

# COVID-19 PANDEMIC GUIDANCE DOCUMENT: Workplace-Level Preparations and Safeguards

## INTRODUCTION

The Fair Labor Association (FLA) created this guidance document to help factories in their efforts to mitigate the risks associated with COVID-19 and ensure the safety of workers. The information that follows offers guidelines on how to prevent the spread of the COVID-19 virus in factories and dormitories through rigorous infectious disease management and the preparations required ahead of the reoccupation of buildings and production facilities after lockdown.

This resource combines information gathered from reliable national and international agencies working on public health and occupational health and safety practices supplemented by the knowledge and experience of the FLA staff based on factory assessments around the world.

Please note that the measures that follow are not intended to replace legal requirements imposed by local authorities. Rather, the guidance presented is designed as an open source of good practices for factory management anywhere.

## WHAT IS COVID-19?

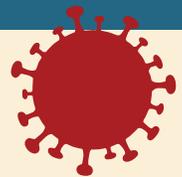
**COVID-19** is an infectious disease caused by a new coronavirus, SARS-CoV-2, first identified in December 2019. Some people infected with the disease experience only mild symptoms, but COVID-19 can be life threatening. COVID-19 is now a pandemic—a global outbreak—that is affecting most countries around the world.

COVID-19 spreads primarily from person to person through small droplets from the nose or mouth, which are expelled when a person infected with the virus coughs, sneezes, or speaks. People can catch COVID-19 if they breathe in these droplets, which is why it is

### COVID-19

#### *Most Common Symptoms*

- ▶ Fever
- ▶ Cough
- ▶ Tiredness



#### *Other Possible Symptoms*

- ▶ Shortness of breath
- ▶ Breathing difficulties
- ▶ Muscle aches
- ▶ Chills/chest pain
- ▶ Sore throat
- ▶ Loss of taste or smell
- ▶ Headache



important to stay at least two meters (six feet) away from others.

People can get infected when they touch objects or surfaces such as tables, doorknobs, and handrails contaminated by COVID-19 droplets, and then transfer the virus to their eyes, nose, or mouth. According to the Centers for Disease Control and Prevention (CDC), the

SARS-CoV-2 virus that causes COVID-19 was found on surfaces like plastic after 72 hours and stainless steel after 48 hours. Regular and thorough handwashing with soap and water for at least 20 seconds or cleaning with an alcohol-based hand rub (at least 60 percent ethanol or 70 percent isopropanol)<sup>1</sup> is essential.

<sup>1</sup> <https://www.cdc.gov/coronavirus/2019-ncov/hcp/hand-hygiene.html>

## COMPONENTS OF AN INFECTIOUS DISEASE MANAGEMENT SYSTEM

**With many employees and visitors coming from different locations**, factories and commercial buildings can become hubs of infectious disease outbreaks such as COVID-19, colds, and the flu.

As a result, facility managers should have comprehensive cleaning and maintenance programs for infection control, including written documentation. These protocols can help prevent the spread of pathogens (germs) that cause health hazards while improving the quality of the indoor environment.

If COVID-19 is not controlled through proper cleaning, personal hygiene, and protective

measures, the disease can spread quickly through factories and related buildings. Much can be done, however, to control transmission through a comprehensive Infectious Disease Management System.

An effective Infectious Disease Management System usually consists of three major components that complement each other and are equally important.

- 1. Comprehensive Cleaning Program**
- 2. Preventive measures to avert an infectious disease outbreak**
- 3. Education and communication**

### 1. COMPREHENSIVE CLEANING PROGRAM

To minimize and prevent the spread of disease, facility managers should design and implement a comprehensive cleaning and sanitizing program, that includes:

- 1. An Infectious Disease Control Plan**, which

presents a clear protocol for cleaning, sanitizing, and disinfecting high-risk areas within a facility or property. It includes specific steps that cleaning staff must take to prevent an outbreak of infectious diseases.



**2. Certified cleaning products** that meet safety guidelines certified by organizations such as Green Seal.<sup>2</sup> These products do not contain chemicals that can contribute to asthma, cancer, respiratory irritation, or other health conditions. Ensure that safety data sheets are available for each product used.

