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UltraTech Cement: A Transition towards BehavioUr-Based Safety

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Kiran Patil was taken aback when he received a phone call on an afternoon in June 2015 informing him of a terrible accident at a work site. A worker had had both legs seriously injured while clinker rake loading, and he had been rushed to the hospital in critical condition. It was an alarming situation for Patil, the chief operating officer at the Rawan Cement Works (Rawan) unit of UltraTech Cement Limited (UltraTech) based in Raipur, Chhattisgarh. His firm belief that all occupational injuries could be prevented was shaken. The unit was in the midst of a terrible phase—perhaps its worst ever. The collapse of the clinker silo roof a few months back had been followed by a series of incidents that had attracted negative attention from government officials, the media, and trade unions. Amid declining productivity and low employee morale, this present incident added to Patil’s woes.

Despite management’s objective of zero tolerance towards safety violations and the deployment of globally acclaimed safety consultants, the situation was suddenly beyond control. As Patil analyzed the situation, he felt that there was a significant gap between the best policies formulated at the management level and their implementation at the grassroots level. This gap led to a deviation from the desired result. It was essential to move from a process-centric approach to safety to one that was people-centric. Patil had a few ideas in mind. He needed effective, immediate, and out-of-the-box solutions to his multi-point objective, so he called his core team together for discussion. His priorities were to manage the safety crisis that had engulfed the unit and to restore the faith of people in the organization. He needed methods to implement policies and procedures at the ground level to prevent a relapse.

EXECUTIVES INVOLVED

Patil had joined the Rawan unit of UltraTech in the financial year (FY) 2013–14 as the chief operating officer and executive president. A graduate in mechanical engineering with a master of business administration degree in finance, Patil was a seasoned professional with more than 30 years of experience in various capacities. Popularly known as the “safety person” within the UltraTech families, Patil had been instrumental in taking safety from a fashion to a passion within the company. He had actively steered the safety excellence journey at UltraTech through his collaboration with DuPont Sustainable Solutions (DuPont). DuPont was an operations management consulting firm that was globally acclaimed for its best-in-class safety systems and its role in transforming workplaces to become not only safer but also efficient and sustainable. Patil’s vision of making everyone accountable for safety had played a pivotal role in providing overall safety standards.

Ravi Kant Dubey had joined UltraTech Cement as a manager in 2008, and was the head of the safety department. He was initially based at the Awarpur Cement Works unit in Chandrapur, Maharashtra. He took over as general manager at Rawan in 2015. An engineering graduate who specialized in industrial safety, Dubey had 19 years of rich experience in executing and implementing a range of safety practices on various important projects in India and abroad. His well-crafted safety practices had resulted in the completion of critical projects without any lost-time injuries.[[1]](#footnote-1) During his tenure at Awarpur Cement Works, he had played a key role in enhancing safety compliance.

BACKGROUND

Owing to its hazardous nature, the cement industry found ensuring healthy and safe working conditions for employees and contract workers to be one of its biggest challenges (see Exhibit 1). Accidents or lost-time injuries had not only instant effects on the morale of the people, but also long-term effects on overall productivity and business sustainability. The cement industry was gradually evolving to develop and implement better systems for occupational health and safety management in order to minimize potential mishaps. The safety practices at UltraTech had a relative edge over those of other global players, and the company’s vision was “to be the leader in building solutions by focusing on zero harm to employees, environment, and our stakeholders.”

Safety at UltraTech was strongly system-driven, with a hierarchy of control to manage risk. The company had a fully functional and dedicated department of safety (see Exhibit 2) consisting of 16 employees. The department, headed by a general manager, consisted of a section head, four front-line executives, and 16 stewards. UltraTech’s safety processes were revamped to focus on the prime goal of achieving zero harm starting in FY2009–10. This was done through a collaboration with DuPont. The initial findings in this project suggested there was a reactive approach towards safety within the company. However, within four years, there had been significant improvement in a 13‑point score that showed a cultural shift towards a proactive approach (see Exhibit 3). Subsequently, there was also a significant reduction in the frequency of accidents.

