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RESPIRATORY PROTECTION

It is the policy of the Hillsborough **Fire District to** maintain comprehensive occupational safety and health programs based upon sound engineering principles, educational advances, and program enforcement. This document establishes Departmental policy, responsibilities, and requirements for the protection of firefighters whose job requires the use of respiratory protection.

This document will also provide assistance to the firefighter in the use and care of respiratory protection.

The Hillsborough Fire District Safety Officer is appointed every year by the Board of Fire Commissioners. He/she shall oversee this program and will develop written detailed instructions covering each of the basic elements in this program, he/she is authorized to amend these instructions with the approval from the Board of Fire Commissioners.

SECTION 1 - STANDARD OPERATING PROCEDURES

General

Firefighters shall wear a self-contained breathing apparatus (SCBA) whenever operating in an unknown environment or one considered Immediately Dangerous to Life and Health (IDLH). IDLH conditions are not limited to the following conditions:

- while engaged in interior structural firefighting;
- while working in confined spaces where toxic products or an oxygen deficient atmosphere may be present;
- during emergency situations involving toxic, flammable or combustible substances; and
- during all phases of firefighting and overhaul.

Firefighters wearing an SCBA must activate the personal alert safety system (PASS) device by turning the air cylinder on before entering an IDLH area where respiratory protection is required.

Firefighters wearing SCBA shall conduct a seal check prior to each use. The seal check is to be performed by connecting the "Stage 2" regulator to the facepiece with the air cylinder turned off, ***taking a deep breath and holding the breath for 3 -5 seconds to determine if there is air entering the facepiece from around the seal. Using the palm of the hand should not be used to check for a proper seal.***

Firefighters shall not remove the SCBA at any time in the IDLH atmosphere. The SCBA shall be used in accordance with the manufacturers instructions (see Appendix A).
All firefighters shall continue to wear an SCBA until they exit the IDLH or the officer in charge determines that respiratory protection is no longer required. The IDLH shall be checked by using a calibrated 4-Gas meter.

Protective Clothing

Firefighters wearing an SCBA or otherwise operating within an IDLH shall be fully protected with the use of approved structural firefighting clothing that meet the requirements of the OSHA Standards for Firefighters (29 CFR 1910.134). Protective clothing shall include turnout coat, bunker pants, gloves, boots, helmet, fire resistant hood, and SCBA integrated PASS device.

Procedures for Interior Structural Firefighting

In interior structural fires, the fire department shall ensure that:

- At least two firefighters enter the IDLH atmosphere and remain in visual or voice contact with one another at all times;
- At least two firefighters will be located outside the IDLH atmosphere ready to render assistance to the interior crew; and
- All firefighters engaged in interior structural firefighting shall use an SCBA.

Note: One of the two firefighters located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as the firefighter is able to perform assistance or rescue activities without jeopardizing the safety or health of any firefighter working at the incident.

Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire RIC has assembled.

There must always be at least two firefighters stationed outside during interior structural firefighting. They must be trained, equipped, and prepared to enter if necessary to rescue firefighters inside. However, the incident commander has the responsibility and flexibility to determine when more than two outside firefighters are necessary given the circumstances of the fire. The two-in/two-out rule does not require an arithmetic progression for every firefighter inside, i.e. the rule should not be interpreted as four-in/four-out, eight-in/eight-out, etc.

Firefighters will wait to commence interior structural firefighting, until the proper number of firefighters can be assembled on scene as required by the response. During this time, the fire will be attacked only from the outside, sizing-up operations will occur and emergency rescue necessary to save lives may take place.

One of the standby firefighters may have other duties such as serving as the incident commander, safety officer, or operator of fire apparatus. However, one of the outside firefighters must actively monitor the status of the inside firefighters and will not be assigned additional duties. The second outside firefighter may be involved in a wide variety of activities. Both of the outside firefighters must be able to provide support and assistance to the two interior firefighters; any assignment of additional duties for one of the outside firefighters must be weighed against the potential for interference with this requirement. Proper assignment of firefighting activities at an interior structural fire must be determined by the incident commander and is dependent on the existing firefighting situation. Consideration of all worksite variables and conditions, and the judgement of the incident commander is critical.

