

**SWACHH BHARAT ABHIYAN
- INITIATIVES BY CEMENT INDUSTRY**

All cement plants in the country have been taking a number of measures and initiatives to realize the Prime Minister's various Missions and Visions, including 'Swachh Bharat Abhiyan' a success. The steps taken by the Industry have already started paying dividends either directly or indirectly. At present CMA has 43 Cement Cos. as its Members with 160 cement plants.

2. After the CCI's Order of June 2012, CMA has not been able to collect and compile any data concerning the Cement Industry. Hence, it will be difficult for CMA to furnish any authentic figures in this regard or the investments made by the Industry in such activities.

3. We take this opportunity to say that DIPP, the nodal Ministry for the cement industry, may kindly do the needful in permitting the CMA again to collect and compile the important data concerning the cement industry on a regular basis so that same can be furnished by CMA to all concerned Ministries, Departments, etc. as and when needed by them.

4. Steps taken by cement companies under 'Swachh Bharat Abhiyan' of the PM are detailed below:

- A. **Waste Management in Offices:** All cement plants are implementing the 3Rs Policy i.e. Reduce, Reuse and Recycle to manage the waste in a systematic way. Waste reduction is the prime concern at all cement plants and companies, including CMA. Hence various actions have been taken towards paperless working in the offices such as, installation of common printers, both side of printing, communication through e-mail, motivational scheme for e-book readers to promote digitalization, etc. Reuse of used envelopes, rough papers, proper utilization of the stationery.

It has been reported that for the recycling, unwanted used papers are being shredded in the paper shredder and shredded paper wastes and other stationery wastes collected in the store are being given to recycler only.

In addition to these, uses of plastic bags & plastic items i.e. cups, spoons are totally banned in the cement cos. including canteen, guesthouse, colony etc. even in functions also.

- B. Segregation of Waste Collection:** Only a few varieties of waste are generated in the offices and colony. These different wastes are being segregated at the point of generation and disposed off in an environmentally sound manner. Different wastes with their collection methods and modes of disposal are tabulated below:

SN	Waste Type	Source of Generation	Collection Points	Mode of Disposal
1.	Paper Waste	Offices	Shredder at Store	Sent to Recycler
2.	Used Stationery	Offices	Store	Sent to Recycler
3.	E-Waste	Offices/ Colony	E-Waste Storage Room at Store	Sent to Registered E-Waste Recycler
4.	Used/Spent Oil (Hazardous Waste)	Plant Machineries	Used Oil Storage Room at Store	Sold to Registered Recycler
5.	Battery Waste	Plant Machineries	Battery Waste Storage Room at Store	Sold to Registered Recycler
6.	Fly Ash	Captive Power Plant	Fly Ash Silo	Used in Cement Manufacturing

SN	Waste Type	Source of Generation	Collection Points	Mode of Disposal
7.	Bio-Medical Waste	Dispensary	Separate Colour Coded Bins at Dispensary	Sent to Registered Common Biomedical Waste Treatment Facility (CBWTF)
8.	Food Waste	Canteen & Colony	Collected from each house	Used as Manure after Vermi-composting
9.	Garden Waste	Green Belt	Collected by regular sweeping	Used as Manure after Vermi-composting
10.	Dust	Plant Operation	Collected in Air Plasma Cutting Machine (APCM) & Road Sweeping Machines	Reused in the System
11.	Sewage	Toilets in Plant & Colony	Sewage Treatment Plant through closed conduits	Treated water used in the gardening and sludge used as manure.
12.	Boiler Feed & RO Reject	Captive Power Plant	Effluent Treatment Plant	Treated water used in dust suppression/ coal yard

- C. Solid Waste Management:** Dust collected in the Air Pollution Control Measures (i.e. ESP, Bag-filters) & Fly ash generated from CPP are main solid wastes, which are generated from the process. These are 100% recycled in the Cement manufacturing, hence no solid waste from process is sent outside the premises. In addition to these, E-wastes & Battery wastes are also generated from the offices & plant equipments, which are being collected at earmarked area & sent to registered recyclers only respectively. Other wastes generated from plant maintenance like old tarpaulins, wooden scraps are sold to scrap dealers for recycling.

The alarming rate at which the flyash has been generated by coal-based thermal power plants in the country has posed serious problems concerning the environment and its disposal on open land is a nuisance and a health hazard for human beings.

After making huge investments running into several hundred crores of rupees, cement industry has been effectively utilizing 27% of the fly ash generated by Thermal Power Houses in the country for the production of PPC and hundred per cent slag generated by Steel Plants for manufacturing slag cement.

Cement industry's concerned efforts help, to some extent, the problem of coal scarcity and depleting reserves of our limestone mines and also soil degradation. It is reported that 0.4 acre land is required for per MW Thermal Power capacity to dump the fly ash in open land. Through purposeful use of fly ash, cement industry has been helping the Govt. to reclaim several thousand hectares of land, which otherwise would have wasted.

