

**THE RAMCO CEMENTS LIMITED, KSR NAGAR
COMPLIANCE REPORT - ENVIRONMENTAL CLEARANCE
CEMENT PLANT – 2.5 MILLION TPA CLINKER, 2.6 MILLION TPA CEMENT &
THERMAL POWER PLANT – 36 MW**

EC Lr. No. : J-11011/403/2006-IA-II (I) dated 7th February, 2007
Period : October 2018 to March 2019

A. Specific Conditions:

- i. *The gaseous and particulate matter emissions from various units shall conform to the standards prescribed by the A.P. Pollution Control Board. At no time, the particulate emissions from the cement plant shall exceed 50 mg/Nm³. The emissions from CPP shall be less than 100 mg/Nm³.*

Continuous on-line monitors for particulate emissions shall be carried out as per the recommendations of the CREP guidelines and on-line data shall be submitted to the APPCB and CPCB regularly. Interlocking facility shall be provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit(s) is shutdown automatically.

Complied.

- Efforts are being made to control particulate matter emissions from stacks within the prescribed limit.
 - All the air pollution control equipment for cement plant Line – I and Line – II are designed for particulate emission (new) standard of 30 mg/Nm³.
 - All the air pollution control equipments for TPP are designed for particulate emission standard of 50 mg/Nm³.
 - As our pyritic sulphur in limestone is less than 0.25%, our SO₂ standard for Kiln – I & Kiln – II is 100 mg/Nm³ (no time frame). The sulphur content is absorbed in clinker and the emission levels are well within the limit.
 - To meet the NO_x standard of 600 mg/Nm³ (with effect from 01.01.2016), low NO_x burner and low NO_x calciner are installed for Kiln – I.
 - NO_x standard for Kiln – II is 800 mg/Nm³ (with effect from 01.01.2016), as this kiln is commissioned in the year 2007. To meet this standard, low NO_x burner and low NO_x calciner are installed for Kiln – II.
 - 10 Nos. of online monitors are installed to measure particulate emissions for stacks (as per CREP guidelines) and linked up with APPCB and CPCB websites.
 - In the event of pollution control equipment not working, the respective unit(s) gets stopped automatically in phased manner with associated interlocks.
- ii. *Ambient air quality including ambient noise levels shall not exceed the standards stipulated under EPA or by the State authorities. Monitoring of ambient air quality and stack emissions shall be carried out regularly in consultation with APPCB and report submitted to the APPCB quarterly and to the Ministry's Regional Office at Bangalore half-yearly. One ambient air quality monitoring station shall be installed in downwind direction.*

Complied.

- Compiled data of ambient air quality monitoring data collected by MoEF&CC approved external laboratory (manually) on monthly basis for the period standard is enclosed as Annexure - I.
 - These stations are selected covering all directions of cement plant.
 - 2 Nos. of continuous online ambient air quality monitoring stations are installed and real time monitoring data is transmitted to APPCB and CPCB servers regularly.
 - Compiled data of stack emission monitoring levels carried by MoEF&CC approved external laboratory (manually) for the same period is enclosed as Annexure - II.
 - 10 Nos. of online monitors are installed to measure particulate emissions for stacks and linked up with APPCB and CPCB websites.
 - Reports of ambient air quality and stack emissions monitoring (manual) submitted to the APPCB, regularly once in a month and consolidated data to MoEF&CC, RO, along with half-yearly compliance reports.
 - Ambient noise levels are being monitored during day and night time and records are being maintained.
- iii. *The company shall install adequate dust collection and extraction system to control fugitive dust emissions at various transfer points, raw mill handling (unloading, conveying, transporting, stacking), vehicular movement, bagging and packing areas etc. Bag filters will be provided in the kiln / raw mill and coal mill and ESP to AFBC boilers and coolers to control air emissions less than 50 mg/Nm³. The dust collected from the pollution control equipments shall be recycled back into the process. Storage of raw material shall be in closed roof sheds. Water spray system shall be provided all around the coal stockpiles and dust suppression system around the coal conveyor system.*

Complied. 87 Nos. of Air Pollution Control Equipments (APCEs) in cement plant and 9 Nos. of APCEs are in operation in TPP (Annexure – III), to control process emissions as well as fugitive emissions at various transfer points, raw mill handling (unloading, conveying, transporting, stacking), vehicular movement, bagging and packing areas etc.

