

Woodburning Heaters

On Apollo missions, the Lunar Module served as home and operating base for astronauts exploring the lunar surface. Since the moon has no layer of atmosphere to filter the sun's rays, the Lunar Module was exposed to extremely high daylight temperatures. To help cool the spacecraft, NASA employed a protective exterior coating capable of casting off, rather than absorbing, the sun's radiant energy. NASA selected an existing high temperature coating called Pyromark and asked the manufacturer to improve it to space-use specifications. Developed by Tempil Division of Big Three Industries, South Plainfield, New Jersey, Pyromark proved effective on the Lunar Module and it is similarly used on the Space Shuttle.

The characteristics which make Pyromark useful in spacecraft protection are similarly beneficial in other high temperature applications. Pyromark is used as a protective coating for a number of commercial products, including those shown in the accompanying photos.

The upper photo shows a high-efficiency woodburning heater that fits into a home fireplace. Manufactured by Aeroheater Company, Inc., Fairfax City, Virginia, it has a patented heat exchanger that recirculates heated air from the upper ducts back into the room with less waste of energy; the heat does not go up the chimney. Temperatures up to 1,800 degrees Fahrenheit are generated within the Aeroheater, so it is coated with Pyromark to protect the metal from heat damage; the high temperature paint also protects the exterior finish from everyday abrasions.

Pyromark is used for the same purposes on the Geomid woodburning stove shown in the lower photo. Manufactured by Transmetal Inc., Mt. Vernon, Washington, the four models of the Geomid line are uniquely shaped for efficiency as well as decor appeal. The wider-at-the-top shape, along with interior design features, promotes favorable airflow patterns inside the stove, thus enabling the Geomid to heat a larger area with a smaller firebox.

