

# Indian Cement Industry...



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# Product Information.

“**Cement** is a material which possesses adhesive and cohesive properties and capable of binding materials like bricks, stones, building blocks etc.”

“**Cement** is a Crystalline compound of calcium silicates and other Calcium Compounds having Hydraulic Properties”( Macfadyen, 2006).

The fundamental chemical compounds to produce **cement** clinker are:-

1. Lime (  $\text{CaO}$  )
2. Silica (  $\text{SiO}_2$  )
3. Alumina (  $\text{Al}_2\text{O}_3$  )
4. Iron Oxide (  $\text{Fe}_2\text{O}_3$  )

Cements used in construction can be characterized as being either **Hydraulic** or **Non-Hydraulic**, depending upon the ability of the cement to set in the presence of water.

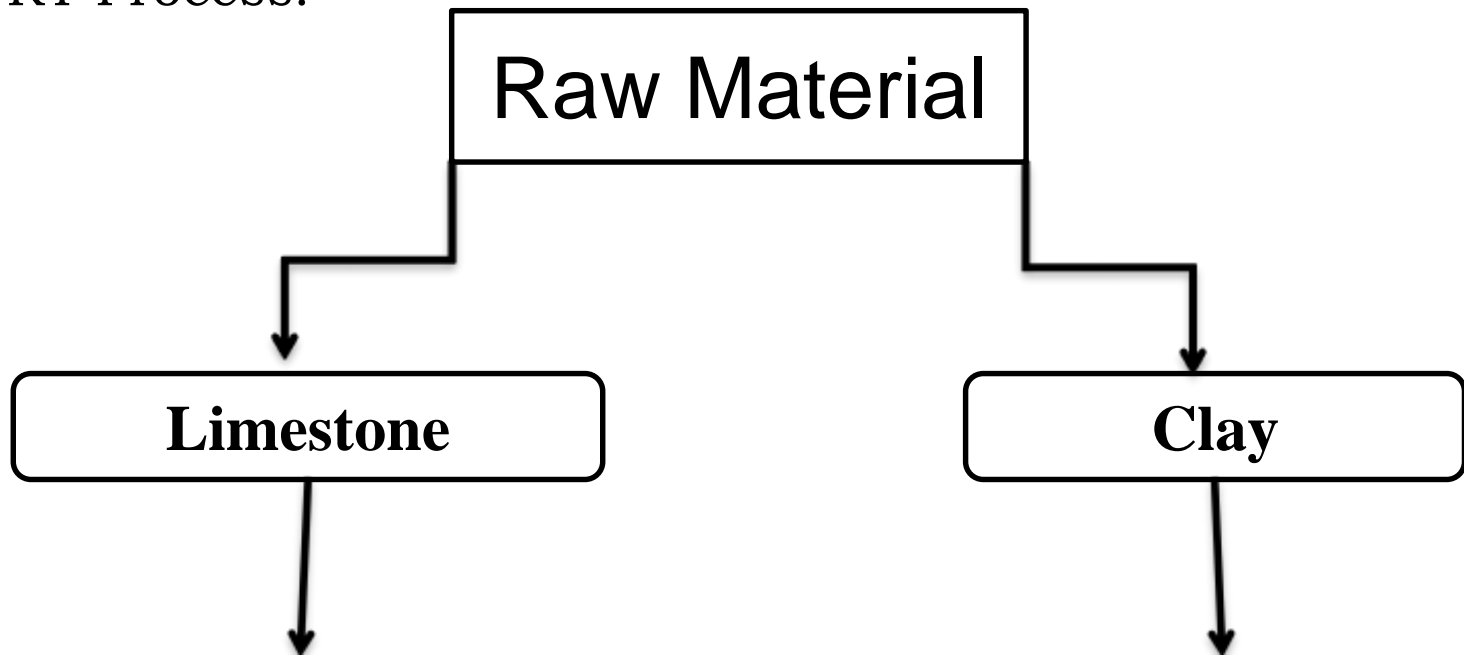
- **Hydraulic cements** (e.g., Portland cement) set and become adhesive due to a chemical reaction between the dry ingredients and water. The chemical reaction results in mineral hydrates that are not very water-soluble and so are quite durable in water and safe from chemical attack. This allows setting in wet condition or underwater and further protects the hardened material from chemical attack. The chemical process for hydraulic cement found by ancient Romans used **Volcanic Ash** (activated aluminium silicates) with **Lime** (calcium oxide).

