

A Guide to Office Safety and Health

Sydney Cheryl Sutton
Editor



N.C. Department of Labor
Division of Occupational Safety and Health
1101 Mail Service Center
Raleigh, NC 27699-1101

Cherie K. Berry
Commissioner of Labor

**N.C. Department of Labor
Occupational Safety and Health Program**

Cherie K. Berry
Commissioner of Labor
OSHA State Plan Designee

Allen McNeely
Deputy Commissioner for Safety and Health

Kevin Beauregard
Assistant Deputy Commissioner for Safety and Health

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This guide is intended to be consistent with all existing OSHA standards; therefore, if an area is considered by the reader to be inconsistent with a standard, then the OSHA standard should be followed.

To obtain additional copies of this book, or if you have questions about N.C. occupational safety and health standards or rules, please contact:

**N.C. Department of Labor
Bureau of Education, Training and Technical Assistance
1101 Mail Service Center
Raleigh, NC 27699-1101
Phone: (919) 807-2875 or 1-800-NC-LABOR**

Additional sources of information are listed
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Foreword

When most people think of occupational safety and health needs, they picture the dangers lurking around construction sites or in factories. However, office workers have discovered over the years that they also face many unique challenges to their safety and health.

A Guide to Office Safety and Health examines many of these potential risks and offers solutions to them. General office safety, indoor air pollution, video displays, and office environmental issues are discussed in this booklet.

In North Carolina, state inspectors enforce the federal OSHA laws through a state plan approved by the United States Department of Labor. The North Carolina Department of Labor's Division of Occupational Safety and Health (OSHNC) is charged with this mission. OSHNC enforces all current OSHA standards. It offers many educational programs to the public and produces publications, including this guide, to help inform people about their rights and responsibilities regarding OSHA.

When looking through this guide, please remember OSHA's mission is greater than just to enforce regulations. An equally important goal is to help people find ways to create safe workplaces. This booklet, like the other educational materials produced by the North Carolina Department of Labor, can help.

Cherie K. Berry
Commissioner of Labor

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Introduction

Historically, the office has been considered a relatively clean, safe, and healthy place to work. In recent years, however, office workers have expressed concerns about the office environment and their working conditions. These concerns are also reflected in complaints of discomfort, anxiety, irritation, and general job dissatisfaction and can be measured in terms of sick leave, absenteeism, and job turnover. This industry guide discusses major areas of concern related to health and safety in the office.

Accidents which occur in offices are frequently from poorly designed office environments and improper office procedures. The rate of office accidents declines when office workers are informed of potential hazards and methods for working safely. Training regarding general safety precautions for work in an office reduces both the number and severity of accidents.

Office workers are increasingly sensitive to the effects of computer video display terminals (VDTs) upon their health and safety. Individuals who work at VDTs commonly report stress related and musculoskeletal disorders. If such disorders are to be reduced, VDT workstations must accommodate the needs of office workers.

Concern over the quality of air in offices has generated various health related symptoms which are known collectively as the "stuffy office syndrome" and as the "sick building syndrome." Indoor air pollution and inadequate ventilation are present subjects of intense study.

The ambience of interoffice surroundings has caused problems for office workers. Such factors as improper temperature, inadequate humidity, and even colors of

walls and furnishings are now known to be sources of discomfort. These are situations which should be considered in creating a safe, healthful, and efficient office environment.

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General Office Safety

Safety is not a common concern for a typical office worker because the office is not perceived as a hazardous working environment. As this guide illustrates, however, office workers do sustain injuries from hazards in the office environment. Many injuries, such as those resulting from falls, are as serious as those found in the industrial workforce. It follows that office workers should be informed of office-related hazards and methods for working safely.

Types of Office Accidents

The most common office accident is falling. Falls account for the greatest number of disabling injuries. Falls result in the most severe injuries and the highest percentage of lost work days due to such injuries.

Falls from chairs occur when workers lean back to tilt their chair, place their feet on a desk, sit down without looking, and rise from or move around in a chair. Falls from stairs also occur, but more precaution is usually exercised on stairs because the fall hazard they pose is recognized. Slips, trips, and falls can result from poor housekeeping such as wet surfaces, electrical cords improperly placed, and trash obstructed walkways. Falls result when workers stand on chairs or other office furniture in order to reach elevated objects.

