



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:

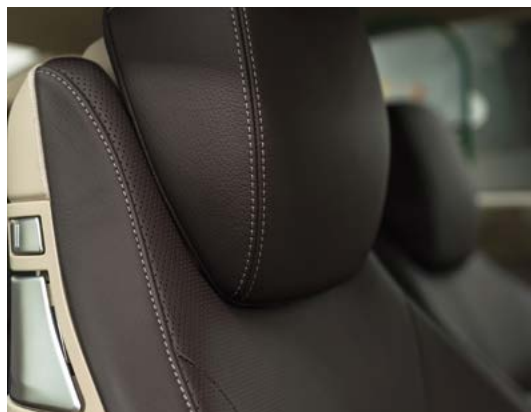
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Steering wheel and gear knob

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

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



The freedom of driving - whatever the weather.



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

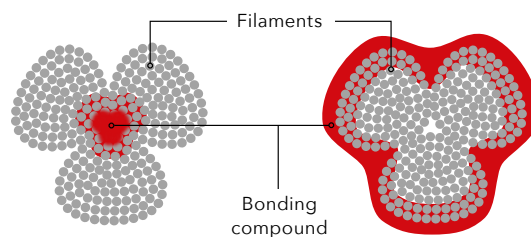
and prevent the gripper tip from tearing through them. They also form an ideal pear-shaped loop, which ensures a perfect stitch formation.



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

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

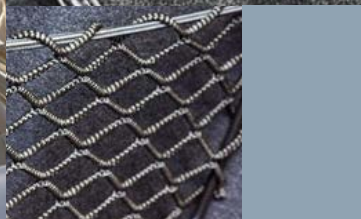
A&E Gütermann offers the perfect sewing thread for every seam position. With the highest durability and an outstanding look. With a consistently high quality and in a wide range of colours.

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

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