

Ministry of Environment, Forest and Climate Change



# CAQM Issues Technical and Operational Norms for Deployment and Utilization of MRSMs Towards Abatement of Road Dust in NCR

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In a significant move towards strengthening road dust mitigation measures across the National Capital Region (NCR), the Commission for Air Quality Management in NCR and Adjoining Areas (CAQM) has issued a detailed circular prescribing technical and operational norms for deployment and utilization of Mechanized Road Sweeping Machines (MRSMs) by all road-owning and road-maintenance agencies in the region.

Road dust remains a dominant contributor to PM<sub>10</sub> and a significant contributor to PM<sub>2.5</sub> levels, particularly during the drier months, and non-uniform or inadequate sweeping practices have been observed to adversely affect ambient air quality. The circular lays down a structured, Right of Way (RoW) based deployment framework to ensure optimal and measurable reduction in dust emissions from roads.

The Commission has noted that roads across NCR vary widely in width and configuration, necessitating a differentiated approach for effective mechanized sweeping. The norms formulated by the Commission aim to institutionalize uniform standards for MRSM induction, capacity, coverage and performance across NCR States. All agencies concerned have been directed to align their fleet planning, procurement and operational strategy in accordance with these norms to ensure effective abatement of road dust. The Technical and Operational Norms are as follow:

## Technical Norms

- i. **Large-size MRSM** with hopper capacity  $> 4 \text{ m}^3$  and operating width of  $> 3 \text{ m}$  for sweeping of roads with a RoW  $> 15 \text{ m}$ .
- ii. **Medium-size MRSM** with hopper capacity between  $1 \text{ m}^3$  and  $4 \text{ m}^3$  and operating width of  $1.5 \text{ m} - 3.0 \text{ m}$  for sweeping of roads with a RoW of  $10 \text{ m} - 15 \text{ m}$ .
- iii. **Small-size MRSM** with hopper capacity  $< 1 \text{ m}^3$  and operating width of  $< 2 \text{ m}$  for sweeping of roads with a RoW  $< 10 \text{ m}$ .
- iv. There could be reasonable variations in the technical specifications of various categories of MRSMs based on actual requirements.
- v. MRSMs should be equipped with an **integrated water spraying system** for effective dust suppression during sweeping operations.

- vi. MRSMs should be equipped with an effective particulate matter (PM) **dust filtration system** to prevent re-entrainment of PM during sweeping operations.
- vii. Only **CNG-fuelled/ Electric** variant MRSMs should be inducted in the new fleet for the sweeping operations.

### **Operational Norms**

- i. MRSM should be able to operate for at least **8-hour** on a **shift basis**. The day and shift schedule of sweeping of roads shall be declared in advance for convenience of the public.
- ii. **Large-size** and **medium-size** MRSMs should be able to cover a distance of approximately **40 running km** during an 8-hour operational shift.
- iii. **Small-size MRSM** should be able to cover a minimum distance of **20 running km** during an 8-hour operational shift.
- iv. Newly inducted MRSMs may be operated and maintained under the **OPEX** mode.
- v. Number of MRSMs required may be calculated on the basis of requirement of sweeping of the roads on alternate days. As MRSM must clean the side edges of the road, the calculation of running km will depend upon the number of edges of the road. For example, 1 km of carriageway without a median/divider corresponds to 2 running km, whereas 1 km of carriageway with a median/divider corresponds to 4 running km.
- vi. Actual deployment of MRSMs may, however, be done based on the presence of dust on the specific roads.

Further, the circular also provides for **handheld vacuum-cleaning machines/litter pickers** to the sweeping staff for cleaning of roadsides/footpaths and mandates scientific disposal of collected road dust to prevent re-entry of dust particles into the ambient air.

The Commission has reiterated that targeted mechanized road sweeping is critical for abatement of dust from roads and reduction in PM10 and PM2.5 levels across Delhi-NCR. The Commission shall continue to closely monitor compliance and implementation of norms to ensure abatement of road dust in the region.

Circular

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