Injuries from strain and overexertion frequently occur when office workers attempt to move or improperly lift heavy objects. Office workers sustain muscular and/or back injuries by carrying or moving books, office furniture, equipment, and supplies without assistance. They may exacerbate such injuries by the stretching, twisting, and bending required by the office routine.

Office workers are injured when struck by objects. File drawers may fall from the cabinet when pulled too far, typewriters can fall from a rolling table, or doors opened from the side opposite the worker may strike the employee. Similarly, injuries occur when workers strike objects. Employees bump into doors and desks. File cabinets inadvertently left open are a source of injury.

Infectious cuts are caused by sharp objects normally found in office environments, such as staples and pens for writing. Fingers can get caught under the knife edge of a paper cutter.

Office Hazard Control

The process for controlling hazards in the office is similar to controlling hazards in industrial settings. The preferred means of hazard control is eliminating the hazard (engineering controls). Another means is minimizing exposure to the hazard (administrative controls). Office-related hazards are controlled by carefully considering the office environment and by following office safety procedures.

Office Environment

The layout of an office should incorporate the principles of work flow, considering safety and health, efficiency, and convenience. The Life Safety Code (National Fire Protection Association (NFPA) 101) covers specific requirements for stairways, exits, and doors. For example, handrails for stairs are required to be located 30 to 34 inches above the tread surface.

Standards enforced under the Occupational Safety and Health Act of North Carolina also address stairs. Generally speaking, enclosed stairways with four or more risers and less than 44 inches wide require a handrail on one side. Enclosed stairways wider than 44

inches require a handrail for both sides. Regardless of stair width, there must be a stair railing for each open side. An intermediate stair railing is required for stairs wider than 88 inches.

Doors which open onto a passageway pose a hazard to oncoming traffic. Guardrails can be used to minimize that hazard or the floor can be painted to mark the swing area. Exits should be unobstructed and well illuminated. Emergency lighting is required for exit hallways or paths.

Inadequate illumination caused by glare or shadows which interfere with vision can contribute to accidents. Illumination levels should be consistent to reduce visual fatigue created when one moves from bright surroundings into dark ones. The office layout should not require employees to face windows, unshielded lamps, or other sources of glare.

Hazards from electrical equipment can be reduced by:

- Using only UL-listed (Underwriters Laboratories, Inc.) equipment.
- Arranging electrical extension cords to avoid tripping hazards.
- Installing proper receptacles.

Electrical appliances such as coffee makers, radios, and lamps can become sources of fire or electrical shock. Appliances should be equipped with electrical plugs which have a ground prong or the appliance should have been marked "double insulated" by the manufacturer.

Electrical extension cords should not be used as a substitute for permanent wiring. When extension cords are a temporary necessity, they should be taped down, clipped to the back of desks, or covered with a rubber passageway if they cross the floor.

The National Electrical Code (NEC), NFPA 70, requires ground fault circuit interrupters (GFCIs) for restroom areas. The GFCI is a fast-acting device which senses current leakage caused by a fault in the electrical circuit. The GFCI shuts off the electricity to interrupt its faulty flow. It is good practice to use GFCIs wherever electrical hazards might develop.

All fuses and circuit breakers must be identified. Place a label on each fuse or circuit breaker switch and a corresponding label on each receptacle and light switch. That practice will reduce time needed to identify a specific fuse or circuit breaker when there is a need to turn it off.

Floor surfaces should have a slip-resistant finish. Tripping hazards can be minimized by immediately replacing defective tiles and carpet or worn floor mats. Slip-resistant floor wax can give polished floors a higher coefficient of friction. Floor mats and runners offer a more slip-resistant protection for stairways or lobby entrances.

Offices should have an area specifically designed for storing supplies. Materials should be neatly stacked in stable piles with the heaviest pieces on the bottom. Office equipment should not be placed on the edge of a table or desk.

Office Safety Procedures

Following safe work procedures in the office can prevent many accidents. Running in offices must be prohibited. Those walking in a passageway should keep to the right. Accidents result when persons stand in front of doors, so employees should stand away from the path of the door swing. Employees should not attempt to carry stacks of materials which are high enough to obstruct vision. If an elevator is available, it should be used instead of carrying stacks of material up flights of stairs.

Proper attention should be given to the act of ascending or descending stairs. Stairways should not be areas for congregation. Those using the stairs should not crowd or push. Falls on stairs occur when persons are distracted through conversation or by turning to another person while descending. Individuals should not stand near doors at stairways.

