

# Statement Of Work for Weaving of SiC

## **BACKGROUND**

NASA is developing Hypersonic Inflatable Aerodynamic Decelerators (HIADs) for application to future robotic and human missions requiring atmospheric entry. HIADs offer considerable system mass and volume savings over rigid aeroshell technology. In addition, inflatable aeroshells are not constrained by the launch vehicle payload shroud diameter which offers the possibility to substantially lower ballistic coefficient of the entry system while delivering a larger payload mass fraction than a rigid aeroshell counterpart. Hypersonic flight and planetary entry descent and landing require the development of high temperature thermal protection systems. NASA is currently evaluating several materials and combination of materials and would like to test the performance of Silicon Carbide (SiC) cloth.

## **SPECIFICATIONS**

This solicitation presents a statement of work for weaving a cloth of Silicon Carbide (SiC). Silicon Carbide is a high temperature ceramic fiber that the Hypersonic Inflatable Aerodynamic Decelerators (HIADs) project is interested in testing at the NASA Langley Research Center (LaRC).

### **Cloth Weaving**

The contractor shall supply 5 Harness Satin woven fabric based on weave architecture of 24 epi in Warp and 24 ppi in fill.

The contractor shall furnish 150 linear feet of material.

Minimum width is 36", larger is preferred.

Ceramic fiber to be woven is Hi-Nicalon<sup>TM</sup> Silicon Carbide.

All fiber shall be furnished to the contractor by NASA.

Quote set-up fees, minimum quantity, and per linear foot charge separately.

**Delivery Date:** 10 weeks from date of award

## **SELECTION CRITERIA**

The vendor of choice will be selected using the “best value” criteria listed below:

- 1) Demonstrated ability to fabricate high temperature textile components similar to those in this solicitation.
- 2) Previous experience and knowledge working with specified materials of interest.
- 3) Overall cost
- 4) Width of material, wider is preferred.
- 5) Timeframe for delivery