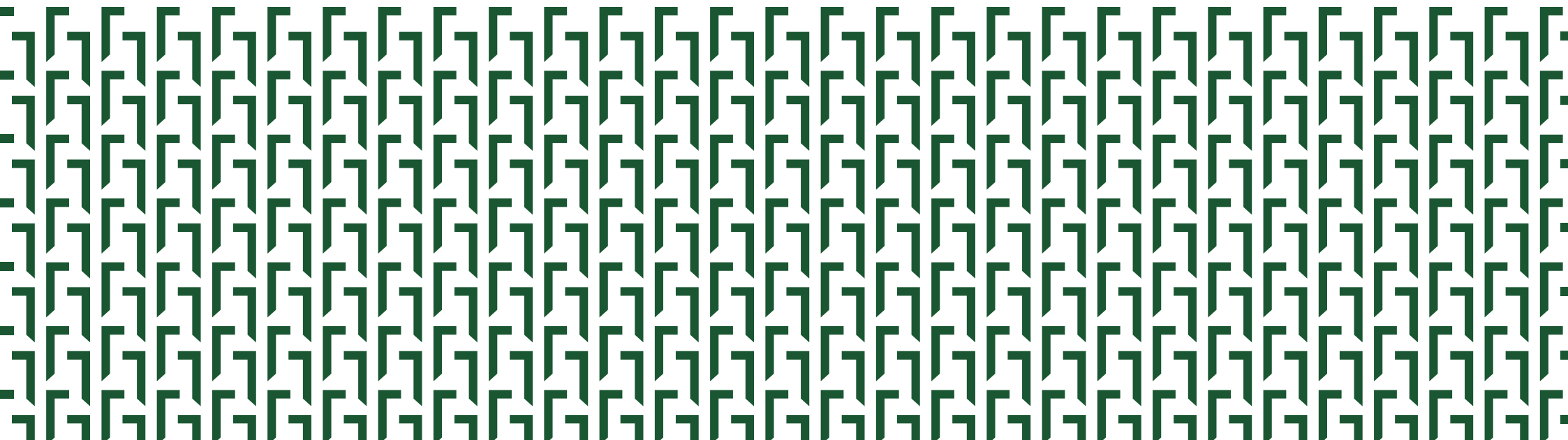
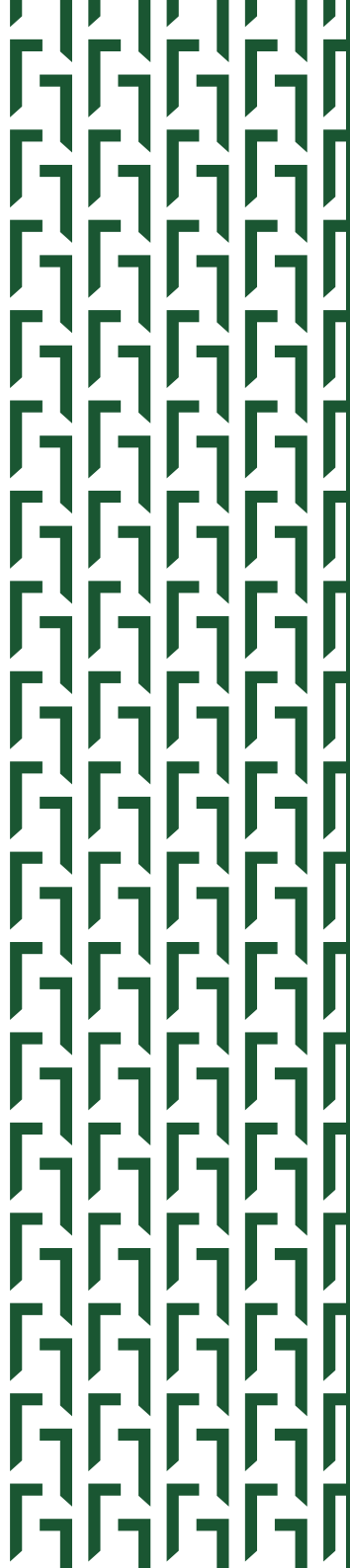


