



WEATHERIZATION ASSISTANCE PROGRAM

COVID-19 Field Operations Guidelines and Resources

A collection of relevant safety guidelines for weatherization program field workers and staff. The subsequent information are guidelines; it is up to the field worker to enforce, uphold, and practice safety protocols as necessary. Keep the information in this packet accessible for reference while on-site.

1. Personal Protection Equipment Checklist

2. Field Worker Safety Guidelines

3. Employee / Client Health Screening Tips

• Energy Audit (Inspection) Safety Guidelines and Protocols

5. PPE Resources and Training Links

- CDC Stop Spread of Germs Poster
- National Association of Home Builders Basic Infection Prevention Guidelines
 - CDC Cloth Mask Use and Fabrication
 - N/R/P Mask Comparison
 - NIOSH Surgical Mask vs. N95 Differences
 - Milwaukee Tool Company Cleaning Guidelines
- The Energy Conservatory COVID19 Blower Door Considerations

WAP Field Worker List of Personal Protection Equipment & Materials

**Remember, the health and safety of you and those around you comes first.
Do not work in environment where you or others may be at risk.**

Gloves	<ul style="list-style-type: none">• Disposable – Latex, neoprene. Discard once soiled.• Washable – Change between appointments. Clean after each daily use.
Face Covering	<ul style="list-style-type: none">• Cloth Mask, Filtering Respirators – Each must fit snug and cover both nose and mouth.• Consult manufacturer sites on reuse protocols. If not specified as “single use” or “discard after use” mask may potentially be worn again depending on condition.
Eye Protection	
Liquid Sanitizer	<ul style="list-style-type: none">• At least 60% alcohol. For use
Sanitizer Wipes	<ul style="list-style-type: none">• To clean equipment and areas frequently touched
Household Cleaner(s)	<ul style="list-style-type: none">• To clean, possibly disinfect surfaces and equipment. Refer to EPA list of approved disinfectants
Liquid Soap	<ul style="list-style-type: none">• To clean both hands, body, and equipment as necessary
Bucket	<ul style="list-style-type: none">• To use as necessary to clean tools and equipment
Shoe covers	<ul style="list-style-type: none">• Washable – Keep multiple and change between appointments. Wash prior to next use.• Disposable – Keep multiple and discard after each home visit.
Paper towels	
Plastic Bags	<ul style="list-style-type: none">• Discard worn PPE. Use gloves when discarding soiled materials.• Contain worn, soiled PPE or clothing that is able to be washed / disinfected
Plastic Sheeting	<ul style="list-style-type: none">• Possible containment of workspace
Box / Window Fan	<ul style="list-style-type: none">• Use of a fan mounted in window will help ventilate room where client is occupying. Not applicable in all settings. Use discretion.
Bodysuits	<ul style="list-style-type: none">• Full body coverings may be applicable to contain clothes from the working environment. Discard after work is complete if not meant for reuse.

Tennessee Coronavirus Resources

- Remote Testing - <https://www.tn.gov/health/cedep/ncov/remote-assessment-sites.html>
- TN Coronavirus Public Information Number - (877).857.2945 10am to 10pm

WAP FIELD WORKER COVID-19 SAFETY GUIDELINES

STAY HOME IF SICK.
DO NOT ENTER WORKPLACE IF OCCUPANTS SHOW SYMPTOMS.

PLAN

- Gather list of supplies, materials, equipment to limit trips outside the work site.
- Outline workflow to reduce number of workers on-site or within 6 feet of one another.
- Develop schedule to incorporate PPE checks and routine cleaning into the workday.
- Stage work processes in advance to identify efficiency gaps and possible unsafe practices.

COMMUNICATE

- Call in advance of arrival to client home.
- Keep identification handy to show client when arriving on-site.
- Notify client and employees of safety guidelines prior to beginning work.
- Understand concerns/needs of the client and employees.
- Regularly remind safety guidelines to all employees.

CLEAN

- Maintain habits to frequently clean hands and often used surfaces.
- Disinfect or clean tools after daily use.
- Wash storage bags/cases to maintain cleanliness and appearance.
- Wipe down interior vehicle surfaces.
- Practice good personal hygiene and maintenance of tools/equipment.