**3. Registered disinfectants and sanitizers** approved and registered with the relevant authorities such as the U.S. Environmental Protection Agency.<sup>3</sup>

**4. Best practices and protocols** to protect cleaning professionals and the occupants of the facility or property.

**5. Correct cleaning equipment** for the task at hand to help reduce the amount of chemicals used. Examples include high-efficiency particulate absorbing (HEPA) vacuum cleaners, microfiber cloths and mop heads, and energy-saving floor care machines along with walk-off mats at building entrances.

**6. An effective training program** for cleaning staff that covers the proper use of equipment, safe products to use, hazard communication, and how to handle bloodborne and airborne pathogens. Training for cleaning high-risk areas should include sanitizing and disinfecting procedures, cover dwell time (the time a disinfectant product must remain on the surface to kill harmful organisms), and rinsing procedures. Training should also incorporate drills, exercises, and simulations. In short, cleaning staff must know and apply proper cleaning and sanitizing procedures to break the chain of infection.

## UNDERSTANDING PARTS OF A COMPREHENSIVE CLEANING PROGRAM

▶ **Cleaning:** Using soap and water on surfaces removes dirt, dust, visible debris, and food particles that harbor germs, thereby reducing the risk of spreading infection. Soap and water kill some types of bacteria and viruses.

▶ **Sanitizing:** Using a sanitizer product reduces microbiological contamination to levels conforming to local health regulations. Sanitizers kill most bacteria.

▶ **Disinfecting:** Kills germs. Cleaning staff can destroy bacteria, viruses, and fungi using a disinfectant.



**7. Identification of high-risk areas and high-risk touchpoints** where there is a greater concern for disease transmission because of the possibility of skin-to-skin contact, objects being placed in the mouth, or contact with fecal matter. These areas include, but are not limited to, restrooms, athletic areas (training rooms, exercise equipment, locker rooms, and so forth), cafeterias, kitchen and coffee rooms, countertops, water fountains and bottle refill stations, conference room tables, and others. High-risk touchpoints are those that are frequently touched by many people, such as door handles, door push plates, fax and copier machine buttons, telephone receivers, computer keyboards and mice, handrails, elevator push buttons, light switches, faucet handles, vending machines, television remotes, and others.

<sup>2</sup> <https://greenseal.org/>

<sup>3</sup> <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>



**8. Specific procedures for cleaning high-risk areas** that cleaning staff must follow. The protocols should include how often these areas should be cleaned. These procedures should cover how cleaning staff should protect themselves while performing their cleaning duties during the pandemic.

**9. Waste management:** Having an effective waste-handling program is imperative. The program should include how waste is collected on each floor/section in the facility, transported to a central pickup location, and then picked up by a qualified waste hauler.

## 2. PREVENTIVE MEASURES TO AVERT AN INFECTIOUS DISEASE OUTBREAK:

Proper cleaning, sanitizing, and targeted disinfecting are important to reduce the spread of microbes, including the SARS-CoV-2 virus. However, additional measures to prevent the spread of COVID-19 and other communicable diseases should be regularly enforced by facility managers and communicated to workers. These include:

### 1. Personal hygiene:

- a.** Encourage all employees to get the flu vaccination.
- b. Cover your nose and mouth with a tissue when coughing/sneezing.** Then throw the tissue in the trash. If no tissue is available, cough or sneeze into your elbow.
- c.** Wash your hands often with soap and water. If soap and water are not available, use a hand sanitizer. Remember, soap and water can kill the SARS-CoV-2 virus, which causes COVID-19.
- d. Avoid touching your eyes, nose, or mouth,** which are pathways for microbes to enter your body.
- e.** Try to **stay at a distance** from people who are sick.

