

Bangalore Metro Rail Corporation Ltd.

Date: 01-09-2020

SOP for Resumption of Revenue Train Operations

Traffic Order No. 01/2020

1. Preparatory works for commencing operations are detailed at Annexure-I

BMRCL shall carry out all the preparatory works detailed in the above annexure before commencement of revenue services.

2. Re-Commencement of Namma Metro operations:

- 2.1 Operations of Namma metro, which was stopped w.e.f. 22nd March 2020 shall re-commence w.e.f. 7th September 2020 on the Purple Line and 9th September 2020 on the Green Line with split operating timings in graded manner as follows:

Purple Line - 07-09-2020 to 10-09-2020 (4 days)

Morning:

The first train will depart from Baiyappanahalli and Mysuru Road stations at 8 am and the last train will depart from these stations at 11 am.

Evening:

The first train will depart from Baiyappanahalli and Mysuru Road stations at 5 pm and the last train will depart from these stations at 8 pm.

Green Line - 09-09-2020 and 10-09-2020 (2 days)

Morning:

The first train will depart from Nagasandra and Puttenahalli stations at 8 am and the last train will depart from these stations at 11 am.

Evening:

The first train will depart from Nagasandra and Puttenahalli stations 5 pm and the last train will depart from these stations at 8 pm.

- 2.2 From 11-09-2020 onwards, trains will be operating on both the lines from 7 am to 9 pm. However, the number of commuters allowed in each train is limited to 400 passengers to ensure social distancing norms.

Headway:

- **Morning Peak – 8 am to 11 am - 5 minutes**
- **Evening Peak – 5 pm to 8 pm – 5 minutes**
- **Off-peak hours:10 minutes**

- 2.3 The trains at Kempegowda interchange station shall be staggered for arrival to avoid crowding in platforms and concourse.

2.4 **Time:**

Dwell time at each station shall be of 1 (one) minute to manage social distancing while boarding and de-boarding.

3. Ticketing:

- 3.1 Journey through tokens is not permitted. Tokens shall not be dispensed till further orders.
- 3.2 Passengers shall enter the station with smart card having sufficient balance for travel. They may also purchase smart card for performing journeys.
- 3.3 The smart cards shall not to be placed on card reader of entry / exit gates. Instead it will be flashed near the gate reader keeping a distance of about 3 cm from the gate reader.
- 3.4 All passengers shall use online payments for top-up of cards through **internet or mobile app**. However, if inevitable the cards shall be topped up by cashless transactions through UPI QR Code, Pay TM etc.

4. Advisory to public:

- 4.1 **Outreach campaign:** The general public shall be advised regarding the measures taken by metro to ensure safety of metro travel by giving publicity in social media/press and TV.
- 4.2 An advisory note shall be published in press to avoid unnecessary travel.
- 4.3 Elderly who are above 65 years of age and children below 10 years are advised to travel only if necessary.
- 4.4 **ArogyaSetu:** All passengers who are having smart phones are encouraged to use 'ArogyaSetu' app and show green colour display on their mobile phones regarding their safety. Security shall note and encourage use of ArogyaSetu app by public

5. Station Entry Rules:

5.1 **Face Mask:** Security shall ensure that every passenger is wearing the face mask. No passenger without face mask shall be allowed inside the station. The passengers shall completely cover their nose and mouth with face mask throughout their travel in metro.

5.2 Thermal Scanning of passengers:

Passengers shall show their hand against a thermal scanner or get themselves thermally scanned manually at entrance of metro stations.

Those who pass the thermal scanning are only permitted to enter the station. Thermal screening of all passengers will be done by security staff before they enter the station and those who are having more than 37° C temperature shall not be allowed to enter the station.

Passengers who show other symptoms of sneezing, cough, breathlessness also shall not be permitted to travel. He/she shall be taken aside by the security staff who shall be with full-cover-PPE and take the passenger's details like name, phone no. and address shall be recorded in a register. He/she shall be advised for medical checkup.

5.3 **Entry by smart cards:** Since tokens are not sold, passengers shall be allowed inside the station only if they carry metro smart card. If any person not having a smart card wants to travel, he may be informed to purchase one at the Customer Care Center and admitted.

5.4 **Baggage limitation:** Only one piece of baggage is permitted per passenger. Passengers are advised to avoid carrying metallic object as far as possible.

5.5 Security department shall remain in touch with the state police to get supplementation of force to deal with any law and order situations at stations located in communally sensitive area.

6. Social distancing:

6.1 The queue strips marked with "YELLOW" retro reflective tapes are provisioned in front of TOM/EFO, escalators/Lifts, on Platform in front of each door of every coach with an inter-distance of 1m, to guide and help passengers to maintain social distancing.

6.2 Announcements shall be made in the stations to use escalators leaving 1 step vacant. Nearby Security on platform shall guide passengers.

6.3 Repeated announcements shall be made on PA systems, both in the stations and trains, about maintaining social distancing including usage of lift and escalators.

