CONSOLIDATED FIBER PLACEMENT - THE LAY-UP
OF CONSOLIDATED UNIDIRECTIONAL FIBER TAPES

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Summary: Automation will be the key factor for the increasing use of composite technology in all industrial areas. Some automated technologies (like ATL and AFP) are already used in the manufacturing process of large composite components. However, there are still problems during manufacturing which could not be resolved completely yet. Furthermore, the drawbacks of the cooling chain and the expensive autoclave process deter the use of composite technology in some industrial areas. The aim of this study is to demonstrate the suitability of a new manufacturing approach regarding the automated fiber placement. The bonding of consolidated fiber tapes allows for an optimal utilization of the fiber properties and eliminates typical manufacturing defects. In order to show the automated processing of the consolidated tape, a rudimentarily placement unit was developed. The unit takes the changed material properties into account and verifies the use of consolidated fiber tape for an automated process.