The two firefighters entering an IDLH atmosphere to perform interior structural firefighting must maintain visual or voice communication at all times. Electronic methods of communication such as the use of radios shall not be substituted for direct visual contact between team members in the danger area. However, reliable electronic communication devices are not prohibited and certainly have value in augmenting communication and may be used to communicate between inside team members and outside standby firefighters.

SECTION 2 - TRAINING

SELF CONTAINED BREATHING APPARATUS TRAINING

Firefighters wearing respiratory protection shall be trained in proper use, cleaning and maintenance. No firefighter shall wear respiratory protection without training as specified in this document.

Training in the use of respiratory protection shall be done in two phases. Each new firefighter will be given initial training before using respiratory protection and annual training thereafter.

New Recruit Training

Initial training is to be provided during the Fire Fighter I Course at a State approved training academy. No firefighter is to use respiratory protection unless training has been successfully completed. Firefighters trained at other than a state approved fire academy must be certified as trained by the Fire District Safety Officer before wearing an SCBA. Each new recruit firefighter must pass a facepiece fit-test prior to beginning SCBA training.

Annual Training/Fit Tests

On-going training shall be provided to all firefighters of the Hillsborough Fire District

Each firefighter must pass a facepiece fit-test annually training. Fit test records shall be maintained at the Bureau of Fire Safety office.

Course Content

Initial and annual training in respiratory protection shall be conducted as specified in Appendix B.

FILL STATION TRAINING

SCBA cylinders will be filled only by firefighters who have completed fill station training. Retraining will be provided annually.

Course Content

Initial and annual fill station training shall be conducted as specified in Appendix C.

SECTION 3 - RESPIRATOR FITTING AND SEAL CHECK

Inspection Before Use

Before using an SCBA, each firefighter shall select and wear the correct size facepiece as determined by initial and annual fit testing. A firefighter shall not wear respiratory protection unless the proper size facepiece is available and the equipment is in proper working condition according to the manufacturer's specifications.

Effective Seal Required

An effective face-to-facepiece seal is extremely important when using respiratory protective equipment. Minor leakage can allow contaminants to enter the facepiece, even with a positive pressure SCBA. Any outward leakage will increase the rate of air consumption, reducing the time available for use and safe exit. The facepiece must seal tightly against the skin, without penetration or interference by any protective clothing or other equipment.

Nothing can be between the sealing surface of the mask and the face of the wearer, including but not limited to, eyeglasses, protective hoods, and beards or other facial hair.

Firefighters shall perform a seal check prior to every SCBA use. SCBA can only be worn when an adequate seal is achieved. The seal check is to be performed by connecting the "Stage 2" regulator to the facepiece with the cylinder turned off, ***taking a deep breath and holding the breath for 3 -5 seconds to determine if there is air entering the facepiece from around the seal***. ***Using the palm of the hand should not be used to check for a proper seal.***

SECTION 4 - INSPECTION, STORAGE, MAINTENANCE AND AIR SUPPLY

Inspection
Regular periodic inspections are required to ensure that all respiratory protection equipment is property operating and available for use.

Inspection Schedule

All SCBA and spare cylinders shall be inspected after each use and at least monthly. Guidelines for inspection are in the manufacturer's instructions found in Appendix A of this program.

After each inspection, the appropriate forms shall be completed. SCBA units determined to be unfit for use shall be taken out of service, and tagged with a description of the particular defect.

In the event replacement or repair of SCBA components is necessary, it shall be performed according to manufacturer's instructions and only by persons trained and certified by the manufacturer or returned to the manufacturer's service facility.

Firefighters will not subject SCBA units to unnecessary abuse due to neglect and/or carelessness. Caution must especially be exercised to protect the facepiece section of the mask from being scratched or damaged.

Each SCBA shall be cleaned and disinfected after each use. Only cleaning/sanitizing solutions for respiratory equipment will be used for cleaning and disinfection.