Fall hazards can be prevented through good house-keeping in the office. Spilled liquids should be cleaned up immediately, and loose objects and broken glass should be removed when first noticed. Broken glass should be immediately vacuumed or swept, and the fine pieces should be picked up with a damp cloth.

Poor sitting habits can also lead to falls. Rolling in one's chair across the floor, leaning sideways in a chair to pick up objects from the floor, and leaning back in the chair with feet on the desk are excellent examples of poor office safety procedures.

Filing cabinets are a major cause of accidents and should be used with care. The safe office worker will:

- Close all file drawers immediately after use.
- Close the file drawer with the drawer handle and not with his or her feet.
- Open only one file drawer at a time to avoid toppling the file cabinet.
- Never leave an open drawer unattended and never open a drawer if someone is underneath it.
- Never climb on open file drawers.
- Remove small stools (used to access upper file cabinet drawers) from passageways and safely store them.
- Wear finger guards to avoid paper cuts.

Other unsafe office procedures include storing pencils with the points upward, placing scissors or knives with the point toward the user, using paper cutters without proper guards, and placing glass objects on a desk or table edge.

Employees using lounges and eating areas should follow good housekeeping and safe operating procedures to prevent exposure to microwaves and burns from hot plates and coffee makers.

Emergency Action Plan

As a general recommendation, employers should develop an *emergency action plan* to address emergencies that the employer can expect in the workplace. Examples of such foreseeable emergencies are fire, toxic chemical releases, hurricanes, tornadoes, blizzards, and floods.

Some of the key components of an emergency action plan are the following:

- Emergency escape procedures and escape routes for employees to follow in the event of an emergency. This should include floor plans that indicate the appropriate evacuation routes.
- How to account for all employees following evacuation.
- The rescue and medical duties for those employees, if any, who are to perform them.
- The preferred means of reporting fires and other emergencies.
- Names or regular job titles of persons responsible for the emergency action plan.

Employers are, however, required to have both an emergency action plan and a *fire prevention plan* when portable fire extinguishers are provided, even though

they are not intended for employee use. The elements of a fire prevention plan are:

- Identification of the major workplace fire hazards and their proper handling and storage.
- Potential ignition sources (e.g., smoking) and their control procedures and the type of fire protection equipment or systems which can be used to control a fire.
- Names or regular job titles of personnel responsible for fire suppression equipment or systems.
- Names or regular job titles of personnel responsible for controlling fuel source hazards.

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Indoor Air Pollution

Our awareness of the quality of indoor air has increased in recent years. Energy conservation programs spawned by world oil shortages have resulted in building design and operation changes. Buildings have been sealed and ventilation rates reduced to prevent the infiltration of untempered outside air (hot, humid air in the summer months and cold, dry air in the winter). These changes have conserved fossil fuels and operating costs, but they have also negatively affected indoor air quality.

Indoor air quality problems are generally classified as “sick building syndrome” (SBS) or “building-related illness” (BRI). Conditions associated with sick building syndrome are not easily traced to a specific substance, but are usually believed to result from some unidentified contaminant or combination of contaminants.

The symptoms associated with SBS include:

- ◆ eye irritation
- ◆ nose irritation
- ◆ irritation of the throat
- ◆ dry mucous membranes
- ◆ mental fatigue
- ◆ respiratory infections
- ◆ cough
- ◆ dry skin
- ◆ erythema (skin reddening)
- ◆ headache
- ◆ hoarseness
- ◆ wheezing
- ◆ nausea
- ◆ dizziness

The symptoms of sick building syndrome are relieved when the employee leaves the building and may be reduced or eliminated by modifying the ventilation system.

BRI describes specific medical conditions which have a known origin. These illnesses can be severe and, unlike SBS, can often be traced to a single contaminant source such as mold infestation and/or microbial growth in cooling towers, air handling systems, and water damaged furnishings. Symptoms may not disappear when the employee leaves the building. Building-related illnesses include:

- ◆ respiratory allergies
- ◆ nosocomial (hospital) infection
- ◆ humidifier fever
- ◆ hypersensitivity pneumonitis
- ◆ Legionnaires' disease

Signs and symptoms characteristic of exposure to chemical and biological substances include:

- ◆ carbon monoxide
- ◆ formaldehyde
- ◆ pesticides
- ◆ endotoxins

Sources of Indoor Air Pollution

Indoor air quality is affected by pollution from inside and outside of buildings and from poor ventilation. Human metabolic activity, smoking, structural components of the building, building contents, biological contamination, office and mechanical equipment, and outside air pollutants that enter the building—all are sources of indoor air pollution.