PROTECT

- Wear all available PPE at all times.
- Advise occupants to maintain proper distance and use of face coverings.
- Minimize ride-sharing and if sharing, keep to a single driver per day.
- Limit tool sharing.
- Reduce, or eliminate, use of on-site restroom as much as possible.

EDUCATE

- Train and supervise employees on proper use of PPE and cleaning of supplies/equipment.
- Cross-train employees, staff in case of absenteeism.
- Understand COVID-19 risks and symptoms.

WAP COVID-19 CLIENT/EMPLOYEE SCREENING EXAMPLE QUESTIONS AND SYMPTOMS CHECK

Screening Questions

Has anyone in the household tested positive for COVID-19?

Is anyone in your household experiencing fever (100.4 +), cough or shortness of breath in the last two weeks?

Has anyone in your household been in contact with someone who has had a fever, cough or shortness of breath in the last two weeks?

COVID-19 COMMON SYMPTOMS

Cough

Shortness of Breath

Chills and/or Repeated Shaking

Muscle Pain

Diarrhea

Fever

Sore Throat

New loss of Taste or Smell

Symptoms may appear 2-14 days after infection

ONLINE SYMPTOMS CHECK RESOURCES

1. [Center for Disease Control – Symptoms Testing \(Self Check\)](#)
2. [Emory University – Coronavirus Checker](#)

TENNESSEE CORONAVIRUS SYMPTOM CHECK RESOURCES

1. **Remote Testing** - <https://www.tn.gov/health/cedep/ncov/remote-assessment-sites.html>
2. **TN Coronavirus Public Information Number – 877.857.2945 (10am – 10pm)**

ENERGY AUDIT ON-SITE GUIDELINES & PROCEDURES

ADVANCE COMMUNICATION

Call Client

- Inform access must be gained throughout home
- Introduce diagnostic procedures
- Explain safety protocols

Understand

- Gain client needs and concerns prior to arrival
- Can auditor/field worker comply with client needs?

Decide

- Do both the client and field worker agree to continue with appointment?

ON-SITE WEATHERIZATION SERVICES

PPE / Protocols

- Wear PPE as recommended
 - Carry identification
- Evaluate condition of personal appearance and equipment
- Sanitize/wash hands/equipment prior to entry, during work, and upon completion
- Suggest occupant(s) wear mask

Social Distance

- No handshakes
- Maintain 6 foot distance during interactions
- Suggest primary room(s) where occupant(s) remain during audit.
- Suggest single entryway to limit repeated exposure throughout parts of dwelling

Outline Steps

- Establish timeframe of energy audit
- Identify when exterior, interior, and diagnostics will take place.
- Keep tools & equipment out of dwelling as much as possible

CLIENT EDUCATION – *Energy Audit*

Client

- Ask if client received education packet
- Ask client to furnish personal pen

Discuss

- Review materials and forms with client
- Auditor signs consent form (*QCI Form during inspection*)
- Client signs consent form

Energy Auditor

- Auditor photographs consent form alongside education materials
- Leaves all materials and signed forms with client
- Uploads to WAPez

ENERGY AUDIT ON-SITE GUIDELINES & PROCEDURES

ENGINEERING CONTROLS

Air Leakage Analysis

- Consider pressurize blower door /duct blaster
- Offer occupant(s) step outdoors, garage, unconditioned basement - *if possible*

Occupant Isolation

- Offer to partition section of dwelling
- Refer to EPA Renovate Right Work Practices

Ventilation

- Seek permission to open windows and turn on exhaust fans - *not during blower door*
- Promote ASHRAE 62.2 and why it's beneficial

AIR LEAKAGE DIAGNOSTIC TIP:

Blower door fans operating in depressurization mode introduce a huge amount of air into the dwelling. The vast amount of moving air may serve to stir small particulates such as virus or bacteria. Yet, diluted air and ventilation do provide benefit to limiting exposure to these particulates and operation of the blower door or duct blaster should be less concern than contracting infection from direct contact. **Always conduct thorough evaluation of dwelling prior to operating blower door or duct blaster and wear PPE at all times.** *[Refer to TEC's COVID19 Blower Door Considerations](#)*

RESOURCES

Virus Contamination on various surfaces

Cardboard, Paper	Up to 24 hours
Plastic	Up to 2-3 days
Copper	Up to 4 hours
Stainless Steel	Up to 2-3 days
Aerosols	Up to 3 hours