SCBA cylinders shall be hydrostatically tested within the period specified by the manufacturer and applicable governmental agencies. Composite cylinders must be tested every five (5) years**.** Composite cylinders will be removed from service after 15 years from the first hydrostatic test date or as specified by the manufacturer.

Storage

All units shall be stored so that they are protected against direct sunlight, dust accumulation, severe temperature changes, excessive moisture, fumes, and damaging chemicals. Care is to be taken so that the means of storage does not distort or damage rubber or elastomeric components.

Air Supply

Breathing air in the SCBA cylinder shall meet the requirements of the Compressed Gas Association G-7.1-1989, COMMODITY SPECIFICATION FOR AIR, with a minimum air quality of Grade D. The Fire Department shall ensure that private vendors supplying compressed breathing air provide a copy of the most recent inspection and certification.

The Fire Department shall assure that sufficient quantities of compressed air are available to refill SCBA for all emergencies. THIS SHALL BE ACCOMPLISHED WITH THE USE OF THE MOBILE CASCADE SYSTEMS AND THE AIR COMPRESSOR LOCATED AT STATION 38. Air cylinders for SCBA shall be filled only by personnel who have completed fill station training. Compressed oxygen shall not be used in open-circuit SCBA.

SECTION 5 - MEDICAL EVALUATION

A medical evaluation to determine the firefighter's ability to wear a SCBA will be provided. Only firefighters that are medically able to wear SCBA will be allowed to do so. Appendix D contains the medical evaluation protocol.

SECTION 6 – RECORD KEEPING

- Completed SCBA inspection forms will be maintained by the Fire Safety office.
- Records/results of air quality tests will be maintained by the Fire Safety office.
- Completed fit test records will be maintained by the Fire Safety office.
- Each firefighter will receive a copy of his/her fit test record.
- Records for both recruit training as well as on-going SCBA training records will be maintained by each individual fire department**.**
- Certificates of completion for Fire Fighter I courses will be maintained by each individual fire department.
- Fill station training records will be maintained by each individual fire department.
- Medical Evaluation Results Forms will be maintained by the Fire Safety office.

SUMMARY OF RESPIRATORY PROTECTION PROGRAM RECORDS

Type of Record	Keep Records
SCBA Inspection Records After Use Monthly	In accordance with state and federal regulations.
SCBA Maintenance/Repair Records	In accordance with state and federal regulations.
Air Quality Test	In accordance with state and federal regulations.
Fit Test	In accordance with state and federal regulations.
Medical Evaluation	In accordance with state and federal regulations.
Training	In accordance with state and federal regulations.
Records Documenting Training for Those Who Fill Cylinders	In accordance with state and federal regulations.

SECTION 7 - PROGRAM EVALUATION

Evaluation Requirements

The effectiveness of the SCBA program shall be evaluated and corrective actions taken to ensure the respiratory protection program is properly implemented. The Hillsborough Fire District will regularly consult with firefighters to assess their views on the effectiveness of the program and to identify any problems.

The evaluation will be conducted by the Fire Chiefs and Commissioners. The evaluation will ensure:

- procedures for purchasing of approved equipment are in place;
- all firefighters are being properly fitted with respiratory protection;
- all firefighters are properly trained;
- the proper equipment, cleaning, inspection, and maintenance procedures are implemented;
- the required records are being kept; and
- changes are implemented to correct deficiencies.

Program Monitoring

Periodic monitoring of the respiratory protection program is necessary to ensure that all firefighters are adequately protected. Random inspections shall be made by the Fire Chiefs to ensure that the provisions of the program are being properly implemented.

Appendix A - Manufacturer's Instructions

NOTE. A copy of the manufacturer's instructions for the SCBA is on file at the Bureau of Fire Safety office.

Appendix B - SCBA Training Outline

At a minimum, the following topics are to be covered in the SCBA training.

1. Why the SCBA is necessary and how improper fit, usage, or maintenance compromise the protective effect of the respirator.