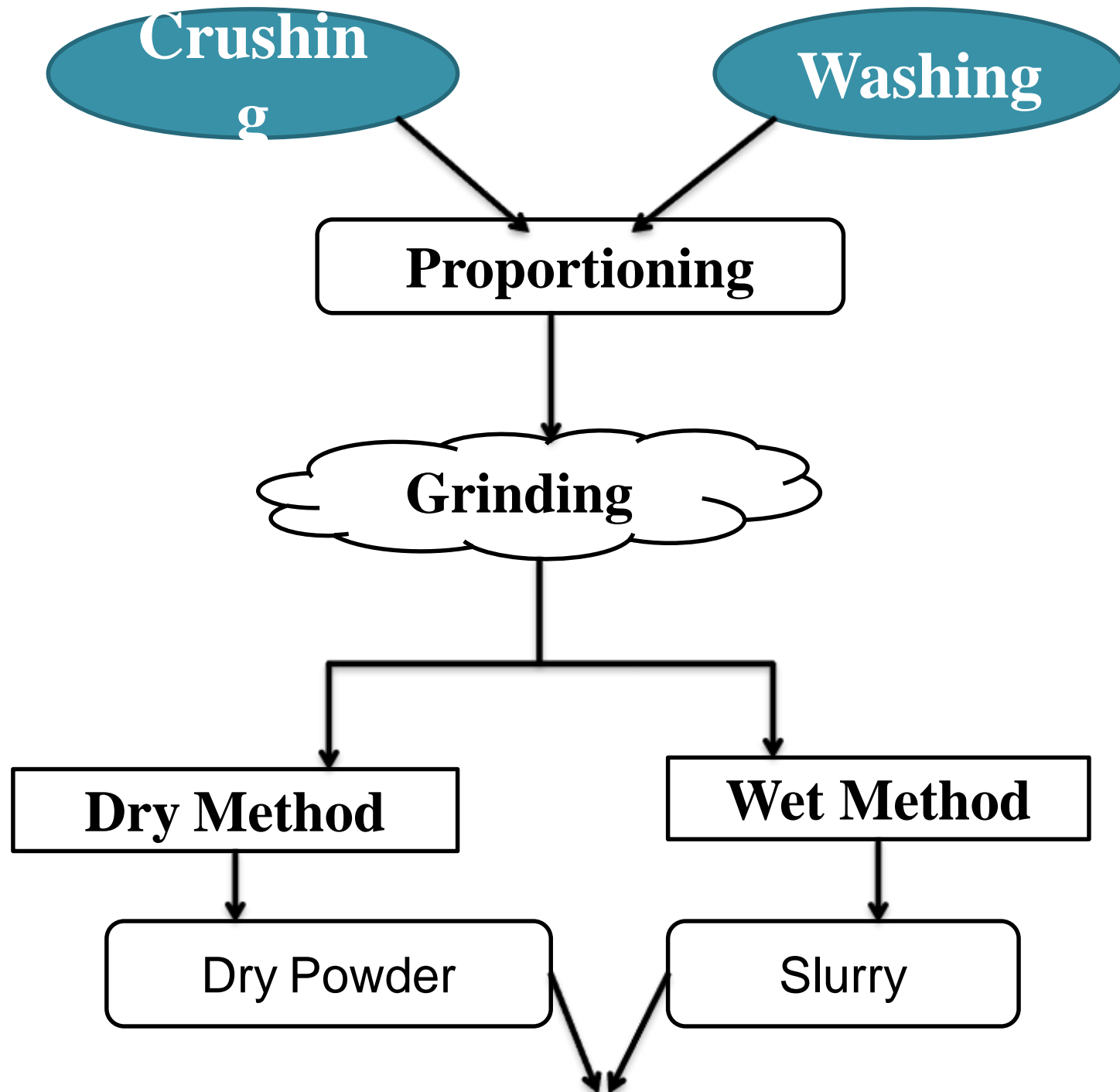
■ **Non-Hydraulic cement** will not set in wet conditions or underwater; rather, it sets as it dries and reacts with [Carbon Dioxide](#) in the air. It can be attacked by some aggressive chemicals after setting.

