

The RUBEROID Co.

BOUND BROOK, N. J.

H.A. SEP - 3 1946

For Attention Mr. W. O. Cowan

Date August 30, 1946

Copy to Messrs. Abraham, Wiser, Lacy, Duke

Reference Your Letter
August 27

Subject U.S. GYPSUM K-Fac Canadian Patent 434 182

I have been very much interested in studying the five claims granted in the above patent. These are quite broad. The body of the patent would no doubt disclose one or more specific examples. We would very much like to review the whole patent if a copy is available.

We gather the following formula limits from the claims:

Asbestos Fiber	5 - 35%
Ground Blast Furnace Slag	10 - 89%
Calcium Hydroxide	3 - 42.5%
Diatomaceous earth	3 - 42.5%
Alkali (Na OH)	0 - 10%

Weight of water (minimum) Three times the combined weight of solids

The ingredients are mixed and then passed through a high speed relatively narrow space to form a slurry of low settling rate. The resulting slurry is transferred to moulds and hardened by autoclaving at a pressure in excess of 50/ per square inch.

The formula is unique in that it uses a large quantity of pulverized blast furnace slag together with a rather high average percentage of caustic soda. Diatomaceous earth is merely a very finely divided, expensive, form of silica (which has a loose weight of about 12/ per cu. ft.) and is highly reactive in a calcilite type of formula, because of the large surface area it exposes for a quick reaction.

The writer cannot see anything in this formula, from either a cost, manufacturing or product advantage over any of our favorite mixes, to at present warrant our further study or consideration. The analysis however in our files do show that both K-Fac and K-Lo approach our finished product rather closely in test characteristics. This merely illustrates that a rather wide range of formula may be used to make the product.

I have been very curious to learn something about their operating technique, particularly the phase where they mention passing the mix rapidly through a narrow space to form a slurry.

I have since been told that their method is essentially as follows:

Hot water is metered into a mixer and the other ingredients carefully weighed into it. The asbestos is added to the mix as received, without previous defibering. This superficial mix is passed through a Bauer Refiner which defibers the asbestos and

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Subject U.S. GYPSUM K-Pac Canadian Patent 434 182 - page 2

forms the slurry. The slurry is apparently thinner than ours. It is filled directly into moulds on trucks. It levels itself in the mould and there is no excess to scrape off. 100% steam pressure is used in autoclaving.

The moulds are reported to have a 1/8" hole in the bottom (slurry does not drain through this). To facilitate unmoulding air pressure from a hose is applied to this small opening. This breaks the suction between product and mould.

The moulds are made from light weight steel (up to the present blocks only are made).

Filling the moulds directly on trucks no doubt saves them a lot of labor and enables them to successfully use a very hot slurry, but I doubt whether this is practical with our heavier slurry which requires scraping the top level with excess overflowing into a return conveyor.

CP:ms

C. R. Weger

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