2. What the limitations and capabilities of the SCBA are.

3. How to use the SCBA effectively in emergency situations, including situations were SCBA malfunctions.

4. Instruction on recognizing medical signs and symptoms that may limit or prevent effective use of the SCBA.

5. How to inspect, put on and remove, use, and check the seals of the SCBA.

6. What the procedures are for maintenance, and storage of the SCBA.

7. The general requirements of the OSHA Respiratory Protection Standard.

8. Each firefighter will be tested to determine their Air Consumption Rate (ACR) as per NFPA 1404.

APPENDIX C - FILL STATION TRAINING OUTLINE

At a minimum the following topics are to be covered in the fill station training:

1. Procedures for inspecting the SCBA cylinder for damage.
2. Information to ensure that the cylinder has the proper hydrostatic test date.
3. Information to ensure that composite cylinders older than **15** years are not refilled and are removed from service.
4. Procedures for safely operating the fill station.
5. Information on the importance of using at least grade D air.
6. Information on the consequences of cylinder failure.
7. The manufacturer's instructions for the fill station.
8. Record keeping requirements.

APPENDIX D - MEDICAL EVALUATION PROTOCOL

Medical evaluation will be provided to firefighters before they are fit tested for respirator use. A medical facility approved by the Fire District will provide medical evaluations. Medical evaluation procedures are as follows:

Medical examinations to determine the firefighter's ability to wear an SCBA will be provided by the medical facility approved by the Board of Fire Commissioners.

Firefighters will receive follow-up medical evaluations as required by the OSHA Respiratory Protection Standard, and/or as deemed necessary by the medical facility approved by the Board of Fire Commissioners.

Upon request, the firefighter will have the opportunity to speak with the health care professional about their medical evaluation.

The Safety Officer will provide the approved medical facility with a copy of this program, a copy of the OSHA Respiratory Protection 1910.134, information on the type of SCBA used by the fire department, information on the frequency and length of SCBA use, potential temperature and humidity extremes, and information on turn-out gear used for firefighting.

Additional medical evaluations will be provided to firefighters under the following circumstances:

- The firefighter reports signs and/or symptoms related to their ability to wear to use an SCBA, such as shortness of breath, dizziness, chest pains, or wheezing;

- If the medical facility approved by the Board of Fire Commissioners health care provider or supervisor informs the Safety Officer that the firefighter needs to be reevaluated;

- Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation.

All examinations and questionnaires are to remain confidential between the firefighter and the health care provider. All medical records and completed questionnaires will not be kept by the fire department. The medical records and questionnaires will be under the control of the medical facility approved by the Fire District

The medical facility approved by the Board of Fire Commissioners will provide the Safety Officer and firefighter with a written recommendation regarding the firefighter's ability to wear a respirator. Only the following information will be provided:

- a statement on the firefighter's ability to wear a respirator,

- the need for follow-up medical evaluation if any are necessary, and

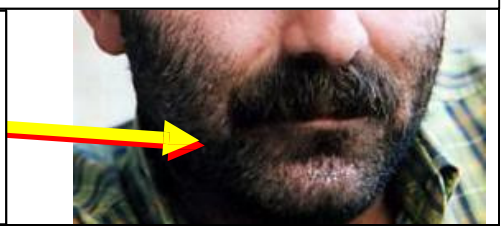
- a statement that the medical provider has provided the firefighter with a copy of the recommendation.

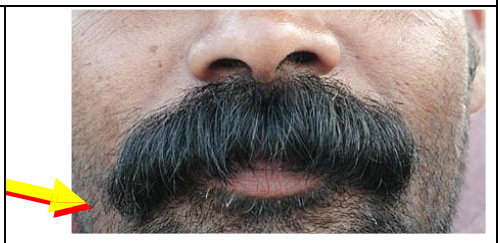
Medical records will be maintained in compliance with the OSHA (29 CFR 1910.134) and access will be afforded to all employers. Access means the right and opportunity to examine and copy records.

