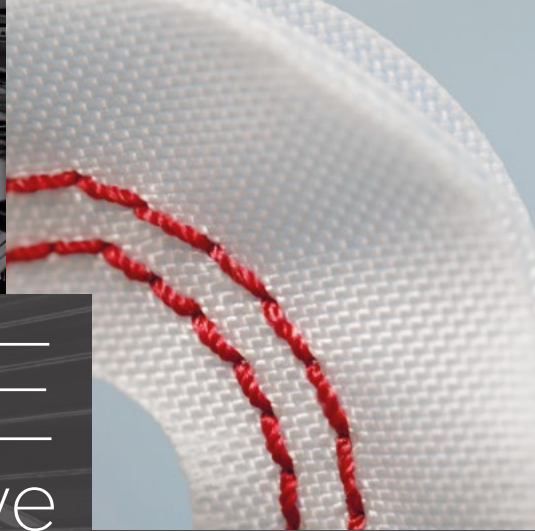




# THREAD GUIDE

## Automotive





# invention became identity.

**The origin of our many achievements** is the passion and our pioneering spirit. Since its first days our brand is known for creative solutions and products that stand out.



## The perfect thread

### **Thread is the oldest connecting technology in the world.**

The first thing people did to connect things was to tie them together. They used threads made from natural fibres or leather.

For us thread is more than sewing apparel.

It is safety, function and aesthetics for any application and material, from silk to polyester to steel.

## Bundling of innovative strength

### **Inventions have always been the backbone of our success.**

A keen eye for market requirements, quality and safety standards and the needs of people around the world have led to new solutions. Acquisitions and collaborations have also brought knowledge to the company over time. And last but not least, the people behind the threads. Their enthusiasm and expertise makes the difference.

Today we are a part of Elevate Textiles. A strong alliance of five traditional brands. Together we take textiles to the next level. To ensure our customers are always one step ahead of what's next. To create the environment for first class products and innovation we continuously invest in infrastructure, technology and production facilities.

## The benchmark: Our customer's needs

### **The perfect thread and product quality for any application.**

From research and development to production – our know-how and high process standards create excellence. Our production sites are equipped with state-of-the-art technology for winding, dyeing and bonding. All to ensure our customers get the quality and smooth sewing processes they demand.

Our answer to the most demanding requirements in durability is bonding. Uniform bonding, preparation, and winding lead to optimum processing and results – this is particularly important for airbag threads.

## Expertise beyond trends

### **Our know-how comes to the fore when a task goes beyond the norm.**

Special requests such as silicone-free, water-repellent, flame-retardant or UV-resistant sewing threads? No Problem!

Customized developments such as wind turbines, heat protection for tunnel drilling rigs? Always welcome!

From apparel to technical textiles, from mobility to high-tech – we are your reliable partner.

## Know-how

Broad experience in industries such as automotive (airbags & interiors), apparel, leather goods, outdoor, technical applications, and many more.

Tasks beyond the norm – take advantage of our development team's expertise for any speciality or innovation.

## Technology

State-of-the-art winding and bonding technology enables new possibilities like hybrid threads.

The unique Micro Core Technology® – the first core spinning process based on microfilament polyester.

Excellent dyes for the highest demands – one of our absolute core competences.

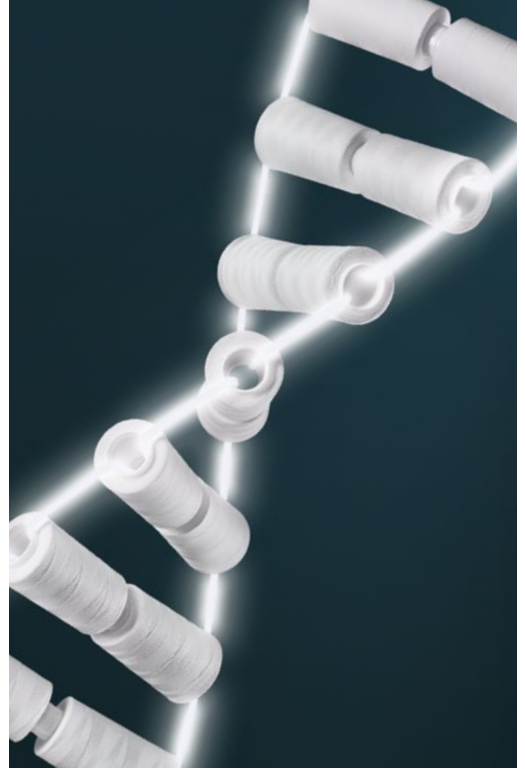
Universal thread lubrication.

## Smart processes

Implementation of self-learning digital processes.

Continuous improvement of quality and efficiency.

Science-based methods to ensure sustainability.



# imagination becomes impact.

**Turning our visions into impressive realities.** That is the mission we follow. Our direction is future. Stepping forward into new ideas and technologies is and has ever been the central part of our company's DNA.



