



Confederation of Indian Industry
125 Years: 1895-2020

IGBC Guidelines
Combating COVID-19
in
Green Buildings

May 2020

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Introduction

The Government of India and State Governments have taken several initiatives for addressing issues related to 'life and livelihood' of people due to the COVID 19 pandemic. The nationwide lockdown is one of the significant measures to break the chain of the infection spread. Once the lockdown is released in partial or in toto, there be could be multiple challenges to operationalise the existing green buildings and carryout construction activities at the site for new buildings.

IGBC is fully seized of the importance of addressing COVID 19 related aspects in all typologies of new and existing buildings. IGBC encourages all key stakeholders including developers, builders, owners, facility managers and occupants of green buildings to incorporate and practice relevant measures to address the spread of COVID 19. To enable stakeholders implement appropriate measures, IGBC has developed this guideline with the inputs and support from the experts and key stakeholders, across the country.

To encourage the upcoming and existing green buildings to implement the guidelines, 5 credit points would be awarded under innovation category. One credit point for each of the following measures would be awarded:

- Hygiene in Buildings
- HVAC and related equipment
- Water and plumbing fixtures
- Measures at construction site
- People transit

The guidelines mentioned herein are illustrative and recommendatory. Projects can explore the possibility of adopting measures over and above the guidelines as applicable to achieve the purpose of preventing any spread of infection

1.0 Hygiene in Buildings

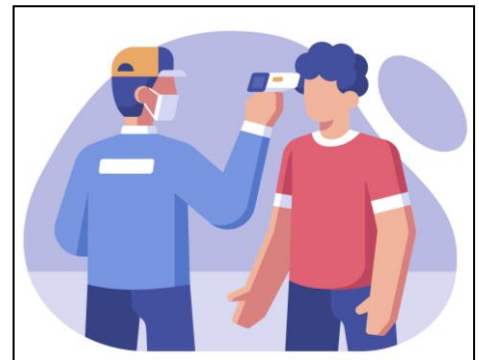
Good hygiene would be the corner stone of combating COVID 19.

Considering the various possibilities of spread within the building premises, there is a need for significantly enhancing hygiene measures beyond regular practices. Hygiene measures should be adopted at the individual level and specific measures to be implemented at all the spaces and surfaces where in the occupants are likely to come in contact.

Form a 'Task Force' involving the employees or occupants for implementation and monitoring of the measures. The following measures may be considered for implementation of hygiene in green buildings.

Personnel Hygiene and protection

- ❖ Fumigate all regularly occupied areas before occupancy
- ❖ Initially operate buildings at 30 % occupancy and gradually increase in a staggered manner
- ❖ Have infrared thermometers or install thermal cameras to check temperature of occupants & visitors.
- ❖ Install sanitation points and designate isolations areas near the entrance of the building.
- ❖ Collect data and maintain records of building occupants & visitors.
- ❖ Have air curtains at entrance
- ❖ Use touch free biometric machines for attendance
- ❖ Have markings on floor to maintain social distance



- ❖ Provide single use masks and gloves for all security and housekeeping staff
- ❖ Staff to get homemade masks or use handkerchiefs during office hours
- ❖ Convert physical appointments into web meetings or video conferences.
- ❖ Have tie-up with the nearest COVID hospital for any emergency situations
- ❖ Circulate daily reports to occupants on measures adopted for health & hygiene to give them a feeling of safety



Regularly Occupied Areas

- ❖ Mop once in 4 hours all regularly occupied spaces with GreenPro ecolabelled cleaning chemicals or soap water
- ❖ Vacuum clean the carpets and door mats atleast twice in a day



Kitchen/ dining / canteen area

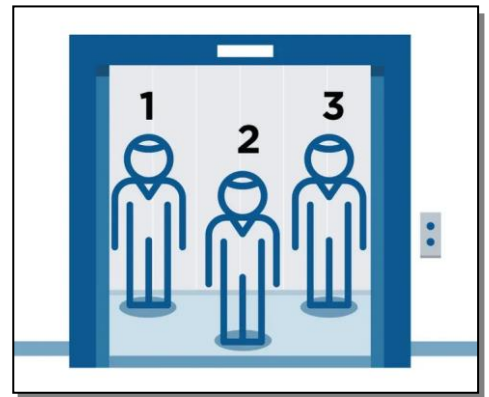
- ❖ Monitor proper cleaning of plates, cups, glasses and cutlery
 - Install dish washer wherever possible
- ❖ Sanitise coffee vending machines, fridge, microwave oven, etc. with disinfectant, once in every 4 hours
- ❖ Encourage occupants to carry food from home
- ❖ Whenever food is ordered from outside, after collecting the food, occupants should sanitise their hands with soap solution or sanitiser