CLIENT INFORMATION

1. Remote Testing - <https://www.tn.gov/health/cedep/ncov/remote-assessment-sites.html>
2. TN Coronavirus Public Information Number – 877.857.2945 (10am – 10pm)
3. Tennessee Department of Health - <https://www.tn.gov/health/cedep/ncov.html>
4. Center for Disease Control - <https://www.cdc.gov/coronavirus/2019-nCoV/index.html>

FACE MASK RESOURCES

CLOTH MASK FABRICATION

- CDC Tips For Self-Made Face Coverings

REUSE OF FACE COVERING

- NIOSH Face Mask Reuse Training

PROPER USE OF DONNING RESPIRATORY MASKS

- OSHA Respiratory Mask Training - Construction
- OSHA Fit Test Training

FACE MASK COMPARISON INFOGRAPHICS

- Differences between N/R/P, 95/99/100
- Differences between surgical masks and N95

WORKSITE CLEANING AND DISINFECTANT RESOURCES

TOOL CLEANING

- Example : Milwaukee Tool Company

ENVIRONMENTAL PROTECTION AGENCY

- List of Approved COVID-19 Disinfectants

CENTER FOR DISEASE CONTROL

- Cleaning and Disinfection for Households

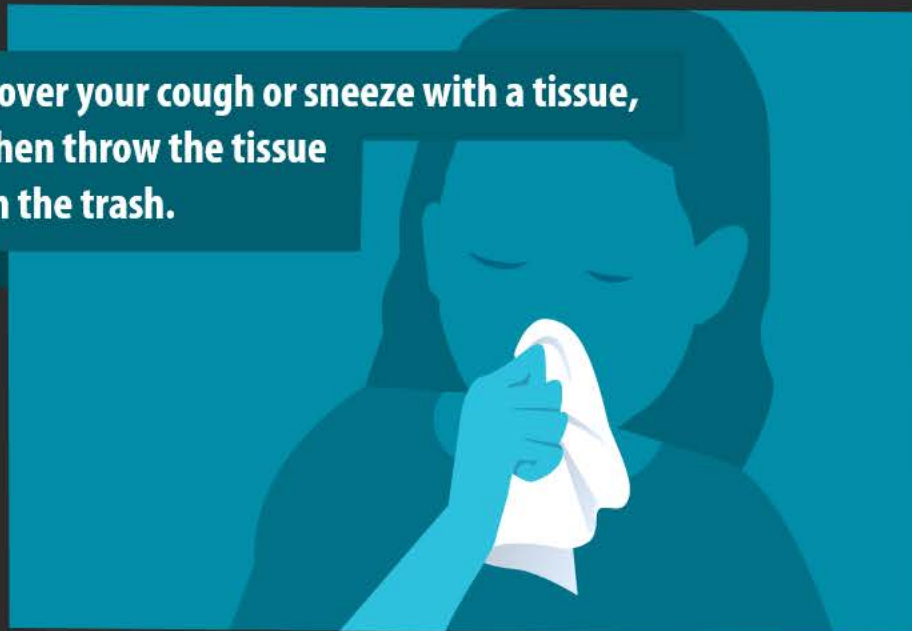
STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Avoid close contact with people who are sick.



Cover your cough or sneeze with a tissue, then throw the tissue in the trash.



Avoid touching your eyes, nose, and mouth.



Clean and disinfect frequently touched objects and surfaces.



Stay home when you are sick, except to get medical care.




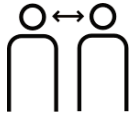









Wash your hands often with soap and water for at least 20 seconds.



COVID-19 Basic Infection Prevention Measures

COVID-19, caused by a new coronavirus, is a respiratory illness that can spread from person to person. The following infection prevention measures may help prevent transmission on construction job sites.

	Stay home if you are sick. DO NOT WORK.
	Wash hands frequently or provide alcohol-based hand rubs containing at least 60% alcohol.
	Cover coughs and sneezes.
	Practice social distancing — try to maintain SIX feet between each worker.
	Wear face covering (cloth, bandana, etc.) <u>or</u> mask over nose and mouth to prevent spread of virus.
	Reduce the size of any group at any one time to 10 people or fewer or LIMIT all in-person meetings.
	Minimize ride-sharing. While in vehicle, employees must ensure adequate ventilation.
	Avoid sharing tools with co-workers, if possible.
	Clean and disinfect frequently used tools, equipment, and frequently touched surfaces (door handles, handrails, machinery controls, cell phones, tablets) on a regular basis.
	If N95 respirator masks are not available, minimize dust and airborne contaminants by using engineering and work practice controls.
	Use proper personal protective equipment (PPE) when cleaning and disinfecting, such as gloves and eye protection.