- f. Prevent personal physical contact** like handshakes, kisses, hugs, etc.
- g. Do not share personal items** that go in your mouth, eyes, or nose—like cutlery, cups, straws, water bottles, or cosmetics.
- h.** Remain at home if you are sick. Limit contact with other people.
- i.** For hand hygiene in high-risk settings, use antibacterial and antimicrobial products. High-risk settings include hospitals, clinics, other health settings like nurses' offices and areas for people with low immune systems. Antibacterial soaps are no more effective at removing germs than regular soaps, but they contain a chemical that kills bacteria, although not all viruses. **These products should not be used indiscriminately in facilities, as most of them are regulated as pesticides and drugs/antiseptics by relevant authorities.** As pesticide, antimicrobial products are used on surfaces such as countertops. As antiseptic, antimicrobial products are used to treat or prevent disease on living things.

*During factory assessments, the FLA observed that workers often shared drinking water cups around drinking water fountains, which presents a risk for disease transmission.*



2. In the event of a disease outbreak at the facility, the following measures should be taken immediately to prevent further infections:
  - a. **Isolate the affected worker(s).**
  - b. **Proceed to a thorough cleaning of the facility**, in line with the guidelines outlined in the previous section.
  - c. **Implement professional cleaning**, which is an important part of the emergency response to an infectious disease outbreak. **Cleaning staff should be trained in the use of cleaning chemicals** and understand that cleaning chemicals are irritants and can be harmful if swallowed, inhaled, mixed with some other chemicals, or come in contact with unprotected skin. **Cleaning staff should also be trained on how to protect themselves by wearing some**

**level of personal protective equipment (PPE).** Training about cleaning chemicals is critical for understanding the proper use of chemicals and materials such as microfiber cloths and mop heads.

- d. **Consult with local health officials** in case additional information and/or official reporting of the cases is needed.
  - e. **Clean high-risk and high-touch areas** more frequently, probably every two hours.
3. Develop information signage and posters that emphasize proper hygiene to prevent the spread of disease. Posters should be produced in languages commonly used and/or include pictorial formats and be placed at high traffic locations such as building entrances or restrooms.

## USE OF FACE MASKS IN THE WORKPLACE



**The use of cloth masks or PPEs** (surgical masks, FFP2/FFP3 and N95 masks) in public places and workplaces has become the topic of discussion during the global pandemic. Faced with a PPE shortage, there have been some conflicting messages about the use of masks during the COVID-19 pandemic for the general workforce in non-healthcare businesses.

**The FLA strongly recommends that factories consider the following:**

1. If masks are a legal requirement in your location, provide them to all workers.
2. If your factory has already asked the general workforce to use some form of cloth masks or PPEs, keep this practice, assuming that the workplace risk assessment has revealed such a need because of an inability to maintain social distancing in some areas or sections.
3. If you are not asking your general workforce to use a form of face covering (cloth masks or PPEs), ensure that this decision is based on your workplace risk assessment and that social distancing can be maintained throughout the workplace.
4. As a general recommendation, encourage workers to wear cloth masks even if the workplace risk assessment shows there is no specific need for PPEs in the workplace.
5. Provide a sufficient number of face masks and PPEs free of charge to workers where needed. Inform workers on how to use PPEs correctly and when to dispose of them. Cloth masks should be properly washed/sanitized daily.



