Forest Chemicals Review
ISSN: 1520-0191
Issue: September-October 2017 | **Pages:** 01 - 06

Different Types of Benefits and Limitations of Portland Cement

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Abstract

Portland concrete is used the world over and used as a fundamental section of strong, mortar, mortar, etc the dry system is used when rough material are commonly hard. This methodology is moderate and its creation is exorbitant. The wet methodology include various action like mixing, expending and pulverizing to deliver the solid.

Keywords: *Grinding, Portland cement, clinker etc.*

I. INTRODUCTION

Concrete is the general term given to the powdered materials which from the beginning have plastic stream when blended in with water or other fluid at any rate has property of setting to a hard-solid structure in two or three hours with changing level of solidarity and holding properties. Concrete is one of the most essential structure materials right now. These are two particular frameworks of amassing concrete. Wet technique minerals are wet ground by adding water to shape a slurry and from that point dried .The dry philosophy minerals are dry ground to outline a powder like substance. Both the procedures are being used and have their own points of interest and limitations.

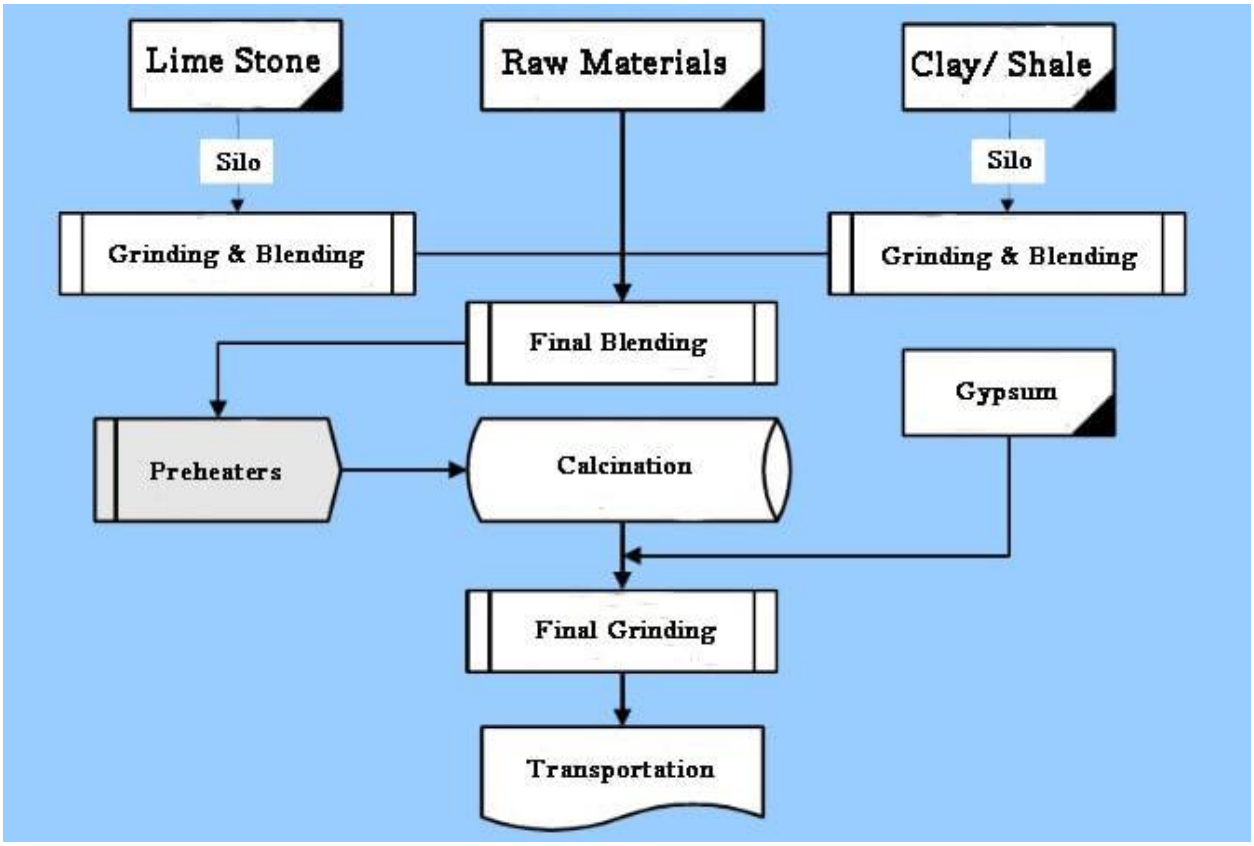

Fig 1 Cement Manufacturing Processes

II. DRY PROCESS

At the point when the accessible raw materials are very hard, at that point this procedure is utilized. The raw materials for example argillaceous and calcareous materials are go through in various stages like crushing, drying, reduction of size and mixing. First of all raw materials are broken in quite a while to little parts that be different in size.

