

## Department of Environment

Govt. of NCT of Delhi

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**Subject: Advisory on incorporating contract clause for contractors/builders by government departments on ensuring dust mitigation measures on-site of construction & demolition projects.**

High levels of pollution has detrimental effects on the health of people, especially if there is high content of particulate matter in the air. Studies have provided evidence of public health consequences of air pollution, and highlighted public health benefits of controlling air pollution. The Indian Council of Medical Research (ICMR) has found that the average life expectancy could be higher if air pollution levels were lowered.

Studies also show that air pollution risk is growing for major categories of diseases that include chronic obstructive pulmonary disease, lung cancer, heart disease, stroke and pneumonia, especially in the elderly and in children. Multiple source apportionment and emissions inventory studies have been carried out in the period 2015-2018, indicate that While during summer, the influence of dust increases to almost 31-34 per cent, its share during winter is about 6-15 per cent.

Dust, be it from construction and demolition activities or roads, in particular is a significant source contributing to generation and release of PM10 and PM2.5 in ambient air and hence need to be controlled and managed at source. Non- adherence of dust mitigation measures under extant rules/ guidelines leads to situations where dust from construction and demolition work disperse in air and mixes with vehicular and industrial polluting particles and thus making air more polluted.

Policy to Curb Air Pollution in the National Capital Region Issued by CAQM in July 2022 also identifies dust management from C and D activities as one of the critical areas for transformation for meeting the national ambient air quality standards. The policy provides targeted action plan and timelines for dust management from C and D activities.

CAQM Policy also directs for Deployment of adequate numbers as defined in policy of anti-smog guns, in proportion to the area of the construction sites. In compliance with the CAQM Direction Nos. 14 dated 11.06.2021, Delhi Pollution Control Committee (DPCC) had launched a web portal for Self- assessment of Construction and Demolition sites of 500 sq mt and above built up area in the National Capital Region. Additionally, in compliance to the CAQM directions no. 21 issued vide date 11.06.2021, 12 "Dust Control & Management Cells" (DCMC) have been constituted by Road Owning /maintaining/ construction agencies for monitoring and effective implementation of dust control measures in the National Capital Region.

For dust management and control, Stringent enforcement of dust control measures, adoption of appropriate technical approaches, monitoring and compliance is necessary

Delhi Pollution Control Committee (DPCC) has also issued Directions to local bodies to use dust suppressants on construction sites and dusty patches of the road. DPCC and other agencies have also deployed enforcement teams to ensure strict compliance of dust control norms as well as to stop illegal C&D waste dumping.

DPCC has directed for adherence to following 14 dust mitigation measures, for ensuring control of dust pollution at C and D sites:



- 1) Dust/wind breaking walls of appropriate height around the periphery of the construction site.
- 2) Installation of Anti-Smog Gun(s) (for > 5000 sqmt construction area).
- 3) Tarpaulin or green net on scaffolding around the area under-construction and the building.
- 4) All vehicles including carrying construction material and construction debris of any kind should be cleaned and wheels washed.
- 5) All vehicles carrying construction material and construction debris should be fully covered and protected.
- 6) All construction debris and construction material of any kind should be stored on the site and not dumped on public roads or pavements.
- 7) No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered.
- 8) No grinding and cutting of building materials in open area. Wet jet should be used in grinding and stone cutting.
- 9) Unpaved surfaces and areas with loose soil should be adequately sprinkled with water to suppress dust.
- 10) Roads to or at construction sites must be paved and blacktopped, i.e., metallic roads (for > 20,000 m<sup>2</sup> built up area).
- 11) Construction and demolition waste should be recycled on-site or transported to authorized recycling facility and due record of the same should be maintained.
- 12) Every worker working on construction site and involved in loading, unloading and carriage of construction material and construction debris should be provided with dust-mask to prevent inhalation of dust particle.
- 13) Arrangement should be provided for medical help, investigation and treatment to workers involved in the construction of building and carry of construction material and debris relating to dust emission.
- 14) Dust mitigation measures shall be displayed prominently at the construction site for easy public viewing.

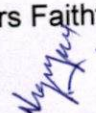
Apart from above, various directions have also been issued by Hon'ble Supreme Court of India in WP(Civil) 13029/1985 in the matter of MC Mehta vs UOI & Ors regarding and Hon'ble National Green Tribunal in OA 21/2014 titled Vardhman Kaushik Vs UOI & Ors defining Environment Compensation against violators as per construction plot area, on polluters pay principle.

Keeping in view the significant contribution of dust in air pollution, it is necessary that dust pollution is controlled at source itself i.e. at C and D sites and responsibility needs to be instilled on the construction and demolition contractors for strict adherence to the dust mitigation measures at site, since environment compliance should be a part and parcel of the principles of building construction and demolition activity.

Therefore, all the departments undertaking construction and demolition work are advised to consider inclusion of the above directions and dust mitigation measures to be adopted at construction and demolition sites, as a standard clause in the contract of agencies/contractors, undertaking the C&D activities in Delhi please. A copy of indicative standard clauses is enclosed for reference please.

Yours Faithfully,

Encl: As Above

  
(Nigam Agarwal)  
Director (Environment)

To,

1. Vice Chairman, Delhi Development Authority
2. Chairman, New Delhi Municipal Council
3. Chairman, NHAI
4. Chairman, DPCC
5. Divisional Commissioner, Department of Revenue, GNCTD

6. Chairman & Managing Director, NBCC (India) Limited
7. Principal Secretary, PWD, GNCTD
8. Commissioner, Municipal Corporation of Delhi
9. Director General, CPWD
10. Secretary, Irrigation & Flood Control Department
11. Managing Director, NCRTC
12. Managing Director, DSIIDC
13. Managing Director, DMRC
14. CEO, Delhi Jal Board
15. CEO, Delhi Cantonment Board

**Copy to:**

1. Member Secretary, CAQM

# Indicative Clauses for Clean Construction Tenders

## 1. Pre-Construction & Demolition of existing infrastructure

Prior to initiate any site clearance and excavation activity, the construction site should be screened with continuous dust/wind breaking walls all around the site with at least 3m height or 1/3rd of the building height and maximum up to 10m or as directed by CPCB/NGT/PCB .