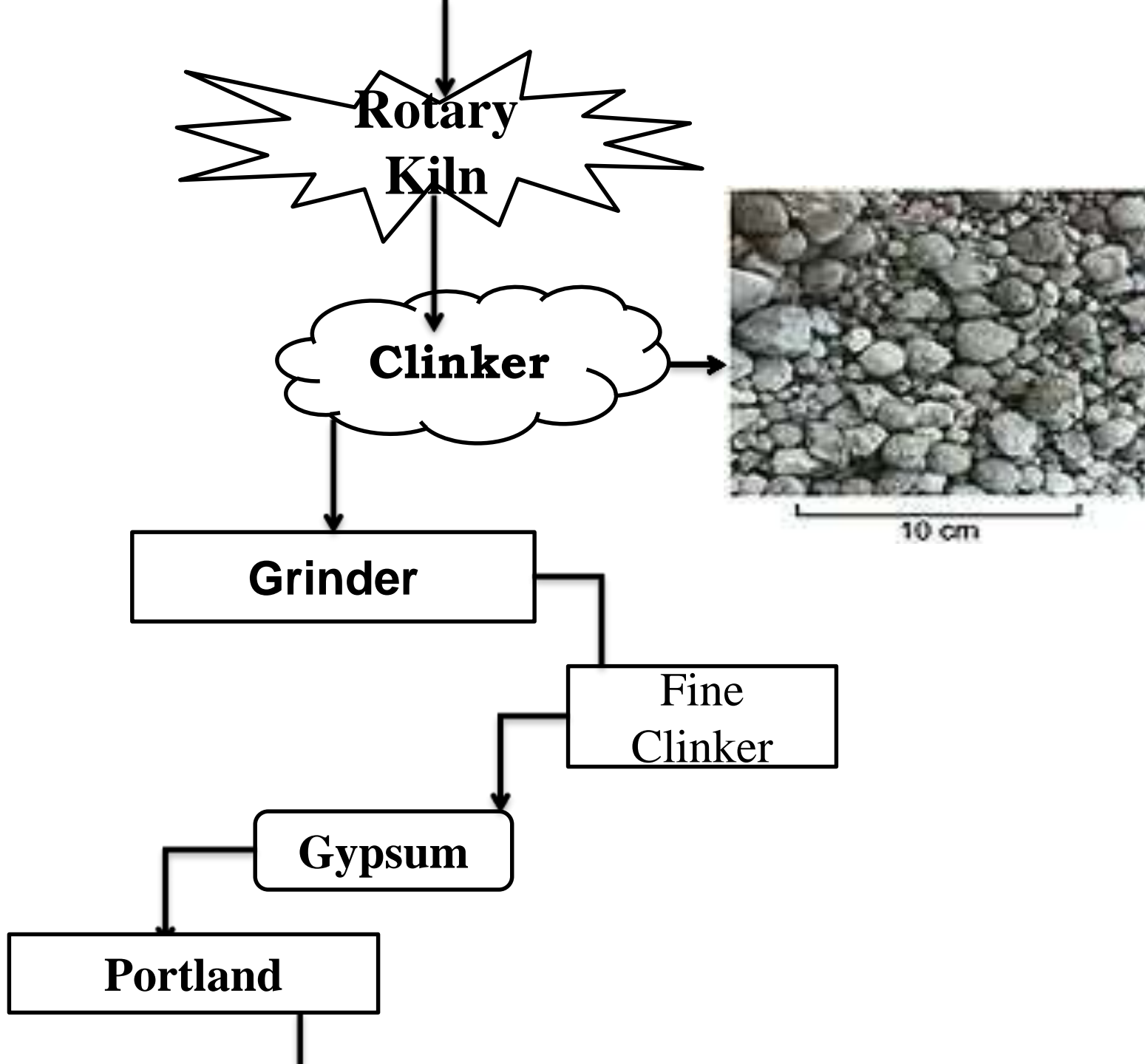
## **Manufacturing process:-**

Three following methods are used in manufacturing of cement:

1. WET Process.
2. SEMI-DRY Process.
3. DRY Process.









**Packaging**

**Shipment...**

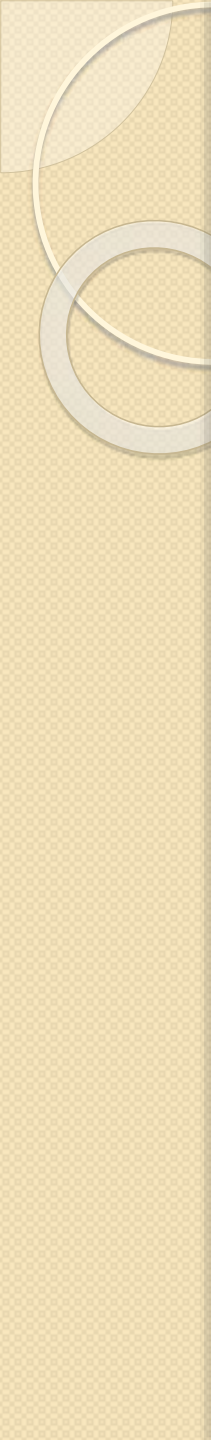




# Introduction....!

India is ranked as the **second-largest** producer of cement in the world, only behind China. No wonder, India's cement industry is a vital part of its economy, providing employment to more than a million people, directly or indirectly. Ever since it was deregulated in 1982, the Indian cement industry has attracted huge investments, both from Indian as well as foreign investors.

India has a lot of potential for development in the infrastructure and construction sector and the cement sector is expected to largely benefit from it. Some of the recent major government initiatives such as development of 98 smart cities are expected to provide a major boost to the sector.