## Expertise means change

### **Innovating sewing thread technologies for the demands to come.**

Developing and implementing new technologies and applications is integral part of our DNA. And so is improving sustainability across our company. Hundreds of employees in Europe and the world step forward into the future with passion and a pioneering spirit.

## Quality at the highest level

### **We place the highest demands on the quality of the resources used and their processing.**

Certified processes form the basis of our quality management system. We comply with strict European regulations and sustainability aspects. A&E Gütermann sewing threads for the automotive industry are manufactured in accordance with IATF 16949:2016 as standard and meet the key requirements for the automotive industry. This means that our sewing threads are harmless to use during processing and in the final application.

These standards are regularly and voluntarily reviewed by independent external certification bodies.

## Reliable advice and service

### **Being reliable also means that we are there to support your needs, and we are at your side with advice.**

We have close relationships with our customers not only in Europe, but worldwide. With comprehensive consulting, lean logistics, and fast production, we achieve high delivery reliability and service quality. This is how we make our contribution to a secure supply chain.

## We prefer action to excuses

### **We act responsibly for people, the environment and the economy.**

We support the United Nations SDGs. Therefore, A&E Gütermann is committed to excellent safe working conditions, diversity and equality.

Our actions to achieve our ambitious environmental goals: 5 % annual reduction in water usage by 2030. Zero waste-to-landfill through 100 % recycling and waste reduction. 4,2 % year-over-year reduction in scope 1 and 2 emissions. Ongoing development of renewable energy from photovoltaic installations and energy savings through optimisation.

## Quality standards

- IATF 16949:2016 (Automotive)
- DIN EN ISO 9001:2015
- DIN EN ISO 50001:2018
- REACH Compliance
- OEKO-TEX® Standard 100
- GRS Global Recycled Standard

## Service

- Reliable business partnership and delivery.
- Sewing consultancy.
- Special developments like individual colour dyes and others.

## Responsibility

- A strong commitment to excellent safe working conditions.
- Reduction of waste and emissions.
- ZDHC water and wastewater management.
- Support of the Paris Agreement und UN SDGs.
- Sustainable products.



# Safety as a priority

When you are moving people around the world, you can't afford to make compromises. Precision, accuracy and safety are paramount here, from airbags right through to seatbelts. With sewing threads from A&E Gütermann, you can rely on an experienced partner who understands the day-to-day challenges and requirements of the automotive industry.

## **Our ambition**

We offer unparalleled sewing thread expertise for all requirements and for our customers around the world. You'll find the right sewing thread for every automotive application in our range. That is our commitment – and that's what we measure ourselves by. Should you find that your specific needs are not fully covered by our current range, we look forward to the challenge of meeting your needs, and will do everything we can to provide you with the perfect product for your requirements.

## **Sewing threads to satisfy the highest requirements**

There are numerous of technical components in cars, motorcycles, trains and aircrafts to ensure that we have a pleasant journey and that we reach our destination quickly and, above all, safely. Sewing threads also play a key role in this. After all, airbags, seats, seatbelts, and most interior trims consist of textile backings that are sewn together, not to mention the insulation materials in the engine compartment. The requirements for these seams can be as broad as the variety of applications: from colourfast, water-repellent, UV-resistant and tear and rub resistant, to temperature and chemical resistant.



## Elegance meets safety

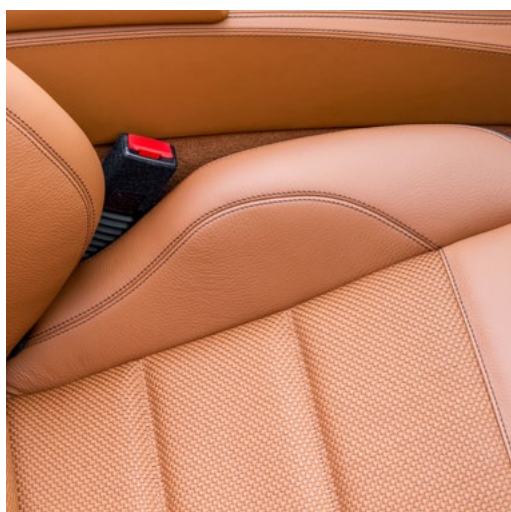
**Anyone who has been working for the automotive industry for years like we have know what matters:**

The technical and visual material properties must be in harmony. Textile backing materials are used in a wide range of vehicle areas.

In visible areas like the seats and the interior, these materials are often leather or fabric, while synthetic fibres such as polyester and polyamide are usually found in areas subject to greater stress and safety requirements. Sewing threads from A&E Gütermann are optimally aligned with these different areas and requirements.



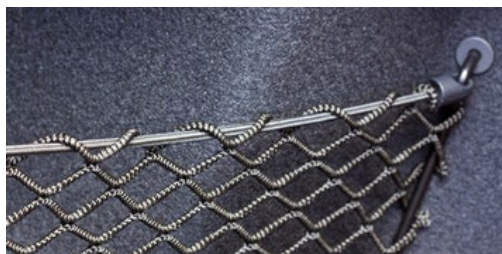
The interior is what gives every vehicle its special look.



