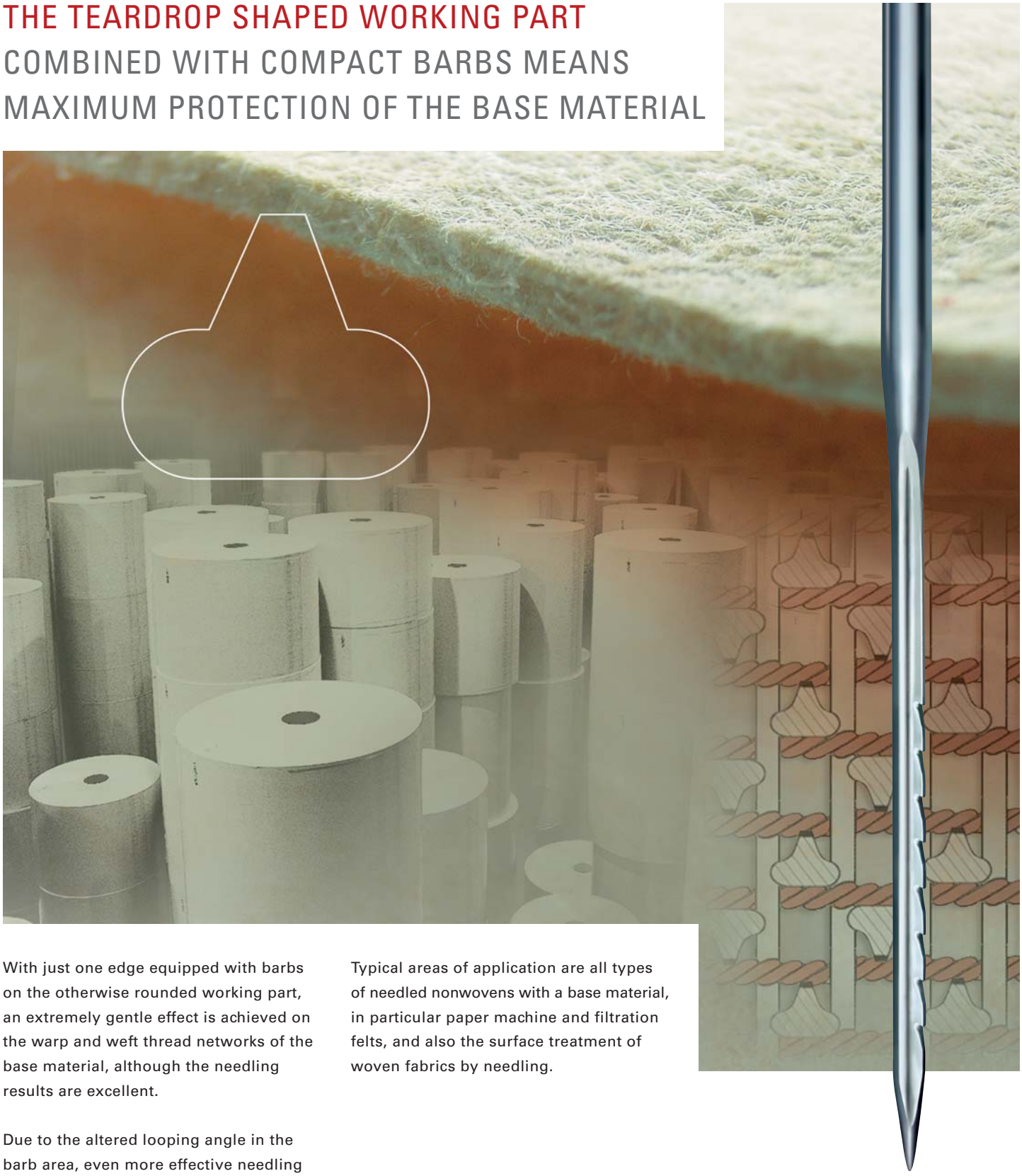
THE TEARDROP SHAPED WORKING PART
COMBINED WITH COMPACT BARBS MEANS MAXIMUM PROTECTION OF THE BASE MATERIAL



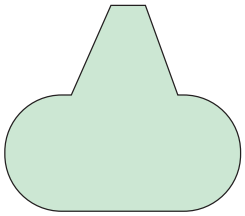
With just one edge equipped with barbs on the otherwise rounded working part, an extremely gentle effect is achieved on the warp and weft thread networks of the base material, although the needling results are excellent.

