



Gütermann

# Automotive



# ADRENALINE IN THE BLOOD

Safety as a priority

If you're 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 pooled sewing thread expertise for all requirements and for customers all over the world. You'll find the right product 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**

An enormous number of technical components in cars, motorcycles, trains and aeroplanes 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 of the interior panelling 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.

### **Certified quality management**

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.



# EMBARKING ON A JOURNEY TOGETHER

Elegance meets safety

Anyone who has been working for the automotive industry for years like us knows 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.



## Seats

Vehicle seats must be stable and durable, but always comfortable and visually appealing. Different types of seams are used here, from holding and closing seams to decorative seams. Additional seam operations are also used in some cases, such as sewing in a seat airbag on the side of the seat. With the solutions from A&E Gütermann, you can rely on the best sewing thread expertise.

Our product recommendation:

Calora 15 | 20 | 30 | 40 | 80  
Filan AS 15 | 20 | 30 | 40 | 80  
Zwilon 20 | 30 | 40  
Amifil AS 20 | 30 | 40  
for holding and closing seams,  
decorative and embellishing seams,  
felled and flat fell seams

## Headrests, armrests and centre console

In the interior, function and form merge into one. Head rests, armrests and centre consoles are among the most visually striking elements in the vehicle interior. They not only ensure safe stability, but also define the individual design. The sewing thread used doesn't just have to be resistant, but also colourfast and UV-resistant, so that it always looks good in daily use.

Our product recommendation:

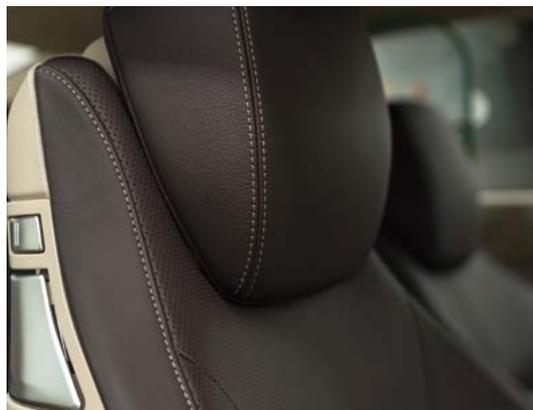
Calora 15 | 20 | 30 | 40  
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felled and flat fell seams

## Steering wheel and gear knob

The steering wheel and gear knob are among



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



The interior is what gives every vehicle its special look.



Beautiful and durable - interior panels.



the few parts of the vehicle that are still partially made by hand. They are subjected to constant stress in daily use. The sewing threads used must match these requirements: they should not only remain colour-fast, but also feel pleasant to touch for many years to come.

Our product recommendation:

**Filan AS 8 | 15 | 30**

**Calora 8 | 15 | 30**

for holding and closing seams

Control and gear knobs are often made by hand.



### Control panels and door panels

Robust and durable, yet visually appealing: the interior panels fulfil several functions. Both leather and fabric elements are used here. The seam types range from holding and closing seams to purely decorative seams. With the sewing thread from our tried-and-tested Calora family, you can rely on perfect quality that fulfils all the requirements.

Our product recommendation:

Calora 15 | 20 | 30 | 40 | 80  
Filan AS 15 | 20 | 30 | 40 | 80  
for holding and closing seams,  
decorative seams,  
felled and flat fell seams

### Floor mats

Floor mats are exposed to daily wear and tear where they come into contact with dust, dirt and stones. The sewing threads used here must be durable enough to withstand this stress. The mechanical processing properties also play an important role, in addition to functional properties such as tear and rub resistance.

Our product recommendation:

Calora 20  
Filan AS 20  
Zwilon 20 | 40  
Amifil AS 20 | 40  
for lockstitch seams  
  
Calora 80  
Filan 80 AS  
for embroidery applications



Constantly under heavy strain - mats in the footwell.



The freedom of driving - whatever the weather.

### Convertible top

Driving with the roof down- a popular activity, especially in summer. However, a convertible top doesn't usually demonstrate its value in sunny weather, but in more challenging conditions such as rain or snow.

In addition to high durability, the sewing threads used must be wind- and water-repellent and offer maximum light fastness and UV resistance.

Our product recommendation:

Solbond 20 | 30  
Calora SPS 20 | 30 (= spider black) for UV-resistant and water-repellent holding and closing seams



The freedom of driving - whatever the weather.

### Rear luggage covers and nets

The luggage compartment in estate cars is covered to protect the occupants from parts flying around. There is also a coarse-meshed retaining net. Both elements need to be strong and durable to provide protection. Since they are sewn, the tear strength of the sewing thread is also important. When selected in the right thickness and colour, it fulfils its function and looks great.