6.4 Social distancing is to be monitored through CCTV and the security staff at the spot are to be alerted whenever situation warrants. Field security staff shall immediately take action to warn the passengers to maintain distancing.

7. Overcrowded train:

- 7.1 Maximum 400 passengers are permitted to travel in a train.
- 7.2 The TO shall take total load of train before leaving each station and if it exceeds 244 tons, TO shall inform OCC regarding the tonnage and take permission from OCC to start the train. If the tonnage exceeds 244 tons, the train is over loaded and therefore, OCC shall make arrangements for de-boarding the passengers to reduce the crowding.
- 7.3 If the crowd is unmanageable, the stoppage at next crowded station shall be skipped duly making necessary announcements. However, at stations where more number of passengers are likely to de-board, skipping of stations shall not be done.
- 7.4 If a train is overcrowded and passengers are not able to board the train, fresh entry of passengers into the station shall be stopped until the crowd is cleared from the platform. A suitable communication shall be maintained between platform and main entry.
- 7.5 The security staff ensures that the passengers do not get crowded in platforms (more than 50 passengers in all stations except terminal and interchange stations) at any time and shall regulate the entry of passengers at the entrance itself, by getting communication from the guards at the platform.
- 7.6 The trains should not stop at the stations falling in containment zone and such stations should not be opened for public.
- 7.7 The officer allotted for every two stations shall ensure orderliness in his/her stations.

8. Number of entries and exits in a station:

- 8.1 Only one entry and one exit shall be kept open at each station as far as possible. Details are attached in **Annexure-II**.
- 8.2 Temporary barricades shall be positioned to prevent/minimize intermixing of entering and exiting passengers.
- 8.3 It is to be ensured that, the boarding passengers shall not obstruct the de-boarding passengers; they shall stand clear of the doorways. Therefore, PF security staff shall guide boarding passengers to stand on right side of doors in the yellow boxes to avoid obstructing de-boarding passengers.
- 8.4 None should be allowed to loiter in the metro station premises.

- 8.5 Functionality of gates at temporarily closed entries shall be tested periodically to meet any contingencies.

9. Cleanliness and Hygiene:

- 9.1 Stations and offices shall be kept clean and Hygienic by spraying disinfectant before commencement and after closure of revenue services/offices.
- 9.2 Hand sanitizers will be provided at the entrance of stations and every passenger will be advised to sanitize his/her hands thoroughly.
- 9.3 Disinfectant will be sprayed at intervals of every 4 hours at entry to the station.
- 9.4 Inside the station, Hand rails, areas of TOM/EFO counters, AFC gates, lifts etc. where passengers are likely to touch shall be cleaned with disinfectant and liquid soap solution once every 4 hours.
- 9.5 Hand rails and grab handles shall be wiped / sprayed with disinfectant after every round trip. The Baggage scanners, HHMD shall be cleaned every 2 hours during revenue hours using approved disinfectant.
- 9.6 Every train shall be thoroughly cleaned and sanitized in the depot, before induction.
- 9.7 Soap dispenser shall be kept in every wash room and water availability shall be ensured.

10. Operation of Air-conditioning and TVS/ECS at Stations:

- 10.1 BMRCL has prepared SOP for operation and maintenance of central AC plant in underground stations which is attached as **Annexure-V**.
- 10.2 In underground stations following are to be ensured for the air Conditioning and Ventilation.
- Maximum intake of fresh air and avoid recirculation of air.
 - Maintaining temperature in the range of 24-30 degree Celsius, humidity of 40-70 %.
 - Frequent cleaning of filters and coil of AHU (Air Handling Unit).
 - Frequent cleaning of grills, diffusers in the passenger area.
- 10.3 Air conditioning units provided at SCR and S&T equipment room of elevated stations shall continue to remain "ON". However, filter, coil cleaning to be followed as per the SoP issued.

- 10.4 Other mechanical air circulators and ventilation fans provided at elevated stations, technical rooms and toilets etc. shall be checked and their proper operation is ensured.
- 10.5 Temperature inside the train shall be maintained in the range of 24-28 degree Celsius depending on climatic condition.
- 11. Parking and opening of other services like food, stores etc at Stations:**
- 11.1 Parking at stations shall be permitted subject to following directions from the State Government.
- 12. General guidelines for Maintenance and Operating staff is given at Annexure-III**
13. Photographs of markings at stations and trains are attached as **Annexure-IV**

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ED (O&M)

Preparatory works for commencing operations

1. Station and via-duct cleanliness

Stations and via duct shall be cleaned and maintained in hygienic conditions. Wash rooms shall be equipped with soap dispensers. The station will be disinfected as detailed separately in para on Cleanliness and hygiene.


2. Maintenance and Security:

The inspections and maintenance of all the equipment and trains are being done in rotation and the healthiness of the systems are being monitored by the respective DGMs/HODs.

Even though two test trains are running on main line regularly during the lockdown, all the technical DGMs/HODs shall satisfy themselves on 06-09-2020 that all their equipment for trains are in good working condition and safe for resumption of revenue service.

