CLEAN SHIPBOARD VENTILATION SYSTEMS

1. SCOPE

1.1 Intent. This standard specification describes the requirements for the Contractor to clean the shipboard ventilation (vent) systems onboard Coast Guard vessels.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), Latest Edition, General Requirements

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 Interferences. The Contractor must be aware that interferences in way of work include, but are not limited to the below-listed, in addition to what may be listed in the invoking work item. Handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

- Vent system intake and exhaust screens.
- Vent system access covers.

3.1.2 Protective measures. The Contractor must refer to paragraph 3.3.3 (Vessel component, space, and equipment protection) of SFLC Std Spec 0000, for the protection of equipment and machinery in the immediate area of the vent system access covers and screen removals, to prevent contamination while vent cleaning work is in progress.

3.2 Operational test - initial. Prior to commencement of work, the Contractor must witness an operational pre-test (by Coast Guard personnel) of the designated vent system(s), to demonstrate existing operational condition. Document the system flow rate (in cubic feet per minute) at each intake and exhaust location while the system is operating. Submit a CFR.

3.3 Preparation.

3.3.1 Temporary ventilation. The Contractor must provide adequate temporary ventilation to each compartment that is affected by shipboard ventilation ductwork cleaning or by securing associated fans, in accordance with the requirements of paragraph 3.3.1.1 (Temporary ventilation) of SFLC Std Spec 0000.

3.3.2 Marking. The Contractor must mark the positions of all dampers and any air-directional mechanical devices within the vent system(s) before cleaning; return the settings to their marked positions upon completion of ventilation cleaning.

3.4 Cleaning requirement particulars. The Contractor must accomplish the following tasks, for each designated vent system:

3.4.1 Preparation. Remove all vent access covers or sections of ductwork, as necessary, to allow complete access to all internal surfaces of the designated vent ductwork(s) and associated equipment.

3.4.2 Mechanical cleaning -general. Employ suitable mechanical means to clean all interior surfaces of the vent ductwork system(s), including removed intake and exhaust screens, access covers, and all internal associated equipment, to a condition free from dirt, grease, lint, impurities, and any other foreign matter. Clean the vent system(s) in its entirety from the point where the air enters the system to the point where the air is discharged from the system.

3.4.2.1 Remove all vent system access covers or remove sections of ductwork as required, to completely clean all vent interior surfaces. Vacuum the ductwork using a brush-type vacuum attachment.

3.4.2.2 Wipe down the vent system fan blades and vacuum the fan motor exterior, to remove accumulated dirt.

3.4.2.3 Vacuum and inspect dampers and venturi tubes to ensure there are no obstructions to restrict airflow.

3.4.2.4 Clean, inspect, lubricate, and exercise all directional closures and other vent fittings to ensure smooth operation.

3.4.2.5 Scrub with hot soapy water to remove the grease, and thoroughly dry vent ducts found to have grease accumulation. If vent ducts are inaccessible, remove first the section closest to the grease contamination source. Remove other sections as required to complete cleaning of all grease-contaminated vent ducts.

CAUTION!

If vent ducts are scrubbed in place, ensure water does not damage the surrounding area and equipment.

3.4.3 Coil cleaning. When cleaning heat or cooling coils, avoid using any method that might force contaminants further into the coils. After completion of cooling coil cleaning, wash the coils, condensate tubes, and drip pans with a suitable sanitizing agent.

NOTE

Use of a vacuum collection method is considered appropriate for coil cleaning.

3.4.4 Dry ice blast cleaning. The Contractor may use dry ice blast cleaning method in lieu or in combination with the mechanical cleaning methods when performing vent duct cleaning. However, dry ice blast cleaning must not be used on heavy grease contaminated areas such as the Gaylord hood and galley vent ductwork.

3.4.4.1 Provide a high pressure air compressor with after coolers, palletized dry ice, a dry ice accelerator and a variety of nozzles for the specific cleaning application.

3.4.4.2 Provide a suction blower and filter system on the outboard end of the system being cleaned to capture all the dirt and debris dislodged from the blast cleaning.

3.4.4.3 Ensure that all areas where the dry ice blast cleaning is ineffective are cleaned by conventional mechanical cleaning methods.

3.5 Inspections. After completion of vent duct cleaning operations, the Contractor must accomplish the below inspections, and submit a CFR.

3.5.1 Cleanliness. Visually inspect the vent ductwork interior surfaces for cleanliness. Be aware that inspection for areas that are difficult to access may be conducted by means of a boroscope.

3.5.2 Other inspections.

3.5.2.1 Visually inspect all internal and external surfaces of the vent ductwork thoroughly for corrosion, rust, holes, split seams, defective joiner flanges, and defective closure fittings.

3.5.2.2 Inspect all heat and cooling coils, piping, closure fittings, valves, and all other components located within the vent ducts for leaks, corrosion, rust, or signs of defect.

3.6 System restoration. Upon completion of all work, the Contractor must ensure the vent system is completely assembled with all covers and screens.

3.6.1 Remove and dispose of all protective coverings.

3.6.2 Ensure all tools, rags, and other foreign materials are removed from the vents before installing access covers.

3.6.3 Renew all existing access cover gaskets. Submit a CFR for all missing access cover gaskets.

3.7 Operational testing-post cleaning. After completion of work, the Contractor must witness an operational test (by Coast Guard personnel) of the cleaned ventilation system(s) to prove satisfactory operating condition. In addition, perform the following tasks:

3.7.1 Visually inspect all duct joints for air leaks. Submit a CFR.

3.7.2 Take flow rate readings at the same locations with the ventilation system running. Compare the flow rate readings with the pre-cleaning readings, and submit a CFR.

4. NOTES

This section is not applicable to this standard specification.