- Along with the modernization activity in the year 2016-17, all the air pollution control equipment for cement plant Line – I and Line – II are designed for particulate emission standard of 30 mg/Nm³.
- All the air pollution control equipments for TPP are designed for particulate emission standard of 50 mg/Nm³.
- ESPs are in operation with respect to Cooler – I & II and TPP – I & II AFBC boilers, where as Bag House is connected to Kiln – I & RABH is connected to Kiln – II respectively.
- Single phase transformers are replaced with three phase transformers in Cooler – II ESP and ESP is upgraded for Cooler - I.
- The dust collected from all APCEs is being totally recycled to the respective process / storage facility.
- All the material transfer points are connected with air pollution control equipments.
- All the packing machines are fitted with bag filters.
- All conveyers are covered with GI sheets.
- Received raw materials are being stored in closed systems.
- Closed sheds are provided for additive stacker & reclaimer, coal stacker & reclaimer and for gypsum storage.

- Cement, fly ash and clinker being stored in silos and fly ash (brought from outside) is unloaded / conveyed through pneumatic system. The entire fly ash generated from TPP is conveyed through pneumatic system and is used in cement plant.
- Water spray system arranged around the coal stacker & reclaimer.
- Agglomerative Dust Suppression system (water fogging) is installed at raw material hopper area, coal handling area and additive handling area.
- Water fogging system is also installed at limestone crusher hopper.
- 3 Nos. of Mobile Road Sweepers & 1 No. of Industrial Vacuum Cleaner are being used for dust removal. The removed / collected dust is being reused in the process.

iv. *Asphalting / concreting of roads and water spray all around the coal stockpiles shall be carried out to control fugitive emissions.*

Complied. All major roads of the plant (including coal stacker / reclaimer road) are paved with concrete. Water sprinkling system is installed around the coal stockpile and water sprinkling is being carried out with truck mounted tanker on roads of cement plant to control fugitive emissions.

v. *Total water requirement from the ground water source shall not exceed 5,519.60 m³/d and prior permission for the drawl of ground water from the SGWB / CGWA shall be obtained. No process wastewater shall be discharged due to its use either in the process or evaporation. All the treated wastewater shall be recycled and reused for ash conditioning, dust suppression, greenbelt development and other plant related activities etc. No effluent shall be discharged outside the factory premises and 'zero' discharge shall be adopted. Domestic effluent shall be used after treatment in Sewage Treatment Plant (STP) for greenbelt development within the plant and colony area.*

Complied.

- Permission obtained from GWD vide Lr. No. 11/Hg/MC/2006 dated 29.03.2007 (enclosed as Annexure - IV) for drawl of 7000 m³/day water from the available quantity of water from the mine de-watering only.
- Cement manufacturing will not generate any process effluents.
- TPP effluent such as DM wastewater, boiler blow down are being treated in effluent treatment plant and reused. The cooling water blow down is recycled and reused. Only make up water is added.
- Sewage treatment plant (of capacity 650 kLD) is in operation to treat domestic sewage from colony, office, canteen and plant.
- Auto garage wash water is being treated separately at Oil & Grease Trap.
- Complied data of STP, TPP ETP and Oil & Grease outlet samples analysis carried out by MoEF&CC approved agency (on monthly basis) for the period October 2018 to March 2019 is enclosed as Annexure – V, VI & VII respectively.
- These treated effluents are used for greenbelt, water sprinkling & partially for process activities.
- The excess treated waste water, if any, is being passed to pond in our own lands to uplift the water table in the nearby area.
- With all these measures, 'zero discharge' is being maintained.

- vi. *The company must harvest the rainwater from the roof tops and storm water drains to recharge the ground water. The company must also collect rain water in the mined out pits of captive lime stone mine and use the same water for the various activities of the project to conserve fresh water.*

Being complied. To conserve fresh water,

- 48 Nos. of rain water harvesting structures are made to recharge the ground water in the colony by March 2019. 4 Nos. of rain water harvesting structure are made to recharge the ground water in the plant by March 2019 (Annexure – VIII).
- Water collected in mine pits is being used for cement plant, for thermal power plant, mines & for domestic uses.
- Treated waste water from STP, ETP and Oil & Grease Trap is used for greenbelt, water sprinkling and partially for process activities.

- vii. *As proposed in EIA / EMP, greenbelt shall be developed in 172.7 ha (60%) out of total 248 ha. land in consultation with the local DFO as per the CPCB guidelines.*

Greenbelt is developed in an area of 130.24 ha by September 2018, out of 248 ha by planting different species including native species. This condition is modified in the latest Environmental Clearance issued for Cement Plant expansion project [No. J-11011/403/2006-IA-II (I) dated 29th September, 2016], as point No. vi of specific conditions:

- A greenbelt of 130.24 ha (52.5 % of 248.08 ha) as on 30.11.2014 has been developed, which should be maintained as it is.