The company worked to develop an integrated approach that built safety into the contract management process. It took various measures to enhance the level of safety at the unit—including the elimination of risk factors, substitution with safer alternatives, the isolation of high-risk zones, engineering control, administrative measures, and mandated use of personal protective equipment. In total, 24 safety standards, 24 safety procedures, and more than 100 guidelines were developed and implemented. Optimally safe working conditions were designed by modifying the facility and infrastructure, designing inherently safe systems, and improving processes (see Exhibit 4). Some significant initiatives were a full-day safety round (when a person was designated only for monitoring safety at a site for a full day), a morning toolbox talk (a discussion on safety related items while preparing for work in morning), daily job activity planning, closed-circuit television monitoring at all critical locations, testing for height phobias, a one-man one-lock system (a safety practice), stop-work empowerment (where each person in the organization was encouraged to stop work if he or she found that there was a safety risk involved), the development of an online safety quiz, and a night vigilance system. Ensuring complete safety was one of the key responsibility areas of the line function. Moreover, the importance of being safe at all times and the mandatory use of helmets were emphasized through off-site safety measures. All of these measures contributed to a safe working environment.

Despite these measures, the plant had witnessed frequent incidents in the recent past. The plant had already been shut down for several weeks due to a cyclone jamming, and this had resulted in a significant loss of productivity. There had been back-to-back accidents: a worker suffered a severe facial injury caused by belt-pulling during maintenance and another suffered high-degree burns while cleaning hot bed ash. The situation worsened when one worker suffered a serious abdomen injury and another died as a result of injuries related to the erection of a coal shed. Finally, the roof of a clinker silo collapsed. There was massive agitation from the trade unions, the issues had flared up in the media, and the government had demanded immediate corrective measures. The situation had become completely out of control.

Many demanding questions needed attention. It was difficult to understand why or how such incidents had occurred when the organization had implemented best-in-class safety systems in collaboration with DuPont. Though ensuring the complete safety of employees at all times was a non-negotiable aspect of the organization, incidents were still being reported at the site.

As Patil was recognizing the need to devise measures that would make safety measures people-centric rather than process-centric, Dubey joined the Rawan unit as it was passing through its toughest ever phase. After two months at this unit and heading the department of safety, Dubey was entrusted with the responsibility of devising an implementation plan for a best-fit approach. He was also given the task of designing internal communications that would restore the faith of employees.

INDUSTRY OVERVIEW

Globally, India was the world’s second-largest producer of cement, so cement contributed significantly to the country’s overall economy. The country had a total cement manufacturing capacity of about 384 million tonnes as of FY2015–16.[[2]](#footnote-2) Per-capita consumption was estimated to be about 200 kilograms, which was low compared with the world average of 500 kilograms. Out of the total consumption in India, the housing sector represented about 67 per cent, followed by infrastructure (13 per cent), commercial construction (11 per cent), and institutional construction (9 per cent). The cement industry in India was dominated by a few large players: UltraTech, Ambuja Cement Ltd., ACC Limited, Shree Cement, India Cements Limited, Ramco Cements Limited, and Birla Corporation Limited.[[3]](#footnote-3) There were 210 large cement plants in the country, accounting for a cumulative installed capacity of over 350 million tonnes, and 350 smaller plants that accounted for the rest. The cement industry employed more than 1 million people either directly or indirectly. Since the industry was deregulated in 1982, it had attracted huge investments from Indian and global investors.

COMPANY OVERVIEW: ULTRATECH CEMENT

Identifying itself as “The Engineer’s Choice,” UltraTech was one of the leading producers of cement globally and the largest manufacturer of grey cement, ready-mix concrete, and white cement in India (see Exhibits 5 and 6). Headquartered in Mumbai, it operated in India with 18 integrated plants, 25 grinding units, and seven bulk terminals. Within the three decades since its inception in 1986, it had carved a niche for itself: beginning as a cement manufacturer, it was now seen as an end-to-end innovative building solution provider. Keeping pace with the changing tastes and preferences of contemporary consumers, it had become a one-stop shop for primary construction needs.

UltraTech’s operations spanned India, the United Arab Emirates, Bahrain, Bangladesh, and Sri Lanka. With a dominant presence on the global front, UltraTech was also India’s largest exporter of cement to adjoining countries and the Middle East. With the organization’s focus on cutting-edge technology, research, and technical services, UltraTech as a brand embodied the characteristics of strength, reliability, and innovation. UltraTech’s parent company, the Aditya Birla Group, was a Fortune 500 company employing a diverse workforce of 120,000 employees, belonging to 42 different nationalities, across 36 countries.

