Texas A&M University-San Antonio

24.01.01.O0.08 Ventilation Control
Approved: September 4, 2015
Next Scheduled Review: September, 2020

Procedure Statement

Ventilation is an engineering control for preventing occupational exposures to potentially harmful air contaminants, heat and microbiological hazards. Two types of ventilation impact faculty, staff, students and visitors at Texas A&M University-San Antonio (A&M-San Antonio): exhaust ventilation and laboratory fume hoods. The selection and design of appropriate air handling and ventilation systems as an occupational exposure control should be based on the results of hazard analysis, hazard identification and good engineering practice.

Reason for Procedure

The purpose of this Procedure is to help A&M-San Antonio comply with all relevant local, state, and federal occupational and environmental regulations, codes, and standards.

Official Procedure

1. RESPONSIBILITIES

1.1 Fume hoods are critical to the safety of researchers, faculty, and students, as they provide the primary means of preventing exposure to airborne hazardous materials on campus. Therefore, it is extremely important that the hoods be maintained in good working order.

1.2 The laboratory manager/coordinator or department head, with the review and approval of the Office of Safety, Risk and Emergency Management, will select a certified company to annually inspect the hoods in accordance with the requirements of American National Standards Institute/American Industrial Hygiene Institute (ANSI/AIHA) code Z9.5-2003 "Laboratory Ventilation," and this Procedure.

2. INSPECTION PROCEDURES

2.1 Per ANSI/AIHA Z9.5-2003 guidelines, the following items are inspected on each hood by the certifying company. A report of the conditions noted will be furnished by the inspection company to an appropriate campus representative.

2.1.1 BODY- The exterior and interior body/frame is examined for damage(s) that could impact safe operation.

2.1.2 SASH- The sash is examined for damage (glass breakage, sticking, etc.). Hoods requiring multiple vertical sashes are observed to determine if an adequate number of sashes are in place (usually a minimum of 3). If present, the sash alarm is tested.

2.1.3 BENCH-TOP- the hood bench-top should not be used for routine storage of hazardous materials if it is being used as a protective working surface. Equipment and/or other materials on the bench-top should not block air flow into the hood.

2.1.4 LIGHT- The hood light must be working.

2.1.5 ID & LOCATION- Equipment ID and location is verified and recorded.

2.1.6 FACE VELOCITY- Face velocity is tested with a calibrated flow meter to ensure that it meets minimum face velocity requirements as follows:

2.1.6.1 Hood face velocity measurements are taken with the sash half open to ensure that the ANSI/ASHRAE recommended velocity of 80-120 fpm is attained when the sash is moved to various user working levels.

2.1.6.2 However, a fume hood may be tested at a lower sash height, perhaps increasing the flow rate to permissible levels, if the following requirements are met:

2.1.6.2.1 A functioning airflow warning alarm is in service; or,

2.1.6.2.2 A mechanical device limiting sash elevation (Sash Stop) is installed with a warning sign posted to indicate sash height limitations.

2.1.7 CONTAINMENT TEST- A flow visualization test (or smoke test) is conducted over the range of operational configurations afforded by the hood design.

2.1.7.1 This test is taken at the target face velocities or exhaust flow rates to determine operational boundary conditions and hood limitations.

2.2 CAUTION and DANGER warning signs will be posted in the following conditions.

2.2.1 Hoods found to have serious deficiencies are posted with warning signs to indicate usage limitations (see below). Since hood face velocity (average flow rate of air being pulled into the hood) is the primary function necessary to prevent exposure to airborne hazardous materials, insufficient face velocity must often results in warning signs being posted to limit or restrict use of the hood.

2.3 CAUTION- UNSAFE CONDITION: Inspection by the certification company has determined that this hood does not meet the university minimum standard for face velocity airflow of 80 feet per minute (fpm).

2.3.1 This hood shall not be used for research involving extremely hazardous substances until repairs have been made, the Office of Safety, Risk and Emergency Management has been notified, and re-inspection has been completed by a certified company.

2.3.2 The lab manager/coordinator and Facilities Services have been notified.

2.3.3 Questions should be directed to Office of Safety, Risk and Emergency Management Caution Sign Clarification

2.3.3.1 If the certification company determines the hood face velocity to be less than 80 fpm, but pass the containment test, a "CAUTION" sign is posted to warn users that the face velocity does not meet requirements for handling extremely hazardous materials with a high degree of hazard.

2.3.3.2 However, the hood may still be used to handle materials that are NOT considered extremely hazardous (low degree of hazard) as determined by the researcher or other responsible person knowledgeable with the hazard(s).

2.3.3.3 Questions regarding the degree of hazard may be directed to the Office of Safety, Risk and Emergency Management.

2.4 DANGER-UNSAFE CONDITION: This hood has been placed out of service by the certifying company.

2.4.1 This hood shall not be used until repairs have been made, the Office of Safety, Risk and Emergency Management has been notified, and a re-inspection has been completed.

2.4.2 Use of this hood will be in violation of this Procedure and ANSI/AIHA z9.5-2003.

2.4.3 The lab manager/coordinator and Facilities Services have been notified.

2.4.4 Questions should be directed to the Office of Safety, Risk and Emergency Management

2.4.5 Danger Sign Clarification

2.4.5.1 If the hood face velocity if found to be less than 80 fpm and fails the containment test, a "DANGER" sign is posted to warn users that the

hood has been placed "out of service" and cannot be used for handling any hazardous material until repaired.

2.4.5.2 A "DANGER" sign may also be posted if a hood is otherwise determined unsafe for use.

3. REPAIR PROCEDURES

3.1 Fume hood deficiencies requiring repair are reported to Facilities Services and tracked through their work order process and by the responsible lab manager/coordinator.

3.1.1 On completion of the work order, contact the certifying company for re-inspection of the hood to ensure that all requirements are met.

3.1.2 Once a hood has passed inspection, a sticker is placed on the hood (usually on the frame). The inspection date should not be expired and the face velocity should be 80 fpm or greater and pass the containment test.

3.2 If you suspect a problem with your hood or the inspection sticker is expired (over a year from the current date), call the Office of Safety, Risk and Emergency Management at (210) 784-1150.

Related Statutes, Policies, or Requirements

System Policy 24.01 Risk Management

System Regulation 24.01.01 Risk Management Programs

Contact Office

Business Affairs, Office of Safety, Risk and Emergency Management (210) 784-1150