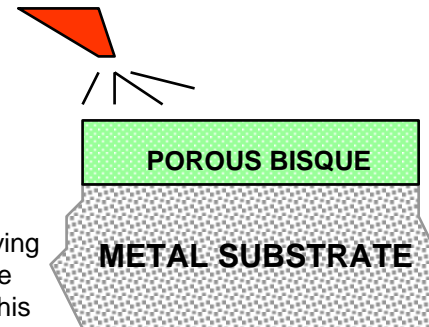


The LT-450 Sol-Gel Coatings are Simple. They Require No Exotic Equipment and only Basic Skills to Process.

Processing is as Follows:

Step 1: Surface Preparation and Coating Application

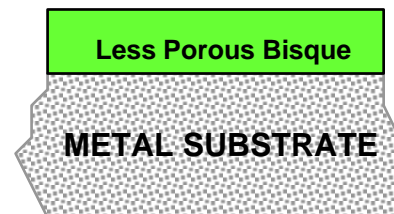
The metallic substrate is cleaned and then blasted with 60 grit Al_2O_3 media at 100 psi air pressure. A thin (<0.65 mm) layer of "Sol-Gel" coating containing a composite powder mixture, liquid binders, and hardeners. This is applied to the surface using conventional air spraying equipment. The composite TBC powder consists of Zirconum Dioxide (ZrO_2) and if requested, hollow spherical "ash" insulating particles. This patented technology* incorporates air insulation into the ceramic layer.



Step 2: Curing and Strengthening of the Porous Coating Layer

The coating or bisque is relatively weak and porous, however applying the liquid binder / hardener two additional times strengthens and hardens the bisque significantly. Porosity is dramatically decreased and the coating is near completion.

Low Temp. Heating
With Binder / Filler

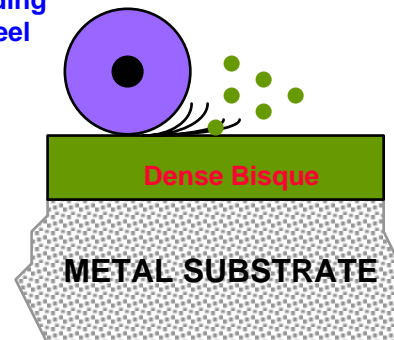


JAY, FOR YOUR INTAKE PORT APPLICATION, PROCESSING IS COMPLETED AT THIS POINT. NO MACHINING OR ADDITIONAL CURING IS NECESSARY.

Step 3: Machining Cured Surface To a Specified Dimension or Tolerance

If certain tolerances are desired, the coating layer can be ground or honed to size at any step of this process. As the coating is treated or densified with the binder / filler solution, it becomes harder to hone with conventional tooling. Use of expensive diamond tooling is cost effective as the coating is not so hard that the diamond tool wears out rapidly. If no dimensions are required, the coating is finished.

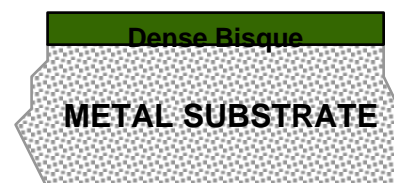
Grinding
Wheel



Step 4: Final Sealing of Coating Layer

The machined coating is re-densified and cured if a very fine surface finish is desired. This step will seal off any possible open porosity which may have been exposed during the machining step. No change in tolerance is brought about by this final treatment.

Low Temp. Heating
With Binder / Filler



* U.S. Patent No. Patent No. 5,820,976