# Nonwovens

Products and services for the Nonwovens industry







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## Tradition and Future

**Groz-Beckert was founded in 1852 and is active in over 150 countries today with around 9,000 employees. Whether for knitting, weaving, felting, tufting, carding or sewing: Our total product portfolio contains over 70,000 products. As a leading supplier of industrial machine needles, precision parts, precision tools, systems and services for a wide range of textile production and joining methods, Groz-Beckert supports its customers and partners within the textile value chain – and beyond: The Technology and Development Center (TEZ) is a pioneering platform with which Groz-Beckert has been shaping the future of the textile industry together with machine manufacturers, end users, textile producers and institutes since July 2010.**

### Groz-Beckert

Textiles are everywhere and are found in a wide variety of shapes and functions in all areas of life: Fashion, sports and leisure, home textiles, flooring or in architecture. And textiles are also indispensable for mobility – from cars to space travel – and for health.

Groz-Beckert manufactures machine needles, precision parts and precision tools and offers supporting services for all aspects of the textile industry, from fashion, home and domestic textiles to technical textiles.

### Technology and Development Center

Groz-Beckert represents reliable product quality and customer service in the world of textiles. The Technology and Development Center (TEZ) was opened in 2010 in order to develop new development and application fields for textiles in cooperation with customers and partners. Not only is the TEZ furnished with state-of-the-art equipment, it also provides the perfect environment for bundling the competencies and knowledge of Groz-Beckert. As a future-oriented company, Groz-Beckert places great value on the research and continued development of new technologies and application fields in the textile industry.

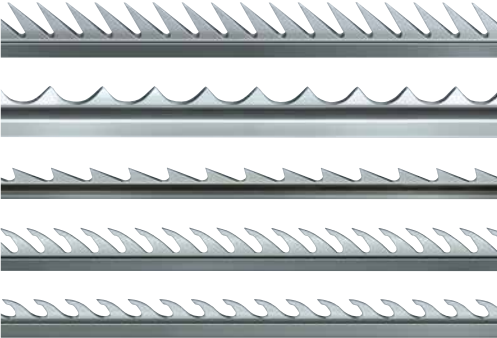


# The Nonwovens product sector

In 1980, Groz-Beckert extended its portfolio to include products for the nonwovens industry. Over time, the portfolio has come to include card clothing for the nonwovens industry, felting and structuring needles, jet strips, high-quality tools and accessories to create surfaces, as well as comprehensive services for nonwovens products. Groz-Beckert provides to the nonwoven industry production solutions with any type of fiber material, be they wood chip fibers, animal fibers, natural fibers, mineral fibers, or synthetic fibers.



Felting and structuring needles



Card clothing for the nonwovens industry



Jet strips



Staple fiber needle punch line

## Far more than just products

Groz-Beckert not only develops, produces and sells products for the nonwovens industry, it also provides a range of services for machine manufacturers and nonwoven fabric producers. The Technical Center Felting at the Groz-Beckert Technology and Development Center (TEZ) is equipped with a state-of-the-art staple fiber needle punch line, as well as various

testing devices for textile-related physical property evaluations under ideal analysis and testing conditions. The staple fiber needle punch line also provides the requisites to simulate production processes and develop process knowledge, in order to provide answers to varied questions. The central goal of the product division is to achieve process optimization

around the manufacture of nonwovens and the consistent expansion of overall expertise in the field of nonwoven bonding.

# Continuous further development



**1980**  
First felting needles  
from Groz-Beckert



**1993**  
Conical felting  
needles

**1995**  
Certification to  
DIN EN ISO 9001

**1999**  
Takeover of Singer  
Spezialnadelfabrik GmbH & Co. KG



**2002**  
GEBECON™



**1991**  
Teardrop shape



**1994**  
GEBEDUR™ I + II

**1998**  
Cross STAR



**2002**  
Tri STAR™



**2004**  
HyTec™ A  
jet strip





**2011**  
Board Master system



**2013**  
EcoStar™



**2017**  
Staple fiber needle punch line

**2019**  
The Groz-Beckert customer product

**2023**  
Groz-Beckert felting needle module



**2010**  
Takeover of Foster Needle Co., Inc.



**2012**  
Patented needle packaging



**2014**  
Twisted



**2017**  
HyTec™ jet strips

**2022**  
Digital Ecosystem

**2024**  
Takeover of the product sector Nonwovens Carding by the product area Nonwovens



Products

## From fiber to nonwoven fabric – the right tool for any application

The upstream process for web consolidation is called carding, which involves the opening, parallelization, and blending of fiber tufts. The product range in the Nonwovens Carding sector includes all card clothing for the nonwovens industry, as well as accessories for card maintenance, consulting and product recommendations, assembly and mounting services, and even machine commissioning.