Revised – 4/23/2020

Use of Cloth Face Coverings to Help Slow the Spread of COVID-19

How to Wear Cloth Face Coverings

Cloth face coverings should—

- fit snugly but comfortably against the side of the face
- be secured with ties or ear loops
- include multiple layers of fabric
- allow for breathing without restriction
- be able to be laundered and machine dried without damage or change to shape

CDC on Homemade Cloth Face Coverings

CDC recommends wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain (e.g., grocery stores and pharmacies), **especially** in areas of significant community-based transmission.

CDC also advises the use of simple cloth face coverings to slow the spread of the virus and help people who may have the virus and do not know it from transmitting it to others. Cloth face coverings fashioned from household items or made at home from common materials at low cost can be used as an additional, voluntary public health measure.

Cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or is unconscious, incapacitated or otherwise unable to remove the cloth face covering without assistance.

The cloth face coverings recommended are not surgical masks or N-95 respirators. Those are critical supplies that must continue to be reserved for healthcare workers and other medical first responders, as recommended by current CDC guidance.

Should cloth face coverings be washed or otherwise cleaned regularly? How regularly?

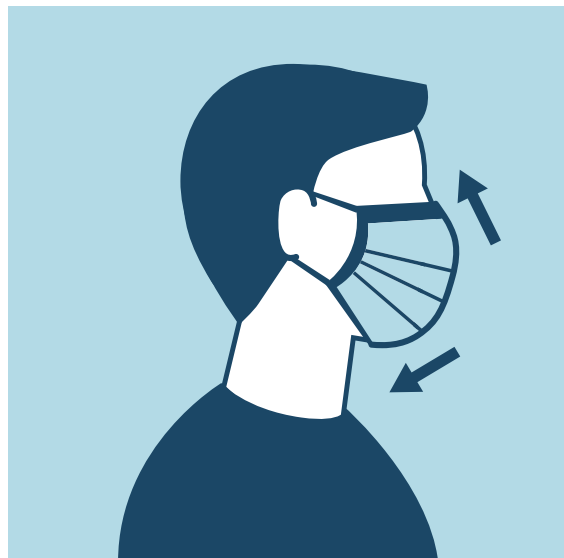
Yes. They should be routinely washed depending on the frequency of use.

How does one safely sterilize/clean a cloth face covering?

A washing machine should suffice in properly washing a cloth face covering.

How does one safely remove a used cloth face covering?

Individuals should be careful not to touch their eyes, nose, and mouth when removing their cloth face covering and wash hands immediately after removing.

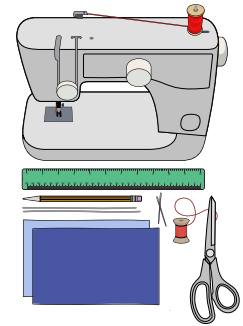


cdc.gov/coronavirus

Sewn Cloth Face Covering

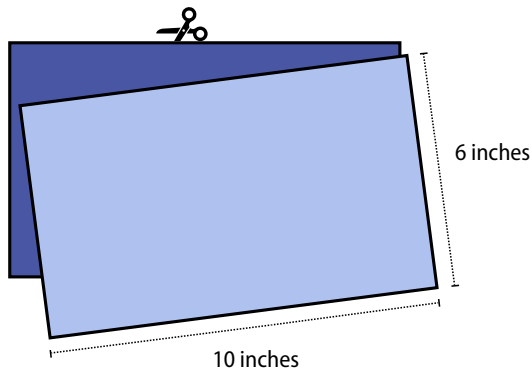
Materials

- Two 10"x6" rectangles of cotton fabric
- Two 6" pieces of elastic (or rubber bands, string, cloth strips, or hair ties)
- Needle and thread (or bobby pin)
- Scissors
- Sewing machine