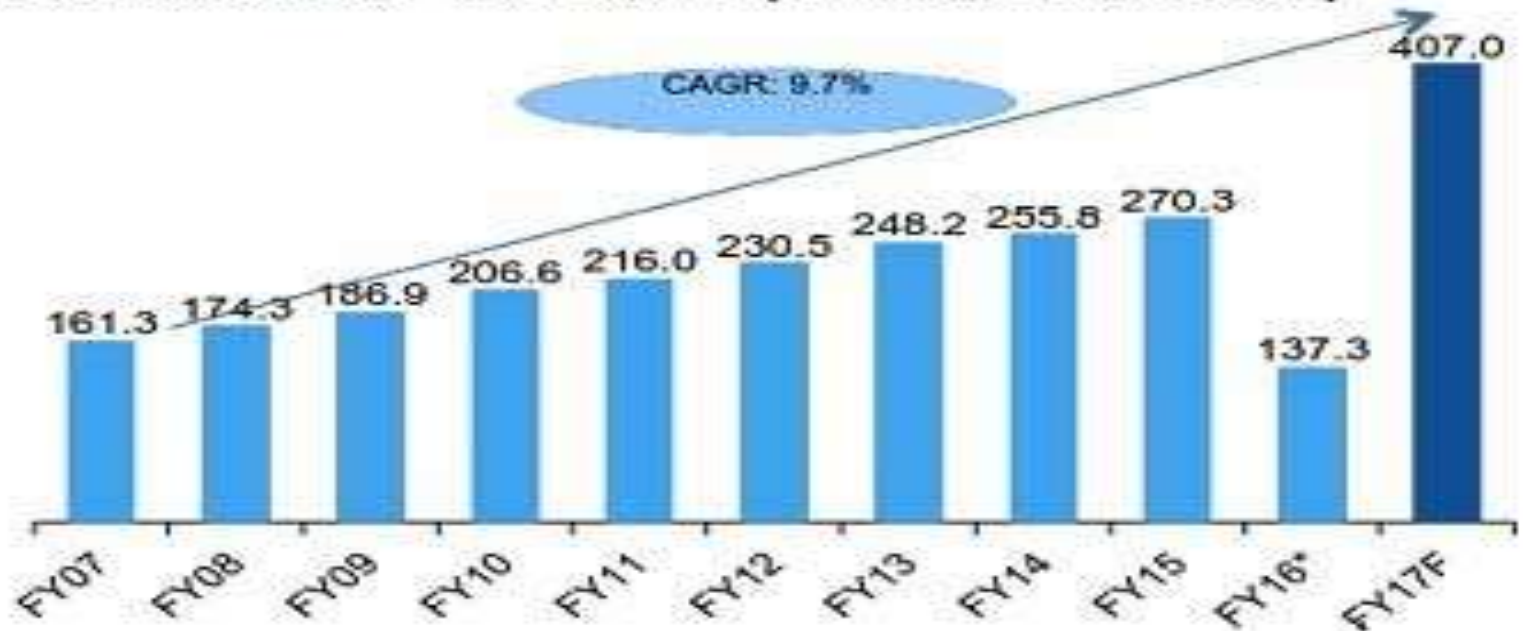


Expecting such developments in the country and aided by suitable government foreign policies, several foreign players such as Lafarge -Holcim, Heidelberg Cement, and Vicat have invested in the country in the recent past. A significant factor which aids the growth of this sector is the ready availability of the raw materials for making cement, such as limestone and coal.

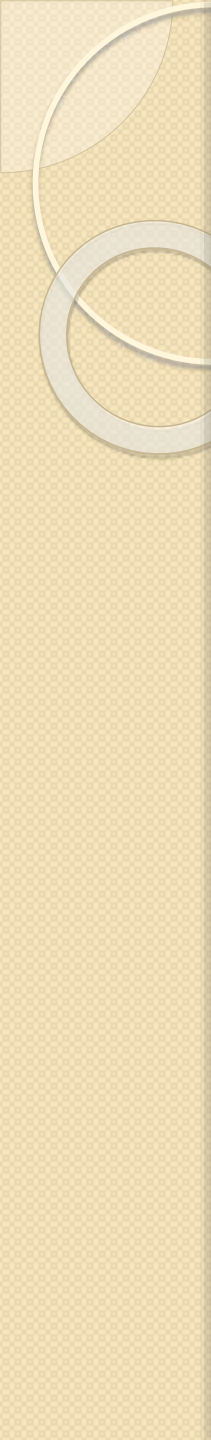
The Indian cement industry increased in value at a compound annual growth rate (CAGR) of 13.14% during the review period(2007–2011), and is projected to grow at a CAGR of 10.64% over the forecast period (2012–2016).

This growth is primarily attributed to the government's high level of infrastructure spending, and the country's increasing number of residential and commercial construction activities. The Indian government invested US\$500 billion on infrastructure during the 11<sup>th</sup> Five-Year Plan (2007–2012) and revealed plans to invest a further US\$1 trillion on infrastructure during the 12<sup>th</sup> Five-Year Plan(2012–2017).