Emphasis is being made to maintain 130.24 ha greenbelt area in and around plant premises and for planting dust capturing plants in consultation with local DFO to mitigate the effects of air emissions.

- viii. *All the cement dust collected from pollution control devices shall be recycled and reutilized in the process. The entire ash generated from the power plant will be pneumatically conveyed to the cement plant and used for manufacturing of PPC. Hazardous waste viz. spent oil from gear boxes and automatic batteries etc. shall be properly stored in a designated area and sold to authorized recyclers / reprocessors.*

Complied.

- All the dust collected from pollution control equipment is being recycled in the respective process, totally.
- The entire fly ash generated from TPP is transported pneumatically and is used in the manufacturing of cement.
- Disposing waste lead acid batteries to APPCB authorized recyclers / reprocessors properly, by storing in a designated area.
- Waste oil (stored in a tank of capacity 3.5 kL) along with fresh fuel is being used for kiln firing while light up & for reclaimer lubrication and / or sold to APPCB authorized agents.

- ix. *The company shall undertake eco-development measures including community welfare measures in the project area.*

Being complied.

- Spent about Rs. 102.55 lakh in the financial year 2018-19 for various socio-economic activities for the surrounding villages as part of corporate social responsibility.
 - CSR activities for the nearby villages are being carried out as per the need basis of the local people, subjected to the budget availability.
 - Details of CSR expenditure for the financial year 2018-19 are enclosed as Annexure – IX.
- x. *Present requirement of limestone shall be sourced from the Ravirala Forest Mine only for which environmental clearance has been accorded by the Ministry on 16th October, 2002. The limestone required in future shall be sourced from the captive limestone mine for which prior environmental clearance has been accorded by the Ministry.*

Noted. Presently, limestone requirement is being sourced from Captive mines, for which Environmental Clearances are obtained. The details are:

Jayanthipuram Limestone Mine (North Band)	1.8 million TPA
Jayanthipuram Limestone Mine (South Band)	0.5 million TPA
Ravirala Limestone Mine	1.2 million TPA
Ramco Budawada Limestone Mine	1.1 million TPA

Limestone is sourced from Ravirala Limestone Mine and other captive limestone mines, after obtaining prior environmental clearances from Ministry only.

- xi. *All the recommendations of the CREP guidelines shall be strictly followed.*

Being implemented. CREP guidelines are being followed. As part of this, modernization project is done by replacing / modifying the pollution control equipment of cement plant with designed emission rate of 30 mg/Nm³, after obtaining valid EC, CFE & CFO. The compliance report for CREP guidelines for cement plant is enclosed as Annexure - X.

B. General Conditions:

- i. *The project authority must adhere to the stipulations made by AP State Pollution Control Board (APPCB) and State Government.*

Being complied as per the CFO Order No. APPCB/HO/UH-IV/CFO:VJA/Auto Renewal-9/2016 dated 08.12.2016, which is valid up to 31st January 2022.

- ii. *No further expansion or modification of the plant shall be carried out without prior approval of this Ministry.*

Complied. Ministry accorded ECs for expansion projects (after this EC):

Project	ToR / EC details
Modernization and up-gradation project to produce 2.80 MTPA clinker & 3.65 MTPA cement	EC No. J-11011/403/2006-IA II (I) dated 09.06.2009
Increase of clinker production from 2.80 MTPA to 3.185 MTPA & for installation 6 MW Turbo Generator	EC No. J-11011/403/2006-IA-II (I) dated 29.09.2016

Increase of clinker production from 3.185 MTPA to 4.685 MTPA & installation of 27 MW Waste Heat Recovery System by installation of 7 Nos. of boilers	ToR No. J-11011/403/2006-IA-II (I) dated 21.12.2018
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iii. *At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO₂ and NO_x are anticipated in consultation with the APPCB. Data on ambient air quality and stack emissions shall be regularly submitted to this Ministry including its Regional Office at Bangalore and APPCB once in six months.*

Complied.

