

JSC Safety and Health Requirements	JPR No.	1700.1L
	Effective Date:	12/20/2018
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Chapter 5.4 Indoor Air Quality

This could be you . . .

An engineer began getting headaches late in the day after moving to another building. Air samples showed there were vapors in the air because a coworker had used acetone to clean the office furniture. Make-up air was increased to eliminate the vapor buildup. Workers were cautioned to use less toxic cleaners whenever possible.

5.4.1 Applicability of this chapter

You are required to follow this chapter if you work in or maintain an indoor workspace.

5.4.2 What this chapter covers

5.4.2.1 This chapter describes the steps to take if you suspect an indoor air quality problem. It doesn't cover:

- a. Confined spaces (see Chapter 6.9, "Entering Confined Spaces").
- b. Ventilation (see Chapters 6.7, "Laboratory Safety and Health," and 10.1, "Safety and Health Requirements for Designing, Constructing, and Operating Facilities").
- c. Indoor work processes such as welding (see Chapter 8.4, "Welding, Cutting, and Brazing Safety").
- d. Soldering (see Chapter 9.4, "Materials that Contain Lead: How to Work with Them Safely").
- e. Using solvents (see Chapter 9.1, "Hazardous Materials Safety and Health").
- f. Asbestos abatement (see Part 11, "Asbestos Control Requirements").
- g. Other asbestos concerns (see Chapter 5.7, "Asbestos in the Workplace").

5.4.3 Indoor air quality

5.4.3.1 Indoor air quality involves maintaining building heating, ventilation, and air conditioning (HVAC) systems, controlling airborne contaminant levels, and ensuring acceptable temperature and relative humidity in buildings. The indoor air quality program shall follow paragraph 4.10 of NPR 1800.1. At JSC, the acceptable indoor air quality and comfort standards are:

- a. Comfortable temperature ranges at 50-percent relative humidity (%RH).
 - (1) Seasonal target ranges (See ASHRAE [American Society of Heating, Refrigerating, and Air Conditioning Engineers] Standard 55, "Thermal Environmental Conditions for Human Occupancy"):

Summer:	75°F to 81°F
Winter:	69°F to 77°F
 - (2) The JSC Energy Conservation policy is to maintain summer temperatures at 76 +/- 2°F and winter temperatures at 70 +/- 2°F.

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- b. Comfort relative humidity range: 20 to 60 %RH (See OSHA Technical Manual Section III, Chapter 2, "Indoor Air Quality Investigation").
- c. Carbon dioxide (CO₂) is a measure of the amount of fresh air coming into the HVAC system balanced with the number of occupants and should not exceed 1000 parts per million (ppm) above background levels (See OTM and ASHRAE Standard 62.1, "Ventilation for Acceptable Indoor Air Quality").

5.4.4 Mold

The Houston climate often presents ideal conditions for mold growth. Mold needs the presence of food and water to grow. For many molds, the best food source is cellulose (e.g., paper, cardboard, wood). Water can come from leaking pipes, rain water through holes in the building envelope, and condensation. There are many forms of mold; however, the presence of mold indoors presents unacceptable conditions.

5.4.5 How to know when you might have a problem

The most common perceptions of poor indoor air quality are stuffiness and uncomfortable temperature. Some people may experience headaches or allergy-like symptoms.

NOTE: These symptoms could also be related to other causes.

5.4.6 Who to call if you suspect a problem

Contact Occupational Health at x36726 if you suspect an indoor air quality problem. They will send out an inspector to interview affected personnel and investigate the problem. They will report back to the facility manager in writing with their findings and recommendations.

5.4.7 Fixing an indoor air quality problem

After an indoor air study, the results are sent to the requester and the facility manager. The facility manager will submit a work order to correct the problem if it involves the building utilities. Contact your supervisor if the problem involves an operation such as model building or construction. Facility managers shall schedule all cleaning activities introducing strong odors or contaminants when few workers will be in the area.