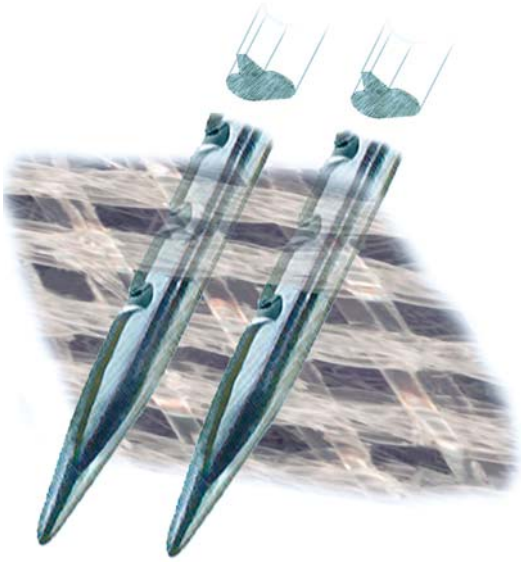
Due to the altered looping angle in the barb area, even more effective needling is achieved.

Typical areas of application are all types of needled nonwovens with a base material, in particular paper machine and filtration felts, and also the surface treatment of woven fabrics by needling.

BENEFITS OF THE TEARDROP SHAPE

Needles with a teardrop shaped working part are marked with the number "6" (G **6**2017) in the G-number.



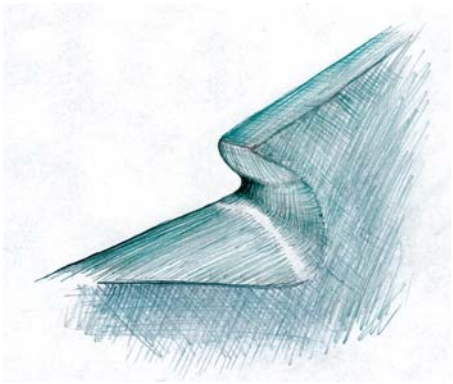


Unlike standard working parts, the teardrop shaped working part has only one edge, while the two remaining edges are absolutely rounded. Only the edge that is not rounded off is equipped with small, closely-set barbs. It is also possible in production of these needles to position the working part in a defined place in relation to the needle crank.

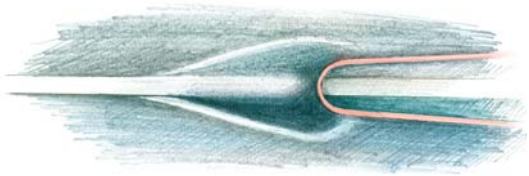
By combining these characteristics that are particular to this kind of needle, it is possible to create an optimum needle package with benefits in practical application. Ideal protection of the base material is possible, and the physical properties of the needle-punched nonwoven are optimised.

The same applies for needling woven fabrics, where either the face is roughened to improve the fabric feel or the back is roughened in preparation for subsequent coating.

The effect is that changes to textile characteristics like shrinkage, tensile strength and pilling can be kept under control.



HL-BARB



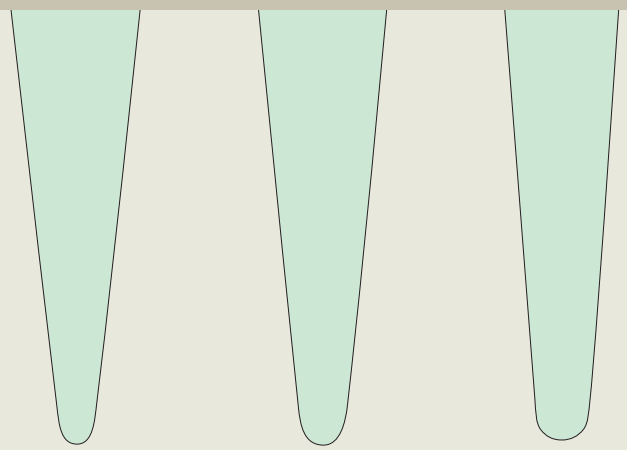
HL-BARB (FROM ABOVE)

Needles with a teardrop shape have **HL-barbs.** The result is needling that is gentle on the fibres, due to the three-dimensional barb rounding and the small barb dimensions.

The risk of damage, for example to monofilament textile fabric as a base material for paper machine felts, decreases relatively, the smaller the barb size. The reduced needling effect is compensated here by the smaller F-barb spacing. For special applications, it is a good idea to use needles with even denser barb spacing.

