



**Mumbai Metro Rail Corporation Ltd.**  
**Mumbai Metro Line-3 [Colaba-Bandra-SEEPZ] Corridor**



**About Train Trial Runs**

Train Trial Runs on this fully underground 'Mumbai Metro Line-3' corridor is required due to adoption of following new technological improvements in the design of both Rolling Stock and Track:

1. Higher Design Speed (95 Kmph) and Operating Speed (85 Kmph) for Eight cars trains.
2. Higher motorization (75%) for eight cars trains to achieve higher acceleration (maximum  $1.38 \text{ m/s}^2$ ) and deceleration (maximum  $1.26 \text{ m/s}^2$ ); six out of eight cars are motorised to optimize train running time.
3. New type of track structure design namely, Twin Booted Low Vibration Track High Attenuation, adopted for the first time in India for any underground metro.

Based on successful outcome of these 'initial design proving train trial runs', dispatch clearance will be planned for the subsequent trains.

**Scope for Conducting MML-3 Train Trial Runs**

Initially, the design proving train trial runs will be conducted on the Down main line in about 3 Kms section between Ramp at SEEPZ to Marol Naka (*excl.*).

1. Static Tests on Train will be performed as under:  
Train Preparation, Train Preparation for Movement, Driving Mode test, Medium Voltage Verification test, High Voltage Verification test, Air Compressor test, Brake test, Doors test, Traction & Propulsion test, Air Conditioning test, Lighting & Indications test, PACIS (Passenger Announcement, Communication and Information System) test, etc.
2. Train Trial Runs for Dynamic testing of Rolling Stock upto the maximum permissible speed of the train trials section.
3. Once the crossover facility to change the tracks between up and down lines are ready at Sahar Road station, the final design proving train trial runs will be carried out at the maximum permissible design speed of MML-3.
4. Oscillation trials of Rolling Stock with RDSO will be planned in this 5 Kms long section between Ramp at SEEPZ to Sahar Road station (*excl.*)
5. Integrated Testing & Commissioning (ITC) of on-board Signalling & Train Control system, Telecom System and Platform Screen Doors at stations will be done from Backup Operation Control Centre (Backup OCC), located at BKC station.
6. Service Trials will be planned after Depot facilities for Line 3 are ready with availability of required numbers of Train sets.





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### **Salient features of Trains**

- Mumbai Metro Line-3 trains having eight metro cars will cater to increased ridership requirements from the beginning.
- 75% of motorisation will help to improve the trains running performance.
- Regenerative braking will result in saving of about 30% of electric energy and will also reduce wear and tear of wheels, brake blocks etc.
- Metro train coaches are 3200 mm wide and can accommodate approximately 2,400 passengers in a standing and seated position. Passenger load will be 6 persons per square meter as per global standard.
- The planned speed of 95 kmph and an actual operating speed of 85 kmph will reduce the overall travel time of passengers.
- Adoption of higher axle load 17 tons per axle will increase Passenger carrying capacity of eight cars train.
- Adoption of 25kV AC traction will optimize the space requirements for traction system in this fully underground MML-3.
- Adoption of stainless-steel material for Car body having good corrosive resistance properties would sustain Metro cars throughout their lifespan of 35 years.
- Adoption of state-of-the-art Communication Based Train Control (CBTC) system in driverless mode of train operations would help in achieving stringent headway 120 seconds requirements of MML-3.
- Four doors on each side of Metro car (of size 1900×1400mm), to provide comfort for commuters during boarding and deboarding, particularly in peak hours.
- On-board Train Control Management System (TCMS) provided for error free and highspeed data transmission between train to operation control centre.
- Smart LED lighting system with automatic light control feature will reduce energy consumption.
- Adoption of roof mounted Air Conditioning with Variable Voltage Variable Frequency (VVVF) scheme will result in 4-5% energy saving.
- Automatic control system for CO<sub>2</sub> and Humidity inbuilt with air-conditioning system of Metro cars will result in better passenger comfort in all climate conditions.

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