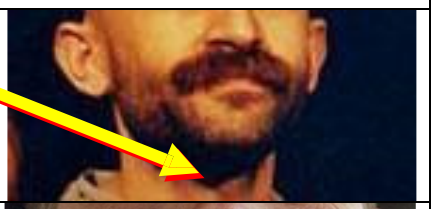
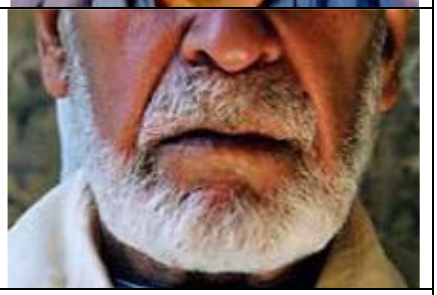
APPENDIX E

Examples of Acceptable and Unacceptable Facial Hair

Acceptable	
Extremely closely shaven hair, ideal for fit testing and seal	
Acceptable level of shaving, will typically provide good seal.	
Half face & Full face: Acceptable for Fit test Reason: Hair is not in the sealing region	
Half face & Full face: Acceptable for Fit test Reason: Hair is not in the sealing region	
Half face & Full face: Acceptable for Fit test Reason: Hair is not in the sealing region	

Unacceptable	
Half face and Full Face: **<u>Unacceptable to Fit Test</u>** Reason: The "5 o'clock shadow" would fail this person.	

Half face and Full Face: **<u>Unacceptable to Fit Test</u>** Reason: Hair from moustache is acceptable as long as it does not touch the sealing surface. However the "5 o'clock shadow" would fail this person.	
Half face and Full Face: **<u>Unacceptable to Fit Test</u>** Reason: Hair from moustache is not in the sealing region. However the "5 o'clock shadow" would fail this person	
Half face and Full Face: **<u>Unacceptable to Fit Test</u>** Reason: Hair is in sealing region under the chin and on the side of the face.	
Half face and Full Face: **<u>Unacceptable to Fit Test</u>** Reason: Hair is in sealing region under the chin.	
Half face and Full Face: **<u>Unacceptable to Fit Test</u>** Reason: Hair is in sealing region under the chin and on the cheeks.	
Half face and Full Face: **<u>Unacceptable to Fit Test</u>** Reason: Hair is in sealing region under the chin.	

Half face and Full Face: **Unacceptable to Fit Test** Reason: Hair is in sealing region under the chin.	
Half face and Full Face: **Unacceptable to Fit Test** Reason: The heavy hair is in sealing region under the chin would prevent a good seal.	
Half face and Full Face: **Unacceptable to Fit Test** Reason: Hair would likely block the sealing region or interfere with the valves.	
Half face and Full Face: **Unacceptable to Fit Test** Reason: Hair would likely block the sealing region or interfere with the valves.	
Half face and Full Face: **Unacceptable to Fit Test** Reason: A hard beard of this size would preclude any chances of obtaining a good seal.	
Half face and Full Face: **Unacceptable to Fit Test** Reason: A hard beard of this size would preclude any chances of obtaining a good seal.	

Appendix F GOG 25

NON-SCBA RESPIRATORS

District volunteers and employees may be required to operate at incidents that will require the use of non-SCBA respirators.

The fire district operates with two different types of non-SCBA respirators, filtering face piece and APR (air purifying respirators).

The filtering face piece respirator an the N95 mask

The APR respirator has two separate filters, P100 and Acid Gas/VOC

N95 and P100 filters may be used during medical assist calls to provide protection from viruses and blood borne exposures

Acid gas/VOC filters are used during fire investigations to provide protection from products of combustion in a post fire incident

Non-SCBA respirators are not to be used in lieu of an SCBA in situations that involve an IDLH atmosphere

The use of Non-SCBA respirators require an annual qualitative fit test for each respirator, fit test results will be documented

The use of non-SCBA respirators requires initial and annual training to include donning and doffing and the respirators limitations. https://www.youtube.com/watch?v=Tzpz5fko-fg

Respirators shall be replaced when they are damaged, soiled or are expired

Each individual is responsible for the cleaning and inspection of their non-SCBA respirator and must report any issues to their Chief or supervisor

These requirements are in addition to the requirements outlined in the fire districts respiratory protection plan.