TRANSITION TOWARDS BEHAVIOuR-BASED SAFETY: THE DECISION

Though safety was strongly system-driven, human intervention had an important role in the process and exposed the system to inadvertent risks of error and overconfidence. While safety compliance was the first consideration of company processes, these considerations were not always properly addressed.A closer analysis revealed that almost 50 per cent of the incidents at UltraTech could be attributed to un-safe acts or the risky behaviours of employees. These were carried out mainly to save time or to make things more convenient. Sometimes, the cause was a lack of understanding or training, or the result of unskilled behaviour or a disagreement about safe practices. Moreover, employees generally believed that while they complied with safety procedures, it was always others who violated safety practices and put things at risk. The major focus for enhancing safety up to this point had been on maintaining safe work conditions. The related areas of concern had been adequately addressed; however, it was now felt that incorporating behavioural modification was the key to controlling, containing, or mitigating the consequence of any untoward happening.

Patil and his core team members arrived at a consensus: engagement of the people was necessary in order to move from being process-centric to being people-centric and to make the safety implementation process effective. Further, they would have to devise emotionally intelligent methods to restore the faith of people in the organization. To manage the immediate crisis, Patil instructed his core team to float an internal communication to all stakeholders. The communication would be aimed at boosting the morale of employees and assuring them that all possible corrective measures would be taken to ensure their complete safety. The team was also considering people-centric measures to incorporate behavioural modifications; these included mentoring, remodelling on-the-job training, and other proposed measures. The key decision would require devising the best-fit approach to effectively transition to behaviour-based safety.

Mentoring

Patil strongly believed that “[safety is] for the people, safety is of people and safety is by the people.” To address the issue of un-safe acts and risky behaviour that could lead to safety violations, it was necessary to drive behavioural modification in people. To shift towards behaviour-based safety, Patil and his team felt that the involvement and participation of people was of prime importance. Patil proposed an informal approach of pairing mentors with mentees to address the issue. This was meant to emphasize the need to be safe over the need to ensure compliance with processes. The concept would aim to bring about behavioural modifications in employees by enhancing their overall level of comfort at the workplace. The approach would require line managers to function as mentors for workers, who would be the mentees. Each mentor would be allocated about 12–15 mentees from cross-functional domains and would be responsible for emphasizing the importance of safety—not only at the plant but also off-site. The mentors would be entrusted with the task of communicating various safety policies, procedures, and guidelines to mentees in an informal and engaging manner. Informal communication would be promoted, and personal bonding would be the key aspect driving the mentor–mentee relationship.

To drive home the concept, it was suggested that the mentors should treat the mentees as extended family; they would also be responsible for addressing their professional and personal grievances. Team activities could be designed to improve bonding beyond the hierarchical framework. Enhanced engagement with people and a caring attitude would make the mentees receptive to the mentors. This approach would make it easier to address un-safe acts in a positive manner and to bring about behavioural changes. Key performance indicators would be based on a monthly tally of interactions, reports of un-safe acts or near misses, stop-work notices, and safety kaizen events attended by the mentees. The intention was to enhance workers’ knowledge of safety standards and develop their commitment to achieving the goal of zero accidents.

Remodelling On-the-Job Training

To address the specific concerns of un-trained or unskilled behaviour, the team considered an innovative approach to employee training that would involve characteristics such as a theme of the month, a “safety on wheels” concept, customization, posters, and the use of field-based scenarios.

Theme of the Month: With a view to building awareness, a safety-based theme such as road safety, machine guarding, environmental conservation, or a proactive approach towards safety would be chosen every month. A few activities would be organized around the proposed theme, and people displaying exemplary behaviour would be acknowledged at a monthly gathering. At the same time, workers would also be apprised of the performance expected from them, current gaps, and suggested methods for overcoming these.

Safety on Wheels: The “safety on wheels” concept was proposed to train ground staff and contract workers during shutdown periods rather than in a formal classroom setting. The concept would make use of animated videos on safety standards. The videos would be made in regional languages to ease workers’ understanding.

Customization: This initiative involved performing a thorough training needs assessment to understand specific needs to be addressed. Special safety induction for young or temporary employees was also under consideration.

Illustrated Posters: To establish better connections with people, posters employing illustrations—as opposed to written hand-outs on the notice boards—would be used to convey learning from incidents.

Field-Based Scenarios: To get the maximum leverage out of the training initiatives, real field-based scenarios would be incorporated. Participants would role-play real incidents to enhance their overall learning in a way that was easy to understand. Communication would be based on identifying risky behaviours and corrective or preventative actions taken, and would emphasize key learning to prevent injuries.