After that the squashed materials are dried by heating at an adequately high temperature. It might be done in drying kilns. These materials are then grind by utilizing ball mills and cylinder to diminish the size of materials to discover powder. The finely dried materials are blended in definite extents. The blending might be done either precisely or by pneumatic strategies eg. Pumped under pressure.

Burning and grinding tasks are similar to wet procedure. Aside from the blending of raw materials. In this procedure, the raw materials blended, fined and afterward took care of into kiln though in the wet procedure, the raw materials are squashed independently and afterward legitimately blended in right extent within the presence of water to make a fine thin paste known as Slurry.

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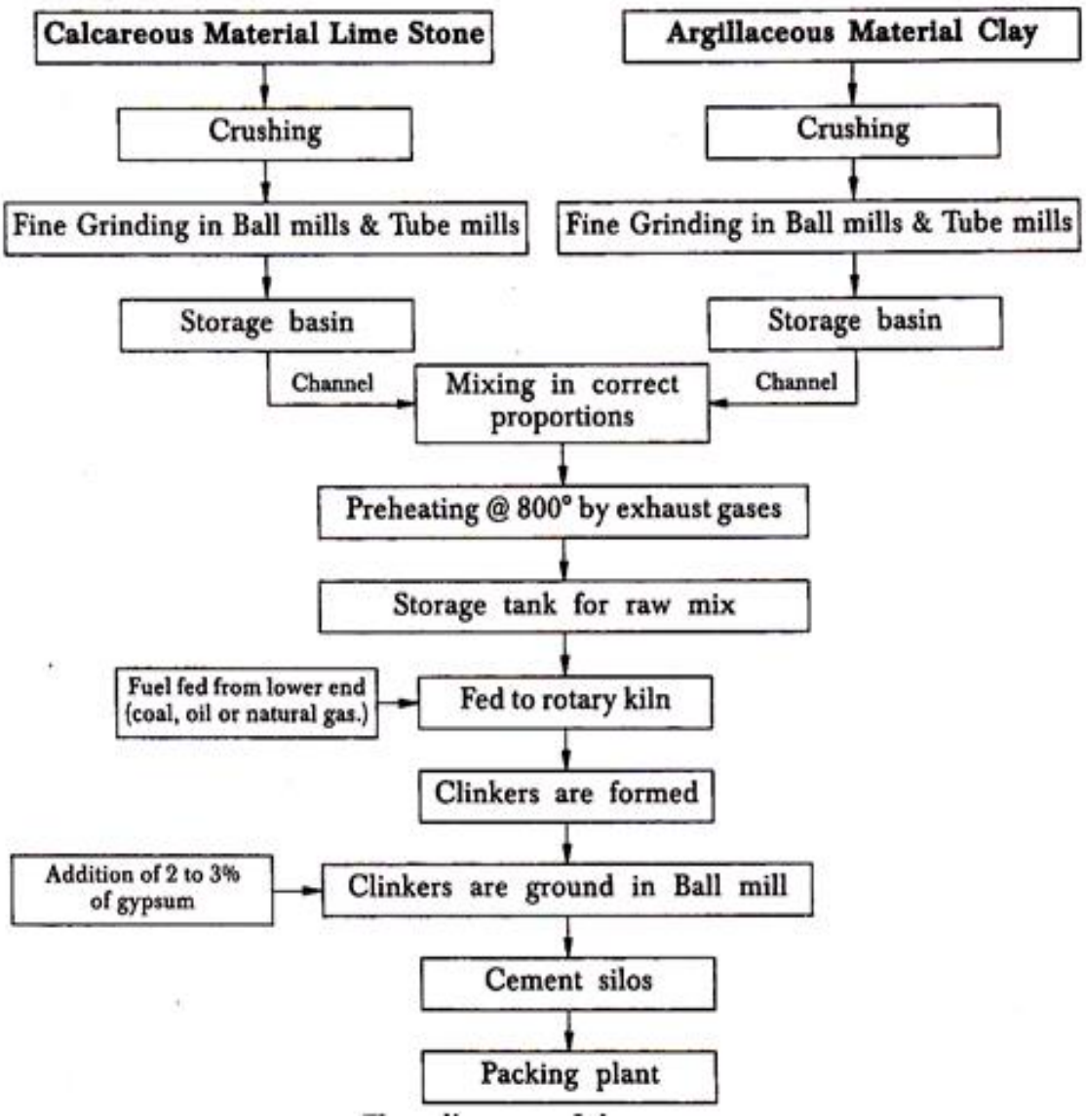

Fig 2: dry process

III. WET PROCESS

Wet Process is normal and is all around utilized for the manufacture of cement. In this procedure the raw materials are finely bunch mixed in the structured segment and the mix is brought to the state of free streaming slurry containing 30-40% water. The slurry is altogether homogenized with the help of compressed air and brought into a rotary kiln. The change gradually descends the kiln because of the revolving movement while an impact of consuming coal is blown from the other end of the kiln.

