

Guidelines for COVID-19 to Help Protect Mechanical Industry Workers



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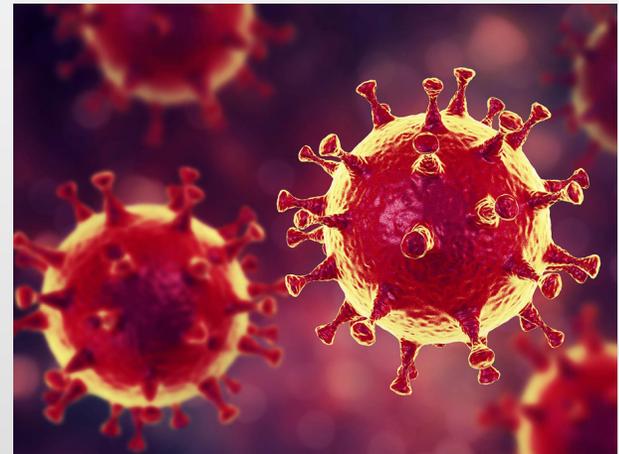


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Purpose

To provide guidance to protect the health of workers performing work on plumbing and HVAC systems.



Understanding Coronavirus Exposure for the Mechanical Trades

Coronavirus is a large family of viruses found in humans and animals.

Coronaviruses are responsible for upper respiratory infections, which range from a common cold to death.

In 2002-2003, a new animal coronavirus called SARS (severe acute respiratory syndrome) emerged in humans in Southern China.

- Spread throughout 29 countries around the world
- A total of 8,098 individuals were infected, resulting in 774 fatalities

Understanding Coronavirus Exposure for the Mechanical Trades

In 2019, a pandemic outbreak of another coronavirus was discovered in Wuhan, China.

New coronavirus is called SARS-CoV-2 which causes the disease known as COVID-19.

- Spreading much quicker than the 2003 SARS outbreak
- To date, Johns Hopkins reports that over 396,000 people worldwide are infected with over 17,250 fatalities.

Because this virus can be easily transmitted between humans, the World Health Organization (WHO) has qualified this virus as a pandemic.

All predictions are that this pandemic is going to continue to spread quickly.

How do you get infected with COVID-19?

The disease is spread by close person-to-person contact.

- It usually occurs from a cough, sneeze, or when someone exhales.
- This releases infected droplets that can get into another's mouth, nose, or lungs.
- Most of these droplets fall onto nearby surfaces and objects like desks, tables or telephones.

People could catch COVID-19 by touching contaminated surfaces or objects – and then touching their eyes, nose or mouth.

- It is unclear how long a virus can remain contagious when exposed on a surface.
- Some researchers state;
 - That the virus can remain airborne for up to 3 hours.
 - That the virus can survive up to one day on cardboard
 - That the virus can survive up to 2 to 3 days on steel and plastic
 - These numbers depend on a variety of variables

COVID-19 spreads in a way like the flu.

How do you get infected with COVID-19?

Compare/Contrast



Bacteria

- Larger of microbes
- Comoutside plex biology
- Live cells of host
- Able to reproduce without host
- **Many are beneficial to host**

Virus

- Smallest of life forms
- Simplest life form
- Must live within cells of host to survive
- Must use host's genetic material to reproduce
- **Most harmful**

What are the symptoms?

Most infected with COVID-19 experience mild symptoms and recover.

Some experience more serious illness and may require hospital care.

Factors which may cause higher risk

- Age
- Individuals with weakened immune systems and people with conditions such as diabetes, heart and lung disease.

Symptoms of COVID-19 include fever, cough, or shortness of breath.

Can it be spread through drinking water?

According to the CDC, the SARS-CoV-2 virus has not been detected in drinking water.

Conventional water treatment methods that use filtration and disinfection should remove or inactivate the SARS-CoV-2 virus that causes COVID-19.

Can the virus spread through sanitary drain and vent systems?

According to the CDC, the virus can survive in human feces.

- It is unclear how long or how contagious the virus remains.

The Chinese government identified an outbreak in a sanitary drain and vent system in Hong Kong.

- It took place in a 30-story high-rise building.
- The sanitary drain and vent systems were “altered” which resulted in open vent connections within the building.
- The building was evacuated after numerous COVID-19 cases were diagnosed.