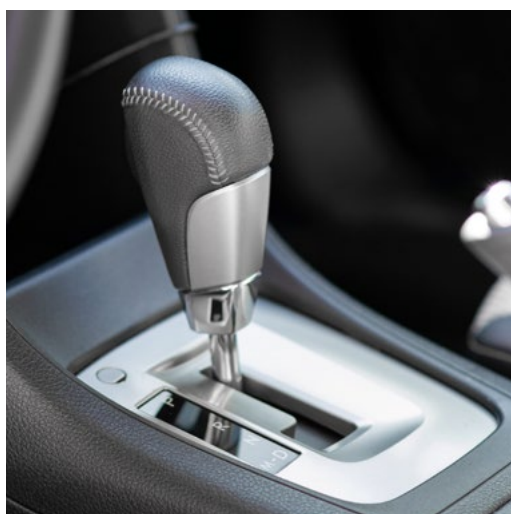
Stable, comfortable, attractive – that's how the seating area in vehicles should be.



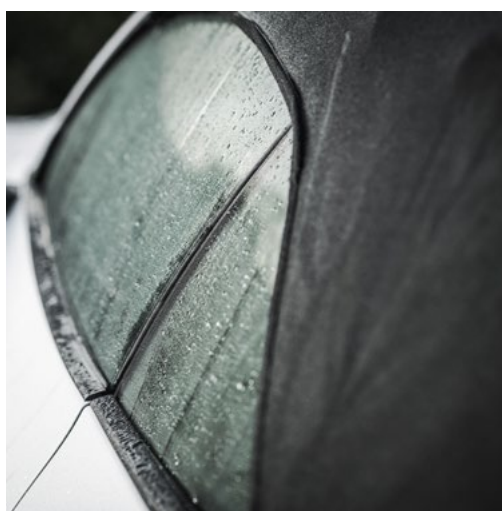
Heavily used – mats in the footwell.



Well transported – so that cargo does not become a risk.



Control and gear knobs are often made by hand.



The freedom of driving – whatever the weather.



# Unconditional protection

Strong fibres have always been the key to vehicle safety. Countless technical components in cars, motorcycles, trains and aircrafts ensure that we reach our destination comfortably, quickly and, above all, safely.

What is the role of the sewing threads? An essential one. An emergency stop puts all materials under extreme stress. Sewing threads must remain absolutely stable, especially those used for safety belts and airbags. Like those offered by A&E Gütermann.

## **Safety belts**

Whether it's a lap belt in an aircraft or a three-point belt in a car, safety belts compensate centrifugal forces. They keep people in their seats in the event of an impact, protecting them from life-threatening injuries. In an emergency they can withstand extreme loads of up to 1.5 tonnes of tensile force. In addition to tear resistance and a certain elasticity, the sewing threads used in safety belts also need to be durable and lightfast.

## **Airbags**

Maximum functionality and safety in accordance with prescribed performance standards are the highest priorities, because airbag threads have to withstand a lot in an emergency. For example, temperatures of several hundred degrees Celsius and forces of many thousands of centinewtons acting on the airbag in the event of a collision, which deploys explosively within 25 milliseconds. Airbag sewing threads must therefore have a high tear resistance, very good elasticity and reliable thermal resistance.

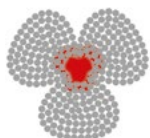
Our impressive products are the result of strictly controlled production processes that comply with the highest standards. The result? Our bondings are perfectly uniform, as are the preparation and winding, because these are decisive factors for optimum processing and obtaining the perfect seam. From a technological point of view, tear resistance and elongation are the most important parameters. Tear resistance is an influential factor for the seam's strength, and the elongation is key to the seam's stretchability.



### Airbag threads during manufacture

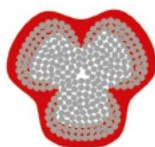
One of the biggest challenges for airbag sewing threads is the multi-directional stitching of multiple layers of very thick fabric, where the sewing thread must not become untwisted. This is a challenge even when using a two-needle machine. A&E Gütermann is there to provide expert solutions with its wide range of highly reliable airbag sewing threads.

To manufacture a perfect airbag seam, a bonded sewing thread is usually used as needle thread and an unbonded sewing thread as the looper thread. The needle thread has to be sewn through the thick, multilayered airbag fabric, which creates friction. Due to the multi-directional sewing process and the high stress, the bonding prevents the sewing thread from untwisting. Bonded sewing threads remain sealed and prevent the gripper tip from tearing through them. They also form an ideal pear-shaped loop, which ensures a perfect stitch formation.



#### Inner bonding

The bonding (red) is located in the core of the sewing thread and is activated through heat.



