

IT'S ALL ABOUT THE MASS!

Norris Cylinder's welded acetylene cylinder with monolithic porous mass



Pores and
glass fibers

What is it?

Norris' porous mass is the original "asbestos free" calcium silicate mass used around the world today. Patented back in 1982 by Union Carbide and transferred to Norris in 1985 the mass formulation utilizes an alkali resistant glass fiber instead of asbestos. When introduced in the aqueous phase of the quicklime-silica slurry process the fiber helps to hold the slurry in suspension providing settling resistance and proper pore formation.

During an autoclaving process (utilizing temperature and steam pressure) the magic of chemistry begins and the aqueous slurry hardens into a blend of solid materials which include interesting things like Tobermorite and Xonotlite. These compounds give the mass its compressive strength while the glass fiber continues its work as a binder and a "hallway" between the pores.

Why is it?

The porous mass is absolutely critical in stabilizing acetylene gas during use and transportation! If acetylene is allowed to congregate in too large of a space it could explosively decompose. For that reason the US Department of Transportation limits the amount of clearance that may exist between the filler and the steel shell.

Over decades of research, use, and work by industry and regulatory bodies the modern monolithic mass has evolved. You could think of today's monolithic mass as a hard sponge with minute little pores that gets saturated with a solvent (typically acetone) in anticipation of carrying acetylene gas. Once given the proper amount of solvent, acetylene is then compressed into the cylinder at very low pressure and dissolves into the solvent. *Yes, dissolves, much like salt dissolves in water!*

Gone are the days of filling cylinders with charcoal, horsehair, balsa wood or countless other items in an attempt to eliminate the possible congregation of "free" acetylene.

"The glass fibers act like small 'hallways' that connect the pores throughout the mass which aid in gas withdrawal."

- Ms. Sally Mitchell
VP Engineering

Porous mass ...

- Is 88%-92% porous.
- Is poured into the cylinder and then hardened by heat and pressure.
- Utilizes solvent to help stabilize the acetylene gas.
- Functions like a heat sink to minimize the dangers of a flash back.
- Is produced in Huntsville, Alabama.



For more information see www.norriscylinder.com or call us at 1-800-527-8418.