Inside Air Contaminants

According to the National Institute for Occupational Safety and Health (NIOSH), approximately 4 percent of indoor air problems can be attributed to contamination from building materials and products. Formaldehyde can emit vapors from urea-formaldehyde foam insulation, particle board, plywood, and some glues and

adhesives commonly used during construction. Other contaminants include fibrous glass, various organic solvents from glues and adhesives, and acetic acid used as a curing agent in silicone caulking.

Chemicals from copying machines, for example, methyl alcohol from spirit duplicators, butyl methacrylate from signature machines, and ammonia and acetic acid from blueprint copiers, contribute to indoor air pollution. Other inside contaminants include:

- ◆ improperly applied pesticides
- ◆ boiler additives such as n,n-diethylethanolamine
- ◆ improperly diluted cleaning agents such as rug shampoo
- ◆ tobacco smoke of all types
- ◆ combustion gases from sources common to cafeterias and laboratories
- ◆ cross-contamination from poorly ventilated sources that leak into other air zones

Approximately 5 percent of indoor air problems involve some type of microbiological contamination. Such contamination can result from water damage to carpets or furnishings, or from standing water in ventilation system components. A respiratory problem known as hypersensitivity pneumonitis can result from bacteria, fungi, protozoa, and microbiological products that may originate in ventilation system components.

Outside Air Contaminants

NIOSH has determined that approximately 10 percent of indoor problems are due to contamination from outside the office space. Examples of these contaminants are motor vehicle exhaust fumes, boiler gases, and previously exhausted air. Major sources are improperly located exhaust and intake vents and periodic changes in wind conditions.

One of the most common contaminants from outside is carbon monoxide gas from basement parking garages, recirculated through the building ventilation system. Other outside contaminants include the by-products of construction or renovation, such as asphalt, solvents, and dusts. Gasoline vapors can infiltrate the basement and/or sewage system and are usually caused by gasoline leaks from ruptured underground tanks at nearby service stations.

Inadequate Ventilation

Inadequate ventilation is by far the largest problem associated with poor indoor air quality. Ventilation problems commonly encountered include:

- ◆ insufficient outdoor air supplied to the office space
- ◆ poor air distribution and mixing which causes stratification, draftiness, and pressure differences between offices spaces
- ◆ extremes of fluctuations in temperature and humidity (sometimes caused by poor air distribution)
- ◆ air filtration problems caused by improper or inadequate maintenance to the building ventilation system

In many cases, these ventilation problems are created or exacerbated by energy conservation measures. Such measures include reducing or eliminating outdoor air; reducing infiltration and exfiltration; lowering thermostats in the winter and raising them in the summer; eliminating humidification or dehumidification systems; and early shutdown and late start-up of ventilation systems.

Control Strategies

Four control strategies can be implemented to reduce indoor air pollution: education and training; dilution

ventilation; modifying processes and/or equipment; and air cleaning.

Education and Training

The employer should provide all office employees with timely information on the health and physical hazards associated with office products and materials. Employers are required by the OSHA hazard communication standard to develop and implement a hazard communication program where any hazardous chemicals are known to be present and to which employees may be exposed. The required hazard communication program details information and training which employees must receive.

Dilution Ventilation

Ventilation systems are designed to supply sufficient oxygen for normal respiration, to dilute contaminants in occupied spaces, to remove contaminants emitted from work areas, and to control odors. The American Society of Heating, Refrigeration, Air Conditioning Engineers (ASHRAE) is a private standard setting organization that has developed specific ventilation standards which are often incorporated into building codes. Most ventilation systems meet the design standards set by state and local building codes.

The primary method of controlling air contaminants in most buildings is general ventilation. Dilution ventilation requires a clean air supply, to dilute all the contaminants of concern, and exhaust openings, located near the contaminant source or work area.

Recirculation of exhausts can be avoided by locating the intake and outlet remotely. Reentry of exhaust air can be avoided by discharging exhaust above the roof away from openings and air intakes.

Diluting contaminants through ventilation should not be used where:

- There are dust or fume producing operations.
- Highly toxic air contaminants are present.
- Large quantities of contaminants are produced.
- Contaminants are released in nonuniform quantities.
- Makeup air is unavailable or tempering the air is economically infeasible.

In the above instances, properly designed local exhausts may be more effective for controlling air quality.