#### Outer bonding

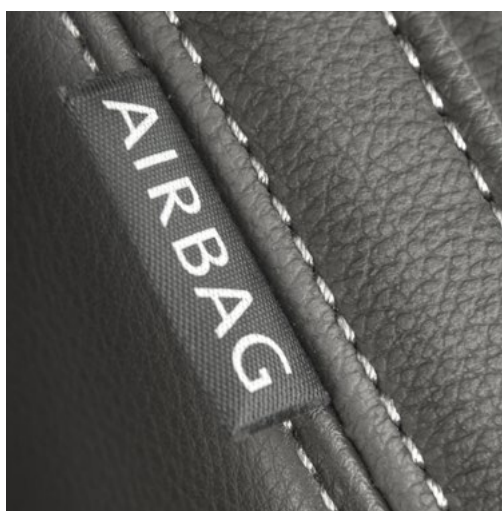
By immersing the sewing thread in a bonding compound, a special adhesive coating is formed around the sewing thread.

### Extended range for airbag seams

Our wide range of products also includes sewing threads that are perfect for construction and assembly seams and ideal for use as rupture seams and basting threads.



Ready to act in the event of an impact – airbags provide protection in milliseconds.



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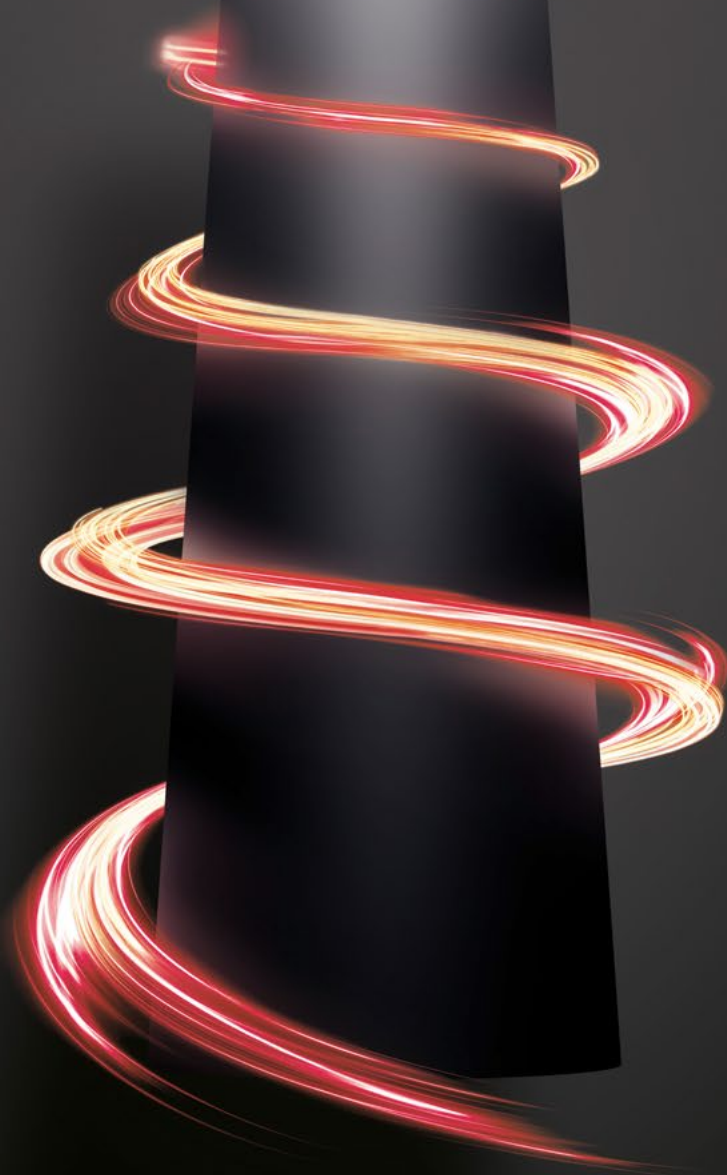
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### Make-up

-  Crosswinds
-  Cone
-  King spool

**A&E** Gütermann



Mobility - Quality meets functionality



# CALORA

- Material:** 100 % polyester
- Construction:** Continuous filament
- Areas of use:** Seating systems, Interior trims, Accessories
- Recommended application:** Holding & closing seams, decorative seams, lapped & case seams, quilting seams, embroidery applications, SAB seams
- Product benefits:**
- + Durable, robust seams
  - + High rub resistance
  - + Very high tear resistance
  - + Very even
  - + Shiny appearance
  - + Ideal for visible/decorative seams

| No./Tkt. | dtex    | Needle             | Make-up                                                                                       | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| 80       | 350(3)  | NM 70-90 / 10-14   | 2,400 m    | 584029 |
|          |         |                    | 8,000 m    | 584045 |
| 60       | 500(3)  | NM 90-100 / 14-16  | 6,000 m    | 583901 |
| 40       | 750(3)  | NM 90-110 / 14-18  | 4,000 m    | 583731 |
| 30       | 1000(3) | NM 110-130 / 18-21 | 900 m      | 583626 |
|          |         |                    | 3,000 m    | 583650 |
| 25       | 1220(3) | NM 130-140 / 21-22 | 2,500 m   | 583535 |
| 20       | 1500(3) | NM 120-140 / 19-22 | 600 m    | 583499 |
|          |         |                    | 2,000 m  | 583529 |
| 15       | 2000(3) | NM 140-160 / 22-23 | 1,500 m  | 586471 |
| 8        | 3750(3) | NM 200-250 / 25-27 | 1,750 m  | 586553 |