Similarly all systems like AFC, Signaling, Communications, lifts escalators etc. are tested for their proper functioning.

a. Rolling Stock:

- All trains shall be started, charged and tested on the main line one day in advance i.e. 06-09-2020.
- Cleanliness and disinfection of trains is utmost important and this shall be regularly done by the Housekeeping staff, supervised by Rolling stock staff before induction from Depot/main line.
- To guide passengers in maintaining social distancing,  mark shall be indicated on alternate seats.
- In front of the seats which are prohibited for sitting, yellow strips shall be pasted on floor for passengers to stand, maintaining "Do GajkiDoori" in all coaches.
- Similar strips shall also be pasted inside the entry of saloondooors where passengers are standing maintaining 1meter distance.

b. Security:

- Proper working of DFMD, HHMD, Baggage Scanners and adequacy of security staff in all stations shall be ensured by ASOs and Dy. CSOs by 05-09-2020.
- Arrangements for Thermal scanning, procedures for identifying suspected passengers based on their symptoms shall be made known to all the security staff/home guards.

- the passengers entering metro stations shall sanitize their hands after thermal scanning and before security checks.
- Every ASO shall ensure social distancing requirements at his station/stations by adequately posting the staff to regulate the crowd at the following locations.
 - Entry gates
 - Frisking area near gates
 - Ticket Counters, Customer Care
 - AFC Gates at entry and Exit.
 - Lifts, escalators
 - Platforms
- Security staff/Home guards to guide the passengers for entering and passing through the station, for exit etc. and ensure that the distancing norms are not violated by the public in metro premises.
- The Security staff shall carry out any other duty such as checking of 'ArogyaSetu app' displaying green colour, availability of metro smart cards with passengers, preventing intermixing of entering/exiting passengers as per the procedures applicable for each station.
- Minimum use of HHMD shall be done and indication by DFMD shall be noted during frisking for which separate procedure shall be issued by Security department.
- These security staff shall wear N 95 mask and further protective measures like face shield normally for frisking duties however, at least two sets of full-cover-PPE shall be available at each station with the security. The guards authorized to handle person with symptoms shall be trained in advance on the correct use of PPE. At Indian Railway interchange stations, more PPE equipment shall be kept (about 5 nos).
- ASOs shall coordinate with CSW staff in marking Retro reflective tape strips at required intervals at all functional entrances for guidance of passengers.
- Protocol to be observed for security staff while dealing with passengers and SoP for security personnel shall be issued separately by CSO/BMRCL.
- Quarantine cabin or area is to be identified, duly providing 2 chairs, at all stations to hold suspected person/persons.
- If any passenger is found to have Covid 19 symptoms- body temperature above 37° C, cough, sneezing, breathlessness etc., he/she shall be directed to the quarantine area. He/she shall be advised to report to

medical centre duly taking his/her details like name, address, phone number. The details are to be communicated to the local authorities.

- Details of Covid 19 hospitals, phone numbers of Hospital Superintendents and that of Nodal officer appointed by state government are to be readily available with Security, control room and Station controller.

c. Stores, HR and Finance:

- Requirement of Personal Protective equipment such as masks, sanitizers for staff and public on recurring basis, gloves, face shield, disinfectant, full-cover-PPE sets etc. shall be arranged by 05-09-2020 as necessary for operations.

d. Trial run of trains:

- Trial trains, incorporating all aspects shall be run on both lines before resumption of revenue services.
- Mock drill of various scenarios post Covid 19, to be conducted before operation. Some of the mock drills are detailed as under:
 - (i) Security guards will take up positions and various scenarios such as dealing of passengers with Covid-19 symptoms,
 - (ii) Regulating the entry of passengers at the main entrance when overcrowding is observed.
 - (iii) De-boarding passengers when a train is over crowded.
 - (iv) Communication between platform and main entrance

- e.** Do's and Don't's for metro travel shall be displayed at stations and trains. The information displayed in Bangalore Metro is as follows.


Dos & Don'ts to prevent spread of COVID-19

Dos

- 1) Please Wear Mask inside Metro Premises and Trains.
- 2) Use contactless smart cards only for metro travel.
- 3) Carry smart phone with "AROGYA SETU" app installed.
- 4) Maintain hygiene & respect restrictions in metro premises.
- 5) Sanitize hands at the entrance of the station.
- 6) Maintain social distancing of minimum one meter right from entry to exit.
 - a. Markings have been indicated for guidance of passengers.
 - b. Use only alternate seats in trains.
 - c. Stand at Yellow markings inside the train.
 - d. Follow the markings in maintaining queues in front of security checks, ticket counters, AFC gates, Platforms, lifts, Escalator etc.
- 7) Use Smart card by flashing it about 5 cm above the AFC gate without touching the AFC gate.
- 8) Use only alternate steps in escalators.