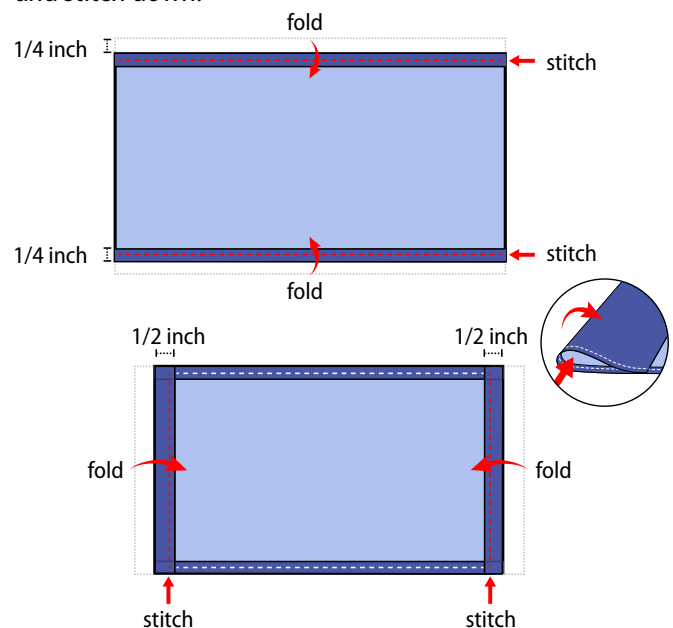


Tutorial

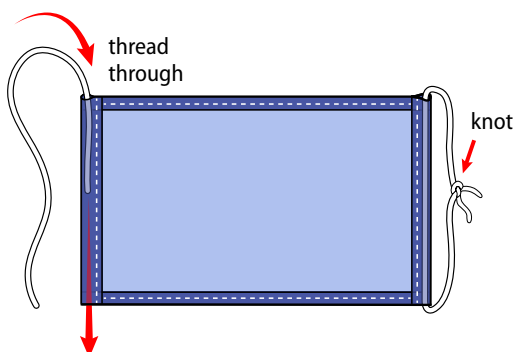
1. Cut out two 10-by-6-inch rectangles of cotton fabric. Use tightly woven cotton, such as quilting fabric or cotton sheets. T-shirt fabric will work in a pinch. Stack the two rectangles; you will sew the cloth face covering as if it was a single piece of fabric.



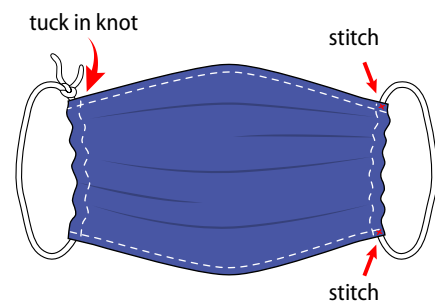
2. Fold over the long sides $\frac{1}{4}$ inch and hem. Then fold the double layer of fabric over $\frac{1}{2}$ inch along the short sides and stitch down.



3. Run a 6-inch length of $\frac{1}{8}$ -inch wide elastic through the wider hem on each side of the cloth face covering. These will be the ear loops. Use a large needle or a bobby pin to thread it through. Tie the ends tight. Don't have elastic? Use hair ties or elastic head bands. If you only have string, you can make the ties longer and tie the cloth face covering behind your head.



4. Gently pull on the elastic so that the knots are tucked inside the hem. Gather the sides of the cloth face covering on the elastic and adjust so the mask fits your face. Then securely stitch the elastic in place to keep it from slipping.

