

Common Questions About Fiberfrax® Silplate® Mass 1500

1. What are the product features of Silplate® Mass 1500?

Silplate Mass 1500 is an extension of the Silplate family of high-temperature fiber-based insulation products. Silplate Mass 1500 is a hot face coating material intended for use over refractory ceramic fiber and/or soluble fiber product forms as well as traditional hard refractory materials. The chemical stability and physical properties of Silplate Mass 1500 combine to form a product which has virtually no in-service shrinkage, outstanding durability (velocity, physical abuse) and flux resistance.

2. How is Silplate Mass 1500 different from other Unifrax Specialties currently on the market such as LDS Moldable®, Topcoat™ 2600 and Topcoat™ 3000?

Silplate Mass 1500 is a proprietary combination of sol-gel produced high-temperature fibers and sintered refractory oxides that yield a product with excellent homogeneity and high fired density. Other than a very small percentage of colorant, the product is completely inorganic. It is particularly well suited for applications requiring durability in service and flux resistance relative to the furnacing environment.

3. How is Silplate Mass 1500 installed?

Silplate Mass 1500 can be installed either by manually troweling or via a positive displacement and/or diaphragm pump in conjunction with a gunning nozzle. The gunning nozzle incorporates air pressure in order to project the Silplate Mass 1500 onto the target substrate. Once the Silplate Mass 1500 is gunned into place, it can be troweled smooth.

4. Is there a recommended installation thickness?

The maximum recommended thickness for sidewall applications is 1" and for overhead application is ½". Prior to installation, the Silplate Mass 1500 should be thoroughly mixed using a mortar whip or some comparable mechanical process. The material can be installed to the finished thickness in a single pass or be built up to the required thickness in several passes. Because of the excellent thermal stability of this material, typical shrinkage and/or expansion practices such as utilizing score marks, expansion joints, etc. are not required.

5. What is the recommended installation procedure for Silplate Mass 1500 over an existing fiber-lined surface?

The existing fiber surface must be mechanically sound and clean of all vitrified or loose fiber to expose a relatively clean, stable fiber surface. Please note that all required Unifrax HSEQ handling practices must be utilized during this process. The cleaned surface is then perforated using a perforating board utilizing 1" long x ¼" diameter tips on 1½" staggered centers. To promote adherence, the fiber surface is then wet lightly with water. While the fiber surface is still wet, the Silplate Mass 1500 is either troweled or gunned into place and finished to the required thickness.

6. What is the recommended installation procedure for Silplate Mass 1500 over an existing hard refractory lined surface?

For installation over an existing hard refractory surface, first confirm that the existing lining is mechanically stable. The substrate should be cleaned and/or sandblasted to remove all loose or glazed material. The refractory surface should be wet lightly with water to promote adherence. While the refractory surface is still wet, the Silplate Mass 1500 is either troweled or gunned into place and finished to the required thickness.

7. Can Silplate Mass 1500 be utilized for new construction over a fiber lining?

For installation over a new or rebuilt lining that will consist of modules or stack bond construction, a slightly different approach may be used to provide a "hard module" lining system. The underlying fiber material should feature edge stack construction on the hot face. During the installation process, Silplate Mass 1500 is applied in a ⅛" thickness to a depth of 2" on the perimeter of each module. This Silplate Mass 1500 coating forms a collar that extends from the blanket to the hot face surface of the module. For stackbond construction, the same ⅛" thick x 2" deep band should be applied on every other fold, not to exceed 3" of spacing. These strips of Silplate Mass 1500 act as anchors and help bond the coating to the fiber. Once this procedure is completed, the installation steps are the same as stated in section 5 of this document.

8. Is there a drying/firing cycle for Silplate Mass 1500?

Since the product is fiber based and essentially immune to thermal shock, there is no required firing cycle. For transport, the Silplate Mass 1500 should be dried at a temperature of approximately 300°F for 24 hours prior to moving. The duration of the drying period is dependent on the thickness of the product and, if possible, a higher drying temperature may be used to shorten the drying time as required.

9. What is the coverage for Silplate Mass 1500?

The coverage rate for Silplate Mass 1500 is 1lb./surface square foot at 1/8" thickness, overage included. Thicknesses other than 1/8" can be proportioned accordingly (2lbs./surface square foot at 1/4" thick, etc.).

10. What is the velocity resistance of Silplate Mass 1500?

Laboratory tests have shown the velocity resistance of Silplate Mass 1500 to be up to 200 ft./second, laminar flow. However, each application is unique, but this product may facilitate the use of a low-mass fiber lining in processes currently thought to be too aggressive for a fiber lining system.

11. Does Silplate Mass 1500 have a shelf life? Is freeze protection required?

Silplate Mass 1500 has a shelf life of six months. It must be freeze protected during shipment and storage in a manner similarly used for other Unifrax Specialty materials with this requirement.

12. Can Silplate Mass 1500 be installed over hot refractory or onto an in-service (hot) refractory lining?

The installation of Silplate Mass 1500 under these conditions has been done successfully. A different installation procedure, specialized equipment, trained installers and specially formulated product are required. Please contact application engineering for hot refractory and/or hot gunning applications.