Therefore, for as long as the pandemic is still active, it should be assumed by anyone working on a sanitary drainage system that the virus is present. (IAPMO, 3/12/2020)

How do mechanical tradespeople protect themselves?

All plumbers and HVAC service technicians working on these systems are strongly recommended to wear personal protective equipment (PPE) including;

- Full face shield worn over safety goggles
- Impermeable gloves
- Protective clothing

These are essential to protect against the potential contact with water and aerosols that contain the coronavirus when working on sanitary systems or sewers.

Assume that everything inside that system is contagious.!!!

How do mechanical tradespeople protect themselves?

OSHA Standards

- Follow all OSHA Standard 29 CFR 1926, Safety and Health Regulations for Construction and relevant 29 CFR 1910 General Industry requirements.
- The most relevant subsections to review are:
 - 1926.20 General safety and health provisions
 - 1926.21 Safety training and education
 - 1926.22 Recording and reporting of injuries
 - 1926.23 First aid and medical attention
 - 1926.28 Personal protective equipment
 - 1926.50 Medical services and first aid
 - 1926.95 Criteria for personal protective equipment
 - 1926.102 Eye and face protection
 - 1926.103 Respiratory protection
 - 1910.1030 Bloodborne Pathogens

Personal Protective Equipment (PPE) for Working on Sanitary Drain and Sewer Systems

Mechanical tradespeople working on sanitary drain and sewer systems should be provided proper personal protective equipment (PPE), training on how to properly use the PPE, and hand washing facilities.

Workers should wash hands, arms and face (in that order) with soap and water for at least 20 seconds immediately after removing PPE.

Personal Protective Equipment (PPE) for Working on Sanitary Drain and Sewer Systems

The following PPE is recommended for workers handling human waste or sewage:

- Safety Goggles – To protect eyes from splashes of human waste or sewage.
- Protective splash-proof face shield – To protect nose and mouth from splashes of human waste or sewage.
- Respiratory Protection – Wear a NIOSH-approved N95 facemask.
- Liquid-repellent coveralls (such as Tyvek) – To keep human waste or sewage off skin and clothing.
- Rubber outer gloves – To prevent exposure to human waste or sewage.
- Nitrile inner gloves – To prevent exposure when removing PPE and cleaning tools
- Rubber boots – To prevent exposure to human waste or sewage.

Additional Best Practice Recommendation for PPE

Wear two liquid-repellant protective suits (outer suit and inner suit) for additional protection during cleaning of tools and equipment after work is complete. Upon completion of work, the following procedures should be followed:

- Carefully remove outer suit and glove by rolling inside out.
- Place in a plastic bag that can be sealed.
- Complete cleaning of tools and equipment. See guidelines.
- Remove inner suit and gloves by rolling inside out being careful not to come in contact with any contaminated surfaces.
- Wash hands, arms and face (in that order) with soap and water for at least 20 seconds immediately after removing PPE.
- Keep your PPE clean by following manufacturer instructions carefully.



Additional Best Practice Recommendation for PPE

Important Note Related to Healthcare Facilities:

- If working in a healthcare facility, the Infectious Control Risk Assessment (ICRA) Program for the facility must be followed regarding
 - anterooms
 - wearing and removal of PPE
 - cleaning of tools
 - Removal of waste and material
 - Paths of worker travel



Personal Protective Equipment (PPE) for Working Near Plumbing Vents and Rooftop HVAC Equipment, Specifically Exhaust Fans

Mechanical tradespeople working near plumbing vents and rooftop HVAC equipment, specifically exhaust fans, should be provided proper personal protective equipment (PPE), training on how to properly use the PPE, and hand washing facilities.

Workers should wash hands, arms and face (in that order) with soap and water for at least 20 seconds immediately after removing PPE.

Personal Protective Equipment (PPE) for Working Near Plumbing Vents and Rooftop HVAC Equipment, Specifically Exhaust Fans

The following PPE is recommended for HVAC workers working near plumbing vents and rooftop HVAC equipment, specifically exhaust fans.