### Production of cement (million tonnes)



Source: Department of Industrial Policy & Promotion, Office of the Economic Advisor, TechSci Research; FY16\*: April-September 2015 ; F - Forecast



The large-scale investment on various infrastructure projects, including roads, railways, bridges and ports, will generate a huge demand for cement over the forecast period. Shorter deadlines for builders to complete projects, labour shortages, space constraints in large cities, the growing need for mechanization and the backlog of infrastructure projects are the main factors driving the increased use of ready-mixed concrete (RMC) in India.

Large township projects in the suburbs of India's leading cities where IT zones are prominent are also generating more demand for RMC. Upcoming infrastructure projects, including energy, roads, ports and airport projects, across India will continue to drive the growth of RMC in India over the forecast period.

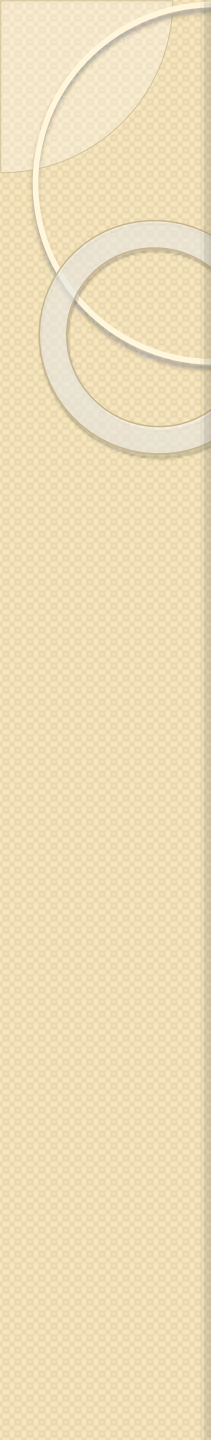
# Factors affecting Cement Industry...

There are certain factors that influence the cement industry. The factors include:

**Economic scenario** – Phases of growth in the economy are positively linked to cement company growth.

**Cost structure and competitiveness** – There isn't much that cement companies can do regarding cost structure because the margins are less to begin with. Cost advantages are usually due to companies having access to a cheaper power source, a quality limestone reserve, or being close to bigger markets.

**Legal, regulatory, and environmental scenario** – The cement industry is affected by regulatory norms. This is prominent in developed countries where environmental issues are more stringent. This adds to the companies' costs.



**Technological advancement** – A disruptive innovation can give the innovating company an advantage. For example, when companies moved from the wet manufacturing process to the dry manufacturing process, there was a cost savings of 5%–10% of the overall cost structure.

**Geographic advantages** – It's an advantage for companies to be near limestone mines or waterways. Ease of transportation is an advantage.

# **MAJOR PLAYERS...!**

- **ACC Ltd.**
- **Gujarat Ambuja Cements.**
- **The Indian Cements Ltd.**
- **UltraTech Cement.**
- **Jaypee Cement.**
- **JK Cement.**
- **Ramco Cement.**
- **Prism Cement.**
- **Shree Cement.**
- **Rain Cement.**
- **Bheema Cements Ltd.**
- **Andhra Cements Ltd.**
- **Barak Valley Cements Ltd.**
- **Chettinad Cements Corporation Ltd.**
- **Dalmia Bharat Cement Ltd.**

# ACC Ltd.

ACC was founded in the year **1936** and has its headquarter in Mumbai. They are the largest cement company of India with **12 manufacturing units** spread in all major states of country. ACC produces range of cement products from cost effective to luxury segments. They have won many prestigious awards for their quality and technology. Company is listed in Bombay & National stock market and has more than **1,00,000 employees**. It has annual revenue of 114 billion and has global presence. ACC is famous for manufacturing best cement in India.



**ACC**  
cement  
Cementing Relationships

**ACC Ltd Cement Production Plants -** Acc Ltd. Damodhar Cement Works (West Bengal), Bargarh Cement Works (Orissa), Chaibasa Cement Works (Jharkhand), Chanda Cement Works (Maharashtra), Gagal Cement Works-I (Himachal Pradesh), Gagal Cement Works-II (Himachal Pradesh), Jamul Cement Works (Chhattisgarh).



# Gujarat Ambuja Cements...

Established in the year **1983** and popularly known as Ambuja Cement, this cement company is **2<sup>nd</sup> largest producer** of cement in India. They have technically advanced factories at Gujarat, Maharashtra, Himachal Pradesh, Rajasthan, Chhattisgarh and West Bengal. All their plants collectively have capacity of producing **160,00,000 tons** of cements. They have a wide network of distributors and wholesalers contributing to nationwide reach of company's products. Annual revenue of the company is more than **70000 million** and has been growing at excellent speed.

