

Application of a standard procedure including calibration block for eddy current testing on carbon fiber materials

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Carbon fiber materials are one of the most innovative materials in industry and have potential to replace other materials like metals or steel for different application. Especially aerospace and automotive companies are using CFRP components increasingly. Standard procedures enable, that a testing method, to be applied at different places by different operators on similar materials in a similar way, delivers identical results and ensure a comparable quality of the testing process. Due to the inhomogeneous character and varying properties of carbon fiber materials (CF-materials), NDT-methods have to be optimized and adapted in various aspects for getting reliable results. Therefore, the existing standard procedures for application and evaluation of the testing data for many NDT methods cannot be used for the CF-materials and have to be either substantially extended or new standard procedures have to be developed and validated from scratch. In this presentation the development of a standard procedure for the quality control of carbon fiber materials during component production process using Eddy Current technique is presented. That includes techniques for reproducible parametrization of the measurement system, the development of a calibration block and its correct use and the evaluation of the measurement signal itself. Additional the usability of the testing process including statistical evaluations of the defect detection probability was examined and will be presented in that article.