

Gerster is a manufacturer of textile surfaces with great expertise in the field of C and ceramic fibers.

Gustav Gerster GmbH & Co. KG: The Gerster TechTex business unit of Gustav Gerster GmbH & Co. KG supports efforts in automation, in the reduction of handling effort and in the reduction of waste with textile innovations around textile preforms and highly drapable wide fabrics.

One example of textile preforms is woven spiral tapes in round components. Round spiral tapes are designed completely to fit the component and can be found in mechanical engineering and ceramic brakes, among other applications. The fiber structure can be varied according to the load from purely unidirectional (in circumferential direction), purely radial to different warp and weft densities.

Complex geometries can usually only be realized by cutting textile webs. The



DRAPFIX biaxial fabrics, example of a forming geometry @ Gerster

reason for this are limitations in the drapability of textiles. This is due to the fixation of the fibers to each other, in the case of fabrics by sewing threads, in the case of woven fabrics by friction of the fibers in the weave structure, as well as the inherent stiffness of the fibers. The highly drapable DRAPFIX and DRAPTEX biaxial fabrics from Gustav Gerster allow the fibers to be displaced in their longitudinal direction, with the fiber spacing remaining virtually unchanged. The draping process itself is carried out by stretching out the textile. With longer travel, yarns are drawn in from the edge; with shorter travel, fibers are pushed out over the cut edge. Spreading processes can be easily



Continuous spiral belt / CFRP base body for CBN grinding wheels @ Gerster

automated, among other things via movable rollers, flexible mats or adapted pressing tools. In addition to improved drapeability and "matching" fiber lengths, only low restoring forces result from the inherent stiffness of the fibers themselves. The forming geometry of the textile in the mold is thus much better preserved. It is also possible to vary different fibers, such as carbon and aluminum oxide fibers, within the scrim. The high drapeability, the low restoring forces and the use of locally adapted fiber types contribute to the load-oriented production of complex geometries in a single step, which is particularly beneficial for processes with short cycle times.