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Sommario/riassunto	Long description: The increased application of composite materials in lightweight structures leads to new integral design of structural parts, using the example of, an integral composite landing flap of an Airbus A320 aircraft. This offers possibilities to simplify the process chain, to decrease manufacturing costs and to have fibre fair structural design. The critical disadvantage of large integral designs is that process-induced deformations are a risk factor during the design phase of the manufacturing process, because rework is not always possible. Especially, the aircraft industry with its demands on high qualities / tolerances and the application of hot curing resin systems, requires knowledge-based methods for virtual process design to avoid time- and effort-consuming iterations. This thesis contributes to the understanding of the mechanism behind process-induced distortions and stresses related to the Resin Transfer Moulding (RTM) manufacturing process. The aim is to comprehend the phenomena, to identify related parameters and to present compensation strategies.