- **Safety Glasses with Face Shield** – To protect eyes and mouth from aerosol transmission of the virus.
- **Respiratory Protection** – Wear a NIOSH-approved N95 facemask or half-face respirator with HEPA filters to protect from inhalation of aerosol transmission.
- **Protective suits/coveralls** (such as Tyvek) – To protect against aerosol transmission.
- **Cut resistant outer gloves** – To protect from cuts and tears to inner glove.
- **Nitrile inner gloves** (6 mil thickness or greater) – To prevent exposure to liquids and when removing PPE and cleaning tools.
- **Disposable Booties** – To prevent potential contamination of work boots.



Important Note Related to Electrical Safety for COVID-19 Only

When working on energized electrical conductors or circuit parts, make sure you are protected first from arc flash and electrical shock hazards by complying with NFPA 70E - 2018.

Use all compatible protective measures against COVID-19, such as wearing an N95 facemask/respirator under your arc flash face shield and following through on the hygiene practices described in these guidelines.

Once trouble shooting is completed, shut off the power, lock it out, test it dead, remove your arc flash and electrical shock PPE, and wear the appropriate PPE for protection against COVID-19 described in these guidelines before completing your work.

Important Note Related to Healthcare Facilities

If working in a healthcare facility, the Infectious Control Risk Assessment (ICRA) Program for the facility must be followed regarding anterooms, wearing and removal of PPE, and cleaning of tools.

Procedures for Tool Cleaning

A clean work area and tool cleaning practices are also extremely important.

- Avoid sharing of tools with coworkers to the greatest extent possible.
- When choosing cleaning chemicals, look for cleaning agents effective against viral pathogens. In health care facilities, try to use the facilities cleaner when possible.
- If such cleaning agents are not available, use soap and water and dry tools thoroughly after use.
- May also use bleach solution by diluting 1 parts household bleach with 10 parts water. Spray onto surfaces or soak items in solution.
- EPA's (www.epa.gov) **List N: Disinfectants for Use Against SARS-CoV-2**

Training for Workers

All workers who handle human waste or sewage should receive training on disease prevention.

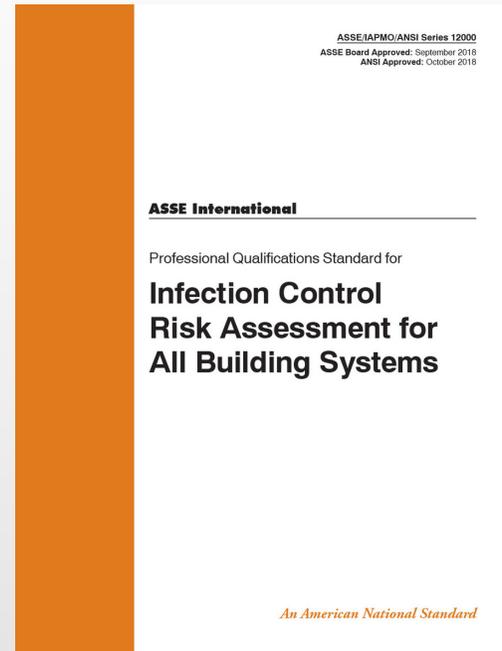
The training should include

- Basic hygiene practices
- Use and disposal of personal protective equipment
- Proper handling of human waste or sewage

Workers must also be urged to promptly seek medical attention if displaying any signs or symptoms such as vomiting, stomach cramps and watery diarrhea.

Training for Workers

It is recommended that all tradespeople be trained and certified to the ASSE Series 12000.



It is also recommended that contractor representatives be trained and certified to the ASSE 12020 Standard.

Training for Workers

ASSE International's Series 12000 Standard, Professional Qualifications Standard for Infection Control Risk Assessment for All Building Systems, is a standard that sets minimum criteria for the training and certification of pipe trades craftspeople, and other construction and maintenance personnel, on how to safely work in an environment with the potentially deadly diseases that may be present within worksites.

Training for Workers

ASSE Series 12000

- **ASSE 12000 – Infection Control for Tradespeople**
- **ASSE 12020 – Infection Control for Contractor Representatives**
- **ASSE 12060 - Water Quality Program Professional Qualifications Standard for Employers and Designated Representatives**
- **ASSE 12061 - Water Quality Program Professional Qualifications Standard for Plumbers**
- **ASSE 12062 - Water Quality Program Professional Qualifications Standard for Pipefitters and HVAC Technicians**
- **ASSE 12063 - Water Quality Program Professional Qualifications Standard for Sprinkler Fitters**

Training for Workers

ASSE International is making the ASSE Series 12000 Standard available for free at <https://asseplumbing.org/12000-2018> while the pandemic remains ongoing.