Other Proposed Measures

Other measures were also proposed, including incentivizing safe work practices, creating an employer of choice index, and closely monitoring risky behaviour.

To build positive reinforcement, incentives would be realigned towards the behavioural excellence of individuals. Employees could be recognized for taking active measures such as reporting near misses, moderating hazards, or using their stop-work authority to prevent mishaps at the workplace. A campaign called *Khatra Dhuno Abhiyan* (“Mission: Risk Finding”) would be initiated to involve everyone in the process of identifying and reporting hazards, and spot awards would be given to motivate people.

The creation of an employer of choice index was also under consideration. This would invite employee feedback about what employees expected from the company in terms of ensuring a safe working culture and what measures they thought should be incorporated to achieve this. Suggestion boxes would be installed at various places to encourage unbiased feedback. The feedback received could be compiled to introduce people-centric measures.

Close monitoring of risky behaviour would be done through safety policing and close supervision. While safety policing would punish un-safe acts, close supervision would involve assigning a skilled worker to each unskilled worker in order to avoid safety violations.

CHALLENGES

A few challenges in implementing the above approaches were anticipated. First and foremost were the criteria for choosing the mentors. The next was to motivate mentors to take up additional responsibility and handle cultural differences between mentors and their mentees. On the one hand, the core team considered methods to build effective communication, develop personal bonds with people, and address their personal grievances; on the other hand, it was difficult to ensure that workers would not make undue use of these methods to avoid work. Training for high-risk activities and the choice of a trainer were other points under consideration. The team also foresaw challenges in devising criteria for identifying risky behaviour and training for high-risk activities.