Modifying Processes and/or Equipment

Pollution emission rates may be reduced by modifying processes and/or equipment. Polluting substances which are part of the work process may simply be eliminated. Less toxic materials may be available to substitute for contaminating substances. Or the quantity of contaminating substances may be reduced.

Equipment may be subject to modification which would reduce contamination. Using equipment differently or installing barriers may also reduce emissions at their source.

Air Cleaning

This control strategy involves removing air contaminants before the air is recirculated. Filters and electronic air cleaners are common particle removal devices. Adsorption and absorption are removal techniques for pollutant gases. Air conditioning is primarily a comfort device, but some concentrations of pollen and other particulate matter are slightly reduced by air conditioning.

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Video Display Terminals

Video Display Terminals (VDTs) are now prevalent in all types of offices. It is common to see operators working with a VDT without interruption for several hours or an entire day.

VDT work restricts movement, demands that the hands be kept positioned at the keyboard, and requires constant attention to the monitor. Operators become susceptible to the effects of poor posture, awkward wrist positioning, poor lighting, and inadequate display characteristics. It is critical that VDTs be designed to fit the capabilities and physical limitations of the worker.

VDT Workstation Design

Studies of individuals engaged in long-term sitting indicate that people usually do not sit straight but continually shift their position. Proper back support and a large working area contribute to comfortable sitting. Therefore, the furniture in a VDT workstation should be as accommodating as possible.

A properly designed chair for the VDT operator is an essential part of the workstation. It affects posture, circulation, and pressure on the spine. A good backrest is an important feature of the chair. It should adjust up, down, backward, and forward. The backrest also supports the inward curve of the lower spine (lumbar). Ideally, the angle between the trunk and thighs should be greater than 90 degrees.

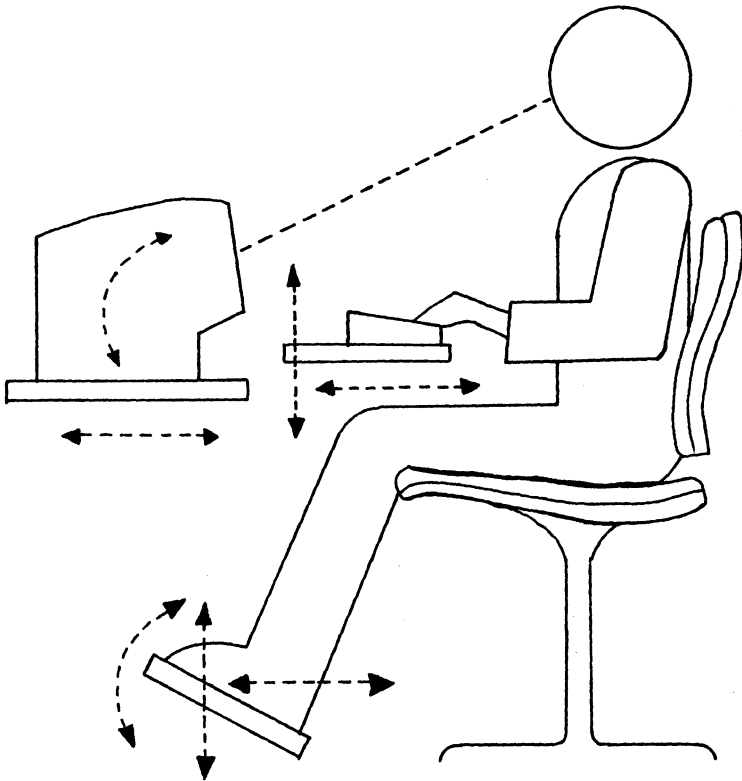
The seat surface should be a reasonable composition so that operators do not suffer pressure from a hard seat or experience levitation from a soft seat. Chair stability and mobility are critical for ease of movement

while in the chair. Chair adjustments must be simple or the operator will not bother to change the chair.

The height of the seat pan should be adjustable so that a seated operator's feet are firmly rested on the floor. The operator's thighs should be somewhat horizontal and the lower legs should be vertical. A footrest may be needed to reach a comfortable sitting position.

Figure 1

Video Display Terminal Areas of Adjustability



The keyboard should be detachable from the VDT to permit the operator to locate it for convenience and preference, according to the work to be performed. Palm, hand, wrist, and arm supports may be needed for long-term keying. A desk height of 24 to 28 inches will allow the upper and lower forearms to form an angle of approximately 90 degrees. The upper arms should hang comfortably at the sides.