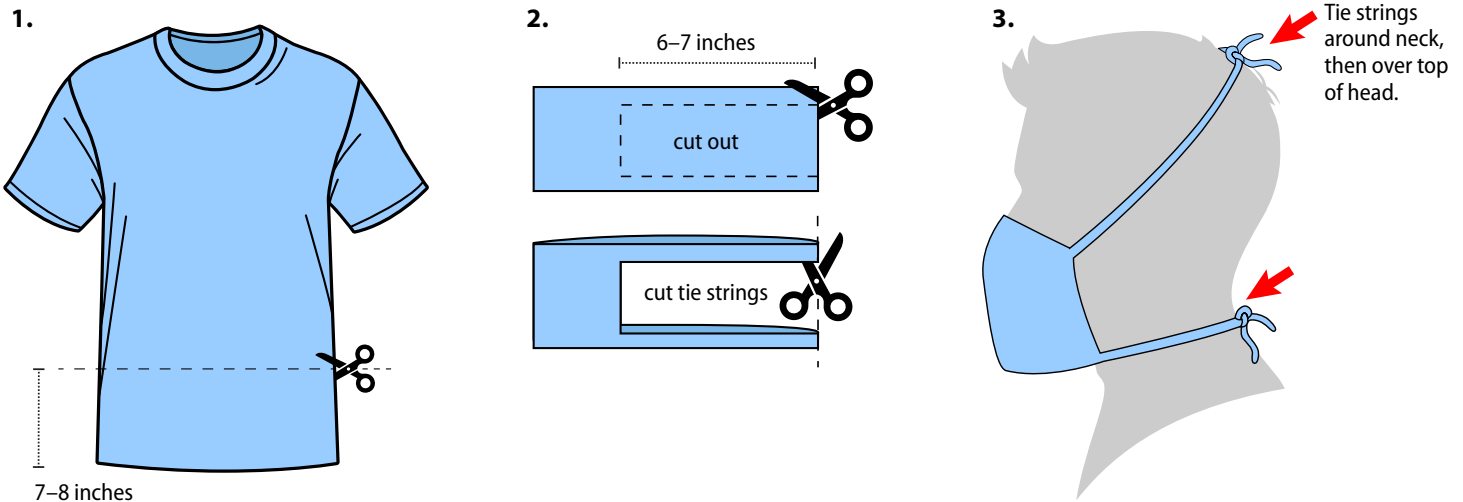


Quick Cut T-shirt Cloth Face Covering (no sew method)

Materials

- T-shirt
- Scissors

Tutorial

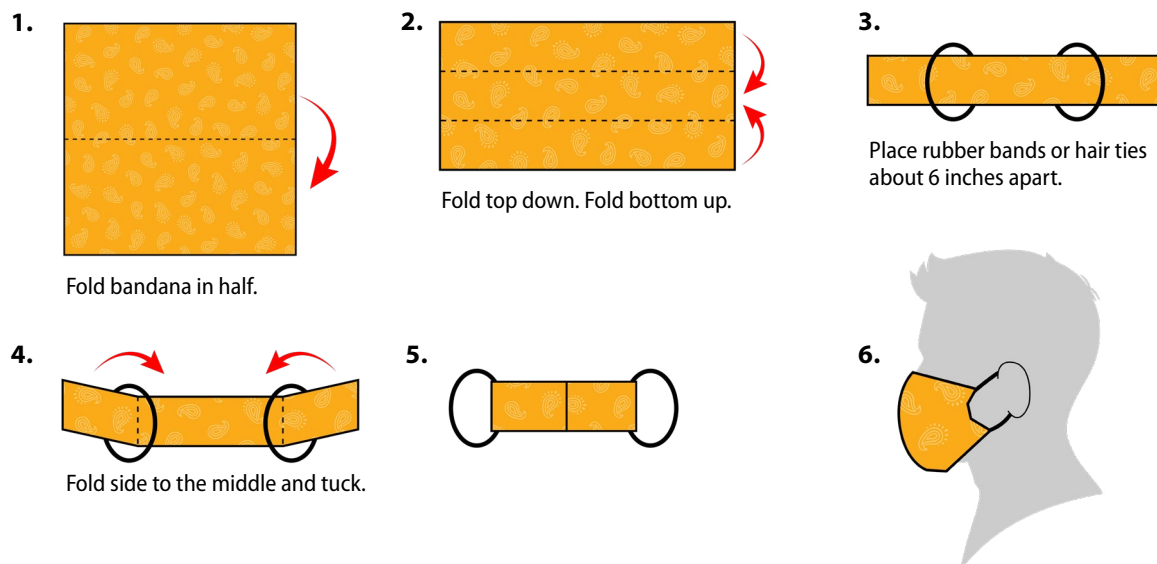


Bandana Cloth Face Covering (no sew method)

Materials

- Bandana (or square cotton cloth approximately 20"x20")
- Rubber bands (or hair ties)
- Scissors (if you are cutting your own cloth)

Tutorial



NIOSH RESPIRATOR FILTER CLASSES

NIOSH classifies the filtering media in respirators based on its resistance to oil and its particle filtering efficiency. The resistance to oil is designated as “N”, “R”, or “P”. Particle filtering efficiency is designated “95”, “99”, or “99.97”.



