



Gütermann

UNCOMPROMISING STRENGTH FOR THE HIGHEST IN SAFETY



Safely to your destination

Numerous technical components in cars, motorcycles, trains or aeroplanes ensure that we reach our destination comfortably, quickly and, above all, safely. What role do sewing threads play in this? A very central one. When an airbag is triggered, it is usually a matter of life or death. The material is exposed to the highest stresses. The same applies to the thread used to sew the airbag.

Seams unlimited

Threads for highest seam requirements

Since airbag threads have to endure a lot in case of an emergency, superior functionality and safety in accordance with the performance standards prescribed are among the highest priorities. For example, temperatures of several hundred degrees Celsius and forces of many thousands of

centinewtons, which act on the airbag when a collision occurs and it unfolds explosively within 25 milliseconds. Therefore, it is essential for airbag threads to have a high breaking strength and excellent elongation as well as an exceptionally reliable thermal resilience.



Processing airbag threads

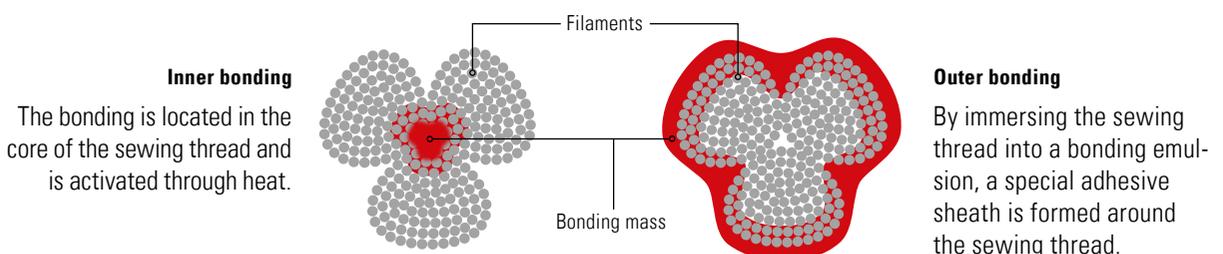
The biggest challenge for airbag threads is the multidirectional sewing of multiple, very dense fabric layers, whereby the sewing thread should not become untwisted – this also applies when using two-needle machines. A&E Gütermann is there for you to provide expert solutions with a diverse range of highly reliable airbag threads as your problem solver.

To manufacture a perfect airbag seam, usually a bonded sewing thread is used as the needle thread and an unbonded sewing thread as the looper thread. The needle thread has to be sewn through the dense and multi-layered airbag fabric, which creates friction. Due to the multidirectional sewing process and the high stress, the bonding prevents

the thread from untwisting. Bonded sewing threads remain sealed and prevent the hook tip from tearing them. They also form an ideal pear-shaped loop, which ensures a perfect stitch pattern.



The two bonding options offered by A&E Gütermann – inner and outer bonding – differ as follows:



Our product solutions

Our products are the result of precisely controlled production processes that comply with highest standards. The result? Our bondings as well as the finishing and winding are perfectly uniform - because these are decisive factors for optimum processing and obtaining a perfect seam. From a technological per-

spective, breaking strength and elongation are among the most important parameters. The breaking strength is the influential factor for the subsequent seam strength and the elongation is decisive for the seam elongation.

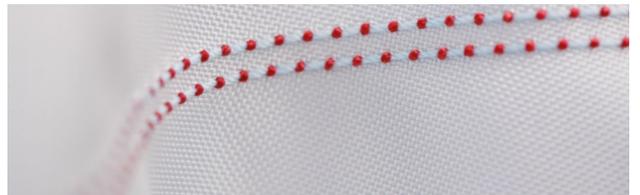
100 % Polyamide 6.6

Our 100% polyamide 6.6 sewing threads possess optimum elongation properties combined with a high tear strength. They ensure that the airbag's seam remains safely intact when being deployed, thus guaranteeing excellent seam performance. Furthermore, they convince by a high rub resistance and loop strength.

Zwibond is the perfect needle thread for airbags. Thanks to its inner bonding, it is fully suitable for use on automatic sewing machines and for critical seam operations such as double chain stitch and multidirectional sewing – even on two-needle machines. Besides, Zwibond has been proven especially when sewing multi-layered fabrics.

Newbond has exactly the same properties as Zwibond, except that this thread has an outer bonding.

Zwilon is an unbonded thread that is ideally suitable as a looper thread.



100 % Polyamide 4.6



G 1503 is available both, bonded and unbonded.

G 1503 is extremely heat-resistant due to its raw material polyamide 4.6 and as been developed especially for airbags units that must withstand high temperatures, e.g. when being deployed. The melting point of G 1503 lies at 290 °C. A higher heat resistance means a higher energy absorption and thus a higher seam safety. Developed and manufactured for multidirectional sewing on CNC-controlled sewing machines, G 1503 is distinctive for the consistently high quality of its raw material. G 1503 is available



100 % Polyester

Cabond and **Calora** are perfect for sewing polyester fabrics and coated materials. Cabond is a inner-bonded continuous filament, which makes it an excellent choice for critical seam operations. Calora, however, is unbonded, making it a very good looper thread.

Extended range for airbag seams

Besides, our wide range of products includes sewing threads that are perfect for construction or assembly seams and that are ideally suited for use as rupture seams and basting threads.

	Mara 220	Skala 360	T162
Construction	Core spun	Continuous filament, bonded	Continuous filament
dtex	130(1)	80(1)	160(2)
Elongation	ø 15 % (13 % – 17 %)	ø 19 % (16 % – 22 %)	ø 19 % (16 % – 22 %)
Breaking strength	ø 470 cN	ø 510 cN	ø 960 cN

Safety first – our certified quality management

Our sewing threads are absolutely safe in processing and in their application, because our suppliers are also required to comply with respective specifications in order to ensure a cooperation in accordance with our standards. To fully meet this requirement, A&E Gütermann voluntarily undergoes regular audits and evaluations by independent external certification bodies.

The following certificates attest to the precise interaction of quality, environmental and production standards at A&E Gütermann:

- Quality Management System of the Automotive industry as per IATF 16949:2016
- Quality Management System as per ISO 9001:2015
- Energy Management System as per ISO 50001:2011

Besides, A&E Gütermann ensures that its product sites in Germany, Spain and Slovenia comply with the following legal regulations:

- EU Chemicals Regulation REACH
- Workplace Ordinance
- Operational Premises Ordinance
- Wastewater Ordinance





Our airbag threads at a glance

100 % Polyamide 6.6

100 % Polyamide 4.6

100 % Polyester

unbonded

inner-bonded

outer-bonded

unbonded

outer-bonded

unbonded

inner-bonded

Zwilon

Zwibond

Newbond

G 1503 UG

G 1503 G

Calora

Cabond

Tkt.
13/3
17/3
20/3
30/3
40/3
60/3

Tkt.
13/3

20/3

40/3
60/3

Tkt.
13/3
17/3
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