The monitor should be located at a proper distance and angle with respect to the human eye. A viewing distance of 12 to 14 inches (30 to 35 centimeters) is common for many operators. A line of sight 10 degrees or more below the horizontal is a comfortable eye position. The monitor should be angled so that the normal vision line falls in the upper half of the screen. (See figure 1.)

Workstation Illumination

The amount of light on a VDT workstation determines if the surface of the display receives direct reflections. Screen reflections may be annoying and cause operator complaints. Reflections on the screen can come from overhead light sources, light fixtures, windows, and shiny surfaces.

In the past, higher levels of illumination were considered more effective. Present recommendations on luminance are that there should be no more than a 3:1 ratio in luminance between the task area and its surroundings. The contrast between the task and the background allows for easy viewing.

Headaches and eye fatigue due to reflected illumination can be reduced in several ways. The most effective method of minimizing screen reflections is to eliminate the light source. This can be accomplished by moving the light source or workstation or by using indirect illumination. If natural lighting is a problem, it is best to position the display so that it is perpendicular to windows.

The next best solution for glare reduction is to control the light between the source and the screen. Baffles, louvers, shades, and shields are useful light control devices.

The least desirable solution is to control the light at the screen of the display. Surface treatments or filters can be used. Filters are designed to improve contrast and reduce glare. However, the overall energy from the VDT character is lessened by a filter and character sharpness is reduced.

Work Methods

Even a comfortable workstation can be stressful and tiring after an operator sits for long periods of time. Stretching occasionally, looking away from the work, or getting up from the VDT station can help relieve strain and stress. If other tasks can be accomplished, alternating them with VDT work can vary the work rhythm to reduce strain and tension.

5

Environmental Considerations in the Office

Temperature

Indoor climate conditions are among the most common complaints from office workers. An uncomfortable atmosphere can cause annoyance and even pain, depending on the degree of heat imbalance.

The effects of improper temperature include fatigue, sweating, respiratory discomfort, and changes in pulse rate. Too warm of an atmosphere leads to sleepiness, a decrease in performance, and increased chance for error. An atmosphere which is too cool stimulates restlessness and reduces alertness and concentration.

Because productivity is related to a comfortable climate, it is important to keep the office at a pleasing temperature. Of course, individuals perceive temperature comfort levels differently. Recognizing that fact, the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) developed a voluntary standard (ASHRAE 55-1981) for temperature ranges. Compliance with the standard would yield temperatures satisfactory to 80 percent of the average population. Compliance would require:

- ◆ a range of 73° to 79°F for an average individual in the summer, and a range of 68° to 74.5°F in the winter
- ◆ relative humidity between 30 and 60 percent
- ◆ an average indoor air velocity of 0.25 meters per second or less in the summer, and an average indoor air velocity of 0.15 meters per second or less in the winter

Preferred air temperature may vary according to air velocity, clothing, muscular activity, and metabolism. Situational conditions can also affect comfort levels. Sitting near a glass wall or window on a hot or cold day may be uncomfortable, and sitting near heat producing equipment such as VDTs and copiers may cause discomfort.

Humidity

Office humidity deficiencies can lead to adverse health effects. It has been demonstrated that dry air leads to chronic irritation of the nasal and bronchial passages. Studies have shown that dry mucous membranes in the air ducts can obstruct the flow of mucous over the ciliary tracts, possibly leading to diminished infection resistance.

Relative humidity below 30 percent is thought to create unhygienic conditions. Atmospheric humidity does not measurably affect thermal comfort, or the effective temperature, if the temperature and humidity are within the ranges recommended by ASHRAE.

Color

Color in the workplace seems to have a psychological effect on individuals due to optical illusions and emotional experiences which colors trigger. Such emotional experiences may be positive or negative feelings which colors somehow link with earlier experiences.

Generally, dark colors are depressing and tiring while light colors are friendly and cheerful. Room colors must also be considered in light of the nature of the work to be accomplished. Routine work requires more exciting colors. Work requiring close concentration requires colors which are not distracting and which are restful.

Intense colors should be reserved for rooms such as entrance halls, restrooms and corridors. Strong colors may help brighten these areas, making them more cheerful. Particular colors and their effects are summarized below.