4. **Focus on employees reporting sick.** Assess immediate and projected staffing needs.
5. **Stagger arrival and departure times** or shift arrangements at work to reduce crowding during workplace entrance and exit.
6. **Stagger break times or shift arrangements** at work to reduce crowding in social areas and canteens. Use safe outside areas during breaks; encourage workers to stay on factory premises during break hours.
7. **Limit movement** within the factory by reducing job/equipment rotation and introducing **one-way systems through** buildings.
8. Plan to **reduce noncritical operations** if possible.
9. Identify workers facing a higher COVID-19 risk due to **individual risk factors**. Special category groups include:
  - a. Older age (over 60)
  - b. People suffering from chronic medical conditions such as immunodeficiency, respiratory disease, cancer, diabetes, etc. Workers who have family members with underlying medical conditions should also be included.
  - c. Pregnant and lactating women
  - d. Disabled individualsEvaluate their jobs/tasks and working conditions to provide additional protection where needed.
10. **Avoid face-to-face meetings** and **reduce the number of visitors**. Encourage phone calls, teleconferences, and virtual meetings when possible.
11. Follow **social distancing**<sup>4</sup> rules in the workplace, keeping two meters (six feet) between individuals. If this is not an option in the performance of specific tasks, follow a task analysis approach to accomplish one or more of the following:
  - a. Segregation of the tasks, breaking them down into sub-tasks
  - b. Use of Personal Protective Equipment (PPE)
  - c. Shorter duration when workers are in close contact
  - d. Installation of separator screens
  - e. Back-to-back or side-to-side working arrangements (rather than face to face) if possible
  - f. More frequent hand washing and surface cleaning
  - g. Introduction of “fixed teams” or “partnering” to reduce the number of other people each worker works with
12. Identify employees who are **certified volunteer emergency medical technicians**, volunteer firefighters, and part-time security officers. Their skills may be helpful during a severe infectious outbreak.
13. Develop procedures such as temperature checks and self-reporting of the symptoms to **identify** and **isolate sick people**.<sup>5</sup> Arrange isolation areas for workers who might be infected, require **self-isolation** for workers operating in the same section and/or sharing the same transportation as suspected COVID-19 carriers, and provide masks for workers showing symptoms.

4 <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html>

5 <https://www.mayoclinic.org/diseases-conditions/coronavirus/symptoms-causes/syc-20479963>



14. Require that workers who have returned from COVID-19 impacted areas **self-isolate for at least for 14 days** and take their temperature twice a day.
15. Arrange **isolation rooms** in dormitories for sick people and implement **access limitations** to these rooms except for designated staff wearing proper PPEs.
16. Identify high-risk jobs/tasks and individuals posing a more significant risk of being a carrier by considering their exposure risks:<sup>6</sup>
  - a. **High-risk exposure:** Jobs with a high potential for exposure to known or suspected sources of COVID-19. Workers in this category are usually limited to:
    - Medical staff
    - Healthcare delivery staff
    - Medical transport staff
    - Mortuary workers
  - b. **Medium exposure risk:** Jobs that require frequent/close contact with people who may be infected, but who are not known or suspected patients. Workers in this category may include:
    - School teachers
    - Workers operating in high-population-density work environments
    - Workers in high-volume retail settings
    - Individuals returning from locations with widespread COVID-19 transmission
  - c. **Low exposure risk:** Jobs that do not require contact with people known to be, or are suspected of being, infected with COVID-19. Workers in this category have minimal occupational contact with the public and other co-workers.

*An FLA-affiliated brand reported at least one incident that involved a part-time workplace doctor who also worked in a hospital. He turned out to be a COVID-19 carrier (vector) and infected many workers in a garment factory.*

*Several incidents were reported involving migrant workers coming from COVID-19 impacted areas who inadvertently transmitted the disease, thus creating clusters in dormitories.*

## HIGH AND MEDIUM RISK GROUPS IN THE WORKPLACE

The FLA strongly recommends that during the pandemic factories should pay special attention to breaking the chain of infection in workplaces by identifying high and medium risk groups in the workplace.

1. Staff that travel for business internationally and domestically
2. Visitors
3. Contractors, such as maintenance or security staff
4. Drivers, both those employed by the workplace and drivers from other companies
5. Couriers and delivery staff
6. Part-time staff members who work elsewhere
7. Workers coming from locations with widespread COVID-19 transmission
8. Workers with family members who are suspected or confirmed COVID-19 patients
9. Workplace doctors and nurses who also work at hospitals or other facilities