Our product recommendation:

Calora 20 | 30 | 40  
Filan AS 20 | 30 | 40  
for holding and closing seams



Well covered - so that cargo does not become a risk.



### Insulation

Insulation materials in the interior of the engine must withstand continuous high loads. In addition to robustness, durability and good sewability, chemical and heat resistance as well as flame resistance are decisive factors. With our sewing threads, you can rely on tried-and-tested solutions that can withstand even the highest loads.

Our product recommendation:

L 753 | 1503

K 753 | 403

Anesafe® 36 | 50 | 75

for holding and closing seams

### Tyre cord

Sewing threads are also used in tyre production. A special tyre cord fabric is incorporated to reinforce rubber tyres. This fabric consists of several layers that are sewn together in the manufacturing process. A "low shrinkage" sewing thread should be used to achieve an optimal result, as the tyre cord expands during processing. Tera 20 LS offers exactly that: precisely defined stretch. This gives the sewn tyre cord tracks the right dimensional stability for optimal quality.

Our product recommendation:

Tera 20 LS (= low shrinkage) for holding seams when sewing tyre cord tracks



The engine compartment – the highest material requirements apply here.



Smooth running, safety, efficiency – quality criteria for tyres.

# NO COMPROMISES for maximum safety

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

What role do the sewing threads play here? An essential one. During emergency braking, all materials are subjected to the highest stresses. Sewing threads on seat belts and airbags in particular must remain completely dimensionally stable. Like those offered by A&E Gütermann.

## Safety belts

Whether we're talking a lap belt in an aircraft or a three-point belt in a car, safety belts compensate for centrifugal forces. They keep people in their seats in the event of an impact, protecting them from life-threatening injuries. In an emergency, these belts must be able to withstand extreme loads of up to 1.5 tonnes of tensile force. In addition to tear resistance and a certain elasticity, durability and light fastness also play an important role in the sewing threads for safety belts.

Our product recommendation:

Calora 8 SPS (= spider black) for bartacks, belt closure

## Airbag

Since the airbag threads have to withstand a lot, superior functionality and safety in accordance with the required performance standards are the highest priorities. For example, temperatures of several hundred degrees Celsius and forces of many thousands of centinewtons act on the airbag when a collision occurs and it unfolds explosively within 25 milliseconds. As a result, it is essential for airbag sewing threads to have a high tear resistance, very good elasticity and reliable thermal resilience.

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 later, and the elongation is key to the seam's stretchability.



Buckling up safely - vital in an emergency.



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



### 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, during which the sewing thread must not become untwisted. This is a challenge even when a two-needle machine is used. A&E Gütermann is there for you 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 the top thread and an unbonded sewing thread as the looper thread. The top 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

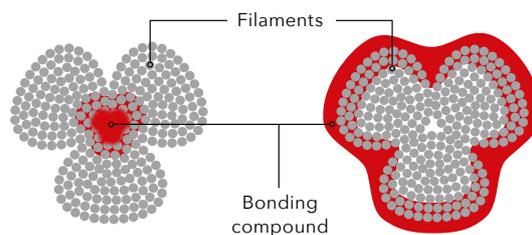
and prevent the gripper tip from tearing through them. They also form an ideal pear-shaped loop, which ensures a perfect stitch formation.



### Bonding options

#### Inner bonding

The bonding 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.

# AT A GLANCE

## Our product recommendations for airbag seams

	<b>Bonding</b>	<b>Product</b>	<b>Tkt.</b>					
100% POLYAMIDE 6.6	none	<b>Zwilon</b>	13/3	17/3	20/3	30/3	40/3	60/3
	Inner	<b>Zwibond</b>	13/3			30/3	40/3	60/3
	Outer	<b>Newbond</b>	13/3	17/3		30/3		
100% POLYESTER	none	<b>Calora</b>	11/3	15/3				
	Inner	<b>Cabond</b>	11/3	15/3				

### 100% polyamide 6.6

Our 100% polyamide 6.6 sewing threads have excellent elongation combined with a high resistance to tearing. They ensure that the airbag's seam remains safely intact when the airbag is deployed, thus guaranteeing the excellent integrity of the seam. They also offer impressive resistance to rubbing and snagging.

**Zwibond** is the perfect top thread for airbags. Due to its inner bonding, it is perfectly safe for automated processes and a special thread for critical sewing operations such as double chain stitch and multi-directional sewing, even when using two-needle machines. This sewing thread has a particularly excellent track record when it comes to the sewing of multilayered fabrics.

**Newbond** is also suitable as a top thread. It has the same properties as Zwibond, except that this sewing thread has an outer bonding.

