

Woven TPS – Mechanical Property Evaluation

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Woven Thermal Protection Systems (WTPS) is a relatively new program funded by the Office of the Chief Technologist (OCT). The WTPS approach to producing TPS architectures uses precisely engineered 3-D weaving techniques that allow tailoring material characteristics needed to meet specific mission requirements. A series of mechanical tests were performed to evaluate performance of different weave types, and get a better understanding of failure modes expected in these three-dimensional architectures. These properties will aid in material down selection and guide selection of the appropriate WTPS for a potential mission.