

Box 14, Veyo, Utah,
January 8, 1948.

Mr. H.O. Asberg, Mer.,
Southwest Construction Co.,
Deerfield, Kansas.

Dear Mr. Asberg:

Your favor of December 28th finds us with the worst winter of many years blocking our roads and this letter may be delayed a few days reaching the mails. We seldom have snow covering the ground in this Region.

We can positively inform you there are MANY different kinds of perlite and obsidian that are puffable. It would be to your interests to inform us HOW you want to use the perlite, for the end use dictates the kind of perlite to be used. Perlites range all the way from two pounds per cubic foot to 20 pounds per cubic foot after being puffed. We can supply any kind and supply it clean. Most of the perlite deposits are dirty and produce a high percentage of sinks.

We have tested every conceivable manner of puffing this mineral, and have built many experimental furnaces. We finally hit upon a simple method that really puffs perlite and consumes trivial amounts of fuel.

Most puffers are based on introducing crushed mineral into a blast of hot gases. All such furnaces have one common fault, instead of PUFFING the mineral they EXPLODE it. Consequently, puffed perlite made in such furnaces takes a great deal of plaster, cement or other binder whereas the CLOSED puffed granules require MUCH less binder. You can also see that they make better insulators and stronger compacts.

We have also done extensive development work on machines for forming blocks and panels. One method enables us to build either blocks or panels with one set-up. For example, this method makes it possible to build a panel four feet by eight feet by four inches thick weighing about 110 pounds. We can cut this weight to as little as eighty pounds if same is desirable.

The insulating properties of perlite and also some local pumice are remarkable. We built a chemical digester of concrete, using perlite and pumice aggregates, mixed. We did this because we had scraps of both lying about and they were handy. One Saturday afternoon I cut the steam off this digester and let it stand over Sunday to cool. Monday morning, about ten o'clock I lifted the lid with a chain block and was greeted with acid fumes which nearly overcame me. The contents of this digester were just about boiling hot, even though the walls were only three inches thick and no heat had been applied for about 43 hours.

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We also have another natural deposit, on the railroad, we should inform you of. We procured this deposit for a lightweight natural aggregate. I discovered this deposit many years ago and have never seen a natural lightweight aggregate near so strong. This broken aggregate weighs about 55 pounds per cubic foot and when we grind it in our grinder we have developed and mix it with an extremely small amount of Portland cement we produce very strong blocks weighing about 80 to 90 pounds per cubic foot.

These blocks should be very good for taking loads and also have much better insulating qualities than cinder blocks. This material will also make concrete of great strength and very good insulating properties. I can inform you that you can save a great deal of cement by its use.

However, we have come upon a development you may consider even better. We melted some of this material and cast it into small test cylinders. These are very strong and weigh about 120 pounds per cubic foot. I have made some that weighed only 90 pounds per cubic foot. (We have made perlite blocks weighing from ten to 30 pounds per cubic foot that have good strength. Ordinary concrete weighs 145 pounds per cubic foot and cinder concrete weighs about 115 pounds per cubic foot. Ordinary glass weighs 180 or more pounds per cubic foot and flint glass about 360 pounds per cubic foot).

We call this new glass PORGLAS. It is the strongest glass I have ever seen and much lighter than ordinary glass. It is not transparent but could probably be made so.

We have heated cylinders two inches diameter and more than an inch thick to white heat and then dropped them into cold water without damage. They neither cracked nor spalled. Blocks can be made in our machines for a small part of the cost of present glass blocks. Our PORGLAS is positively impervious to all atmospheric influences. It is also attractive in appearance. We have swung on these test blocks with a single-jack without damage.

We have developed a casting machine that will turn out blocks of most any size or shape from PORGLAS. I cannot think of a more durable building material for both interior and exterior facings. We do not have a production machine in operation but its design is simple and based on principles that have worked in other industries. We sincerely believe that if you had a PORGLAS machine, our perlite puffer and a perlite panel and block machine you would simply outdo competition to such an extent you would be able to obtain a tremendous volume of business. However, if you prefer to stay with more conventional methods, we can supply you both perlite mineral and this special natural aggregate. In the latter event, about how many carloads will you need per month. We obtained a freight rate to Kansas points of about \$7 per ton but do not presently know what they may grant. We will appreciate any information you have on freight rates.

About what density do you prefer in the puffed perlite?

Very truly,

Dero A. Wilson
Dero A. Wilson.