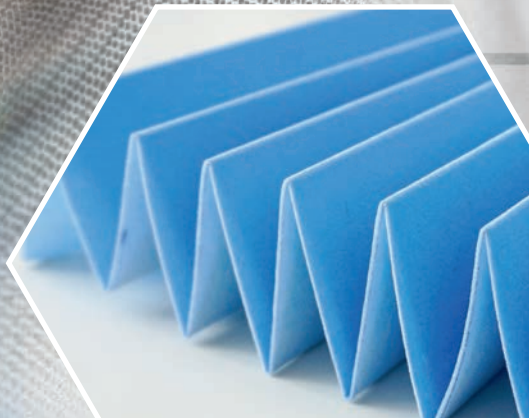
Norafin®

*materials for life*

# PROCESS & AFTERTREATMENT Capabilities



**As a solution-oriented manufacturer of hydroentangled and needle punched nonwovens, as well as composites, it is our goal to translate the needs of our customers into available products.**

Our experienced technology division is here to develop the machinery and equipment technology even further. Only through optimizing are we able to maintain a high level of quality and offer innovative productions solutions to our customers.
We have three spunlace lines and one needle line, three cutting lines and one finishing line spread over our two sites in Mildenau (Germany) and Mills River (USA).
Precise investment in quality and technology allows us to respond flexibly to changing market needs and product requirements.

## Materials for Life

# *Fiber marks the Beginning*

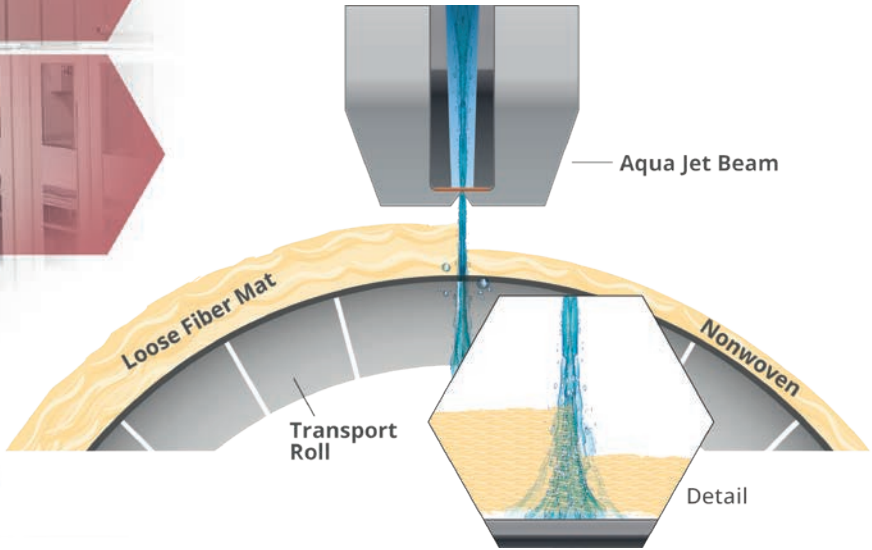
**Thanks to our own flexible production technologies, we are able to process a large variety of staple fibers. New fibers can be tested and verified in cooperation with our Research & Development Department.**

- staple fibers in lengths of 20 – 70 mm
- fiber finenesses between 1 – 15 Dtex
- surface weights between 15 and 1,000 g/m²

**POSSIBLE FIBER TYPES ARE FOR EXAMPLE:**

- **High-Performance Fibers** (Meta- & Para-Aramide, PANOX, Polyimide (PI), UHMWPE etc.)
- **Thermoplastic Fibers** (PET, PET BiCO, PA, PP, PLA etc.)
- **Natural and Regenerates Fibers** (Flax, Hemp, Viscose, Viscose FR, Lenzing™ Lyocell etc.)