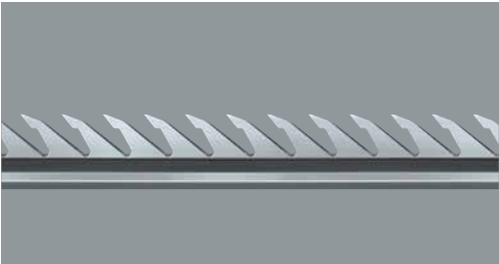
With the mechanical nonwoven binding process, fibers are transported by felting needles or hydroentanglement, and incorporated into the nonwoven web. The nonwoven fabrics produced in this way, are used in a wide variety of fields including medicine, cars and aircraft, geotextiles, filtration, home furnishings, and felts for paper production machinery. Wide-ranging fields of application call for suitably specialized tools. This is why the Groz-Beckert portfolio encompasses thousands of different felting and structuring needles. Depending on the materials used, the requirements of the production processes and the end products, the most suitable needles need to have certain characteristics and "talents". For jet strips, production is subject to customer request. The individual configuration and depth of variation provide a number of different options.



Groz-Beckert newsletter

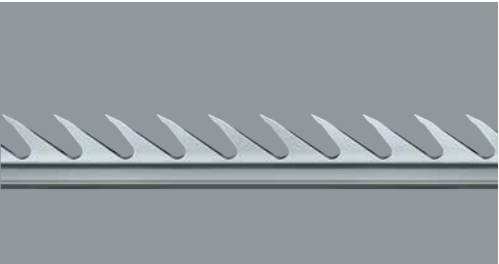
# Unique card clothing

Being a customer-focused company, Groz-Beckert is constantly listening inputs from the market to further develop cutting-edge carding technology. This interaction between customer and the R&D department has proven to be a strong tool in tackling today's challenges. At present, below mentioned unique products are in the Groz-Beckert range. Please contact Groz-Beckert Carding for more details.



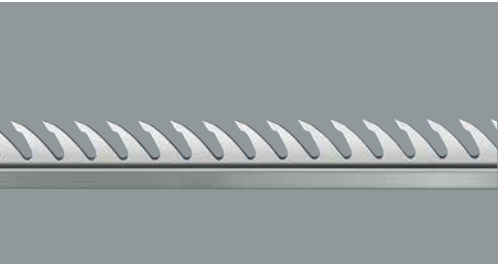
### SiroLock™

SiroLock™ is a card wire with a unique step especially designed for doffers and workers. SiroLock™ controls fibers at the step instead of at the front angle. This significantly improves its fiber retention, enabling it to take much more fibers than conventional wires. This wire is especially beneficial in the ever-demanding high-speed spunlace industry.



### EvoStep™

EvoStep™ is a new range of worker and doffer wires that feature a unique undercut on the tooth front which is more pronounced compared to the angle of the overhang part below the tip. Thanks to this “evolutionary” step, the fiber taking and holding capacity of EvoStep™ is up to 30 % better compared to conventional wires.



### SiroLock plus™

The comprehensive and application-oriented portfolio of the SiroLock™ plus card clothing reflects the characteristics of the Groz-Beckert InLine card clothing: a reduced rib height of the interlock card clothing and in particular improved strength of delicate card clothing teeth. This enables optimal card clothing geometries with fiber-protecting finish quality.

## The Groz-Beckert portfolio of felting and structuring needles

Depending on the fiber materials and required properties of the end product, different needle types are appropriate which differ in terms of their length, the shape of the working part and the distribution or properties of the barbs. Groz-Beckert offers many different high-performance felting and structuring needles.