Dos & Don'ts to prevent spread of COVID-19

Dos

- 9) Please co-operate for
 - a. Thermal Scanning at entrance.
 - b. Checking of smart phone for AROGYA SETU App.
 - c. Scanning your metallic belongings by removing them and placing in bag/tray.
 - d. Implementing restricted number of passengers per train.
 - 10) Limit usage of lifts to 4 persons at elevated stations.
 - 11) Limit usage of lifts to 6 persons at underground stations.
- Don'ts**
- 1) Don't shake hands with others.
 - 2) Don't spit in metro premises.
 - 3) Don't travel with any of the COVID-19 symptoms like Body temperature in excess of 38°C, Cough, Sneezing, Breathlessness.
 - 4) Don't sit on the Seats marked with .
 - 5) Don't travel in the train by sitting or standing at other than permitted places.
 - 6) Don't use cash/debit/credit cards for recharging of smart cards.

ಕೋವಿಡ್ 19 ಹರಡುವಿಕೆಯನ್ನು ತಡೆಗಟ್ಟಲು ಅನುಸರಿಸಬೇಕಾದ ಕ್ರಮಗಳು

✓ ಧರ್ಮಗಳನ್ನು ಪಾಲಿಸಿ:

- 1) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
- 2) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ "AROGYA SETU" ಅಪ್ಲಿಕೇಷನ್ ಅನ್ನು ಸ್ಥಾಪಿಸಿ ಮತ್ತು ಅದರ ಸಹಾಯವನ್ನು ಪಡೆದುಕೊಳ್ಳಿ.
- 3) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಅದರ ಸಹಾಯವನ್ನು ಪಡೆದುಕೊಳ್ಳಿ.
- 4) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
- 5) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
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- 8) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.

ಕೋವಿಡ್ 19 ಹರಡುವಿಕೆಯನ್ನು ತಡೆಗಟ್ಟಲು ಅನುಸರಿಸಬೇಕಾದ ಕ್ರಮಗಳು

✓ ಧರ್ಮಗಳನ್ನು ಪಾಲಿಸಿ:

- 1) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
- 2) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ "AROGYA SETU" ಅಪ್ಲಿಕೇಷನ್ ಅನ್ನು ಸ್ಥಾಪಿಸಿ ಮತ್ತು ಅದರ ಸಹಾಯವನ್ನು ಪಡೆದುಕೊಳ್ಳಿ.
- 3) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಅದರ ಸಹಾಯವನ್ನು ಪಡೆದುಕೊಳ್ಳಿ.
- 4) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
- 5) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
- 6) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
- 7) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.
- 8) ದಿವ್ಯಾ ಸಂಪನ್ಮೂಲಗಳನ್ನು ಬಳಸುವಾಗ ಮಾಸ್ಕ್ ಧರಿಸಿ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಮಾಸ್ಕ್ ಧರಿಸಿ.

Annexure-II**Number of entries and exits in a station****LINE- I**

Sl.No	Station Name	Gate		Lift	
		Entry cum Exit	Only Exit	Entry cum Exit	Only Exit
1	BYPH	A-Ent and B-Ent	A-EntandB-Ent	A	B
2	SVR	B-Ent	C-Ent	C	-
3	INDR	C-Ent	A-Ent	B	-
4	HLRU	B-Ent	C-Ent	A	-
5	TTY	A-Ent	B-Ent	C	-
6	MAGR	B-Ent	B-Ent	-	-
7	CBPK	C-Ent	B-Ent	C	B
8	VDSA	E-Ent B-Ent	A-Ent	F	C
9	VSWA	C-Ent A Ent	B/D-Ent	E	E
10	KGWA	A-Ent (West side)	D- Gate (East side)	A	3 & 4 Dome Area
11	BRCS	A-Ent C-Ent	C-Ent	A	C
12	MIRD	C- Ent	B- Ent	A	-
13	HSLI	C- Ent	A- Ent	B	-
14	VJNR	A- Ent	B- Ent	A	-
15	APPG	C- Ent	A- Ent	B	-
16	DJNR	C- Ent	A- Ent	B	-
17	MYRD	B- Ent	D- Ent	A	-
TOTAL		21	19	16	07

LINE- II

SI.No	Station Name	Gate		Lift	
		Entry cum Exit	Only Exit	Entry cum Exit	Only Exit
1	NGS	A – Ent	B – Ent	-	-
2	DSH	A – Ent	B – Ent	-	-
3	JLH	A – Ent	B – Ent	-	-
4	PYID	A – Ent	A – Ent	-	-
5	PNYA	B – Ent	B – Ent	-	-
6	GGP	A – Ent	E – Ent	A – Ent	A – Ent
7	YPM	G – Ent	E – Ent and A – Ent	D – Ent	D – Ent
8	SSFY	A – Ent	B – Ent	-	-
9	MHLI	A – Ent	C – Ent	B – Ent	B – Ent
10	RJNR	A – Ent	B – Ent	A – Ent	A – Ent
11	KVPU	A – Ent	B – Ent	B – Ent	B – Ent
12	SRPU	C – Ent	B – Ent	B – Ent	B – Ent
13	SPGD	A – Ent	B – Ent	-	-
14	CKPE	A – Ent	B – Ent	B – Ent	B – Ent
15	KRMT	A – Ent	D – Ent	A – Ent	A – Ent
16	NLC	A – Ent	C – Ent	A – Ent	A – Ent
17	LBG	B – Ent	A – Ent	B – Ent	B – Ent
18	SECE	B – Ent	A – Ent	C – Ent	C – Ent
19	JYN	B – Ent	C – Ent	A – Ent	E – Ent
20	RVR	A – Ent	A – Ent	-	-
21	BNSK	D – Ent	A – Ent	-	-
22	JPN	B – Ent	D – Ent	C – Ent	C – Ent
23	YCH	E – Ent	C – Ent	B – Ent	B – Ent
TOTAL		23	24	14	14