Revenue - 76378.1 million

Headquarters - Mumbai, India

Unit: Ambuja

Nagar(Gujarat), Bhatapara II

(Chhattisgarh), Bhatapara

(Chhattisgarh), Dadri(Uttar Pradesh), Darlaghat(Himachal Pradesh)

Pradesh)



# The Indian Cements Ltd.

3<sup>rd</sup> in the list is **Indian Cement**. Indian Cement established in the year **1946**, is leading cement manufacturer with a countrywide network of production units and marketing offices. The company is based out of Tamil Nadu and is largest cement producer in South India and acquire 30% of country's cement market. They are most trusted brands of cement in Southern States of India. They give employment to **7500 people** in their company.



Type - Private Sector  
Listed in - BSE & NSE  
Headquarters - Tamil Nadu,  
india

# Ultra Tech Cement...!

UltraTech Cement incorporated in the year **1987**, has been a pioneer and trend-setter in Indian Cement Industry. They are 100% subsidiary of Fortune 500 Company - Aditya Birla Group. They have their head-office in Mumbai and are the largest producer of grey cement in India. Their products are exported to various countries in Middle East and neighbouring Indian sub-continent countries. It has annual production capacity of **66 Million Tonnes** Per Annum (MTPA) and has **12 operational plants** across India.

**UltraTech**  
**C E M E N T**

*The Engineer's Choice*

Parent Company -  
**Grasim Industries**


# Jaypee Cement...!

Jaypee Cement is subsidiary of reputed Jaiprakash Associates Limited (Jaypee Group). The company was founded in the year **1979** and has its head-office in Noida. They produce variety of cements in their state of the art **18 production facilities**, spread across **in 10 states of India**. All of their factories are capable of producing tonnes of high quality cements and related products. They have various quality certifications namely ISO-14001:2004, OHSAS-18001:1999 and ISO-9001:2000. **Established in 2001.**



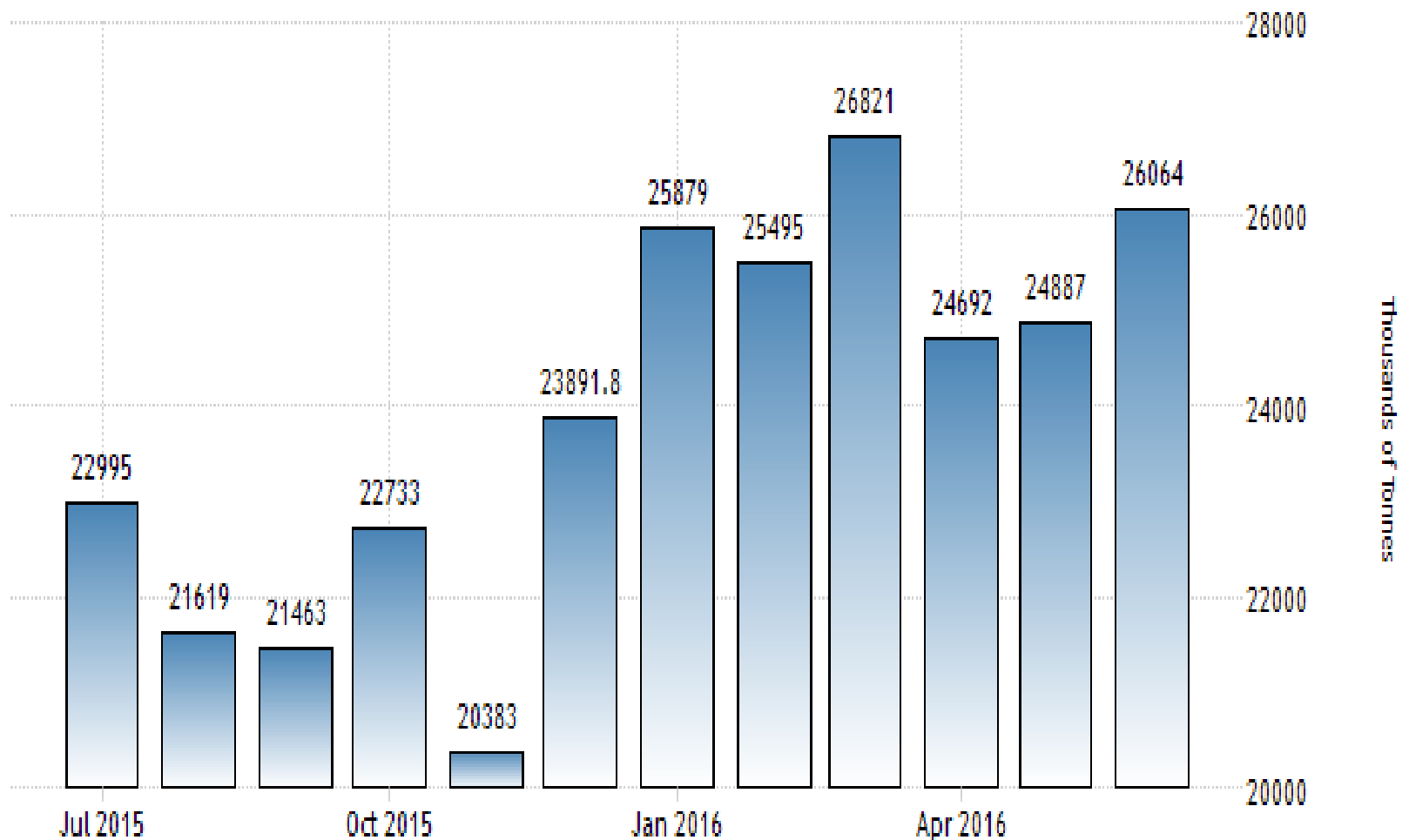
# Market share...!

