

Human Resource and Skill Requirements in the Construction Material and Building Hardware

Executive Summary



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National
Skill Development
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Key Growth Drivers for Construction Material and Building Hardware sector

Cement

Demand Drivers

- Demand for Cement is derived from the growth of housing, infrastructure and commercial real estate sectors
- Demand expected to reach 6-7% by 2016-17 and achieve 8-10% by 2020

Strong linkages with Construction sector

- There are no close substitutes to cement
- The only exogenous factors that can affect the growth of the cement industry are the growth prospects of the construction and infrastructure sectors

Cement Outlook

Greener Technology adoption

- Focus is on emission reduction, since cement production is one of the most energy intensive industries. Investment of INR 60,000 crores required for technology up-gradation
- Alternate fuels are being encouraged to be used in kilns have also resulted in considerable cost reduction

Policy Environment

- Credit availability for housing and real estate also expected to ease
- Cement has one of the highest rates of excise tax, that could threaten its growth prospects

Steel

Demand Drivers

- Strong focus on infrastructure development with spending targets of more than \$1 trillion envisaged in the 12th Five year plan.
- Middle class population in India is expected to reach 600 million by 2030.

Supply Drivers

- Robust investments: Investments are planned to boost the production capacities of steel plants by existing players in the next five years.
- Use of advanced technologies:

Steel Outlook

Competitive advantage

- Leader in production
- Low-cost manpower

Policy Environment

- Advent of liberalisation and free trade policy: Freedom to set up integrated steel plants in the private sector;
- Placing imports of steel under OGL (open general licence)

Key Growth Drivers – Bricks and Refractory material Segment

Demand Drivers

- Strong growth in the construction sector
- Large Demand in urban centers
- Population growth and rapid urbanisation
- Growing demand for housing

Strong linkages with Construction sector

- The only exogenous factors that can affect the growth of the bricks industry are the growth prospects of the construction and infrastructure sectors
- Use of AAC and RC bricks becoming popular

Bricks Outlook

Greener Technology adoption

- In order to reduce emissions, Government is promoting use of resource efficient bricks and improving the overall efficiency in brick making

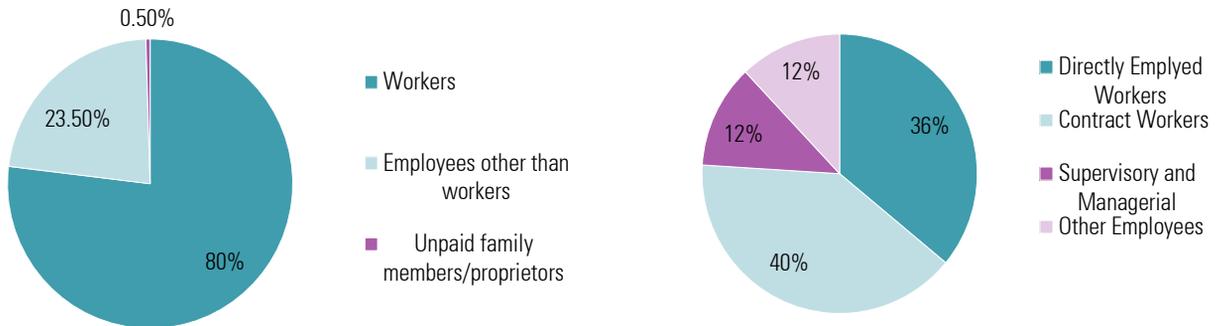
Policy Environment

- Though the policy environment has not been completely favorable for the brick making business, upgrading to new technologies has opened new venues of opportunity for players in the sector

Demographic characteristics of workforce

Predominantly unorganized nature of workforce in the industry

Workforce composition – Cement



The cement manufacturing sector is dominated by worker who account for nearly 76% of the total workforce.

Supervisory and managerial levels constitute 12% of the total workforce.

