

Abstract:

An introduction to composites testing

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The global composites market and industry has seen a steady increase over the past decades and is expected to grow further in the coming years, quickly leaving behind a small dent in 2020 resulting from the global pandemic. Typical application areas are aerospace, transportation, wind energy, marine, sports and leisure and construction, with increasing penetration of composite materials in all areas. Due to the orthotropic material response, complex interactions of stress states, a variety of failure modes and the influence of manufacturing processes on the mechanical response, to name some major influencing factors, the development and design of composite structures must rest on a solid foundation of material parameters derived from mechanical testing. This presentation provides an overview of typical static test methods, required testing machines, test fixtures and possibilities to fulfill the demanding requirements for strain measurement at ambient and non-ambient temperature testing.

144 Wörter, 1003 Zeichen (mit Leerzeichen)