# CALORA rPET

- Material:** 100 % polyester, recycled
- Construction:** Continuous filament
- Areas of use:** Seating systems, Interior trims, Accessories
- Recommended application:** Holding & closing seams, lapped & case seams, quilting seams, embroidery applications
- Product benefits:**
- + Durable, robust seams
  - + High rub resistance
  - + Very high tear resistance
  - + Very even
  - + Shiny appearance
  - + Ideal for visible/decorative seams

| No./Tkt. | dtex    | Needle             | Make-up                                                                                       | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| 40       | 750(3)  | NM 90-110 / 14-18  | 4,000 m  | 583732 |
| 30       | 1000(3) | NM 110-130 / 18-21 | 3,000 m  | 583651 |
| 20       | 1500(3) | NM 120-140 / 19-22 | 2,000 m  | 583530 |
| 15       | 2000(3) | NM 140-160 / 22-23 | 1,500 m  | 586472 |



# CALORA SPS

- Material:** 100 % polyester
- Construction:** Continuous filament
- Areas of use:** Specials, Safety belts
- Recommended application:** Final bartack, Belt closure
- Product benefits:**
- + Particularly high light fastness due to black spun-dye
  - + Optimal UV resistance
  - + Durable, robust seams
  - + Very high tear resistance
  - + Very even

| No./Tkt. | dtex    | Needle             | Make-up                                                                                     | Code   |
|----------|---------|--------------------|---------------------------------------------------------------------------------------------|--------|
| 60       | 500(3)  | NM 90-100 / 14-16  | 6,000 m  | 582557 |
| 30       | 1000(3) | NM 110-130 / 18-21 | 3,000 m  | 587524 |
| 20       | 1500(3) | NM 120-140 / 19-22 | 2,000 m  | 587460 |
| 8        | 3750(3) | NM 200-250 / 25-27 | 2,850 m  | 587444 |



# FILAN AS

- Material:** 100 % polyester
- Construction:** Continuous filament
- Areas of use:** Seating systems, Interior trims, Accessories, Airbags
- Recommended application:** Holding & closing seams, decorative seams, lapped & case seams, quilting seams, embroidery applications, SAB seams
- Product benefits:**
- + Durable seams
  - + Good tear resistance
  - + Smooth surface finish
  - + Very even
  - + Good rub resistance

| No./Tkt. | dtex    | Needle             | Make-up                                                                                       | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| 120      | 270(3)  | NM 70-80 / 10-12   | 5,000 m    | 560023 |
| 80       | 300(3)  | NM 70-90 / 10-14   | 2,400 m    | 560020 |
|          |         |                    | 10,000 m   | 560022 |
| 60       | 500(3)  | NM 90-100 / 14-16  | 10,000 m   | 560019 |
| 40       | 700(3)  | NM 90-110 / 14-18  | 1,200 m    | 560014 |
|          |         |                    | 4,000 m    | 560015 |
|          |         |                    | 4,000 m    | 560017 |
|          |         |                    | 8,000 m   | 560018 |
| 30       | 900(3)  | NM 110-130 / 18-21 | 900 m    | 560010 |
|          |         |                    | 3,000 m  | 560011 |
|          |         |                    | 6,000 m  | 560012 |
| 25       | 1070(3) | NM 130-140 / 21-22 | 3,000 m  | 560009 |
| 20       | 1350(3) | NM 120-140 / 19-22 | 600 m    | 560003 |
|          |         |                    | 2,000 m  | 560005 |
|          |         |                    | 4,000 m  | 560027 |
| 15       | 2100(3) | NM 140-160 / 22-23 | 1,000 m  | 560001 |
| 11       | 2800(3) | NM 160-230 / 23-26 | 1,000 m  | 560000 |



# FILAN AS S-TWISTED

- Material:** 100 % polyester
- Construction:** Continuous filament
- Areas of use:** Seating systems, Interior trims, Accessories
- Recommended application:** Holding & closing seams, decorative seams, lapped & case seams, quilting seams
- Product benefits:**
- + Suitable for the left needle on a 2-needle machine
  - + Durable seams
  - + Good tear resistance
  - + Smooth surface finish
  - + Very even
  - + Good rub resistance

| No./Tkt. | dtex    | Needle             | Make-up                                                                                       | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| 21       | 1350(3) | NM 120-140 / 19-22 | 2,000 m  | 560008 |
| 16       | 2100(3) | NM 140-160 / 22-23 | 1,000 m  | 560026 |



# FILAN AS EMB

- Material:** 100 % polyester
- Construction:** Continuous filament
- Areas of use:** Seating systems, Accessories
- Recommended application:** Embroidery applications
- Product benefits:**
- + Suitable for embroidery applications
  - + Durable seams
  - + Smooth surface finish
  - + Very even
  - + Good rub resistance

| No./Tkt. | dtex   | Needle           | Make-up                                                                                     | Code   |
|----------|--------|------------------|---------------------------------------------------------------------------------------------|--------|
| 120      | 270(2) | NM 70-80 / 10-12 | 2,400 m  | 560025 |