Standard felting needle – view of the complete needle and working part

The function of structuring needles (fork and crown needles) is to structure already consolidated fiber webs in special machines. The surfaces are designed with a velour or ribbed character, or with geometric or linear patterns.

The portfolio encompasses:

- Thousands of needle types for all applications
- World market's most extensive production range
- Special needle geometries coordinated to wide-ranging product segments
- Needle designs to address the most stringent demands



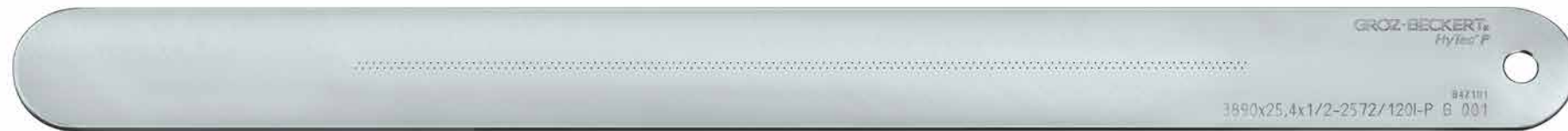
Fork needle – working part



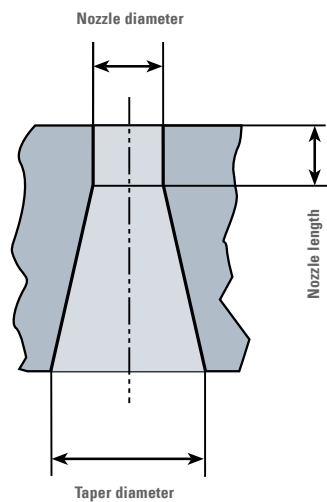
Crown needle – working part

## Jet strips

Jet strips are used for hydroentanglement, the so-called spunlace technique. As with felting and structuring needles, various jet strips are needed depending on the desired properties of the end product. Groz-Beckert offers jet strips in various dimensions and materials.



Jet strip



The portfolio includes jet strips with the following specifications:

- Overall length: 80 mm to 6,200 mm
- Number of nozzles: 40 to 20,000 nozzles
- Number of rows: 1 to 5 rows
- Nozzle diameter: 0.08 mm to 0.22 mm

## Fields of application for the nonwovens industry

The areas in which card clothing, felting and structuring needles, as well as jet strips are used, are almost limitless. Bonded nonwovens are also used in many technical areas due to their durability, appearance, functionality, low weight, and inexpensive production.



Geotextiles



Door lining (Alcantara)



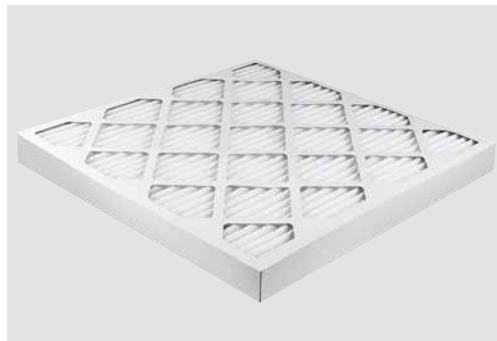
Hood absorber



Paper machine felts



Bitumen-coated roofing felt



Cassette filter



Wipes



Synthetic leather



Services

## Solving problems and making new discoveries

**One of the fundamental requirements for producing nonwoven fabrics is to always choose precisely coordinated tools and accessories. To help its customers succeed, Groz-Beckert not only offers all the required products from a single reliable source, it also provides services for that added peace of mind.**

# Services in the Nonwovens Carding Sector

Good service is the key to success. In addition to high-quality card clothing and accessories, Groz-Beckert offers comprehensive and professional service in the Nonwovens Carding sector. This service ensures that your production lines always run at their best, downtime is minimized, and you benefit from the highest quality in the long term. In doing so, Groz-Beckert sets industry standards and underscores its commitment to excellent customer service.

Our qualified service team is available around the clock and performs operations both directly at the customer's site and in our modern service workshop.