The ASSE 12000 certification training addresses viruses, including the Severe Acute Respiratory Syndrome (SARS) virus, but does not specifically reference COVID-19.

CDC Recommendations - www.coronavirus.gov

The Centers for Disease Control and Prevention (CDC) recommends that workers perform the following preventive/protective actions, generally and while at work:

- Wash hands frequently with soap and water for at least 20 seconds immediately after working on a sanitary waste and vent system.
- Avoid touching face, mouth, eyes, nose, or open sores and cuts while working on a sanitary waste and vent system.
- After working on a sanitary waste and vent system, wash hands with soap and water for at least 20 seconds before eating or drinking.
- After working on a sanitary waste and vent system, wash your hands with soap and water for at least 20 seconds before and after using the toilet.
- Before eating, remove soiled work clothes and eat in designated areas away from human waste and sewage-handling activities.
- Do NOT smoke or chew tobacco or gum while working on a sanitary waste and vent system.

CDC Recommendations - www.coronavirus.gov

- Keep open sores, cuts, and wounds covered with clean, dry bandages.
- Gently flush eyes with safe water if human waste or sewage contacts eyes.
- Use waterproof gloves to prevent cuts and contact with human waste or sewage.
- Wear rubber boots.
- Remove rubber boots and work clothes before leaving worksite.
- Clean contaminated work clothing daily with 0.05% chlorine solution (1-part household bleach to 100 parts water).
- Clean and disinfect tools and equipment used.

CDC Recommendations - www.coronavirus.gov

- Clean and disinfect the work area frequently.
- Cover your cough and/or sneeze with your bent elbow.
- Do not report to work when you feel ill.
- Report and document all exposures.
- If you start to feel ill, inform your supervisor immediately and document the incidence.
- Currently there is not a vaccination for COVID-19 but it is recommended that all other vaccinations be current.

Hand Washing

Stop Germs! Wash Your Hands.

When?

- After using the bathroom
- Before, during, and after preparing food
- Before eating food
- Before and after caring for someone at home who is sick with vomiting or diarrhea
- After changing diapers or cleaning up a child who has used the toilet
- After blowing your nose, coughing, or sneezing
- After touching an animal, animal feed, or animal waste
- After handling pet food or pet treats
- After touching garbage



How?



Wet your hands with clean, running water (warm or cold), turn off the tap, and apply soap.



Lather your hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.



Scrub your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.



Rinse hands well under clean, running water.



Dry hands using a clean towel or air dry them.

Keeping hands clean is one of the most important things we can do to stop the spread of germs and stay healthy.