- Cement demand in India is expected to increase due to government's push for large infrastructure projects, leading to 45 million tonnes of cement needed in the next three to four years.
- India's cement demand is expected to reach 550-600 Million Tonnes Per Annum (MTPA) by 2025. The **housing sector** is the biggest demand driver of cement, accounting for about **67%** of the total consumption in India. The other major consumers of cement include infrastructure at 13%, *commercial construction at 11%* and industrial construction at 9%.

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- To meet the rise in demand, cement companies are expected to add 56 million tonnes (MT) capacity over the next three years. The cement capacity in India may register a growth of 8% by next year end to 395 MT from the current level of 366 MT. It may increase further to 421 MT by the end of 2017. The country's per capita consumption stands at around 190 kg.
  - The Indian cement industry is dominated by a few companies. The top 20 cement companies account for almost 70% of the total cement production of the country. A total of 188 large cement plants together account for 97% of the total installed capacity in the country, with 365 small plants account for the rest. Of these large cement plants, 77 are located in the states of Andhra Pradesh, Rajasthan and Tamil Nadu.

# Market Production of Indian Cement Sector

INDIA CEMENT PRODUCTION



# Government Policies...

In the **12th Five Year Plan**, the Government of India plans to increase investment in infrastructure to the tune of **US\$ 1 trillion** and increase the industry's capacity to **150 MT**.

The Cement Corporation of India (**CCI**) was incorporated by the Government of India in **1965** to achieve self-sufficiency in cement production in the country. Currently, CCI has 10 units spread over 8 states in India.

In order to help the private sector companies thrive in the industry, the government has been approving their investment schemes.



Some such initiatives by the government in the recent past are as follows:

- The Parliament of India has cleared amendments to the Mines and Minerals Development and Regulation (MMDR) Act, which will enable companies to transfer captive mines leases similar to mines won through an auction, and which is expected to lead to increased Mergers and Acquisitions (M&A) of steel and cement companies.
- The Government of India is planning to revive the state-run cement factories across India, in order to give a boost to road and realty projects by bringing down their construction costs.
- **Budget 2016-17** has proposed a slew of measures to boost infrastructure and investment, which will be positive for the cement sector, as increased spending on infrastructure increases the demand for cement. 100 per cent deduction for profits to an undertaking in housing project for flats up to 30 square metres in four metro cities and 60 square metres in other cities approved during June 2016 to March 2019 and completed in three years.

- Incremental spend on smart city development, the government has allocated Rs 7,296 crore (US\$ 1.09 billion) towards Atal Mission for Rejuvenation of Urban Technologies (**AMRUT**) and Mission for Development of 100 Smart Cities.
- Rise in allocation under Pradhan Mantri Gram Sadak Yojana (**PMGSY**) to Rs 19,000 crore (US\$ 2.79 billion) for FY17.
- The Government of Kerala has accorded sanction to Malabar Cements Ltd to set up a bulk cement handling unit at Kochi Port at an investment of **Rs 160 crore (US\$ 23.5 million).**
- The Government of India has decided to adopt cement instead of bitumen for the construction of all new road projects on the grounds that cement is more durable and cheaper to maintain than bitumen in the long run.

# Investments.....

On the back of growing demand, due to increased construction and infrastructural activities, the cement sector in India has seen many investments and developments in recent times.

According to data released by the Department of Industrial Policy and Promotion (**DIPP**), cement and gypsum products attracted Foreign Direct Investment (**FDI**) worth US\$ 3.109 billion between April 2000 and March 2016.

Some of the major investments in Indian cement industry are as follows:

- KKR Mauritius Cement Investments Limited acquired 8.5% stake in Dalmia Bharat Limited (**DBL**).