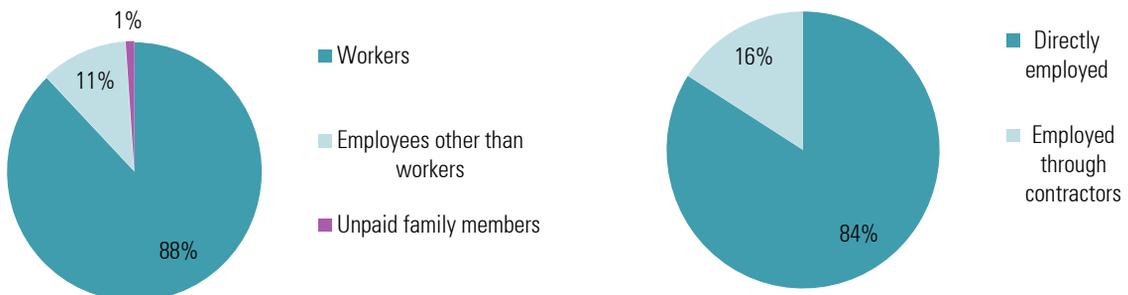
Workforce composition – Steel



Apart from the directly employed, those who are employed through contractors represent the largest (14%) section of the workforce.

There is a strong presence of **contract workers** in the steel sector, with over 59% of the composition of workers constituting contract workers.

Workforce composition – Bricks and Refractory material Segment

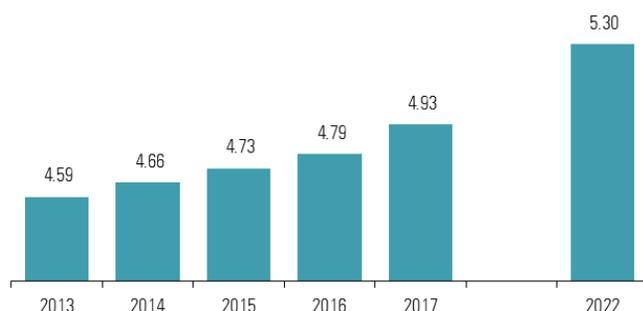


Sources: Industry Interactions; KPMG in India analysis

Incremental Human Resource Requirement (2013-22)

Current workforce of 8.2 million (2013) is expected to increase to ~10.9 million by 2022

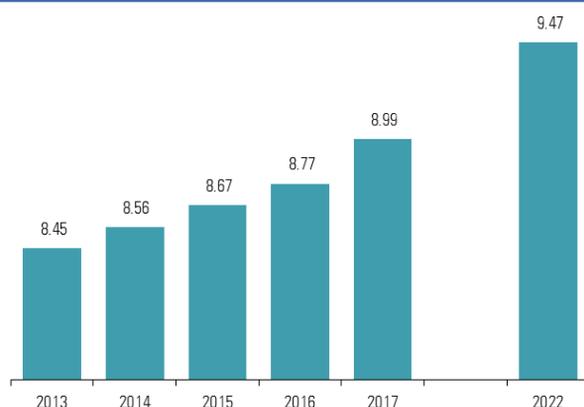
Workforce Projection in 2013-22 (in lakhs) - Cement



Source: Primary Interactions, KPMG Analysis

The cement sub-sector currently employs ~0.45 million employees which is expected to increase in the nine year period 2013-22 to ~0.53 million.

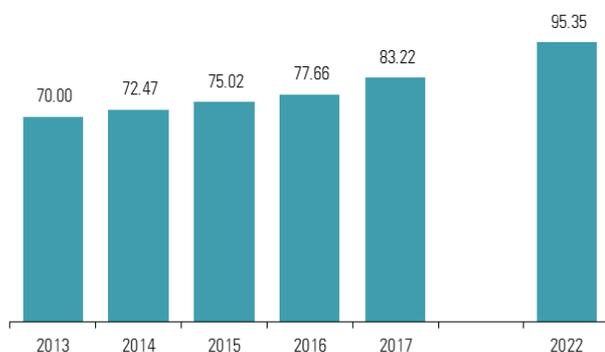
Workforce Projection in 2013-22 (in lakhs) - Steel



Source: Primary Interactions, KPMG Analysis

The iron and steel sub-sector currently employs ~0.8 million employees which is expected to increase in the nine year period 2013-22 to ~0.95 million.

