

Analysis of Failure in Fiber Polymer Laminates

The Theory of Alfred Puck

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Preface

In 2003 I was encouraged by Alfred Puck himself to write this book about his failure model and the Puck fracture criteria. The motivation was that Puck's own book from 1996 was written in German and did not cover the major progress especially in the field of validation which was achieved since. There was no comprehensive presentation of Puck's work in English language and several people asked for an English book with such content.

I had at the time just finalized my dissertation about the gradual failure process for which I had worked closely together with Alfred Puck as a senior adviser. He considered me as one of the best experts and the right person to write such a book. That was of course a high honor to me and I agreed to start the project being supported and encouraged by the management of my employer, the Institute for Plastic Processing (IKV), namely Walter Michaeli and Ernst Schmachtenberg.

Originally it was planned to publish in 2004, but as often in such projects this was a too optimistic assumption and after I changed from university to industry in early 2005 and started a family at the same time it became hard to find enough time for the project. I am grateful to Petra Jantzen from Springer who – always polite but with the right pressure – set deadlines and pushed me to work. After all, the elongation of the project offered the opportunity to implement the latest work in the field which was conducted in the recent years. Thus, value was added to the overall project. On the other hand, there are still wishes which have not been met. For sure a broader presentation of the applications of Puck's failure model would have been desirable. But now it is time for publication and this part is left out for the moment.

There is a list of people who have made this book possible. First to name is of course Alfred Puck, who taught and advised me for years and who also revised this book. Günther Lutz – one of the co-authors of the VDI2014 guideline on the development of FRP components – has been the main reviser of the text. I thank not only for this but also for the great profit I got from the work on the VDI2014.

Additional thanks go to Walter Michaeli and Ernst Schmachtenberg who encouraged me to write this book during my time at the IKV. Besides I am very grateful to Dieter Merkle and Petra Jantzen from Springer for

making this book possible. Last but not least I thank my wife Claudia for her understanding and patience during all the hours I worked for this book.

I dedicate this book to my children Paula Liane and Peter Elias.

Rendsburg, January 2008

Martin Knops