

## FIBERFRAX® FIBERWALL™ SYSTEMS HARDWARE

The Fiberwall system family of anchoring hardware and accessory components provides an array of attachment options to cover a broad range of lining system designs and application requirements.

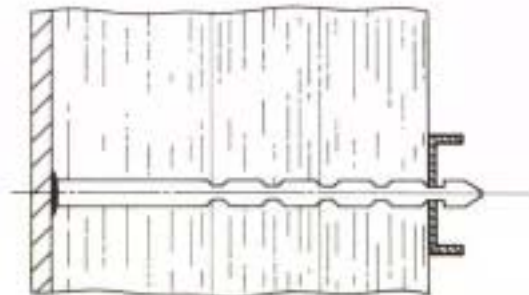
Intended for use with Fiberfrax Fiberwall lining systems, Fiberwall hardware is available in a variety of metal alloy grades as well as in various ceramic compositions. This family of hardware components has been developed to provide optimal service life for an assortment of Fiberwall lining systems including layered blanket and board linings, stackbond linings, Spear-Loc bonded modular systems and L.O.R. (lining over refractory) linings.

### Insultwist Pin and Washer Assembly

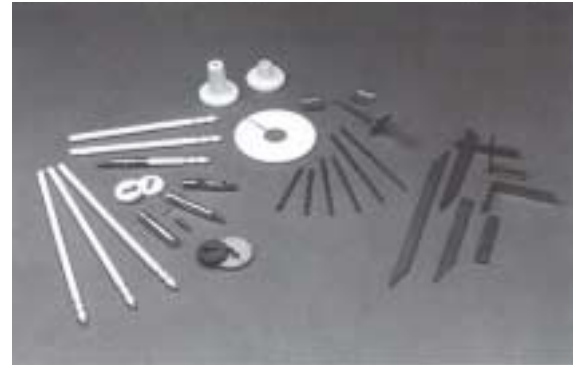
Insultwist alloy pin and washer assemblies are utilised as anchors in layered lining systems. The studs are available in five standard lengths: 90mm, 115mm, 150mm, 200mm and 250mm. Insultwist alloy pin and washer assemblies are available in three standard alloy grades. They are shown below, along with corresponding maximum recommended operating temperatures (under normal oxidising atmospheres):

Alloy	Maximum Recommended Operating Temperature
304SS	760°C
310SS	927°C
601 Inconel	1093°C

### Insultwist Pin/Washer Assembly



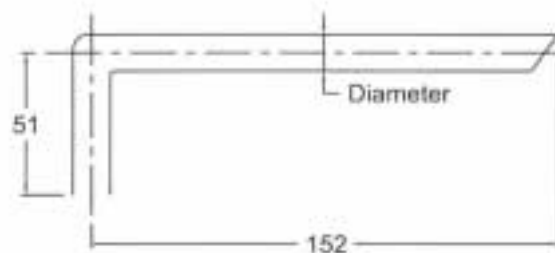
Recommended stud length is determined by adding 25 mm to the applicable lining thickness. For example, a 90mm lining thickness would require a stud of length 115mm.



### Fiberwall Stackstuds

Stackstud type anchors are required in the construction of stackbond lining systems. Stackbond linings consist of layers of blanket strips, or folded blanket battens, that are stacked together and simultaneously impaled and compressed over the stackstud anchor. Both blanket strips and folded blanket battens are compressed approximately 25% when installed. The stackstud illustrated below is typical. Other dimensional forms are available by special request. Stackstuds are available in standard alloy grades of 304SS and 310SS. 601 Inconel is available by special request.

### Stack Stud

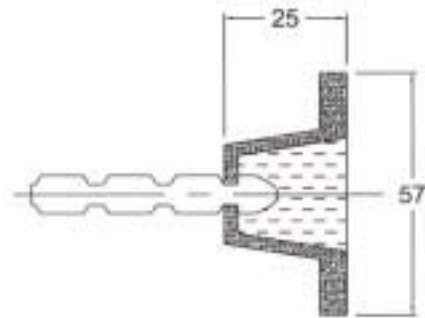


### Fiberwall Ceramic Cuplocks

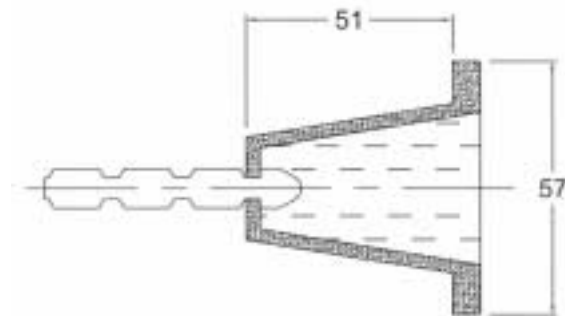
When hot face temperatures exceed 1093°C but are below 1149°C, the ceramic cuplock retainer can be employed to extend the recommended operating temperature of the 601 Inconel stud to 1149°C. The alloy washer is not required when the cuplock is used to retain the insulation lining.

The stud length dimension, when using a 51mm cuplock retainer, is determined by subtracting 25mm from the applicable lining thickness.

### 25mm Shank L.O.R. Ceramic Cuplock



### 51mm Shank Ceramic Cuplock



Typically, the 25mm cuplock is used in conjunction with barbed 601 Inconel studs in L.O.R. applications. The "barb" of a barbed stud is configured so that it will easily enter within, but will lock securely to, predrilled holes in the refractory surface.

LDS moldable is employed as a filler to plug the cuplock's 25mm deep core and, as in the 51mm cuplock, is carried over to the face of the cuplock to effect a seal around the core's perimeter edge.

### Fiberwall Spear-Loc Modular System Hardware

The Spear-Loc anchor assembly is a multipurpose, two component anchor consisting of a tine and base leg. Spear-Loc anchors can be utilised as stackstuds in the construction of stackbond lining systems or in the construction of Fiberwall Spear-Loc bonded modular lining systems.

Tines are available in half or full length beams. Base leg options allow for hand welding or for arc stud gun welding to the casing plate.

Spear-Loc anchor assemblies are available in standard alloy grades of 304SS and 310SS. 601 Inconel is available by special request.

### Spear-Loc Gun Weld/Hand Weld Anchor

