



# GRAPHITE ADHESIVE: EBS-1X

## What is EBS-1X?

EBS-1X is a one part, carbon filled / reinforced, high temperature adhesive used to bond, fill, and repair graphite and carbon-carbon (CFC) components and structures used in reducing atmospheres to 5400°F (2980°C).

## Typical Applications

EBS-1X is typically used to bond and patch graphite and carbon-carbon (CFC) components such as brushes, fixtures, furnace parts, RF susceptors, electrodes, crucibles, graphite foil to graphite rigid insulation, graphite foil to carbon-carbon (CFC) composites, graphite foil to graphite felt, carbon-carbon composites to insulation, metal-casting dies, and continuous casting dies.

## Material Benefits

Easy-to-apply one part adhesive that contains no asbestos or volatile organic solvents.

Adhesive for graphite and carbon-carbon(CFC) components with a max temperature rating of 5400°F (2980°C).

A range of package types (cartridge, cans, pails, or drums) for ease of handling and dispensing to minimize waste.

Tensile-shear strength measured in the ranged of 1100psi.

## Application Instructions

- EBS-1X can be applied to graphite or carbon-carbon (CFC) components by caulking tube dispenser, spatula, or brushing. If needed, material can be thinned using a solvent such as Acetone.
- Ensure to apply EBS-1X to clean dry surfaces, applying minimal pressure to ensure a uniform film is formed between joined surfaces. Note, material needs to be heat cured.
- Cure for 60 minutes at 302°F (150°C). A good green mechanical bond is achieved after 40 minutes but it is recommended to allow the bond to fully set to achieve maximum strength and moisture resistance by maintaining at 302°F (150°C) for 2 hours. Tensile shear strength by this method has been measured in the range of 1100psi.
- For clean-up, Acetone, MEK, Glycol Ether Solvents can be used. Generally, polar solvents work best.



| Properties            | Values                                    |
|-----------------------|---|
| Appearance            | Thick, pasty thixotropic liquid           |
| Max Temperature       | 5400°F   2980°C                           |
| Solid Content         | 100%, no Solvents or VOC's                |
| Percent Carbon Filler | > 35%                                     |
| Carbon char yield     | 78%                                       |
| CTE                   | 4.1 x 10 <sup>-6</sup> m/(m·°C)           |
| Flammability          | Non-flammable                             |
| Coverage              | 4 mil film covers ~400ft <sup>2</sup>     |
| Weight Per Gallon     | 12.5 lbs                                  |
| Shelf Life            | 6 months @ 55-75°F,<br>12 months @35-50°F |