Colors	Effects
Blue	Restful
Brown	Restful
Green	Very restful
Orange	Exciting
Yellow	Exciting
Red	Very stimulating, not restful
Violet	Aggressive, tiring

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Sources of Help

North Carolina Department of Labor

The North Carolina Department of Labor's Division of Occupational Safety and Health (OSHNC) administers OSHA rules and regulations in our state. Workers employed in both public and private offices are protected by OSHA.

Any employee may contact OSHNC regarding an unsafe or unhealthy condition in his or her workplace. Complaints may be made by calling toll-free 1-800-NC-LABOR or by calling (919) 807-2796. Any employee making a complaint about such conditions can request to have his or her name kept confidential.

An employer or any employee may contact the OSHNC Bureau of Education, Training and Technical Assistance regarding questions about OSHA or for other assistance regarding occupational safety and health information. Many publications including the OSHA standards for general industry or for construction, a wide range of industry-specific booklets, and other materials can be ordered through this bureau. See the inside back cover of this guide for the bureau's address and telephone number.

The North Carolina Department of Labor Library offers employers and employees a wide range of literature and audiovisuals on labor-related topics. The library's holdings are loaned free of charge to the public. A full-time librarian is on staff to assist patrons in selecting the materials most appropriate to their needs. The address and telephone number for the library is:

North Carolina Department of Labor Library
4 West Edenton Street
Raleigh, NC 27601-1092

Telephone: 1-800-NC-LABOR or (919) 807-2848

Employers may also contact the OSHNC Bureau of Consultative Services. This bureau conducts programs to assist employers in improving the safety and health conditions of their facilities and programs to recognize those who operate safe and healthy workplaces.

Bureau of Consultative Services staff members routinely conduct safety and health consultative visits at worksites at the request of employers. The bureau does not share its information with the OSHNC compliance bureaus.

This bureau also administers the Safety Awards program to honor those who operate safe and healthy workplaces and the Carolina Star program which recognizes employers who have achieved extraordinary safety and health records. Please contact the bureau for more information on any of these services. The Bureau of Consultative Services's address and telephone number are located on the inside back cover of this guide.

Other Organizations, Associations, and Agencies

You have valuable sources of assistance in your own vicinity. For example, the local chapter of the American Red Cross and the American Heart Association can assist you in establishing a course in CPR (cardio-pulmonary resuscitation). Your local fire department or community college can teach your office staff about different types of fire extinguishers, including how to use one, and advise you about a response plan for emergencies such as fires.

A sampling of other agencies includes:

Duke Poison Control Center
1-800-672-1697 (24 hours/day)

National Fire Protection Association (NFPA)
Batterymarch Park
Quincy, Massachusetts 02269
(617) 770-3000

National Safety Council
1121 Spring Lake Drive
Itasca, Illinois 60143-3201
(630) 285-1211

Suggested Readings

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N.C. Department of Labor. *North Carolina Occupational Safety and Health Standards for General Industry*.

North Carolina Occupational Safety and Health Hazard Communication Standard, 13 NCAC 7C.0101(a)(105); 29 CFR 1910.1200.

The following industry guides are available from the N.C. Department of Labor's Division of Occupational Safety and Health:

- #1. A Guide to Safety in Confined Spaces*
- #2. A Guide to Procedures of the Safety and Health Review Board of North Carolina*
- #3. A Guide to Machine Safeguarding*
- #4. A Guide to OSHA in North Carolina*
- #5. A Guide for Persons Employed in Cotton Dust Environments*
- #6. A Guide to Lead Exposure in the Construction Industry*
- #7. A Guide to Bloodborne Pathogens in the Workplace*
- #8. A Guide to Voluntary Training and Training Requirements in OSHA Standards*
- #9. A Guide to Ergonomics*
- #10. A Guide to Farm Safety and Health*
- #11. A Guide to Radio Frequency Hazards With Electric Detonators*
- #12. A Guide to Forklift Operator Training*
- #13. A Guide to the Safe Storage of Explosive Materials*
- #14. A Guide to the OSHA Excavations Standard*
- #15. A Guide to Developing and Maintaining an Effective Hearing Conservation Program*
- #17. A Guide to Asbestos for Industry*
- #18. A Guide to Electrical Safety*
- #19. A Guide to Occupational Exposure to Wood, Wood Dust and Combustible Dust Hazards*
- #20. A Guide to Crane Safety*
- #21. A Guide to School Safety and Health*
- #23. A Guide to Working With Electricity*
- #25. A Guide to Personal Protective Equipment*
- #26. A Guide to Manual Materials Handling and Back Safety*
- #27. A Guide to the Control of Hazardous Energy (Lockout/Tagout)*
- #28. A Guide to Eye Wash and Safety Shower Facilities*
- #29. A Guide to Safety and Health in Feed and Grain Mills*
- #30. A Guide to Working With Corrosive Substances*
- #31. A Guide to Formaldehyde*
- #32. A Guide to Fall Prevention in Industry*
- #33. A Guide to Office Safety and Health*
- #34. A Guide to Safety and Health in the Poultry Industry*
- #35. A Guide to Preventing Heat Stress*
- #36. A Guide to the Safe Use of Escalators and Elevators*
- #37. A Guide to Boilers and Pressure Vessels*
- #38. A Guide to Safe Scaffolding*
- #39. A Guide to Safety in the Textile Industry*
- #40. A Guide to Emergency Action Planning*
- #41. A Guide to OSHA for Small Businesses in North Carolina*