# TERA LS

- Material:** 100 % polyester
- Construction:** Continuous filament
- Areas of use:** Specials
- Recommended application:** Holding & closing seams
- Product benefits:**
- + Precisely controlled shrinkage behaviour
  - + Precisely defined elongation ensures very good dimensional stability of the sewn tyre cord webs
  - + Suitable for multi-needle machines

| No./Tkt. | dtex    | Needle             | Make-up                                                                                       | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| 20       | 1500(3) | NM 120-140 / 19-22 | 2,000 m  | 704016 |



# SOLBOND

|                                 |                                                                                                                                                                                                               |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Material:</b>                | 100 % polyester                                                                                                                                                                                               |
| <b>Construction:</b>            | Continuous filament, outerbonded                                                                                                                                                                              |
| <b>Areas of use:</b>            | Interior trims, Specials                                                                                                                                                                                      |
| <b>Recommended application:</b> | Closing & decorative seams                                                                                                                                                                                    |
| <b>Product benefits:</b>        | <ul style="list-style-type: none"> <li>+ Very high colour fastness</li> <li>+ Optimal UV resistance</li> <li>+ Water repellent</li> <li>+ Very high rub resistance</li> <li>+ High tear resistance</li> </ul> |

| No./Tkt. | dtex    | Needle                 | Make-up | Code   |
|----------|---------|------------------------|---------|--------|
| 40       | 750(3)  | NM 90 - 110 / 14 - 18  | 3,000 m | 583677 |
| 30       | 1000(3) | NM 110 - 130 / 18 - 21 | 2,500 m | 583669 |
| 20       | 1500(3) | NM 120 - 160 / 19 - 23 | 1,500 m | 583634 |



# SUNSTOP®

|                                 |                                                                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Material:</b>                | 100 % polyester                                                                                                                                                                |
| <b>Construction:</b>            | Continuous filament, outerbonded                                                                                                                                               |
| <b>Areas of use:</b>            | Specials                                                                                                                                                                       |
| <b>Recommended application:</b> | Closing & decorative seams                                                                                                                                                     |
| <b>Product benefits:</b>        | <ul style="list-style-type: none"> <li>+ Optimal UV resistance</li> <li>+ Very high colour fastness</li> <li>+ High colour fastness</li> <li>+ High tear resistance</li> </ul> |

| No./Tkt. | dtex    | Needle                 | Make-up             | Code   |
|----------|---------|------------------------|---------------------|--------|
| 30       | 900(3)  | NM 110 - 130 / 18 - 21 | 2,100 yds = 1,920 m | 709171 |
|          |         |                        | 4,200 yds = 3,840 m | 709175 |
| 20       | 1350(3) | NM 120 - 140 / 19 - 22 | 1,350 yds = 1,234 m | 709172 |
|          |         |                        | 2,700 yds = 2,468 m | 709176 |



# ANEFIL POLY AS BT

|                                 |                                                                                                                                                                                 |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Material:</b>                | 100 % polyester                                                                                                                                                                 |
| <b>Construction:</b>            | Continuous filament, innerbonded                                                                                                                                                |
| <b>Areas of use:</b>            | Seating systems                                                                                                                                                                 |
| <b>Recommended application:</b> | Holding & closing seams, decorative seams, lapped & case seams, quilting seams                                                                                                  |
| <b>Product benefits:</b>        | <ul style="list-style-type: none"> <li>+ Highly durable seams</li> <li>+ High tear resistance</li> <li>+ Optimum engineered extension</li> <li>+ Good rub resistance</li> </ul> |

| No./Tkt. | dtex    | Needle                 | Make-up | Code   |
|----------|---------|------------------------|---------|--------|
| 30       | 900(3)  | NM 110 - 130 / 18 - 21 | 2,700 m | 560211 |
| 20       | 1350(3) | NM 120 - 140 / 19 - 22 | 2,000 m | 560210 |



# BAUSCHGARN

**Material:** 100 % polyester  
**Construction:** Textured multifilament  
**Areas of use:** Seating systems  
**Recommended application:** Overlock seams  
**Product benefits:**

- + Very soft and dense edge coverage
- + High bulked character
- + Very soft seams
- + Optimum engineered extension

| No./Tkt. | dtex   | Needle           | Make-up                                                                                      | Code   |
|----------|--------|------------------|----------------------------------------------------------------------------------------------|--------|
| 100      | 380(2) | NM 70-90 / 10-14 | 10,000 m  | 586919 |



# TEXAN

**Material:** 100 % polyester  
**Construction:** Textured multifilament  
**Areas of use:** Seating systems  
**Recommended application:** Overlock seams  
**Product benefits:**

- + Very soft and dense edge coverage
- + High bulked character
- + Very soft seams
- + Optimum engineered extension

| No./Tkt. | dtex   | Needle           | Make-up                                                                                       | Code   |
|----------|--------|------------------|-----------------------------------------------------------------------------------------------|--------|
| 90       | 380(2) | NM 70-90 / 10-14 | 6,000 m  | 560350 |