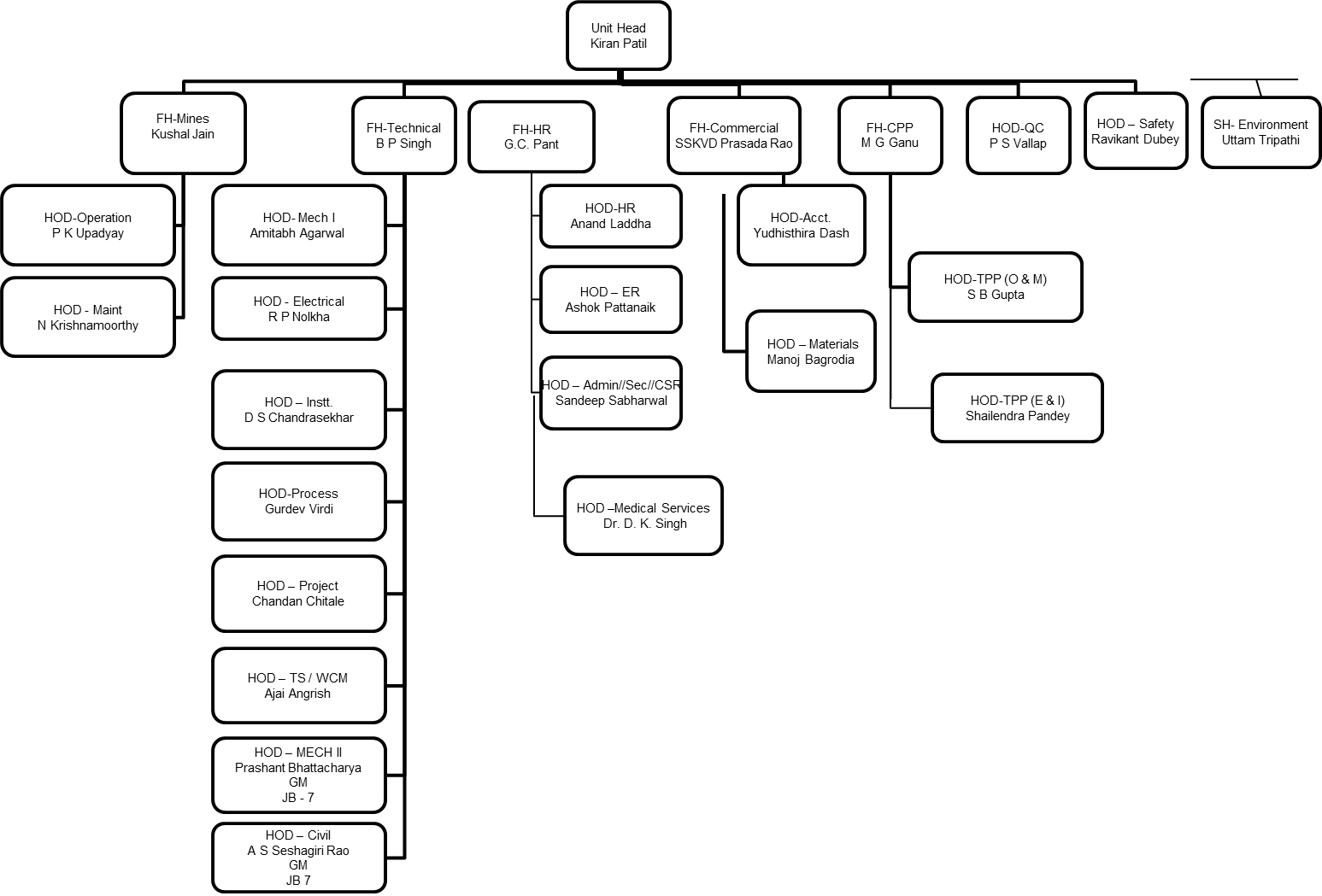
moving forward

To improve workplace safety, the company would have to look beyond existing organizational protocols and systematic safety compliance. The priority was to address the fundamentally risky behaviour of employees, reduce lost-time injuries, and make business sustainable in the long term. The key decisions revolved around managing the safety crisis at the unit and devising a plan to prevent the recurrence of recent events.

Exhibit 1: Common causes of injuries

Source: Company documents.

Exhibit 2: Organizational structure at UltraTech cement



Note: FH – Functional Head, HOD – Head of Department, SH – Section Head, HR – Human Resource, QC – Quality Control, TPP – Thermal Power Plant, O&M – Operation & Maintenance, Instt – Instrumentation, ER – Employee Relation, E&I – Electrical and Instrumentation, TS – Technical Services, WCM – World Class Manufacturing.

Source: Company documents.

Exhibit 3: 13-point score improvement trend as per DuPont–Rawan Cement Works



Source: Company documents.

Exhibit 4: Safety initiatives at UltraTech cement

|  |
| --- |
| **Facility and Infrastructure** |
| Dual emergency exits in all buildings and substations |
| Emergency lights to provide lighting and exit routes during blackouts or in emergency situations |
| Improved electrical safety at substations |
| Centralized parking |
| Designated pathway for vehicle and pedestrian movement |
| Foot-over bridge and drop gates |
| Cherry pickers, scissor lifts, mobile platforms |
| Machine guards, deck plate |
| Rail safety |
| Lifeline arrangement at critical location |
| Closed-circuit television monitoring of all critical locations |
| Access ways, platforms, galleries, and ladders |
| **Design and Modification** |
| Tongue plate modification in wagon-loading machine to reduce finger injuries |
| Platform for wagon door closing |
| Use of sweep guards, mechanical stoppers, and wheel chokes on tires |
| Lock out, tag out, try out (LOTOTO) provision in old panels |
| Modifying blind corners of roads, speed breaker, truck yards |

EXHIBIT 4 CONTINUED

|  |
| --- |
| **Systems Initiated** |
| Online system for safety management |
| LOTOTO system |
| Stop-work empowerment during detection of un-safe conditions |
| Vehicle inspection and monitoring |
| Height phobia testing for deputed workers |
| Development of in-house app for online safety quiz on desktop and laptops |
| Special safety night vigilance by senior officials during shutdown |
| Safety announcement system |
| **Process Improvements** |
| Visual indicator to caution people for entry into confined spaces |
| Mill door safety interlocks |
| Anemometer to detect safe wind speed |

Source: Company documents.