- **Comprehensive support:** Fast maintenance and repair throughout Europe
- **High-quality components:** Resistent card clothing for optimal performance
- **Customer satisfaction:** Individual consulting and tailored solutions
- **Increased efficiency:** Minimal downtime thanks to reliable service



Service workshop



Service vans



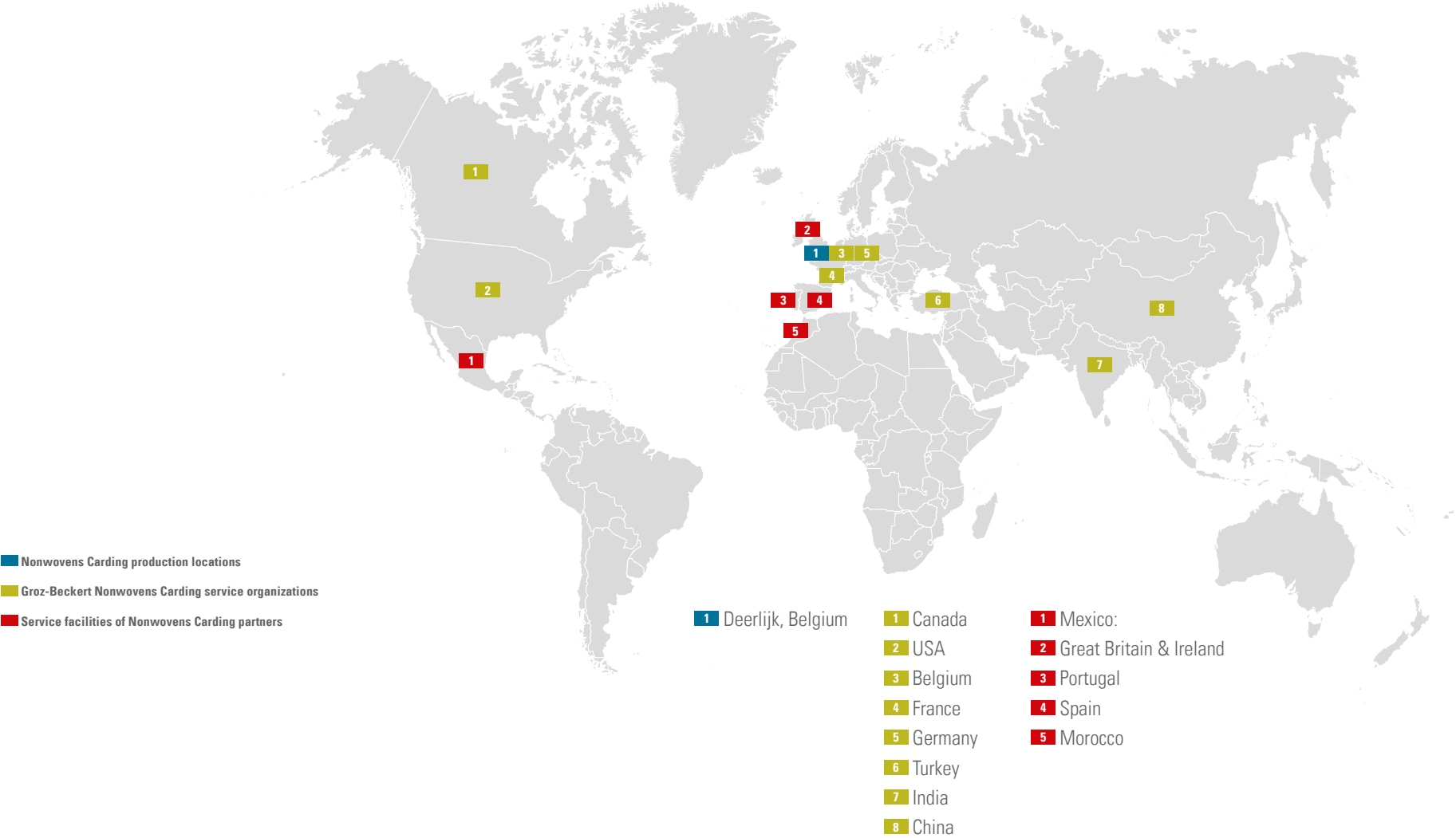
Mounting service



Search for damages to the wire on a roller

# On-site service with global presence

You benefit from our commitment to local service supported by our global presence. You can rely on our global network of production sites, service organizations, and the facilities of our partners to ensure that your requirements are met quickly and efficiently. All locations and facilities guarantee service even beyond their national borders.