6 <https://www.osha.gov/Publications/OSHA3993.pdf>



- 17.** Follow existing food hygiene standards, in line with the workplace Infectious Disease Management System. Food and health authorities<sup>7</sup> have examined **food safety concerns** related to the COVID-19 pandemic. No evidence has emerged to suggest that COVID-19 can be transmitted through food or food packaging. The general suggestion is to maintain existing hygiene standards and abide by the rules of the Infectious Disease Management System of the workplace.
- 18. Encourage telecommuting** for employees involved in **tasks that can be performed remotely**, such as merchandisers, building automation system technicians, administrative support, etc.
- 19.** Install **hand sanitizer stations** at various points inside and outside of the facility/dormitory. Define checking and refilling these sanitizer stations as a critical task.
- 20. For Heating, Ventilation, and Conditioning (HVAC) systems**, consider the following precautions<sup>8</sup>:
  - a.** Install ultraviolet germicidal irradiation (UVGI) light bulbs/devices in ventilation systems. UV light is known to be an effective germicide, reducing the number of microbes being circulated through air-handling equipment.
  - b.** Increase outdoor air ventilation (disable demand-controlled ventilation and open outdoor air dampers to 100 percent as indoor and outdoor conditions permit).
  - c.** Improve central air and other HVAC filtration to MERV-13 (ASHRAE 2017b) equivalent or the highest level achievable.
  - d.** Keep systems running at night and on weekends. Do not switch ventilation off, but keep systems running at a lower speed (24/7 if possible).
  - e.** Switch ventilation to a normal speed at least two hours before the building use time and switch to a lower speed two hours after normal business hours.
  - f.** Bypass energy recovery ventilation systems that push potentially contaminated exhaust air back into the outdoor air supply.
  - g.** Add portable room air cleaners with HEPA or high-MERV filters to improve the clean air delivery rate, if needed.
  - h.** Avoid duct cleaning during this period if possible.
  - i.** Replace central outdoor air and extract air filters, according to the maintenance schedule.
  - j.** Use standard protective measures, including respiratory protection, when replacing filters and performing maintenance work.
  - k.** Ensure regular airing with windows (even in mechanically ventilated buildings).
- 21. For the transportation of the workers:**
  - a.** Limit the number of workers in each vehicle.
  - b.** Assign spaced seating within the method of transportation.
  - c.** Improve fresh air intake/air circulation.
  - d.** Consider multiple trips to reduce the number of passengers, if possible.
  - e.** Identify high-touch areas, such as door handles, seats, radio controls, and implement periodic cleaning.

<sup>7</sup> <https://www.fda.gov/food/food-safety-during-emergencies/food-safety-and-coronavirus-disease-2019-COVID-19#workers>

<sup>8</sup> [https://www.ashrae.org/file%20library/about/position%20documents/pd\\_infectiousaerosols\\_2020.pdf](https://www.ashrae.org/file%20library/about/position%20documents/pd_infectiousaerosols_2020.pdf)



## 22. In elevators:

- a. Reduce/limit the number of people per elevator.
- b. Apply two-meter physical distancing where possible.
- c. Improve cabin ventilation where possible.
- d. Mark cabin to prevent face to face positioning.

## 23. In dormitories:

- a. **Reduce occupant density** through adjustments where possible.
- b. Consider renting temporary housing, such as hotels or hostels, to provide additional capacity and maintain social distancing, if possible.
- c. Implement **administrative measures** to reduce the number of people in commonly used areas.
- d. Ensure that dormitories are included in the comprehensive cleaning program.

## 24. In childcare facilities<sup>9</sup>:

- a. **Reduce occupant density** through adjustments. Where possible, follow social distancing rules.
- b. Ensure that the childcare facility/area is included in the comprehensive cleaning program.

- c. Do NOT use cloth face coverings or **put PPE on babies and children under the age of two** because of the danger of suffocation.
- d. Prepare an isolation room or area that can be used to isolate a sick child.
- e. Carry out temperature screening before admission to childcare facility/area.
- f. Communicate to parents the importance of keeping children at home when they are sick.

## 22. In toilets, consider the following precautions:<sup>10</sup>

- a. Limit number of users.
- b. Keep bathroom ventilation in operation 24/7.
- c. Avoid open windows in bathrooms to ensure the right direction of ventilation.
- d. Instruct building occupants to flush toilets with closed lid.
- e. Use trash bins with a cover and plastic bags.
- f. Categorize refilling soap dispensers and paper towels/tissues as a critical task.

