

SOLID SURFACE

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COMMENTARY

Setting Up a Hard Surface Fabrication Shop? Plan Carefully for Air and Water

By Jon Lancto • If you are planning the inevitable or have already begun the addition of granite and quartz fabrication to your product line, you first must have the basics covered. Aside from the



obvious need for material handling equipment and electricity, the core of any hard surface shop is its water and air systems.

All hard surface fabrication work should be done wet, which is critical to utilize the cooling effect of water on diamonds and to create a safer environment for your employees. Just as important, you do not want anyone in your company to be at risk of contracting Silicosis, the lung disease associated with inhaling granite or stone dust. With lots of water in a shop environment, the use of electric power tools becomes a safety concern, making switching to air tools necessary to reduce the chance of electrical shock.

Water systems range in design from a series of settling pits, to hoppers with bags, to centrifuges to filter presses. Only hopper and bag systems were economically feasible when we began our operation. We recently took our bag and hopper system to the dump and changed to the filter press method of cleaning water. Now with many more people entering the granite business, filter presses have come way down in price and are the most effective and simplest to operate.

A filter press is a series of filter racks pressed together through which gray water is forced using an air diaphragm pump. It collects sediment in much the same way as a diatomaceous earth filter for a swimming pool. The filter cloths are coated with a fine powder before having gray water pushed through them. Every seven to 10 days the filter racks are separated and the nearly dry sludge is dropped out and the filter cloths recoated. These racks are then put back into position and “pressed” together using a hydraulic jack.

In comparison to our previous system, we are saving time and have much less weight and volume of sludge going into the dumpster. Our press, installed by New England based Water Treatment Technologies, cleans more water than we can use down to a 1-micron particle size. As part of our water system, we also utilize a gray water pump, which pulls its water straight from the pit to supply cooling water to our bridge saw reducing the demand on the press. With the press there is no need for chemicals like coagulants and flocculants to mix into the gray water. Because the water is cleaner, corrosion of tools becomes less of an issue, bearings last longer, and polishing becomes easier.

The other core system is air compression. Because of the high demand for air in this type of shop, a rotary or screw type of compressor will pay for its additional cost in a short time. Rotary compressors are meant to run full time and can supply continuous high volumes of air for production demands. There are fewer contaminants in rotary supplied air

because of the lack of oil present in a piston type system which will help increase service intervals on pneumatic tools used in the shop. A backup compressor is also a good idea to eliminate the risk of lost time due to failure or service issues. When determining a shop layout, plan on lots of drops from the ceiling for access to both your air and water supplies.

Both good water and air systems are critical for a hard surface shop and should be prioritized when putting together a budget for a start-up operation. Early attention to the plumbing and installation of your water and air system will pay dividends in the future. Skimping on these two systems will only slow down and limit the growth you can achieve in this rapidly expanding market.

About the author:

Jon Lancto is president of Solid Surface Products in Cornelius, N.C., and has extensive experience in solid surface fabrication. He is a founding member of ISSFA, and served for four years as the fabricator association's first president.

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