SUMMARY (Line 1 + Line 2)

I)	No. of Entry cum Exit Gates	-	44
II)	No. of Entry cum Exit Lifts	-	30
		=	<u>74</u>
III)	No. of Exit Only Gates	-	43
IV)	No. of Exit Only Lifts	-	21
		=	<u>64</u>

Annexure-III

General guidelines for Maintenance and Operating staff

1. In depots, regular cleaning of offices and hygiene maintenance shall be carried out.
2. All vehicles entering the premises shall be spray-sanitized.
3. Adequate quantity of hand sanitizer shall be provided at entrance of the offices and stations for every one entering, to sanitize his/her hands.
4. Adequate number of thermo scanners shall be put into service at depots, crew control office, stations and other work spots for checking body temperature of each and every employee reporting for duty. If the temperature is more than 37° C, details of such an employee shall be recorded in an exclusive register. Symptoms of cough and breathlessness if observed shall be recorded in the register. If any of the above symptoms is/are adverse, HR department shall be informed who shall also check and confirm the adverse symptoms and advise the staff concerned to take leave and get medically examined duly recording details.
5. Lunch break shall be staggered and all staff shall be directed to take lunch solitarily.
6. All employees aged 65 years and above, those having co-morbidities like Diabetes and/or hyper tension and the parents of children of below 5 years age have been facilitated to work from home as far as practicable and shall be continued.
7. All employees shall use "ArogyaSetu" app and display green colour on their mobile before entry into depot/stations to help fight CoVID 19.
8. Signages will be displayed at lifts for limiting usage to a maximum of 4/6 persons for lifts whose capacity is 8/12.
9. Employees shall maintain social distancing requirements while commute to the office and back.
10. Dos and Don'ts for staff are as follows:

Do's

- To maintain personal hygiene and physical distancing in office and while transiting to office
- staggering the lunch breaks
- Frequent washing of hands with soap and water for atleast 20 seconds very often

- Sanitize your hands if washing with soap is not possible
- At the work place not to gather or form a group (more than 2 to 3)
- Masks should be used throughout the duty period
- Sneezing and cough to handkerchief or upper arm
- Chairs / sitting area should be kept hygienic and get cleaned often
- Follow the guidelines issued by Government
- If COVID-19 symptoms are observed like high temperature, cough, sneezing get doctors advise
- Employees above 65 yrs of age, employees who have underlying medical condition and pregnant women shall take extra precautions.
- Use ArogyaSethu app
- Avoid large scale meetings and communicate through emails and electronic devices as far as possible.
- Undertake essential correspondence on official email and avoid sending files and document to other office, to the extent possible.

Don'ts

- Shake hands.
- Touch your eyes, nose and mouth.
- Sneeze or cough into palms of your hands.
- Spit in Public.
- Travel unnecessarily, particularly to any affected region.
- Participate in large gatherings including sitting in groups at canteens.
- Visit Gyms, clubs and crowded places etc.
- Spread rumors or panic.
- Mix with people if symptoms of COVID-19 exist
- Don't encourage entry of visitors / outsiders to the work places / Office Premises to the possible extent