## Felting and structuring needle-related services

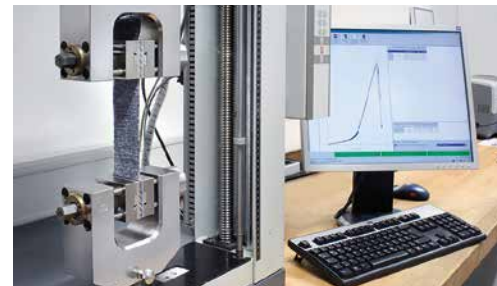
A universal staple fiber needle punch line, as well as various measurement and testing devices for textile-related physical examinations, are available for new designs and material testing at the Competence Center Felting Technology in the Groz-Beckert Technology and Development Center (TEZ).



The staple fiber needle punch line at the Competence Center Felting

The staple fiber needle punch line is suitable for performing fundamental testing of geotextiles, filtration media, automotive nonwovens, synthetic leather, home textiles or nonwoven webs for paper machines. Additionally, the facility is available for:

- Customer projects/trials/joint development
- Ramp-up production
- Own projects
- Groz-Beckert Academy, universities, etc.



Testing tensile force and elongation

Measurement and testing devices for textile-related physical analysis play a significant role in assessing nonwoven fabric, and are the basis for comprehensive service. At Groz-Beckert, you can also call on leading specialists in applications engineering to help you find problem solutions or provide support in the development of your products.

In detail, Groz-Beckert can help with:

- Dynamic penetration force measurements
- Textile analyses (fibers/product)
- Needle analyses
- Fundamental analyses
- Product assessments (surface, strength, density, ...)



Determining penetration force

### Further analyses

The Felting product sector can also call upon a broad based fund of textile expertise and extensive laboratory facilities in the Technology and Development Center (TEZ). Alongside laboratories for material and chemical analyses, a textile test lab complete with the latest ultra-modern equipment and standardized climatic test facilities is also available. Here, tests can be performed in particular for nonwoven fabrics - from the raw material through fibers and yarns through to the finished end product.

## At home in the world of nonwovens

Groz-Beckert is there for its customers the world over: The Groz-Beckert production and sales subsidiaries around the world are backed up by a close-meshed network of distributors and trade partners, ensuring that our customers can call directly on us in around 150 countries.

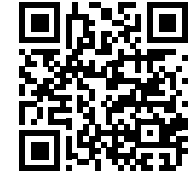
### Product sector objectives

- Increased productivity, product quality and service life
- Sparing use of resources
- Process optimization



### The Groz-Beckert Nonwovens product sector

- Product diversity and complete portfolio: The world's broadest-based and most extensive portfolio
- Worldwide service and sales network
- Warehousing in central customer regions
- The best delivery capability anywhere in the world by a long margin compared to other needle manufacturers
- Expert teams in the local sales regions
- Multiple-stage safety concept
- Expertise in mechanical bonding
- 160 years of experience in the manufacture of precision tools



Download the current training program

## Groz-Beckert Academy

**Apart from offering personal application advice, Groz-Beckert has always supported their customers by providing product as well as basic knowledge along the textile value chain. Since 2012 this part of the comprehensive service package has a name: The Groz-Beckert Academy has set itself the task of sharing and passing on knowledge, imparting experiences as well as making know-how and competencies accessible.**

Whether it is knitting, weaving, felting, tufting, carding or sewing – the Groz-Beckert Academy offers a comprehensive training program that covers all the most important textile production and joining methods. Using a mix of theory and practice, our experienced trainers share expertise and know-how. As a result, the participants are optimally equipped for their tasks within the textile world.

The course range covers various basic, advanced and special training courses, which are held in the Technology and Development Center (TEZ) in Albstadt. Moreover, the Groz-Beckert Academy offers individual trainings on-site at the customer's location.

All courses are offered in German and English. Selected courses are also held in additional languages, such as Spanish and Chinese.



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