# ZWILON

- Material:** 100 % polyamide 6.6
- Construction:** Continuous filament
- Areas of use:** Seating systems, Interior trims, Accessories, Airbags
- Recommended application:** Holding & closing seams, decorative seams, lapped & case seams, quilting seams, embroidery applications
- Product benefits:**
- + Optimum airbag - looper thread
  - + Very high tear resistance
  - + Durable, robust seams
  - + Excellent performance on automatic sewing machines
  - + Smooth thread surface
  - + Optimum engineered extension
  - + Very high rub resistance

| No./Tkt. | dtex    | Needle             | Make-up                                                                                               | Code   |
|----------|---------|--------------------|-------------------------------------------------------------------------------------------------------|--------|
| 60       | 500(3)  | NM 90-100 / 14-16  | 12,000 m           | 586626 |
|          |         |                    | approx. 12,000 m   | 586196 |
| 40       | 750(3)  | NM 90-110 / 14-18  | 4,000 m            | 582204 |
|          |         |                    | approx. 8,000 m    | 586684 |
| 30       | 1000(3) | NM 110-130 / 18-21 | 900 m             | 582867 |
|          |         |                    | approx. 6,000 m  | 582077 |
| 20       | 1500(3) | NM 120-140 / 19-22 | 600 m            | 581941 |
|          |         |                    | 2,000 m          | 581992 |
|          |         |                    | approx. 3,100 m  | 581976 |
|          |         |                    | approx. 4,000 m  | 586150 |
| 17       | 2000(3) | NM 130-160 / 21-23 | approx. 2,700 m  | 581362 |
| 13       | 2300(3) | NM 140-180 / 22-24 | 1,300 m          | 581836 |
|          |         |                    | approx. 2,050 m  | 581842 |



# AMIFIL AS

- Material:** 100 % polyamide 6.6
- Construction:** Continuous filament
- Areas of use:** Seating systems, Interior trims, Accessories, Airbags
- Recommended application:** Holding & closing seams, decorative seams, lapped & case seams, quilting seams, SAB seams
- Product benefits:**
- + Very high tear resistance
  - + Excellent performance on automatic sewing machines
  - + Smooth thread surface
  - + Optimum engineered extension
  - + Durable, robust seams
  - + Very high rub resistance

| No./Tkt. | dtex    | Needle             | Make-up                                                                                     | Code   |
|----------|---------|--------------------|---------------------------------------------------------------------------------------------|--------|
| 80       | 400 (3) | NM 70-90 / 10-14   | 2,400 m  | 560114 |
| 40       | 700(3)  | NM 90-110 / 14-18  | 4,500 m  | 560110 |
| 30       | 900(3)  | NM 110-130 / 18-21 | 5,000 m  | 560104 |
|          |         |                    | 6,500 m  | 560106 |
|          |         |                    | 8,000 m  | 560108 |
| 20       | 1350(3) | NM 120-140 / 19-22 | 1,000 m  | 560101 |
| 10       | 2700(3) | NM 160-230 / 23-26 | 1,000 m  | 560090 |



# AMIFIL AS S-TWISTED

- Material:** 100 % polyamide 6.6
- Construction:** Continuous filament
- Areas of use:** Seating systems, Interior trims, Accessories
- Recommended application:** Holding & closing seams, decorative seams, lapped & case seams, quilting seams
- Product benefits:**
- + Suitable for the left needle on a 2-needle machine
  - + Very high tear resistance
  - + Excellent performance on automatic sewing machines
  - + Smooth thread surface
  - + Optimum engineered extension
  - + Durable, robust seams
  - + Very high rub resistance

| No./Tkt. | dtex    | Needle             | Make-up                                                                                       | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| 31       | 900(3)  | NM 110-130 / 18-21 | 6,500 m  | 560115 |
| 21       | 1350(3) | NM 120-140 / 19-22 | 1,000 m  | 560103 |



# NEWBOND

- Material:** 100 % polyamide 6.6
- Construction:** Continuous filament, outerbonded
- Areas of use:** Airbags
- Recommended application:** Quilting seams
- Product benefits:**
- + Perfect needle thread for airbags
  - + For critical seam operations in the automotive sector
  - + Suitable for sewing multi-layered fabrics
  - + Ideal for 2-needle machines

| No./Tkt. | dtex    | Needle             | Make-up                                                                                             | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------------|--------|
| 30       | 1000(3) | NM 160-210 / 23-24 | approx. 5,500 m  | 581879 |
| 20       | 1500(3) | NM 130-150 / 19-22 | approx. 4,200 m  | 583461 |
| 17       | 1760(3) | NM 140-160 / 22-23 | approx. 3,500 m  | 583446 |
| 13       | 2300(3) | NM 180-200 / 24-25 | approx. 2,700 m  | 581257 |



