

**Al-mutsaqbal University College**



**Building and Construction Engineering  
Department**

**Constructional Technology**

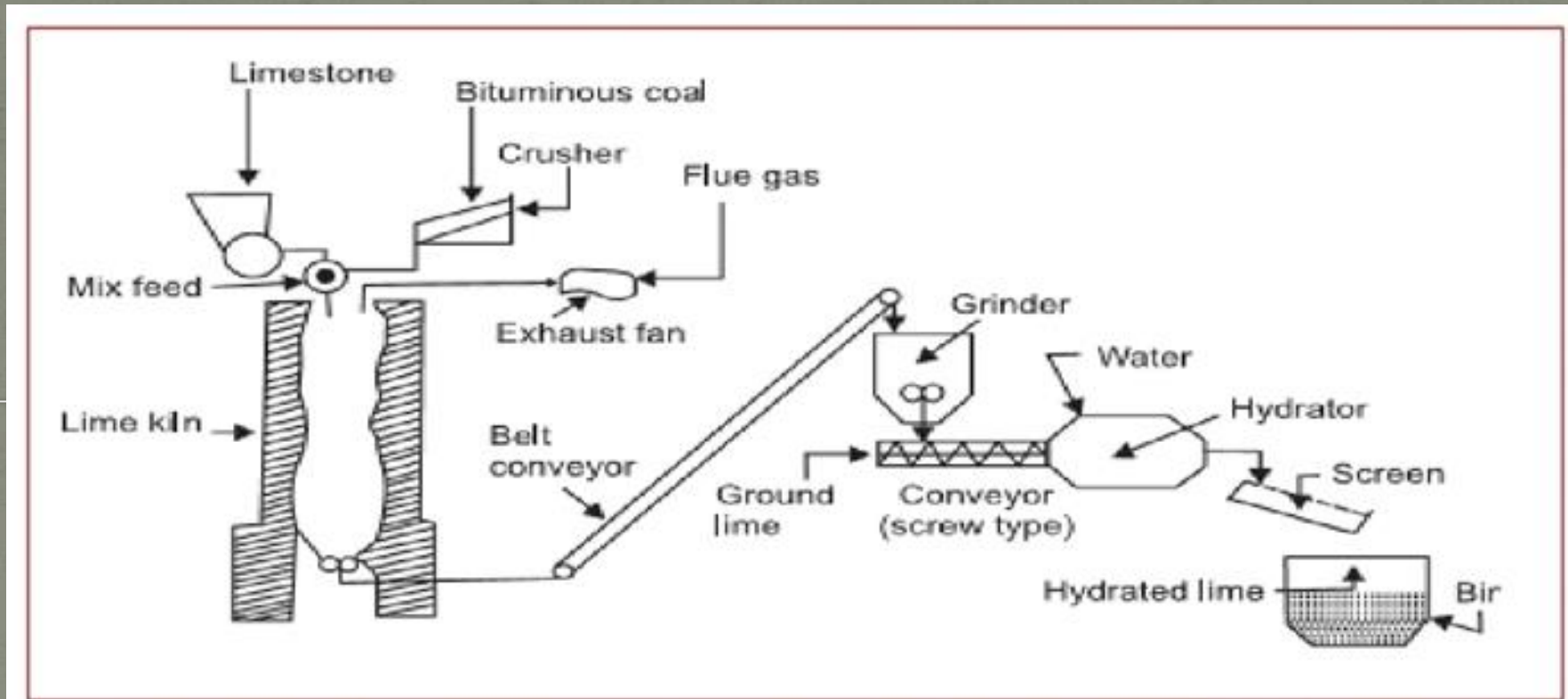
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**2<sup>nd</sup> Class  
Lecture (6)**

**Ruqayah Hayder**

## *Manufacturing of lime*

Fat lime is obtained by burning limestone and hydraulic lime is obtained by burning kankar. Limestone is usually burned in some form of vertical kiln which may be a tunnel or flare shaped working on continuous or intermittent systems.



**Flow diagram of lime manufacturing.**



## Slaking

Quick lime, obtained by burning limestone, when sprinkled with water slakes within 10 minutes and becomes powder. It is then used for various engineering purposes such as white washing, plastering, making mortars and lime putty. The process is also known as hydration of lime.



In the above reaction high heat of hydration is generated at a temperature of about  $350^{\circ}\text{C}$ . The energy liberated during this reaction causes the lumps of quick lime to split and fall to powder. In hydration of lime the heat of hydration generated is not sufficient to break the lime to powder and therefore, the lime is broken mechanically to a suitable size.

Theoretically, the requirement of water for slaking of lime is 32 per cent of the weight of CaO. The amount of water used is 2 or even 3 times greater, depending upon composition, degree of burning and slaking methods, because a part of the water used is vapourised by the released heat. However, to avoid burning and to promote workable pastes, masons usually slake limes with 1.5 to 2 times as much water as lime. Fat lime slakes in 2-3 hours, whereas hydraulic lime slakes in 12-48 hours. Great care should be exercised to slake the lime completely.