The contractor shall prepare a solid waste management plan and identify location to dispose demolition waste created from demolition of any pre-existing structure at project site. The Construction waste management plan for safe handling, storage, and recycling of demolition waste to be prepared by the contractor in consultation with the engineer in charge by the contractor.

## 2. C&D waste storage and management

All construction and demolition debris shall be stored at the site securely during the demolition (and not dumped on the roads or open spaces outside) and are properly disposed in accordance with the provisions of the Construction and Demolition Waste Management Rules, 2016. Further, the Contractor shall follow, inter alia, the following:

- a) The Contractor shall be responsible for collection, segregation of concrete, soil and others and storage of construction and demolition waste generated, as directed or notified by the concerned local authority in consonance with these rules.
- b) The Contractor shall ensure that other waste (such as solid waste) does not get mixed with this waste and is stored and disposed separately.
- c) The Contractor shall ensure that if more than 20 tons or more C & D waste is generated in one day or 300 tons in a month, same shall be segregated into four streams such as concrete, soil, steel, wood and plastics, bricks and mortar and shall submit waste management plan and get appropriate approvals from the local authority before starting construction or demolition or re-modelling work and keep



the concerned authorities informed regarding the relevant activities from the planning stage to the implementation stage.

- d) The Contractor shall keep the construction and demolition waste within the premise or get the waste deposited at collection centre so made by the local body or handover it to the authorized processing facilities of construction and demolition waste; and ensure that there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or the public or drains.
- e) The contractor shall insure to keep records of waste generated, and the quantities of waste that have been recycled.

All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016.

### 3. Construction Vehicles, Equipment and Machinery

Contractor shall ensure that all vehicles, equipment and machinery used for construction are regularly maintained and confirm that emission levels comply with environmental emission standards/norms.

All vehicles delivering construction materials to the site shall be covered with Tarpaulin or green net to avoid spillage of materials and maintain cleanliness of the roads. Contractor make sure that No uncovered vehicles carrying construction material and waste shall be permitted do bringing in sand, cement and other construction materials prone to causing dust pollution at the site as well as taking out debris & soil from the site without being properly covered.

For controlling the noise from Vehicles, Plants and Equipment, the Contractor shall confirm the following:

- a) All vehicles and equipment used in construction will be fitted with exhaust silencers.
- b) Servicing of all construction vehicles and machinery will be done regularly and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced.

- c) Noise emission from compactors (rollers) front loaders, concrete mixers, cranes (movable), vibrators and saws should be less than 75 dB(A).
- d) As per the standards/guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) sets, noise emission in dB(A) from DG Set (15-500 KVA) should be less than  $94 + 10 \log_{10} (KVA)$ . The standards also suggest construction of acoustic enclosure around the DG Set and provision of proper exhaust muffler with insertion loss of minimum 25 dB (A) as mandatory.
- e) A speed limit of maximum 10km/hr shall be enforced for any vehicular movement inside the construction site.

#### 4. Wheel washing

Wheel Tires of all vehicles used by of the contractor, or any of his sub-contractor or materials supplies shall be cleaned and washed clear of all dust/mud before leaving the project premises. This shall be done by routing the vehicles through tire washing tracks.

Contractor shall arrange for regular water sprinkling for dust suppression of the construction sites and unpaved roads used by his construction vehicles. The Contractor shall insure provision of adequate infrastructure at site as required for wheel washing of vehicles leaving the site including provision of supply water, necessary pumps, provision for managing waste water from washing & wash pit/ gravel pit.

#### 5. Anti-smog Gun

Contractor shall provide Anti-smog guns at the project site as per CPCB/ CAQM policy and other regulatory requirements to keep the air pollution under limits. The deployment of adequate number of anti-smog guns shall be supplemented with suitable system of water storage tank, jet pumps, and nozzles to act as anti-smog guns. The contractor shall keep regular log of usage of Anti-smog guns on site including start & stop times and particulate matter (PM 10 & PM 2.5) levels before & after operations.

## 6. Sedimentation basin

The contractor shall prepare sedimentation basin or a temporary pit at the lowest convenient point of the site for collecting, trapping and storing sediment produced by the construction activities & storm water runoff generated during construction. A flow detention facility must also be constructed for reducing peak run-off rates. This would also allow most of the sediments to settle before the run-off is directed towards the outfall.

The sedimentation infrastructure shall be suitably sized and located at one or multiple levels as per actual site conditions and shall be maintained throughout

## 7. Grinding and cutting inside close space

The Contractor shall keep grinding and cutting of building materials in closed space. The open area for grinding and cutting shall be prohibited.

The Contractor shall make sure that wet jet shall be use for grinding and stone cutting.

## 8. Water sprinkled on unpaved surface and hard road surface

Contractor shall provide suitable dust mitigation measures to keep the air pollution under limits.

The contractor shall arrange for regular water sprinkling for dust suppression of the construction sites and unpaved roads used by his construction vehicles. The STP waste can be use for the sprinkling and it should meet the CPCB norms. The contractor should regularly monitor that sprinkling should be as per the standard and water monitoring also be followed.

Unpaved surfaces, loose materials and loose soil shall be adequately sprinkled with water to suppress dust at least 2-3 times daily.

## 9. Dust mitigation measure display

The contractor shall display the dust mitigation measures prominently at the construction site for easy public viewing.