Annexure-IV

Photographs of markings at stations and trains

Thermal scanning and Sanitizer before station entry



Markers in front of Station AFC Gates



Right method of flashing smart cards at entry/exit gate



Markers on platform in Station



Markers in train



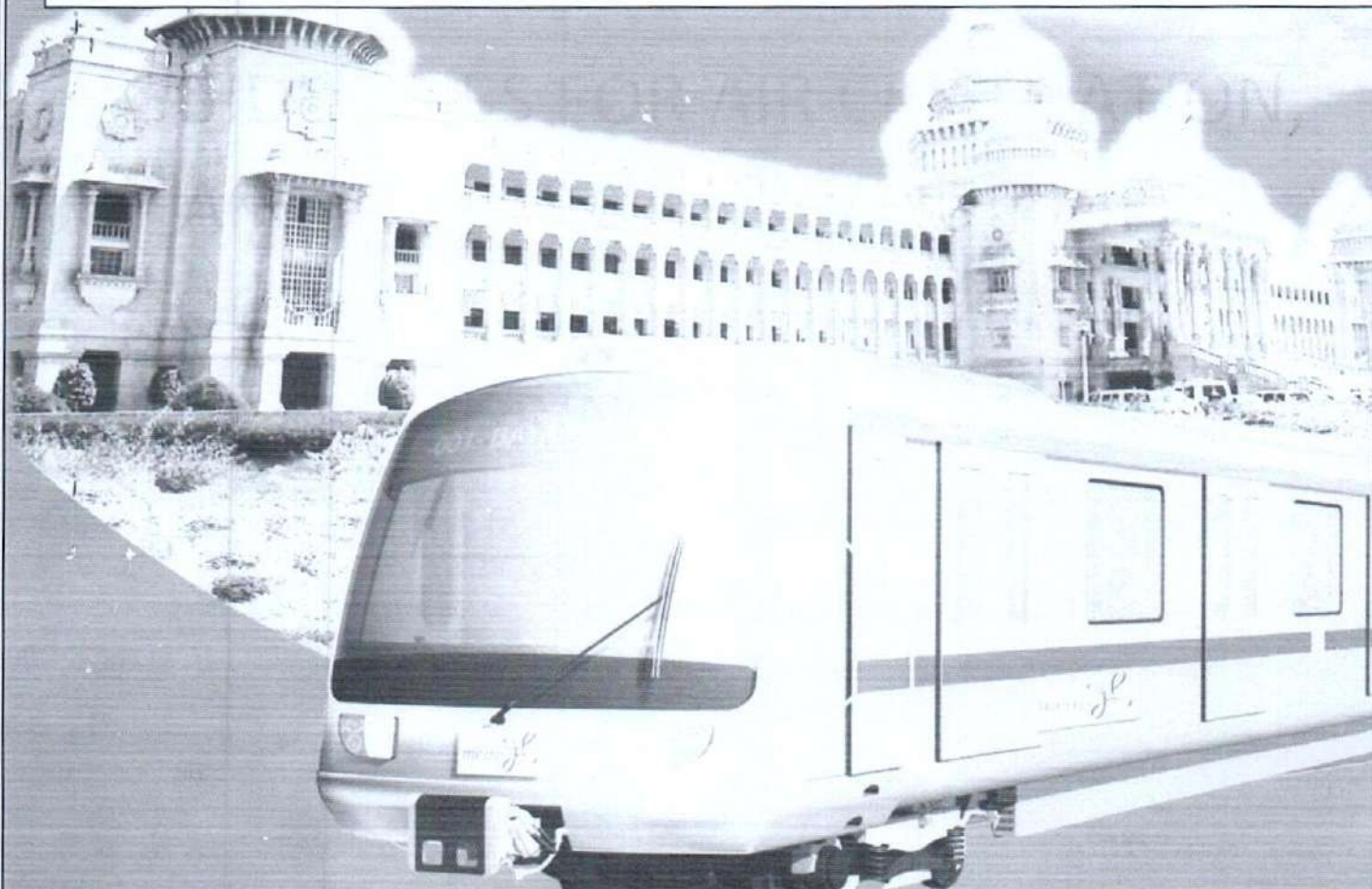
Passenger occupancy in trains



Social distancing in Trains



GUIDE LINES FOR AIR CIRCULATION,
AIR CONDITIONING EQUIPMENT
OPERATION AND MAINTENANCE
DURING COVID-19



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Guideline for running of Air Circulation, Air Conditioning Equipment during COVID-19

1.0 Introduction:

Central Public Works Department (CPWD) vide Office Memorandum No. CE CSO(E)/COVID-19/2020/028 Dated 13.05.2020 has issued "Guidelines for Running of Air Circulation, Air Cooling and Air Conditioning Equipment during COVID-19" for guidance of field units of CPWD. Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE) has also issued guidelines for Air Conditioning and Ventilation during COVID-19. Considering these two documents as reference and prepared a "Metro Guidelines for running of Air Circulation, Air Conditioning Equipment during COVID-19".

2.0 Standard Operating Procedure for ECS System and other Air-conditioning units installed in BMRCL Phase-I in wake of COVID-19

As per ISHRAE Guidelines, 24 to 30 degree Celsius temperature, while humidity level of 40-70 % is permissible with proper ventilation. BMRCL underground stations are designed to maintain a temperature between 27 (+/- 1) degree Celsius and Relative Humidity less than 55-65 percent having provision of adequate ventilation , hence the BMRCL design is inline the ISHRAE guidelines for decreasing the rate of Contamination due to COVID 19.

2.1 Preparedness Measures before start of commercial operation after

LOCKDOWN:

a. One-time measures before starting the regular operation and maintenance are as follows:

1. Proper washing of AHU/FCU filter- It is recommended to sanitize using 1% sodium hypochlorite, left for 10 minutes and then washed / wiped clean with water / cloth. (The above methodology is only for washable filters).
2. Cleaning/Disinfection of AHU/FCU coils- Follow standard manufacturer recommendations of coil cleaning and then sanitize using 1% sodium hypochlorite.
3. Diffuser/Grills needs to be disinfected - These diffuse/grills may also be disinfected by using 1% sodium hypochlorite solution.
4. Ensure healthiness of Exhaust fans in ECS rooms, Toilets, ASS, kitchens, canteen etc.
5. All Toilet Gates should be pasted with instruction "FLUSH THE TOILET WITH LID CLOSED" in order to avoid contamination.
6. Clean the Air Conditioning supply and Return Air plenums i.e OTE duct, UPE duct and Supply/return air plenums / shafts.
7. Install the clean & sanitized filters