MAXIMUM BASE MATERIAL PROTECTION

Point designs

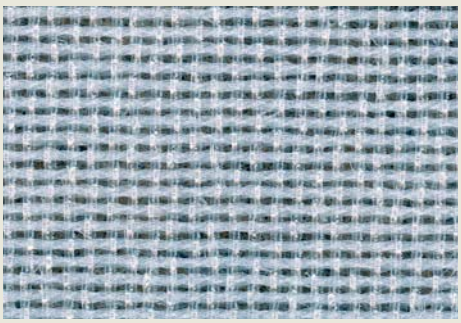


In order to achieve the necessary gentleness on the fabric, Groz-Beckert felting needles are available with a teardrop shaped working part with different sizes of round point.

S	Slightly rounded point
S1	Rounded point
S2	Very rounded point

Areas of application

Typical fields of application are all types of needled nonwovens with a base fabric, in particular paper machine and filtration felts.



BASE FABRIC

PAPER MACHINE FELTS

A teardrop shaped working part has ideal characteristics to provide the perfect solution to all problematic areas of application where gentle treatment of the needled product is called for.

FILTRATION FELTS

TANNING FELTS

NEEDLING WOVEN FABRICS

TO OBTAIN A CHANGE OF SURFACE STRUCTURE ON ONE SIDE OR BOTH SIDES

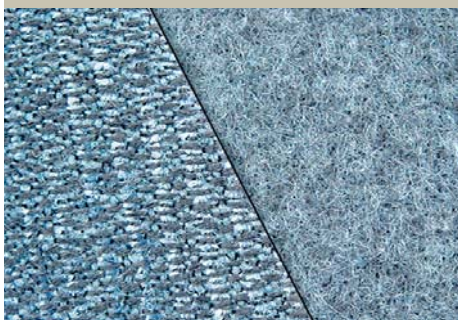
Needling woven fabrics with the objective of applying a coating

The process can be used on woven fabrics with low thread density which do not have a high tensile strength. These fabrics are subsequently primarily used as upholstery fabrics. A fleece is created on one side by needling, which then affords effective support and the required adhesion for subsequent fixing (e.g. with latex).

Needling woven fabrics to achieve a roughening effect (possibly needling on both sides)

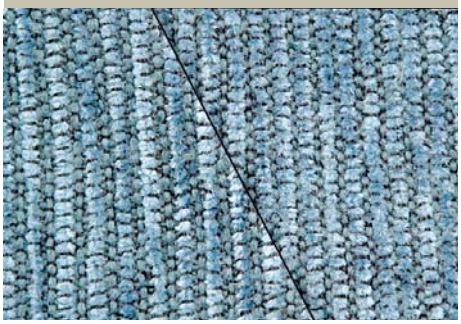
In this case, the fabric is needled to obtain special textile characteristics. In addition to the roughened appearance, the material acquires a fuller texture. Shrinkage, losses of ultimate strength and pilling effect can still be controlled.

Back



BEFORE AFTER

Front

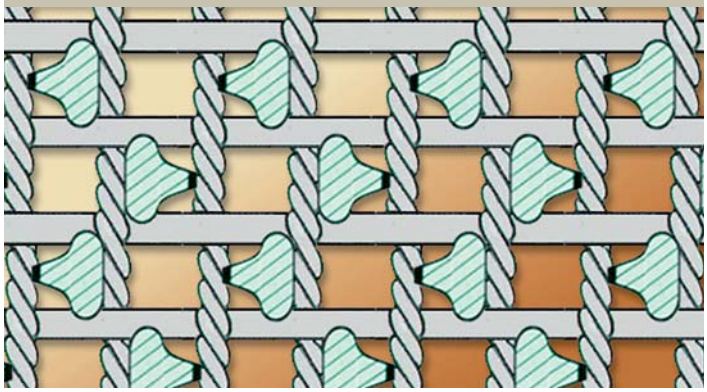


BEFORE AFTER

The illustrations on the left depict a sample needled on one side with a before and after comparison.

The fleece and appreciably denser surface structure can be clearly seen.

Ideal arrangement of teardrop shaped needles in the fabric



MACHINE RUNNING DIRECTION

Minimal effect on fabric and yarns

Needling of the yarns can be influenced by the chosen method of arranging the needles in the machine. The parts of the fabric positioned opposite the barbs are largely protected. Only the selected warp or weft yarn is machined (see illustration to the left).

To avoid undesirable draft in the product, the needles are inserted in rows offset alternately by 180°. Ideally, they should be installed in such a way that the fibres are drawn out of the warp, thereby preventing any contraction in width.

GROZ-BECKERT KG
Postfach 10 02 49
72423 Albstadt
Telefon 0 74 31 10-0
Telefax 0 74 31 10-20 88
contact@groz-beckert.com
www.groz-beckert.com