**Zwilon**, on the other hand, is an unbonded thread which is perfect for use as a lower thread.

### 100% polyester

**Cabond** and **Calora** are perfect for sewing polyester fabrics and coated materials. Cabond is a continuous filament and performs impressively as an upper thread thanks to its inner bonding, making it an excellent choice for critical sewing operations. Calora is not bonded, making it a very good under 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.



	Construction	dtex	Elongation	Tear resistance
MARA 220	Micro Core Technology®	130(1)	ø 15% ( 13% - 17%)	ø 470 cN
SKALA 360	Continuous filament, bonded	80(1)	ø 19% ( 16% - 22%)	ø 510 cN
CALORA 80	Continuous filament	350(3)	ø 18% (12% - 24%)	ø 1,850 cN



# AT A GLANCE

## Our product recommendations for you

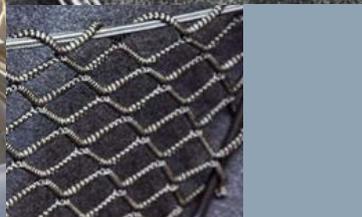
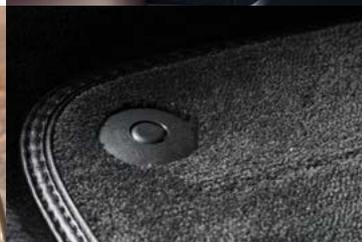
A&E Gütermann offers the perfect sewing thread for every seam position With the highest durability and an outstanding look. With a consistently high quality and in a wide range of colours.

Area	Seam position	A&E Gütermann solution	Material	Construction	
<b>Seats</b>	Holding and closing seam, decorative seam, felled and flat fell seams	<b>Calora 15   20   30   40   80</b>	100% polyester	Continuous filament	
		<b>Filan AS 15   20   30   40   80</b>			
		<b>Zwilon 20   30   40</b>	100% polyamide 6.6	Continuous filament	
		<b>Amifil AS 20   30   40</b>			
<b>Headrests, armrests and centre console</b>	Holding and closing seam, decorative seam, felled and flat fell seams	<b>Calora 15   20   30   40</b>	100% polyester	Continuous filament	
		<b>Filan AS 15   20   30   40</b>			
		<b>Zwilon 20   30   40</b>	100% polyamide 6.6	Continuous filament	
		<b>Amifil AS 20   30   40</b>			
<b>Steering wheel and gear knob</b>	Holding and closing seam	<b>Calora 8   15   30</b>	100% polyester	Continuous filament	
		<b>Filan AS 8   15   30</b>			
<b>Control panels and door panels</b>	Holding and closing seam, decorative seam, felled and flat fell seams	<b>Calora 15   20   30   40   80</b>	100% polyester	Continuous filament	
		<b>Filan AS 15   20   30   40   80</b>			
<b>Floor mats</b>	Lockstitch	<b>Calora 20</b>	100% polyester	Continuous filament	
		<b>Filan AS 20</b>			
		<b>Zwilon 20   40</b>	100% polyamide 6.6	Continuous filament	
		<b>Amifil AS 20   40</b>			
	Embroidery	<b>Calora 80</b>	100% polyester	Continuous filament	
		<b>Filan AS 80</b>			
<b>Convertible top</b>	UV-resistant and water-repellent seams	<b>Calora SPS 20   40 (= spider black)</b>	100% polyester	Continuous filament	
		<b>Solbond 20   30</b>		Continuous filament, bonded	
<b>Insulation</b>	Lockstitch/seam	<b>L 753   1503</b>	100% aramide	Continuous filament	
		<b>K 403   753</b>		Spun, long staple	
		<b>Anesafe® 36   50   65</b>		Spun, short staple	
<b>Rear luggage cover and nets</b>	Holding and closing seams	<b>Calora 20   30   40</b>	100% polyester	Continuous filament	
		<b>Filan AS 20   30   40</b>			
<b>Tyre cord</b>	Holding and closing seams	<b>Tera 20 LS (= low shrinkage)</b>	100% polyester	Continuous filament	
<b>Safety belts</b>	Final bartack, belt closure	<b>Calora 8 SPS (= spider black)</b>	100% polyester	Continuous filament	
<b>Airbag</b>	Lockstitch seams	<b>Zwilon 13   17   20   30   40   60</b>	100% polyamide 6.6	Continuous filament, bonded	
		<b>Zwibond 13   30   40   60</b>		Continuous filament, inner-bonded	
		<b>Newbond 13   17   30</b>	100% polyamide	Continuous filament, bonded	
	<b>Calora 11   15</b>	100% polyester		Continuous filament, unbonded	
		Sew in seat air bag	<b>Calora 80</b>	100% polyester	Continuous filament
		Construction and assembly seams	<b>Mara 220</b>	100% polyester	Micro Core Technology®
		<b>Skala 360</b>	Continuous filament, bonded		

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