**NOT RESISTANT
TO OIL**

N95, N99, N100

Filters at least
95%, 99%, or 99.97%
of airborne particles

**SOMEWHAT RESISTANT
TO OIL**

R95, R99, R100

Filters at least
95%, 99%, or 99.97%
of airborne particles

**STRONGLY RESISTANT
TO OIL/OIL PROOF**

P95, P99, P100

Filters at least
95%, 99%, or 99.97%
of airborne particles

OILS

When products containing oil (like fuel, lubricating or hydraulic oils, solvents, paints, and pesticides) are sprayed or used in processes producing aerosols or droplets, the oil component may become airborne.

Understanding the Difference



Surgical Mask



N95 Respirator

Testing and Approval

Cleared by the U.S. Food and Drug Administration (FDA)

Evaluated, tested, and approved by NIOSH as per the requirements in 42 CFR Part 84

Intended Use and Purpose

Fluid resistant and provides the wearer protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer’s respiratory emissions.

Reduces wearer’s exposure to particles including small particle aerosols and large droplets (only non-oil aerosols).

Face Seal Fit

Loose-fitting

Tight-fitting

Fit Testing Requirement

No

Yes

User Seal Check Requirement

No

Yes. Required each time the respirator is donned (put on)

Filtration

Does NOT provide the wearer with a reliable level of protection from inhaling smaller airborne particles and is not considered respiratory protection

Filters out at least 95% of airborne particles including large and small particles

Leakage

Leakage occurs around the edge of the mask when user inhales

When properly fitted and donned, minimal leakage occurs around edges of the respirator when user inhales

Use Limitations

Disposable. Discard after each patient encounter.

Ideally should be discarded after each patient encounter and after aerosol-generating procedures. It should also be discarded when it becomes damaged or deformed; no longer forms an effective seal to the face; becomes wet or visibly dirty; breathing becomes difficult; or if it becomes contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.



CLEANING OF TOOLS TO HELP PREVENT SPREAD OF COVID-19

Should a tool need to be cleaned that does not have blood or visible bodily fluids on it, Milwaukee® recommends the following protocol. This protocol is subject to the recommendations of the Centers for Disease Control (“CDC”), OSHA, and those of State and Local health departments. Please follow applicable guidelines of these agencies.

- People handling tools should wash their hands or use a proper hand sanitizer before and after use to help prevent contamination.
- People handling tools should be properly trained and protected using necessary Personal Protective Equipment (PPE).
- Clean tools with mild soap, a clean damp cloth, and, as needed, an approved diluted bleach solution only. Certain cleaning agents and solvents are harmful to plastics and other insulated parts and shouldn't be used.
- Milwaukee® does not recommend cleaners that have conductive or corrosive materials, especially those with ammonia. Some of these include gasoline, turpentine, lacquer thinner, paint thinner, chlorinated cleaning solvents, ammonia and household detergents containing ammonia.
- Never use flammable or combustible solvents around tools.

CLEANING OPTIONS:

1. **MILD SOAP & REST**

- If no blood was present on the product, it can be **cleaned with mild soap and a damp cloth to remove the fluids and then left to rest for 3 days**. This is based on CDC advisement that the virus may live on plastic surfaces for up to 72 hours, which suggest that the virus would no longer be harmful after the resting period. After this, the tool can be cleaned again.

*Recommended for batteries

2. **MILD SOAP & DILUTED BLEACH SOLUTION**

- If no blood was present on the product, it can be **cleaned with a mild soap and damp cloth to remove dirt and grease and then decontaminated with a diluted bleach solution**, which is consistent with CDC advise. The full diluted bleach cleaning procedure can be found below.

*Not recommended for batteries

PROCEDURE

1. Clean the product surface with mild soap and water to remove dirt and grease.
2. Dip a clean cloth into the dilute bleach solution.
3. Wring out the cloth so it is not dripping wet.
4. Gently wipe each handle, grasping surfaces, or outer surfaces with the cloth, using care to ensure liquids do not flow into tool.
5. No other cleaning material should be used as the diluted bleach solution should never be mixed with ammonia or any other cleanser.
6. Allow the surface to dry naturally.
7. The cleaner should avoid touching their face with unwashed hands and should immediately wash their hands after this process.

