

Hidden talents – technical yarns in the car

Unseen from the outside or visible only after a second glance, many technical yarns are "hidden" inside the car. Their task is to absorb tensile forces at a more or less precisely defined elongation.





The desired elongation behaviour does not result from the textile material alone. Rather, the deciding factor for elongation behaviour is the construction of the twisted yarn, i.e. its structure combined with its twists.

The carcass of a tire, for example, consists of twisted cord yarns. With every revolution of a tire, these twisted cord yarns are subjected to tension – many millions of times over the course of years. Therefore, high fatigue resistance is essential for the cord yarns in the carcass. It is not the material itself but mainly the construction of the twisted yarn and its twist level that guarantee such high fatigue resistance. Symmetrical 2-ply and 3-ply constructions, preferably made of polyester or rayon, are used in the carcass.

There are also twisted yarn constructions elsewhere in the car: toothed belts in the engine compartment serve to transfer mechanical energy. The toothed belt is subjected to tension with every revolution. In order to withstand this continuous strain, the toothed belt contains highly twisted cord yarns made from high-performance textile fibres such as aramid, for example.

Seat belts, the car's primary lifesaver, must absorb large amounts of kinetic energy in the event of a collision – in a short but precisely defined period of time. Seat belts must therefore exhibit very specific strength and elongation behaviour, which in turn arises from the textile material properties of the polyester used for them in combination with the twists.

The airbags are invisible because they are hidden in the steering wheel, dashboard and door panelling, but they are extremely important – even lifesaving – in the event of an accident. Today, they are standard equipment in every car. The starting point for producing airbags is yarns made of polyamide or polyester. To smoothly weave these yarns into a textile fabric, they must first be given a few twists, i.e. a protective twist.



Technical yarns with protective twist can also be found in lorry tarpaulins. Tarpaulins must be tear-proof and resistant to temperature changes and precipitation. High-strength polyester with low shrinkage is therefore used for tarpaulins.

With the twisting and cabling machines TechnoCorder TC2 and CableCorder CC5, Saurer offers ideal machines for the production of technical yarns made from a variety of feed materials in a very wide yarn count range.

TechnoCorder TC2 – as versatile as the market

- Maximum production flexibility
- Unique material flexibility
- Yarn count range from 235 to 60 000 dtex
- Unbeatable productivity

CableCorder CC5 – cabling in pole position

- High energy savings
- Smart spindle design
- Modern quality control
- Automation solutions