<sup>9</sup> <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-childcare.html>

<sup>10</sup> [https://www.rehva.eu/fileadmin/user\\_upload/REHVA\\_COVID-19\\_guidance\\_document\\_ver2\\_20200403\\_1.pdf](https://www.rehva.eu/fileadmin/user_upload/REHVA_COVID-19_guidance_document_ver2_20200403_1.pdf)

## 3. EDUCATION AND COMMUNICATION:

When a pandemic is declared, concern spreads throughout society. Educating employees and their families and communicating accurate information to all facility occupants is critical to avoid panic and minimize the potential for misperceptions.

Measures and protocols should be explained clearly to address concerns and ensure that all involved comply with Infectious Disease Management rules. The following points should be communicated and implemented:



- 1. All employees should implement the personal hygiene measures and physical distancing rules.**
- 2.** The factory follows the guidance/guidelines of local authorities and international standards.
- 3.** Emergency management plans are regularly reviewed and drilled.
- 4.** Critical functions are being reviewed, and staffing plans for backup personnel are ready to be invoked when necessary.
- 5.** The factory monitors travel alerts and travel restrictions.
- 6.** The factory continually reviews and updates existing business continuity plans.
- 7.** The factory implements a comprehensive cleaning program, focused on cleaning procedures designed to prevent an outbreak of infectious disease. High-risk and high-touch areas are cleaned every two hours, for example.
- 8.** All key personnel have been trained on the necessary steps to take, how to implement them, and the proper use of PPE.
- 9.** The Heating, Ventilation, and Conditioning (HVAC) systems in the building are under inspection to ensure they are operating as intended. Within a building, HVAC systems and cleaning procedures are critical to break the chain of possible infection.
- 10.** The factory will ensure that all contractors are training their employees on safety procedures, as outlined in relevant regulations, such as US Department of Labor Operational Safety and Health Administration (OSHA) “Universal Precautions Against Bloodborne



## WORKERS' ROLE IN PREVENTING THE SPREAD OF THE VIRUS

During a pandemic, all protective measures taken by the facility management are useful for breaking the infection chain in the workplace, only when combined with personal hygiene.

The FLA strongly recommends that workers follow personal hygiene and physical distancing rules in their social life to prevent the spread of the virus in the workplace.



Pathogens” (CFR 29.1910.1030) as well as “Personal Protective Equipment Standard” (CFR 29.1910.132) and “Respiratory Protection Standard” (CFR 29.1910.134), which provide protection for workers when exposed to contact, droplet, and airborne transmissible infectious agents, when conducting repairs/maintenance on the ventilation system, sinks, toilets, and drains.

- 11.** Coordination and agreements are made with certified bio-contamination cleanup firms.
- 12.** Workers who are sick and/or lost a loved one during the pandemic can obtain psychological support.
- 13.** Workers/worker representatives/trade unions are included in infectious disease management-related activities and receive feedback through regular meetings.
- 14.** Existing health and safety committees and workplace health units are empowered to make an active contribution to infectious disease prevention.



# COVID-19 PANDEMIC: RECOMMISSIONING BUILDINGS AFTER LOCKDOWN

**Lockdowns are an urgent measure designed to reduce the transmission of COVID-19** and “flatten the curve” of infection. Since the COVID-19 pandemic was declared, many countries have implemented lockdowns; in some places, these are still in force. As countries emerge from lockdown and workers return to their workplaces, safety is a major concern. The following steps should be taken to ensure workplace safety prior to reopening a workplace:

- ▶ **Prepare a timeline and assess the scope of work required** for the safe reoccupation of the building. Consider all safety precautions needed to minimize the risk of viral transmission.
- ▶ **Align the timeline, scale, and extent of the reoccupation** of the building with local regulations and the advice of local authorities.
- ▶ If the building is shared with other occupants, **organize a meeting to discuss respective recommissioning plans** and coordinate efforts.

- ▶ **Evaluate potential risks** that could stem from the activities of other occupants.
- ▶ **Reassess all jobs/tasks** evaluated in risk assessment reports conducted before the COVID-19 pandemic prior to reoccupying the building.
- ▶ **Produce a revised risk assessment report** that takes into account additional health and safety risks that have been identified and avoids or minimizes these risks.
- ▶ **Finalize the details of the Comprehensive Cleaning Program** detailed in the previous sections.
- ▶ **Consider what proportion of the workforce** will be asked to return to work or **which sections of the building will be occupied** while evaluating building system requirements, such as access to hot water, life safety systems such as fire detection and extinguishing systems, gas detection systems, emergency illumination, chemical spillage detection systems, entry and exit plans, and ventilation rates.