Rest Rooms

- ❖ Clean restrooms with GreenPro ecolabelled housekeeping chemicals
- ❖ Keep paper tissues in front of all restrooms and encourage people to use tissues for touching the door handles / knobs and flush buttons, before entering and while leaving
- ❖ Keep soap solutions (or) sanitisers near wash basins

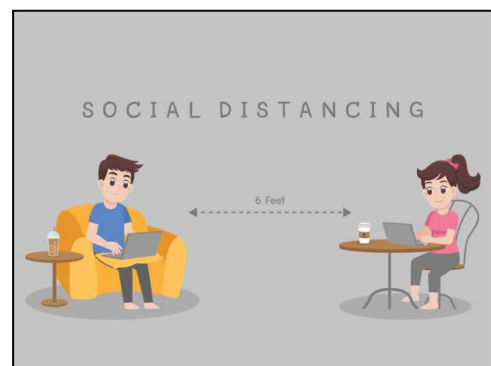
Lifts

- ❖ Restrict number of people travelling in lifts and have markings on floor to maintain distance
- ❖ Sanitise lift buttons every one hour
- ❖ Keep tissue papers in the lift for people to use while touching the buttons
- ❖ Avoid use of fan in the lift to prevent airborne transmission
- ❖ Provide sanitiser bottle in lift lobby



Interior layout in Building

- ❖ Rearrange workstations layout to maintain 6 feet distance from each occupant
- ❖ Rearrange furniture in common areas to address social distancing
 - Lobby, waiting room, meeting rooms, seminar halls
- ❖ Provide floor markings for social distancing in common areas where people congregate
- ❖ Sanitise high touch surfaces once in 2 hrs
 - Workstations, door handles/ knobs, handrails, lift doors and lift buttons



- ❖ Designate open areas/ balconies for occupants to relax, if they desire
- ❖ For new construction, suggested to use anti-microbial copper coated door handles, knobs and bolts

Waste Handling

- ❖ Instruct housekeeping staff to avoid direct contact to waste while segregating and also during disposal
- ❖ Should use disposable masks and gloves
- ❖ Install separate storage bins for disposing used masks, gloves and tissue papers
- ❖ While removing used masks and gloves use tissue papers and dispose the tissue paper along with mask & gloves.

2.0 HVAC and related equipment

HVAC plays a significant role in maintaining comfort conditions in a building. Maintaining low temperature and recirculation of air can lead to survival of virus on surfaces and in air for a prolonged period of time and can become a source for spread of infection. At the same time, disabling HVAC is not a solution since it may bring in thermal stress amongst occupants. IGBC recommends the following measures in HVAC and related equipment before and during operation & maintenance.

Before Operation

- ❖ Clean grilles, diffuser and the internal surfaces using soap water
- ❖ Wash and clean filters
- ❖ Flush Out all regularly occupied areas well before occupancy while keeping the doors and windows open



- ❖ Block the return air dampers to avoid recirculation and open the fresh air damper 100%, during initial days
- ❖ Avoid operating air-conditioners without provision of fresh air specifically for CSU (ceiling suspended Unit) or FCU (Fan Coil Unit)
- ❖ Areas which are not well ventilated, may use portable air purifier
- ❖ Install UVGI lamp in AHU (after cooling coil)
 - UV spectrum is capable of inactivating microorganisms

During Operation

- ❖ Disable demand controlled ventilation, open 100% fresh air dampers
- ❖ Maintain negative pressure of atleast 5 Pa
- ❖ Maintain the following Temperature and Relative Humidity
 - Thermostat setting between 26-28 °C
 - Relative Humidity between 40% and 60%
- ❖ Avoid use of Heat Recovery Wheels (HRW) if there is a leakage
- ❖ Till COVID-19 gets under control avoid utilising the water collected through condensation for any application.
- ❖ Periodically carryout chemical dosing with biocides for cooling tower water

3.0 Water & Plumbing Fixtures

COVID 19 is not a waterborne disease. However, while consuming or using water, the related plumbing fixtures and their surfaces can be a source of spread of infection. IGBC recommends specific measures for reducing the spread of infection through water and related plumbing fixtures before starting and during the operation of the building.