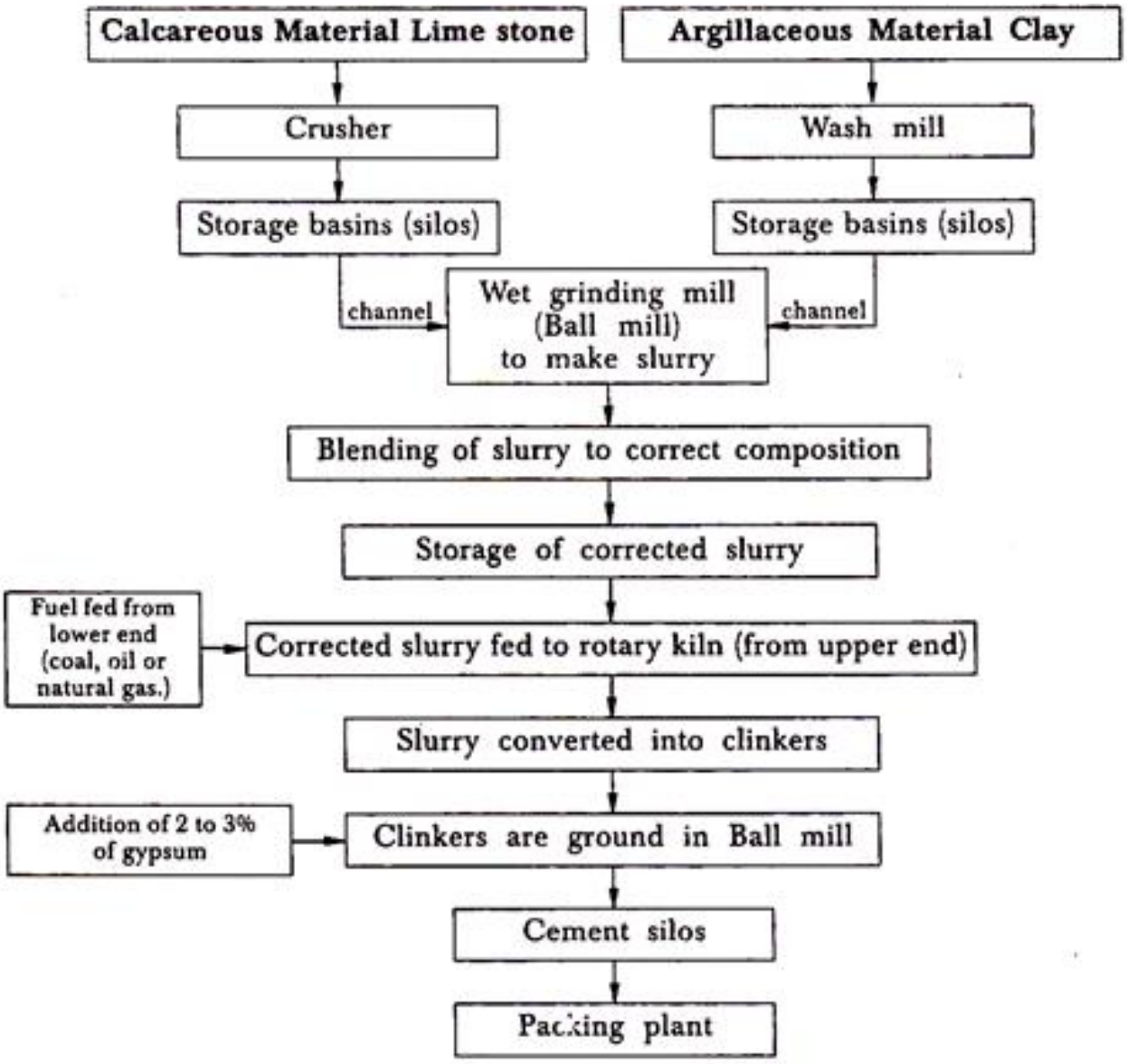

Fig 3: wet process

IV. CONCLUSION

The main benefit of wet process are low cost of mining and crushing raw materials, the exact control of composition and consistency of the slurry and the cost-effective use of fuel over and done with the exclusion of separated drying operations. The longer kilns necessary in wet process are costly and less approachable to a variable clinker request than the short kilns that can be used in the dry process.

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