These initiatives of the Industry have been contributing significantly in making 'Swacch Bharat Abhiyan' a grand success.

- D. **Hazardous Waste Management:** Cement industry per say has limited quantities of its own hazardous waste. The same is sent for disposal through licensed hazardous waste handling companies. On the other hand, cement plants help other manufacturing industries to dispose off their hazardous wastes by using it either as alternative fuel in cement kiln or alternative raw material in cement production.

- E. Recycling & Reuse of Waste:** Domestic waste water is 100% reused in the green belt development after treatment in STP and sludge is being used as manure. Waste water generated from captive power plant is used in dust suppression after treatment.

In addition to these, cement plants have **installed Waste Heat Recovery System**, which saves the natural fuel of the country. **Current installed capacity of WHR systems in India is about 250 MW.** With increased focus on achieving PAT targets, financing options available and Policy support, **the additional estimated potential of 750 MR through WHR** could also be tapped by the Industry.

Over the last few years, the Cement Industry has been **making concerted efforts to enhance the usage of Alternate Fuels in place of fossil fuel-coal like Solid Municipal Wastes, Paint Sludge, Biomass, etc.** after making huge investments in the process technology.

The usage of **AFR and WHR by cement plants have reduced the CO₂ emissions level by about 36% from 1.12tCo₂/t cement to 0.719 tCO₂/t cement now.**

In the last two-three years, the **average Thermal Substitution Rate** in Cement Industry has **gone up to 4% from less than 1%**, although the industry has to go a long way to reach the world average TSR of 40% which would call for all positive help and financial incentives from the Govt.

It is learnt that **Mangalam Cement** in Rajasthan **is also** planning to **utilize Kota stone slurry (an Industrial waste) and sulphuric acid** (a waste from HZL) to form **chemical gypsum**, which will be used in cement manufacturing. This initiative will reduce the waste as well conserve the natural resources.

F. Industry Participation in Construction of Public / Community

Toilets: It is understood that all cement plants are taking concrete steps to construct public/community toilets through providing financial assistance in line with the Swachh Bharat Abhiyan.

- **Mangalam Cement:** Over **300 beneficiaries** were motivated and **constructed toilets** in their houses.
- **Saurashtra Cement:** Spent **Rs. 7.67 lakhs** in **constructing 59 toilets** in 2015-16. For 2016-17, a **budget of Rs. 21 lakhs is approved to construct 120 toilets.**
- **Gujarat Sidhee Cement:** Earmarked funds for **construction of 15 toilets** in the nearby villages in liaison with local village bodies. The estimated cost for construction of toilets will be about Rs. 5 lakhs.
- **Vasavdatta Cement:** **Constructed 226 toilets** and especially for **women constructed 10 number of toilets.**
- **Dalmia Cement:** **Built 115 school sanitation** blocks, **4 community sanitation** blocks and **500 low cost toilets.**
- **Century Cement:** **Constructed 388 toilets** at various nearby villages and construction of **40 toilets** is in process under CSR activity.
- **J.K. Cement:** As per published data, **constructed 350 toilets** in villages surrounding plant site.

G. Industry's role to effect behavioral change regarding healthy sanitation practices:

- Cement cos. are **organizing various awareness programmes** under **health & sanitation schemes** in and around the plant premises with the help of NGOs and Medical Teams.
- **Motivating Sarpanch of villages to identify** the person (s) who is/are not using toilets even after construction of toilets in his/her house and motivating those persons who are not using toilets.

H. Industry's role in generating awareness about sanitation and its linkage with public health:

Cement companies and plants have taken the **initiatives to sensitize** their **employees**; their **families** and **community** for **construction and utilization** of toilets, sanitation and its health benefits through various means, i.e.:

- **Nukkad Natak in community**
- **Awareness rally and programmes by employees & children**
- **Cleaning campaigning by senior executives.**
- **Medical practisioners are visiting nearby villages and offering free medical checkup and distributing free medicines once in a month.**

I. Industry's role in Eradication of Manual Scavenging & Elimination of open defecation:

In this area, cement companies are **organizing awareness programmes** in nearby villages for healthy sanitation practices by their **qualified sanitation** staff. In addition, they conduct **regularly gate meeting for contract labours**, contractor and employees in which motivational messages are conveyed by Unit Head and individuals are awarded with certificate and cash for contribution towards best practices.

As mentioned earlier, cement companies have provided adequate number of toilets, separately for gents and ladies employees. **All the toilets are attached to Sewage Treatment plants through closed conduits to avoid manual scavenging.**

J. Planting trees in office complex: Green Belt Development in the cement plants is a continuous process. Each cement plant in the country has planted several lakhs of trees both in the **Plant, surrounding and mines areas**. The rough number of such trees will be over 50 million trees, considering a million tonne plant **saplings about 1.25 lakh trees** and presently the capacity of the industry is about **425 million tonnes**.

Dalmia cement have reported that they have recently **created a record of planting 25000 saplings in 35 minutes** through a community engagement in their cement plant at Meghalaya.

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