Before Starting Operations

- ❖ Carryout chemical cleaning of water storage tanks and treated waste water tanks

- ❖ Flush water carrying pipes with clean water

Potable Water consumption

- ❖ Advise occupants to carry their own water bottles and suggest to use mineral water
- ❖ Check the quality of potable water regularly and take corrective measures
- ❖ Disinfect the treated waste water before reuse

Fixtures in Existing Buildings & New Buildings

- ❖ Install sensor-based plumbing fixtures for Faucets, water closets & urinals
- ❖ Use sensor-based hand dryers and paper towels in washrooms, kitchen / canteen
- ❖ Use sensor based or foot operated drinking water dispensers
- ❖ Use Long handle (Surgical) faucets which can be operated by elbow in washrooms / kitchen/ dining areas
- ❖ Use timer-based drip & sprinkler irrigation systems to minimise or eliminate manual watering



4.0 Measures at Construction site

Congregation of workforce at construction site increases the probability of the spread of COVID 19. Extreme care needs to be taken to protect workers from COVID 19. Create awareness amongst the workforce about COVID 19 and sensitise them about the measures that need to be followed to protect themselves.

IGBC recommends a set of measures before allowing the workers to enter the site and during their work. Even materials at the construction site need to be handled

properly to avoid the spread. The following are some of the measures that could be taken up at the construction site.

Workforce before entering the site

- ❖ Have provision for housing for the workers within or near the construction site
- ❖ Schedule shift systems based on the work for maintaining social distancing
- ❖ Buy insurance for workers entering the site
- ❖ Maintain entry / exit details for movements into the project site
- ❖ Screen staff and workforce for any COVID-19 symptoms before being allowed to work
 - Use infrared thermometer
- ❖ Restrict visitors into construction site
- ❖ Provide in situ isolated wards for any emergencies

During the Work

- ❖ Maintain atleast 5-6 ft of distance between two workers at all places
- ❖ Entry/exits should be kept open all times
- ❖ Provide gloves, disposable masks and gumboots for all workforce apart from their regular safety gear
- ❖ Install signages in local language at common areas
- ❖ Service lifts to be operated with a dedicated operator and provide tissues which can be used to touch buttons and later disposed.
- ❖ Disinfect all metal surfaces like handrails, handles, knobs on a daily basis



Material Handling

- ❖ All materials delivered at site are to be stored separately and used after 48 hours
- ❖ Sanitise all incoming vehicles
- ❖ Insist on wearing gloves while handling materials & equipment and sanitise the gloves on daily basis

5.0 People Transit

The risk of infection for people is very high during their transit from their home to their place of work and back to their home. Create awareness about the COVID 19 amongst all the occupants and encourage them to take measures to protect themselves during their transit. Some of the measures that could be taken up during transit are as below.

- ❖ Wear disposable mask or cloth mask while commuting short distances.
- ❖ Wear masks while commuting by bikes
- ❖ Avoid outstation travel, to the extent possible
- ❖ Encourage work from home concept
- ❖ Advise staff using public transport to use disposable masks and gloves during transit
- ❖ Encourage employees to use their own vehicles as far as possible
- ❖ Operate Company owned buses with 30-50% occupancy
- ❖ Sanitise the company owned vehicles on a daily basis



Suggested References

The IGBC guidelines for green buildings have been developed considering all building typologies. For any specific guidelines users may refer the following:

- ❖ Guidelines issued periodically by Central & State Governments
- ❖ ISHRAE Guidelines (India HVAC &R Society)
- ❖ ASHRAE Guidelines (American HVAC &R Society)
- ❖ REHVA Guidelines (European HVAC &R Society)
- ❖ CPCB Guidelines for Handling Bio-medical Waste
- ❖ CREDAI - Guidelines for Restarting Construction Sites post LockDown
- ❖ IPA COVID19 guidelines
- ❖ 'Your Safety in Mind' COVID 19 Response - Guidelines developed by TATA Consulting Engineers Limited & Ecofirst Services Limited

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