# *Spunlace Technology (Hydroentanglement)*




## PROCESS POSSIBILITIES

**Basis weight range:** 15 – 750 g/m²

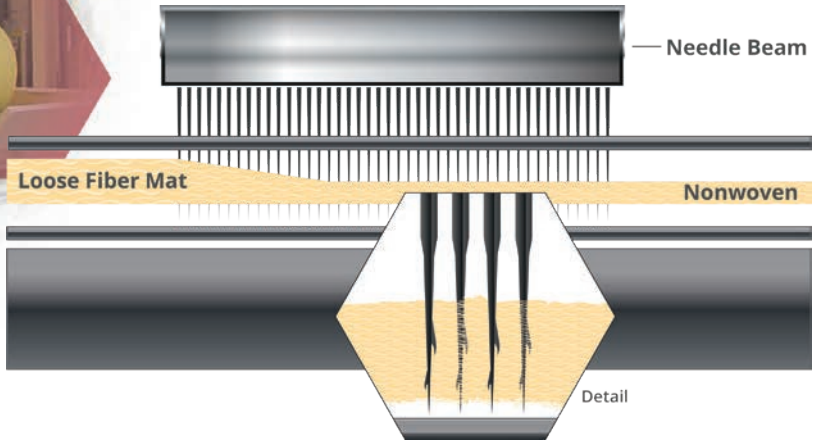
**Width upon request:** max. 2.80 m

**Capacity:** 6,000 metric tons per year

**During spunlacing, a homogeneous, intertwined textile structure is created by means of water jets. This nonwoven can be produced in various structures by using different drums. In addition, two autonomous carding machines enable us to combine up to four nonwoven layer constructions in a single operation.**

- **flat, apertured and structured (3D) materials**
- **spunlace lamination**
- **multilayered and double sided**
- **reinforcement through scrims, weaves, etc.**
- **antistatic or conductive**
- **different colors, according to RAL**
- **Manufacturing process without additional chemical binders and with own water treatment cycle** (part of our certified energy management system according to DIN EN ISO 50001:2018)

# *Needlepunch Technology*




## PROCESS POSSIBILITIES

**Basis weight range:** 60 – 1,000 g/m²

**Width upon request:** max. 2.40 m

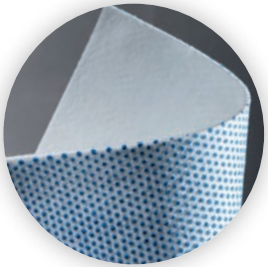
**Capacity:** 1,000 metric tons per year

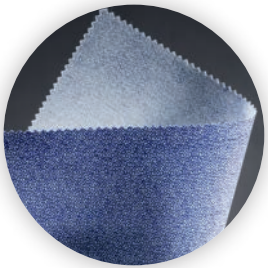
An autonomous needlepunch line processes the fibrous dry web. The web created from the carding machine is mechanically strengthened via vertical moving needles.
In a second process, more layers can be added.
A thermal fixation in the dryer is possible if required.

- antistatic or conductive
- different colors, according to RAL
- reinforcement through scrims, weaves, etc.

# *Internal Aftertreatment Capabilities*

**In addition to advising our customers on the right fiber, we are able to adapt our lines to produce a material that meets your requirements and needs. We also offer a wide range of finishing options and value added processing steps.**
**We have an autonomous finishing line that enables us to finish our technical nonwovens, as well as other supplied textiles, according to your needs.**





**AFTERTREATMENT OPTIONS:**

- water and oil repellent
- flame-retardant
- pre-shrinking (wash resistance)
- reinforcement/stiffening
- antistatic
- insect protection
- high-visibility
- hydrophilic
- surface modifications
  (anti-slip, smooth, etc.)
- foam application (stable, unstable)
- calendering, quilting
- one color print

# *Overview of our technical opportunities*

**Padding** – The nonwovens are fully impregnated, and the desired function is imparted throughout the material.

**Lamination** – Two materials are bonded together during lamination using a variety of adhesives (nonwovens + nonwovens/fabric + nonwovens/ nonwovens + film).

**Printing** – Single color patterns, logos, or images can be applied using rotary screen aftertreatment line printing technology.

**Coating** – A variety of functional coatings, including stable or unstable foams, can be applied to one side of the material.

**Kiss-roll Coating** – Low add-on chemical treatments can be applied to one side of the material using kiss-roll application. It is possible to finish each side of the nonwoven to impart a different function.

**Hydro-Splicing** – By means of our own patented process, two nonwoven rolls are connected together without any visible transition.

# *Final Converting*

**Norafin offers not only the solution-oriented production nonwovens, but also the customer-oriented supply of the goods.**

## Short rolls converting

- Individual roll converting, lengths of at least 25 running meters infinitely variable possible (diameter up to 1.70 m)

## Individual width assembly

- Widths from at least 100 mm to 2,400 mm infinitely variable

## Packaging solutions

- Packaging in foil bags and folding cartons on pallet, with and without UV protection
- Customized packaging upon request possible

*Your contact for special technical nonwovens.*

NO Cap-Aft 09/2026

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