Workforce Projection in 2013-22 (in lakhs) - Bricks and Refractory material Segment



Source: Primary Interactions, KPMG Analysis

The bricks, mortar, stone and other materials retailing sub-sector currently employs ~7 million employees which is expected to increase in the nine year period 2013-22 to ~9.5 million.

Supply & Training Infrastructure

Available training infrastructure is largely defined by the industry and its in-house training provisions

Cement manufacturing is increasingly **mechanised** and **computer simulation oriented**. There is also an impetus towards the promotion of nanotechnology-based production methodologies. This demands the creation of new job roles and increased skill sets in order to match the changing characteristics of production as well as in order to cope with the production capacity expansion of 150 MT expected during the Twelfth Plan period.

Building Materials and Technology Promotion Council, New Delhi

So far, more than 800 construction professionals and 2000 masons, bar benders, plumbers, artisans have been imparted hands-on training.

Sustainable Construction and Green Construction Practices; Earthquake Resistant Design and Construction; Concrete Mix - Design and Quality Control; Water Proofing and Damp Proofing; Quality Control and Assurance in Construction; Use of Chemical and Mineral Admixtures for Concrete Construction; Repair, Maintenance & Rehabilitation of Buildings including Seismic retrofitting
Use of Bamboo in Building and Housing Construction

Dalmia Institute for Scientific and Industrial Research, Rajgangpur, Orissa

Testing and evaluation of refractory related raw materials, intermediate and finished products and their application in different industries, Human Resources Management, TQM, ISO and Application of IT to refractory industries. (6 weeks)

Engineer, Production Manager, QC/R&D Manager, Chemists and Supervisors working in Manufacture or use of Ceramic and Refractory Materials of Colombo Plan Countries

Application of refractory products in different industries, financial, personnel and Human Resources management, TQM, TOC, IT, ISO:- scope, application and benefits to refractory industries (2 weeks)

Production manager, Engineer, Marketing Manager, R&D/QC Manager, Supervisors and middle decision makers of Colombo Plan Countries

J. K. Cements Training Institute, Nimbahera, Rajasthan

The training centre is equipped with modern training aids and caters to competency development needs of more than 25 cement plants of northern India. It sources students from Rajasthan and other states

Training is also provided to workers from other cement plants
Advanced Skill building training for workers with 5-10 years of experience

Short term courses: 3-5 days; Long term courses: 1-12 weeks

National Council on Cement and Building Materials, Hyderabad and Ballabgarh

Recommended to be the national nodal for skill development in the cement industry. It is the only organisation that caters to training entry level as well as working professionals.

Certificate courses in individual areas of cement technology for 2-3 months; Computer based training programmes for operators and technicians; Distance Learning Programme - one year Post Graduate Diploma in cement technology; Refresher courses on specific subject of cement manufacturing of 5 to 30 days

Source: KPMG Analysis; Stakeholder interactions

Recommendation	Implications
Strengthening the training framework to match the changing industry requirements	<ul style="list-style-type: none">▪ Training infrastructure will be standardized and comparable across providers▪ Coordination between stakeholders in order to identify the skill gaps and appropriate mechanisms to deal with them▪ Licensing of providers will help in monitoring compliance, regulation and accreditation of training
Institutional measures to have relevant checks for monitoring of agencies	<ul style="list-style-type: none">▪ Creation of a nodal agency to monitor the training ecosystem in the sector is crucial to standardize the training and evaluate its quality▪ This will require consultation between the industry, training providers and potential trainees
Training curriculum development to align the skill set imparted along with industry requirements	<ul style="list-style-type: none">▪ Existing workforce will be awarded certification by RPL in order to ensure effective delivery of appropriate training for appropriate levels



cutting through complexity

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