2.2 Operation of Environment Control System /Air conditioning system:

- a) Environment Control System in Underground stations of BMRCL has to be switched on in particular modes as specified below:

- i. 06:00 AM- 8:30 AM- In open mode which will intake 100% fresh air and will exhaust 100% air respectively to avoid any recirculation and contamination of air. This shall be achieved with the following setting parameters at BMS
 - Open Mode will be operated based upon the Ambient Enthalpy less than 59 kJ/KG (27 Deg C and 50 % RH).
 - Air-handling units shall draw 100% fresh air from the fresh air shaft and supply air to the station public areas.
 - The Return air shall be exhausted from the Trackway Exhaust Fans through the exhaust shafts.
- ii. 8:30 AM- 09:00 PM- Open mode as above including operation of chillers to avoid temperature rise and maintain humidity. This shall be achieved with the following setting parameters at BMS and run chillers in manual mode and air circulation open Mode.
 - Air-handling units shall draw 100% fresh air from the fresh air shaft and supply air to the station public areas
 - The Return air shall be exhausted from the Trackway Exhaust Fans through the exhaust shafts.
 - The Return Air Temperature set point at 27 deg C for operating the 3 way valve to allow the chilled water from the Chillers
- iii. 9:00 PM till the last Revenue Train operation – Open Mode Ventilation only. (similar to above 1 procedure)

Note: Open Mode implies No recirculation of Air in the premise, the fresh Air taken is exhausted and circulated by Exhaust fans.

b) Air-conditioning with FCU/Ducted Units/Split AC/VRV Indoor Unit in Rooms :

- i. These are used either in technical rooms or in individual offices. As technical rooms are not manned therefore no action is required. In case of SCR and other rooms with FCU/Split ACs, the ventilation fan should be kept in ON condition wherever applicable.
- ii. In case of individual offices at elevated stations and individual buildings, outdoor air infiltration through slightly opening of windows has to be done.

c) Multiple Cassette Units:

- i. Used at site offices and in conference rooms.
- ii. At such places entry/exit doors to be kept open in case the space is being used by more than 1 personnel.

d) Mechanical Ventilation/Fans/Ducts

Technical Spaces/ Rooms/Toilets with Mechanical Ventilation or Fans for Ventilation in Rooms have to be kept always in on condition for proper air circulation.

e) UVGI Lamp

The Underground station having provision of UV lamps shall to be kept in ON condition for ensuring the disinfection of air.

2.3 Maintenance of Ventilation System:

- a) Sanitization of the technical equipment area to be done before carrying out maintenance Activity using prescribed disinfectants.
- b) Carry the preventive maintenance on all the units as per manufacturer's guidelines. This should include disinfecting and cleaning of:

- i. **Filters, grilles, diffusers & internal surfaces:** It is recommended to sanitize using 5% Cresol Solution (Containing 50% Cresol and 50% Liquid Soap Solution). Mix 1 litre of this solution in 9 litres of water. by spraying on the filter, left for 10 minutes and then washed / wiped clean with water / cloth. Diffuser/grills may also be disinfected by using the above solution.
- ii. **Condensate drain pan:** Disinfecting / treatment of condensate drain pan is suggested using UV treatment or 1% sodium hypochlorite dosing.
- iii. **Coils:** Follow standard recommendations of coil cleaning and then sanitize using the same protocol as that of the filters specified above.
Note: The guidelines for preparing fresh 1% sodium hypochlorite solution is at Annexure I

Table: The frequency of cleaning/disinfecting is tabulated below:

S.No	Equipment	Frequency of Cleaning /Disinfection
1.	Filters (AHU, Manned Technical rooms FCU-SCR/Offices)	Bi Weekly
2.	Filter (Technical Unmanned Rooms)	Monthly
3.	Grills/Diffusers (Manned Rooms/ Offices)	Weekly
4.	Grills/Diffusers (Unmanned Rooms and Other areas)	Bimonthly

S.No	Equipment	Frequency of Cleaning /Disinfection
5	Disinfecting/ Treatment Condensate Drain Pan	Weekly
6.	Coils	Monthly

2.4 For Staff involved in Operation and Maintenance:

The safety of service technicians is paramount. The recommendations are as follows:

a) Do's

- i. Carry company identity card.
- ii. Maintain social distancing norm and wear a face mask, eye protection & gloves. Avoid personal contact, including handshakes with co-workers /customers.
- iii. Carry your own water bottle and food as required.
- iv. Wash hands often for at least 20 seconds using soap as per Annexure-II. Always carry alcohol-based sanitizer and use whenever hand washing is not possible
- v. Use prescribed PPE (Personal protection Equipment).
- vi. Extra Precaution to be made by staff involved in filter cleaning / Coil Cleaning/Diffuser or grill cleaning.
- vii. Carry a sanitary bag of adequate size, to keep the replaced item and dispose safely.
- viii. Follow proper disposal methods for used PPE's (Mask, Gloves, Goggles). Masks should be discarded and changed if they

become physically damaged or soaked. (Annexure-III:
Guidelines for use of mask)