Exhibit 5: Ultratech Balance Sheet

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **UltraTech Cement—Standalone Balance Sheet (in ₹ millions)** | | | | |
|  | **March 2016** | **March 2015** | **March 2014** | **March 2013** |
|  | **12 Months** | **12 Months** | **12 Months** | **12 Months** |
| **Source of Funds** | | | | |
| Total Share Capital | 2,744.30 | 2,744.00 | 2,742.40 | 2,741.80 |
| Equity Share Capital | 2,744.30 | 2,744.00 | 2,742.40 | 2,741.80 |
| Reserves | 204,616.60 | 185,832.80 | 168,232.70 | 149,606.40 |
| Net Worth | 207,360.90 | 188,576.80 | 170,975.10 | 152,348.20 |
| Secured Loans | 19,427.30 | 29,565.30 | 23,893.50 | 21,473.40 |
| Unsecured Loans | 28,871.80 | 35,553.00 | 24,834.30 | 23,153.40 |
| Total Debt | 48,299.10 | 65,118.30 | 48,727.80 | 44,626.80 |
| Total Liabilities | 255,660.00 | 253,695.10 | 219,702.90 | 196,975.00 |
|  | **March 2016** | **March 2015** | **March 2014** | **March 2013** |
|  | **12 Months** | **12 Months** | **12 Months** | **12 Months** |
| **Application Of Funds** | | | | |
| Gross Block | 344,515.90 | 317,824.40 | 250,043.10 | 213,201.60 |
| Less: Accum. Depreciation | 119,188.80 | 108,349.80 | 91,324.70 | 81,978.00 |
| Net Block | 225,327.10 | 209,474.60 | 158,718.40 | 131,223.60 |
| Capital Work in Progress | 0 | 20,736.90 | 20,416.30 | 35,053.70 |
| Investments | 51,081.20 | 52,087.50 | 53,916.70 | 51,087.20 |
| Inventories | 24,260.90 | 27,514.10 | 23,683.60 | 23,504.70 |
| Sundry Debtors | 14,148.90 | 12,031.90 | 12,810.20 | 10,172.40 |
| Cash and Bank Balance | 22,352.00 | 2,139.40 | 2,775.00 | 1,426.60 |
| Total Current Assets | 60,761.80 | 41,685.40 | 39,268.80 | 35,103.70 |
| Loans and Advances | 27,195.10 | 28,165.10 | 25,219.90 | 21,620.50 |
| Total CA, Loans, & Advances | 87,956.90 | 69,850.50 | 64,488.70 | 56,724.20 |
| Current Liabilities | 111,594.10 | 85,424.30 | 68,107.60 | 66,421.70 |
| Provisions | 11,266.70 | 13,030.10 | 9,729.60 | 10,692.00 |
| Total CL & Provisions | 122,860.80 | 98,454.40 | 77,837.20 | 77,113.70 |
| Net Current Assets | −34,903.90 | −28,603.90 | −13,348.50 | −20,389.50 |
| Total Assets | 241,504.40 | 253,695.10 | 219,702.90 | 196,975.00 |
| Contingent Liabilities | 50,162.50 | 66,787.90 | 63,747.00 | 50,343.20 |
| Book Value (₹) | 7,556.00 | 6,872.20 | 6,234.50 | 5,556.50 |

Note: ₹ = INR = Indian rupee; US$1 = ₹63.6040 on June 1, 2015; CA = current assets; CL = current liabilities

Source: Company documents.

Exhibit 6: Financial Results for Fiscal Year 2015–16

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Consolidated (in ₹ millions)** | | | | **Stand-alone (in ₹ millions)** | | | |
|  | **Quarter ended** | | **Year ended** | | **Quarter ended** | | **Year ended** | |
|  | **March 31, 2016** | March 31, 2015 | **March 31, 2016** | March 31, 2015 | **March 31, 2016** | March 31, 2015 | **March 31, 2016** | March 31, 2015 |
| **Net Sales** | **68,500** | 65,170 | 252,810 | 240,560 | 64,360 | **61,330** | 238,410 | 226,480 |
| **PBIDT** | **14,780** | 14,350 | 51,090 | 47,760 | 13,900 | **13,620** | 48,510 | 45,670 |
| **PAT** | 7,230 | 6,570 | 22,870 | 20,980 | 6,810 | 6,150 | 21,750 | 20,150 |

Note: PAT = profit after tax; PBIDT = profit before interest, depreciation, and tax

Source: Company documents.

1. A lost-time injury is something that results in a fatality, permanent disability or time lost from work. It could be as little as one day or shift. [↑](#footnote-ref-1)
2. “Cement Sector Analysis Report,” Equity Master, February 3, 2015, accessed February 10, 2018, <https://www.equitymaster.com/research-it/sector-info/cement/Cement-Sector-Analysis-Report.asp>. [↑](#footnote-ref-2)
3. “Top Companies in India by Total Assets, BSE: Cement—Major,” Money Control, accessed January 31, 2018, www.moneycontrol.com/stocks/marketinfo/totassets/bse/cement-major.html. [↑](#footnote-ref-3)