

Advanced TUFROC Thermal Protection System

TUFROC is a cost-effective, state of the art, high temperature reusable thermal protection system that is flight-proven as the wing leading edge of X-37B. The low-density dual layer system takes advantage of the high temperature capability of a carbon composite at the surface and transitions to a low-conductivity silica-based Shuttle tile material in depth. An updated surface treatment formulation has resulted in a better performing system, called Advanced TUFROC, which demonstrates lower surface temperature due to reduced catalytic atom recombination at the surface, compared to the original system. An overview of TUFROC and recent arc jet testing will be presented.