- **Cement maker Burnpur Cement** plans to invest Rs 500 crore (US\$ 74.64 million) for expansion of its production capacity to 3 MTPA in the next 3 to 4 years.
- India's largest cement maker **UltraTech Cement** is looking forward to **acquire Jaiprakash Associates** 6 cement factories for a total value of Rs 16,500 crore (US\$ 2.42 billion).
- Birla Corporation Ltd, a part of the MP Birla Group, has agreed to acquire 2 cement assets of Lafarge India for an enterprise value of Rs 5,000 crore (US\$ 733.6 million).
- **JSW Cement Ltd** has planned to set up a **3 MTPA** clinkerisation **plant at Chittapur in Karnataka** at an estimated cost of Rs 2,500 crore (US\$ 366.8 million).

- **JSW** Group plans to expand its cement production capacity to 30 **MTPA** from 5 **MTPA** by setting up grinding units closer to its steel plants.
- **UltraTech Cement Ltd** bought 2 cement plants and related power assets of **Jaiprakash Associates Ltd** in Madhya Pradesh for Rs 5,400 crore (US\$ 792.3 million).
- **Dalmia Cement (Bharat) Ltd** has invested around **Rs 2,000 crore (US\$ 293 million)** in expanding its business in North East over the past 2 years. The company currently has 3 manufacturing plants in the region — one in Meghalaya and two in Assam.

# Problems/challenges...

There are a number of constraints and bottlenecks which are hindering the growth of this core sector industry. A few of the major concerns of the industry are discussed below:-

**Excess cement capacity:** Cement industry has been experiencing glut situation as there has been mammoth mismatch between cement demand and its supply. The industry had created the capacity on the back of government's projection of potential cement demand arising out of the thrust given for infrastructure development in the country and the allocation of funds earmarked for the purpose. However, the cement demand, as projected, has not materialised, despite the capacity having been created well in advance after making huge investments.

**Cement highly taxed:** Although cement is a high volume low value product, it is one of the highly taxed commodities (60% of the ex-factory price), even more than luxury goods. This is exclusive of the freight transportation, which is about 20% of the operating cost. The levies and taxes on cement in India are far higher compared to those in the countries of Asia-Pacific region or even compared to the developing economies like Pakistan and Sri Lanka. Cement and steel are two major materials needed for construction of any infrastructure. However, it is ironic that the rate of **VAT** charged on cement and steel differs vastly. While the Value-Added Tax (**VAT**) on steel is only four per cent, it is 12.5% on cement/clinker which goes up to even 15% in some of the states.

**Steep fall in cement exports:** With the high incidence of government levies, infrastructure constraints at ports and the regulatory policies of the government providing encouragement for import of cement with nil custom duty, the export of cement and clinker from India has been steadily and continuously declining from **9MT** in FY07 to **3.5MT** in **FY12**, despite the fact that Indian cement industry is presently having the substantial excess capacity of cement and clinker.

**Acute shortage of coal:** Coal is one of the major raw materials needed by the industry both in the manufacturing of cement and also for generating power. In the last couple of years, there has been **a steep drop** in the supply of linked coal to the cement industry **from 70% in FY04 to almost 39% now**, mainly due to diversion of coal to the power sector. Cement companies, therefore, have perforce to resort to either open market purchase or imported coal which works out to nearly 2 to 2.5 times higher than the domestic price or use of the alternate fuel like pet coke, lignite, etc. which also adds up significantly to the additional cost of production. What is worse, new capacities are not being given any coal under the Linkage Scheme and therefore there is a real fear that the shortage of the main fuel, with no assurance of its availability in future, may actually hamper the required capacity additions for future build up. With the increasing cost of coal and other input materials such as diesel, etc. the production cost of cement has gone up significantly.



**Inadequate availability of wagons:** Rail is the ideal mode of transportation for cement industry. However, it has always been plagued by the short supply of wagons, particularly during the peak period. In addition to this, infrastructure constraints and also not factoring the points of view of the cement industry, which is one of its largest consumers, in the policies of the railways have been hampering the planned movement of cement to the consumption centres, adversely impacting the production schedule and also increasing the overall transportation cost of cement. Rail share for cement which was 53 per cent a couple of years back has come down to 35 per cent now, which is a matter of great concern both to the cement industry and the railways.

**Use of fly ash unviable:** Cement industry's initiative and investment to the tune of more than Rs 1000 crore for effectively utilizing the industrial waste fly ash, which was otherwise posing a nuisance as a health hazard, has helped the thermal power plants in addressing and tackling the menace of fly ash related health and environmental hazards. However, power plants which had been earlier supplying fly ash to the cement industry free of cost have for the last couple of years, as per the order of the Ministry of Environment and Forests, started charging for fly ash from November 2009. The order has also made it mandatory for the cement plants having captive power plants to supply 20% of the fly ash generated as free of cost to the small scale brick manufacturers, etc. **within the vicinity of 100 kms of their plants.** Both these have severely impacted the production cost of cement and also seriously threatened the fly ash recycling potential in the country.

Any  
Question?



**THANK YOU....!**