# ANEFIL NYLON AS BT

- Material:** 100 % polyamide 6.6
- Construction:** Continuous filament, innerbonded
- Areas of use:** Seating systems
- Recommended application:** Holding & closing seams, decorative seams, lapped & case seams, quilting seams
- Product benefits:**
- + Particularly hard-wearing seams thanks to increased tear resistance
  - + Excellent performance on automatic sewing machines
  - + Smooth thread surface
  - + Optimum engineered extension
  - + Durable, robust seams
  - + Very high rub resistance

| No./Tkt. | dtex    | Needle             | Make-up                                                                                       | Code   |
|----------|---------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| 40       | 700(3)  | NM 90-110 / 14-18  | 3,500 m  | 560201 |
|          |         |                    | 8,000 m  | 560202 |
| 30       | 900(3)  | NM 110-130 / 18-21 | 2,500 m  | 582695 |
| 20       | 1350(3) | NM 120-140 / 19-22 | 2,000 m  | 560200 |



# ZWIBOND

- Material:** 100 % polyamide 6.6
- Construction:** Continuous filament, innerbonded
- Areas of use:** Seating systems, Airbags
- Recommended application:** Quilting seams
- Product benefits:**
- + Perfect needle thread for airbags
  - + For critical seam operations in the automotive sector
  - + Excellent performance on automatic sewing machines thanks to inner bonding
  - + Suitable for sewing multi-layered fabrics
  - + Ideal for 2-needle applications

| No./Tkt. | dtex    | Needle             | Make-up             |   | Code   |
|----------|---------|--------------------|---------------------|---|--------|
| 60       | 500(3)  | NM 90-100 / 14-16  | approx.<br>12,000 m | ⏏ | 583138 |
| 40       | 750(3)  | NM 90-110 / 14-18  | approx.<br>8,000 m  | ⏏ | 583085 |
| 20       | 1500(3) | NM 120-140 / 19-22 | approx.<br>2.700 m  | ⏏ | 582964 |
|          |         |                    | 8,000 m             | ⏏ | 586617 |
| 13       | 2300(3) | NM 140-180 / 22-24 | 1,300 m             | ⏏ | 582840 |
|          |         |                    | approx.<br>2,600 m  | ⏏ | 586674 |
| 8        | 2900(3) | NM 210-240 / 26-27 | 800 m               | ⏏ | 582816 |



# GÜTERMANN K

- Material:** 100 % meta-aramide / Nomex®
- Construction:** Spun, long fibre
- Areas of use:** Specials
- Recommended application:** Quilting seams
- Product benefits:**
- + Short-term high-temperature-resistant at approx. 360°C
  - + Flame retardant and self-extinguishing
  - + Non-melting
  - + Good resistance to chemicals
  - + Very high tear resistance

|                 | No./Tkt. | dtex   | Needle             | Make-up                                                                                     | Code   |
|-----------------|----------|--------|--------------------|---------------------------------------------------------------------------------------------|--------|
| GÜTERMANN K 403 | 70       | 400(3) | NM 90-100 / 14-16  | 700 m    | 701319 |
|                 |          |        |                    | 5,000 m  | 701299 |
| GÜTERMANN K 753 | 40       | 750(3) | NM 100-110 / 14-18 | 3,000 m  | 701342 |



# ANESAFE®

- Material:** 100 % meta-aramide / Nomex®
- Construction:** Spun, short fibre
- Areas of use:** Specials
- Recommended application:** Quilting seams
- Product benefits:**
- + Short-term high-temperature-resistant at approx. 360°C
  - + Flame retardant and self-extinguishing
  - + Non-melting
  - + Good resistance to chemicals
  - + Very high tear resistance

|             | No./Tkt. | dtex   | Needle             | Make-up                                                                                       | Code   |
|-------------|----------|--------|--------------------|-----------------------------------------------------------------------------------------------|--------|
| ANESAFE® 50 | 50       | 600(3) | NM 100-110 / 16-18 | 4,000 m  | 705705 |
| ANESAFE® 36 | 36       | 800(3) | NM 110-130 / 18-21 | 3,000 m  | 705704 |



# GÜTERMANN L

- Material:** 100 % meta-aramide / Nomex®
- Construction:** Continuous filament
- Areas of use:** Specials
- Recommended application:** Quilting seams
- Product benefits:**
- + Short-term high-temperature-resistant at approx. 360°C and permanently at 260°C
  - + Flame retardant and self-extinguishing
  - + Good resistance to chemicals
  - + Highly durable
  - + Long-lasting
  - + Very high tear resistance

|                  | No./Tkt. | dtex    | Needle                 | Make-up                                                                                     | Code   |
|------------------|----------|---------|------------------------|---------------------------------------------------------------------------------------------|--------|
| GÜTERMANN L 753  | 40       | 750(3)  | NM 90 - 110 / 14 - 18  | 400 m    | 701505 |
|                  |          |         |                        | 1,200 m  | 701491 |
|                  |          |         |                        | 4,000 m  | 709328 |
| GÜTERMANN L 1503 | 20       | 1500(3) | NM 120 - 140 / 19 - 22 | 600 m    | 701548 |
|                  |          |         |                        | 2,000 m  | 724475 |

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