Occupational Safety and Health (OSH)

Sources of Information

You may call 1-800-NC-LABOR (1-800-625-2267) to reach any division of the N.C. Department of Labor; or visit the NCDOL home page on the World Wide Web, Internet Web site address: <http://www.nclabor.com>.

N.C. Division of Occupational Safety and Health

Mailing Address:

1101 Mail Service Center

Raleigh, NC 27699-1101

Local Telephone: (919) 807-2900 Fax: (919) 807-2856

Physical Location:

111 Hillsborough St.

(Old Revenue Building, 3rd Floor)

For information concerning education, training and interpretations of occupational safety and health standards contact:

Bureau of Education, Training and Technical Assistance

Mailing Address:

1101 Mail Service Center

Raleigh, NC 27699-1101

Telephone: (919) 807-2875 Fax: (919) 807-2876

Physical Location:

111 Hillsborough St.

(Old Revenue Building, 4th Floor)

For information concerning occupational safety and health consultative services and safety awards programs contact:

Bureau of Consultative Services

Mailing Address:

1101 Mail Service Center

Raleigh, NC 27699-1101

Telephone: (919) 807-2899 Fax: (919) 807-2902

Physical Location:

111 Hillsborough St.

(Old Revenue Building, 3rd Floor)

For information concerning migrant housing inspections and other related activities contact:

Agricultural Safety and Health Bureau

Mailing Address:

1101 Mail Service Center

Raleigh, NC 27699-1101

Telephone: (919) 807-2923 Fax: (919) 807-2924

Physical Location:

111 Hillsborough St.

(Old Revenue Building, 2nd Floor)

For information concerning occupational safety and health compliance contact:

Safety and Health Compliance District Offices

Raleigh District Office (313 Chapanoke Road, Raleigh, NC 27603)

Telephone: (919) 779-8570

Fax: (919) 662-4709

Asheville District Office (204 Charlotte Highway, Suite B, Asheville, NC 28803-8681)

Telephone: (828) 299-8232

Fax: (828) 299-8266

Charlotte District Office (901 Blairhill Road, Suite 200, Charlotte, NC 28217-1578)

Telephone: (704) 665-4341

Fax: (704) 665-4342

Winston-Salem District Office (4964 University Parkway, Suite 202, Winston-Salem, NC 27106-2800)

Telephone: (336) 776-4420

Fax: (336) 776-4422

Wilmington District Office (1200 N. 23rd St., Suite 205, Wilmington, NC 28405-1824)

Telephone: (910) 251-2678

Fax: (910) 251-2654

To make an OSHA Complaint, **OSH Complaint Desk:** (919) 807-2796

For statistical information concerning program activities contact:

Planning, Statistics and Information Management

Mailing Address:

1101 Mail Service Center

Raleigh, NC 27699-1101

Telephone: (919) 807-2950 Fax: (919) 807-2951

Physical Location:

111 Hillsborough St.

(Old Revenue Building, 2nd Floor)

For information about books, periodicals, vertical files, videos, films, audio/slide sets and computer databases contact:

N.C. Department of Labor Library

Mailing Address:

1101 Mail Service Center

Raleigh, NC 27699-1101

Telephone: (919) 807-2848 Fax: (919) 807-2849

Physical Location:

111 Hillsborough St.

(Old Revenue Building, 5th Floor)

N.C. Department of Labor (Other than OSH)

1101 Mail Service Center

Raleigh, NC 27699-1101

Telephone: (919) 733-7166 Fax: (919) 733-6197