- 3 Nos. of ambient air quality monitoring stations are established near to plant boundary (including in the downward direction as well as where maximum ground level concentration of SPM, SO₂ and NO_x are anticipated) and 9 Nos. of ambient air quality monitoring stations are established in nearby villages.
- Compiled data of ambient air quality monitoring (spread all around the cement plant) carried out by MoEF&CC approved agency on monthly basis for the period October 2018 to March 2019 is enclosed as Annexure – I.
- Compiled data of stack emission monitoring levels carried by MoEF&CC approved external laboratory for the same period is enclosed as Annexure - II.
- Monthly stack & ambient air quality monitoring data are being submitted to APPCB on regular basis.
- Half-yearly compliance reports are being submitted to APPCB and Regional Office of Ministry located at Chennai on regular basis.

iv. *Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.*

Complied.

- Cement manufacturing does not generate process effluents.
- TPP effluent (1439 kLD) is being treated in effluent treatment plan.
- Sewage treatment plant of 650 kLD is installed to treat domestic effluent from office, canteen, plant and colony.
- Auto garage wash water is being treated separately at Oil & Grease Trap.
- Compiled data of STP, TPP ETP and Oil & Grease outlet samples analysis carried out by MoEF&CC approved agency (on monthly basis) for the period October 2018 to March 2019 is enclosed as Annexure – V, VI & VII respectively.
- The treated wastewater is being used for greenbelt, water sprinkling and partially for process. The excess treated waste water, if any, is being passed to pond in our company's own lands to uplift the water table nearby area.

v. *The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).*

Being complied. Providing noise control measures including acoustic hoods, silencers, enclosures etc. at all sources of noise generation. Efforts are made to achieve noise levels within norms. Ambient noise levels are being monitored during day and night time and records are being maintained.

vi. *Proper housekeeping and adequate occupational health programmes must be taken up. Occupational Health Surveillance programme shall be done on a regular basis and records maintained. The programme must include lung function and sputum analysis tests once in six months.*

Being complied.

- Proper housekeeping is maintained in the plant premises.
- 3 Nos. of Mobile Road Sweepers & 1 No. of Industrial Vacuum Cleaner are being used for better housekeeping.
- Occupational health surveillance programme is being carried for the employees regularly and records are being maintained. Occupational Health Centre (with qualified Occupational Health Specialist with supporting staff) is established with the following facilities:
 - X-ray
 - ECG
 - Spirometry (lung function test)
 - Audiometry
 - Semi-auto analyser to carryout bio-chemical tests
 - Clinical lab for micro-biological tests (including sputum test)
 - Checking colour blindness
 - Dental chair
 - Ambulance

vii. *The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP.*

Complied.

- Air pollution control equipments are established as EIA / EMP report and are being maintained properly.
- Sewage treatment plant to treat plant, colony & office sewage; effluent treatment plant to treat thermal power plant effluents and oil & grease trap to treat auto garage effluent are established and are being operated as proposed in EIA / EMP.
- The treated effluents & sewage is used for greenbelt development, water sprinkling activities and partially for process activities.
- Socio-economic measures are being carried out as per EIA / EMP reports, for upliftment of nearby areas.

viii. *A separate environmental management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of Senior Executive.*

Complied. Separate environmental management cell is carrying out monitoring functions. The organization chart of environmental cell is enclosed as Annexure - XI.

ix. *As mentioned in the EIA / EMP, Rs. 16.35 Crores and Rs. 10.00 Crores kept towards the total cost and recurring cost / annum for implementing environmental pollution control measures shall be judiciously used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.*

Being complied. Earmarked funds so provided are not being diverted for any other purposes.

- Rs. 1635 lakh spent towards total cost of various pollution control equipment for cement plant Line – II & thermal power plant Line – II at the time of installation of plant.
- Rs. 4.31 crore spent on new air pollution control equipment in the financial year 2016-17 as part of the Line – I expansion project.
- Greenbelt expenditure in the financial year 2018-19 is Rs. 120.25 lakh with respect to plant, colony, mining lease areas and nearby areas.
- Rs. 18,724 crore spent as recurring cost in the financial year 2018-19, for various environmental protection measures associated with plant. The expenditure details for various environmental protection measures are enclosed as Annexure – XII for the financial year 2018-19.
- An amount of Rs. 14.90 crore is allocated towards Environment Management Activities for 2019-20 towards capital as well as recurring costs for plant & mines and being spent.

x. *The Regional Office of this Ministry at Bangalore / Central Pollution Control Board / AP Pollution Control Board shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.*

This is being submitted as part of six month compliance report with required statistical interpretations of monitored data.

xi. *The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.*

Informed.

xii. *The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the AP Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office.*

Complied. Advertised in "Eenadu" Telugu daily and "The Hindu" English daily on 14-02-2007. Copy of the same is forwarded to MOEF, RO, Bangalore vide Lr. No. LAB/PCB/10836/2007 dated 20-02-2007.