TPS Requirements

Flight Requirement	Derived Requirement	Verification Method
• Maintain structural temperature	• Thermal conductivity • Recession rate	• Conductivity measurement • Wind tunnel/HGF/ablation tests • Analysis
• Ice/frost prevention	• Thermal conductivity	• Conductivity measurement • Flat tank cryogenic test • Analysis
• Maintain propellant quality	• Thermal conductivity • Recession rate	• Conductivity measurement • Wind tunnel/HGF/ablation tests • Analysis
• No debris generation	• Flexure capability • Recession rate • Bond tension strength • Cryogenic strain compatibility	• Wind tunnel/HGF/ablation tests • Bond tension strength measurements • Cryoflex tests • Combined environments test • 3 and 4 point bend test • PAL ramp flexure tests