- ix. Monitor your health closely. If you develop symptoms like fever, cough, sore throat, tiredness or shortness of breath, immediately inform the office and take necessary action as advised by the government. Do not continue to work under these circumstances.
- x. Avoid using of alcohol-based sanitizer, before working with electrical sources.

b) Don'ts

- i. Never board unknown persons in the vehicle.
- ii. Never touch the common items provided at the work premise such as newspaper, common towel, etc.
- iii. Never handle other person's belongings or share food and water from others.
- iv. Never use another person's crash helmet or PPE.
- v. Do not hand over one's mobile phone to another person/colleague.
- vi. Do not share the pen especially for service report signature from colleagues, instead ask the colleagues to use their own pen.
- vii. Never enter premises which are marked as isolated or quarantined.

Annexure- I

Guidelines for Preparation of 1% sodium hypochlorite solution

Product	Available chlorine	percent
Sodium hypochlorite – liquid bleach	3.5%	1 part bleach to 2.5 parts water
Sodium hypochlorite – liquid	5%	1 part bleach to 4 parts water
NaDCC (sodium dichloro-isocyanurate) powder	60%	17 grams to 1 litre water
NaDCC (1.5 g/ tablet) – tablets	60%	11 tablets to 1 litre water
Chloramine – powder	25%	80 g to 1 litre water
Bleaching powder	70%	7g g to 1 litre water
Any other	As per manufacturer's Instructions	

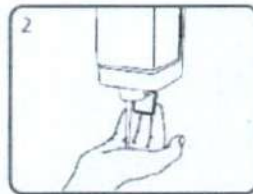
Annexure- II

Steps of Hand Hygiene

Hand-washing technique with soap and water



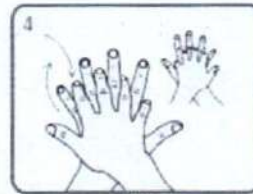
Wet hands
with water



Apply enough soap
to cover all
hand surfaces



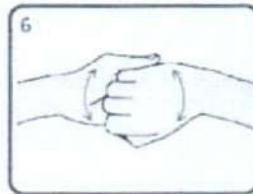
Rub hands palm
to palm



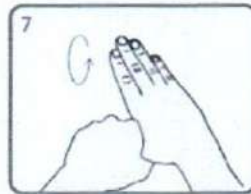
Rub back of each hand
with palm of other hand
with fingers interlaced



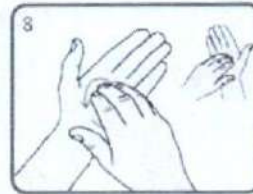
Rub palm to palm with
fingers interlaced



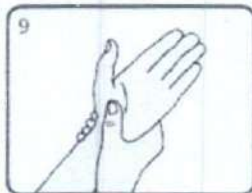
Rub with back of fingers
to opposing palms with
fingers interlocked



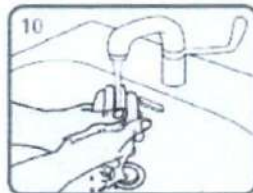
Rub each thumb clasped
in opposite hand using a
rotational movement



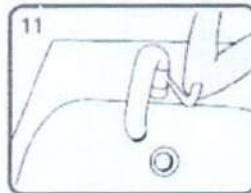
Rub tips of fingers in
opposite palm in a
circular motion



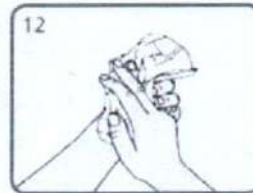
Rub each wrist with
opposite hand



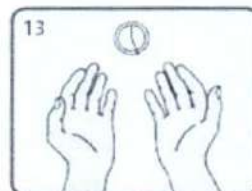
Rinse hands
with water



Use elbow to
turn off tap



Dry thoroughly with
a single-use towel



Hand washing should take
15-30 seconds

Annexure-III

Guidelines for use of mask

The correct procedure of wearing triple layer surgical mask:

1. Perform hand hygiene
2. Unfold the pleats; make sure that they are facing down.
3. Place over nose, mouth and chin.
4. Fit flexible nose piece over nose bridge.
5. Secure with tie strings (upper string to be tied on top of head above the ears –lower string at the back of the neck.)
6. Ensure there are no gaps on either side of the mask, adjust to fit.
7. Do not let the mask hanging from the neck.
8. Change the mask after six hours or as soon as they become wet.
9. Disposable masks are never to be reused and should be disposed off.
10. While removing the mask great care must be taken not to touch the potentially infected outer surface of the mask
11. To remove mask first untie the string below and then the string above and handle the mask using the upper strings.
12. Disposal of used masks: Used mask should be considered as potentially infected medical waste. Discard the mask in a closed bin immediately after use.