▶ *Media and brands reports indicate an instance of one chemical tank leak (in India) and one boiler explosion (in Turkey), along with several cases of disabled fire detection and alarm systems, emergency illumination systems and residual current devices (RCDs, also known as Ground-Fault Circuit Interrupters or GFCI) in recommissioned garment factories.*

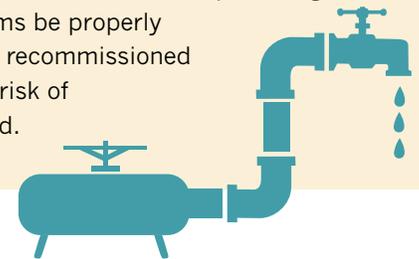


- ▶ When assessing occupancy levels and working hours, take into account:
  - ◆ **Social distancing requirements** within the workplace
  - ◆ **Constraints on the travel time and mode of transportation** of the workers
  - ◆ **Space availability and working routine**
- ▶ Consider that **potential changes in the use of welfare facilities and equipment may be needed** to reduce the risk of transmission of infection (healthcare and childcare facilities, canteen, rest and social areas, smoking room, breastfeeding room, etc.). Such factors will influence the decision on levels of occupancy and times of operation.
- ▶ **Implement higher ventilation rates** to minimize the risk of airborne transmission. Follow the recommendations covered in the HVAC section in previous sections.
- ▶ **Improve building entrance and exit protocols** to ensure:
  - ◆ **No delays/queues** at the entrance/exit that could violate social distancing requirements
  - ◆ **Temperature checks station** (using thermal guns, for example) at the entrance, if possible
  - ◆ **Better visitor screening**
- ▶ **Implement a lift control program** to reduce occupancy of lift cars
- ▶ **Review and revise emergency response plans** for possible local outbreaks

## MINIMIZE THE RISK OF LEGIONELLA BACTERIA

Water and HVAC systems of unoccupied buildings be vulnerable to Legionella bacteria growth due to low water use. Legionella causes Legionnaires' disease, a severe form of pneumonia.

The FLA strongly recommends that plumbing and HVAC systems be properly investigated and recommissioned to eliminate the risk of Legionella spread.



- ▶ **Perform periodic maintenance and/or testing** of the following building systems prior to reoccupation of the building:
  - ◆ **Water/wastewater systems**, including wastewater treatment plant
  - ◆ **Electrical systems**
  - ◆ **Gas system and compressed gas cylinders**
  - ◆ **Pressure vessels**
    - Compressors/air tanks
    - Boilers/steam generators/autoclaves
  - ◆ **Emergency systems**
    - Fire detection and alarm systems
    - Active fire protection system, such as sprinklers, fire suppression and smoke control systems, fire extinguishers, etc.
  - ◆ **Emergency lighting**
  - ◆ **Lifts and escalators**
  - ◆ **HVAC system**
  - ◆ **Access control and security systems**
  - ◆ **Chemical storage areas**



# SOURCES

## ORGANIZATIONS:

- American Society of Heating, Refrigerating and Air-Conditioning Engineers  
<https://www.ashrae.org/>
- Centers for Disease Control and Prevention <https://www.cdc.gov/>
- Chartered Institution of Building Services Engineers <https://www.cibse.org/>
- Federation of European Heating, Ventilation and Air Conditioning Associations  
<https://www.rehva.eu/>
- Green Seal <https://greenseal.org/>
- Health and Safety Executive <https://www.hse.gov.uk/>
- Mayo Clinic [www.mayoclinic.org](http://www.mayoclinic.org)
- U.S. Department of Labor, Occupational Safety and Health Administration  
<https://www.osha.gov/>
- U.S. Environmental Protection Agency <https://www.epa.gov/>
- U.S. Food and Drug Administration <https://www.fda.gov/>
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