A properly diluted bleach solution can be made by mixing:

- 5 tablespoons (1/3rd cup) bleach per gallon of water; or
- 4 teaspoons bleach per quart of water

NOTE: If blood was on the product, advance cleaning is needed. Follow established Bloodborne Pathogen protocols for your business. Under OSHA requirements, anyone required to perform this type cleaning should be trained in Bloodborne Pathogens and the use of the necessary PPE for this work.

Is it Safe to do a Blower Door Test during the COVID-10 Pandemic?

This is primarily a healthcare question, which we are not qualified to answer, so you should also seek input from health care officials. The following information is provided as general comments, not as guidance. It may also help health care officials understand what a Blower Door does since it is probably unfamiliar to most of them.

What does a Blower Door do? In testing a building's air tightness, a blower door causes air to pass through the leaks that occur in a building, sometimes in directions that they do not normally flow. In any pressurization or depressurization test, outdoor air is flowing into the building (or the space being tested, if it's not the whole building) and indoor air is flowing out of the building (or the space being tested). This could cause the flow of air containing the virus between infected and uninfected persons and could stir up particles that contain the virus.

The following table provides some thoughts on the relative risks associated with a blower door test, based on our understanding.

Scenario	Description	Risk to Tester	Risk to Occupants
1	Building that is not (yet) occupied	Risk is minimal	Risk is minimal
2	Occupied single family dwelling that does not share any walls with adjacent dwellings See Guideline on Page 2	Risk is lower (See note 1)	Risk is lower (See note 1)
3	Occupied multi-family dwelling or a dwelling that shares walls with other dwellings	Risk is higher (See Note 2)	Risk is med to high (See Note 2)
4	Buildings occupied by people known to be infected, or suspected of being infected with COVID-19	Risk is highest (See Note 3)	Risk is highest (See Note 3)

Note 1

The CDC guidelines for cleaning a building after someone who is COVID-19 positive has left the building include the following: "Open outside doors and windows to increase air circulation in the area." This implies ventilating potentially contaminated air to outside and bringing outdoor air inside are safe practices during the pandemic.
<https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html>

Note 2

The blower door test will likely cause air to flow between dwellings potentially spreading infectious air. Testing should likely be avoided.

Note 3

Testing should not occur until the occupants meet CDC recommendations for "all-clear".

Are there Best Practices to Run a Blower Door Test during the COVID-19 Pandemic?

Guideline to minimize the risk of testing an occupied single-family dwelling, with no shared walls during the COVID-19 Pandemic (Scenario #2 above).

The Energy Conservatory has been asked to respond to the question “What is the safest method for doing a blower door test during the COVID-19 Pandemic?” The short answer is “It depends on many factors that will be different for each test.” Everyone who performs a blower door test during the pandemic should follow CDC and local health care officials guidelines. As a part of this, we encourage testers to think carefully about their unique situation and consider where the air is coming from and where it is going during the blower door test. We have some suggestions which we believe will lower the risk for this type of test in many circumstances.

We suggest: Follow CDC guidelines - Wear PPE, follow social distancing guidelines. Run a pressurized test from outside the building, (but still ensure house is properly set-up for the test). During the test, move away from the fan intake.

Here are the details behind our suggestions:

1. Always wear appropriate personal protective equipment and follow social distancing guidelines, per CDC, your local health officials, and your employer.
 - a. Link: <https://www.cdc.gov/coronavirus/2019-nCoV/index.html>
2. In general, during the test it is better to be outside the home than inside
 - a. This is best achieved performing a Pressurizing Blower Door test
 - b. Pressurization is preferred over de-pressurization to minimize opportunity for backdraft or other concerns which you may not be able to address or would require an additional trip inside the home during set-up of the home and then returning after the test to turn appliances back on.
 - c. If the home is pressurized, you may not need to turn off any combustion appliances prior to the test, since you will be pressurizing and not risking backdraft
 - i. This may also give you the option to set-up the home more quickly yourself (limiting your time in the home) or even having the homeowner assist in setting up the home by closing windows and opening interior doors.
 - ii. NOTE: Pressurization tests often result in a higher leakage rate than depressurization tests because pressurization will open backdraft dampers, and depressurization will close them. You may need to adjust your test procedures accordingly if comparing air tightness before and after air sealing work is done.
 - d. To limit potential exposure of occupants to the person performing the test, move away from the fan intake during the test.
3. Equipment surfaces should be cleaned per CDC disinfecting guidelines prior to being packed up.
 - a. <https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html>