LIFE IS BETTER WITH

CLEAN HANDS



www.cdc.gov/handwashing



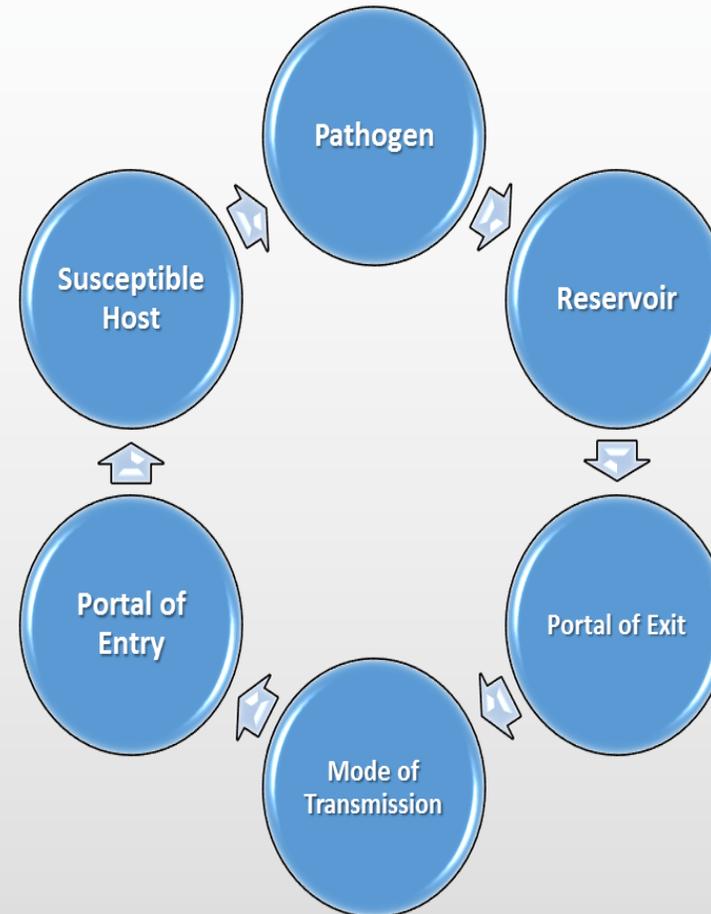
Practice Social Distancing

It is important to follow social distancing recommendations.

Try to keep a minimum six-foot distance between others.

Remember, it could take anywhere from 2 to 14 days for COVID-19 symptoms to appear, if they even appear at all.

If you believe you have contracted the virus, stay home, contact your supervisor and seek assistance from your medical provider.



I cannot locate or purchase certain PPE right now. How should I proceed?

This is currently a common problem. It is imperative that healthcare providers and first responders receive all of the necessary PPE first.

N 95 Masks

- For our purposes, it is possible to reuse and extend the life of N95 masks.
- Remember we are not treating infected individuals. The purpose of the tradesperson mask is to protect themselves from possible contaminated droplets from entering your airway.
- It has been reported that 3M's recommendation to medical providers is to keep the mask in a paper bag until use and placed back in the paper bag after use. The mask can be reused unless it becomes soiled or damaged, then it must be replaced. 3M also recommended the use of a face shield to protect the mask from vapor/droplet exposure and to cover the N-95 with a surgical mask.

I cannot locate or purchase certain PPE right now. How should I proceed?

N 95 Masks

- Remember that tradespeople working on drains or vents already should be wearing goggles and a full-face shield. The mask adds a layer of added protection for the nose and mouth. There are other options which will provide a minimum protection like surgical masks.
- Do not touch your face
- Wash hands, arms and face. Each for at least 20 seconds

I cannot locate or purchase certain PPE right now. How should I proceed?

Nitrile Gloves (6 mil thickness or greater)

- While it is the best practice to wear the inner nitrile gloves, work can still be performed safely without them.
- Drain cleaning or work performed on a drain or sewer line requires some type of impermeable gloves. They should be durable enough to hold up to the work being performed.
- Keep open sores, cuts, and wounds covered with clean, dry bandages.
- Wash hands for at least 20 seconds.

I cannot locate or purchase certain PPE right now. How should I proceed?

Tyvek suites

- Best practices recommends wearing at least one liquid-repellent coveralls like Tyvek. When working in conditions with higher exposure (sanitary drains) it is recommended to double up and follow the guidelines for removal.
- The purpose of this recommendation is to protect the tradesperson from having their clothing become contaminated. This would possibly allow spread throughout the rest of the individuals travels including their family.
- At a minimum, if you are working where possible splashing of human waste is a possibility, a liquid-repellent suite is required. It could be as simple as rain gear.
- If you are not going to encounter human waste, then any kind of disposable coveralls would be acceptable. Follow the procedures for removal and disposal.
- Wash hands, arms, and face for at least 20 seconds each.

I cannot locate or purchase certain PPE right now. How should I proceed?

If working in a healthcare facility, the Infectious Control Risk Assessment (ICRA) Program for the facility must be followed regarding anterooms, wearing and removal of PPE, and cleaning of tools.

Conclusion

Skilled tradespeople have been performing this type of work for decades. We are constantly being exposed to viruses like colds and flu's on job sites. Sanitary drain systems have the possibility of containing viruses like Hepatitis.

Through the years, we have learned and evolved. We know how to protect ourselves from possible exposures through training and proper use of PPE.

Today, we deal with an unknown Coronavirus – SARS CoV-2. It is highly contagious with no vaccination or medication available.

Using the knowledge and training we have, along with CDC recommendations, we have come together to provide these best practices guidelines.

We would like to thank all involved in the development of this program and hope that you and your fellow tradespeople remain safe while performing the essential work that we do.

Thank you