

**BY ORDER OF THE COMMANDER
42D AIR BASE WING (AETC)**

MAXWELL AFB INSTRUCTION 32-2005

26 FEBRUARY 2013



Civil Engineering

**FIRE PREVENTION AND PROTECTION
DURING CONSTRUCTION, ALTERATION,
DEMOLITION, AND REPAIR OPERATIONS**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFD 32-20, *Fire Emergency Services*. It establishes rules and procedures and defines responsibilities for an effective fire prevention and protection program at Maxwell AFB during construction, alteration, demolition, and repair work. Submit an AF Form 847, *Recommendation for Change of Publication*, to the OPR to recommend changes to this publication. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. This instruction does not apply to Air Force Reserve Command (AFRC) and Air National Guard (ANG) units.

1. Fire Prevention and Protection Standards.

1.1. Construction, alteration, demolition, and repair work at Maxwell AFB and Gunter Annex must comply with EM 385-1-1, *Safety and Health Requirements*, NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, and this instruction.

1.2. Contractors and other personnel performing construction, alteration, demolition, or repair work will receive a fire prevention briefing and a copy of this instruction prior to the start of work. A copy of this instruction shall be placed in a location so it is readily accessible at the work site. A copy of EM 385-1-1 and NFPA 241 shall also be maintained at the work site. Contact the Maxwell AFB Fire Prevention Office at (334) 953-5870 to address questions or concerns regarding fire prevention and protection requirements.

1.3. The Fire Prevention Office will monitor construction, alteration, demolition, and repair work to ensure compliance with all fire prevention standards and regulations. When fire hazards or unsafe practices or conditions are found, the Contracting Officer Representative (COR) or Civil Engineer (CE) inspector will be notified. The COR or CE inspector will ensure immediate action is taken to eliminate the hazard.

1.4. The Base Fire Marshal approves buildings, or portions thereof, to be occupied during construction, alteration, demolition, or repair work. The following safety conditions must be maintained in order for buildings to remain occupied:

1.4.1. The required means of egress and building fire protection features must be in place and continuously maintained. Alternate life safety and building fire protection measures that are acceptable to the Base Fire Marshal may be used to meet this requirement.

1.4.2. Flammable, hazardous, or explosive materials or equipment must not create danger to the occupants or impede their egress from the building.

2. Fire Safety Program. Fire safety is extremely important. The fire prevention and protection standards specified in this publication and the referenced documents herein will ensure all work meets Air Force fire prevention standards.

2.1. The general contractor will develop and implement a site-specific fire prevention plan to address the following items:

2.1.1. Fire reporting and evacuation procedures.

2.1.2. A list of the potential major workplace fire hazards and the procedures to minimize them.

2.1.3. Potential ignition sources.

2.1.4. Types of fire suppression equipment or systems appropriate for the control of fire.

2.1.5. Assignments of responsibilities for maintaining equipment and systems.

2.1.6. Responsibilities for controlling fuel source hazards.

2.1.7. Good housekeeping practices to include procedures for removing waste materials.

2.1.8. Procedures for handling spills and leakage of flammable and combustible liquids and gases.

2.2. The general contractor will appoint a fire prevention program manager at each work site. The fire prevention program manager will:

2.2.1. Ensure all employees are trained in the fire prevention plan and the emergency reporting and response procedures.

2.2.2. Ensure employees are trained in the use of the fire protection equipment provided.

2.2.3. Ensure adequate numbers and types of fire protection equipment are provided.

2.2.4. Manage the hot work permit program.

2.2.5. Authorize the isolation or shutdown of fire protection systems and ensure that information is communicated to the Emergency Communications Center (ECC). Notify the ECC at (334) 953-7449 or 953-7470. Ensure isolated, impaired or inoperative fire

protection systems are returned to service as soon as possible and notifications are made to the ECC.

2.2.6. Ensure the temporary coverings placed on fire protection devices are promptly removed upon completion of the work.

2.2.7. Develop policies and procedures to prevent false fire alarms resulting from construction, alteration, demolition, or repair work.

2.3. Fire Reporting Procedures. Any individual working on Maxwell AFB or Gunter Annex who discovers a fire shall immediately notify the fire department. All fires, suspected fires, and evidence of past fires must be reported.

2.3.1. To report a fire on Maxwell AFB or Gunter Annex:

2.3.1.1. Dial 911 from the base telephone exchange.

2.3.1.2. Dial 953-9911 on cell phones; cell phone users with a service provider outside of the local area must dial (334) 953-9911.

2.3.2. Take the following actions when a fire is discovered:

2.3.2.1. Sound the alarm and evacuate the building.

2.3.2.2. Notify the Fire Department as prescribed in paragraph 2.3.1. and provide the following information:

2.3.2.2.1. Facility number and location of fire.

2.3.2.2.2. What is burning, if known.

2.3.2.2.3. Number and type of injuries, if known.

2.3.2.2.4. Name and phone number of person reporting the fire.

2.3.3. Do not hang up until the fire alarm center operator tells you to do so, unless you feel your safety is at risk and you must hang up and evacuate the facility.

2.3.4. After a fire emergency has been reported, the individual reporting the fire will appoint someone to direct the fire apparatus to the fire scene. If it is safe to do so, attempt to extinguish small fires.

2.3.5. All persons shall evacuate the building when notified to do so as a result of a known or perceived fire emergency. They shall also evacuate the building when the fire alarm system is activated.

2.3.6. An individual shall not deliberately or maliciously report a fire when no fire is present.

2.4. Emergency Response Vehicle Access.

2.4.1. Every building undergoing construction, alteration, demolition, or repair shall be accessible by fire department emergency response vehicles at all times.

2.4.2. All access roads must have an all-weather driving surface not less than 20 feet of unobstructed width and a vertical clearance of not less than 14 feet.

2.4.3. Dead-end access roads in excess of 150 feet in length must be provided with provisions for fire vehicles to turn around.

2.4.4. Access roadways must be extended within 150 feet of all portions of the exterior walls of the building.

2.4.5. Access to fire hydrants and fire department connections to fire suppression and standpipe systems shall be provided and maintained at all times.

2.5. Fire Extinguishers.

2.5.1. Portable fire extinguishers shall be provided for use.

2.5.2. Fire extinguishers shall be inspected monthly and maintained as specified in NFPA standards.

2.5.3. Fire extinguishers shall be fully charged, operable, suitably placed, and readily accessible.

2.5.4. Employees shall receive fire extinguisher training as required by NFPA standards.

2.5.5. At least one fire extinguisher, with a minimum 3A:40BC rating, shall be provided in tool houses, storerooms, and other similar buildings.

3. **Smoking.** The careless use and disposal of smoking materials is a leading cause of fires.

3.1. Smoking is authorized on Maxwell AFB and Gunter Annex in designated tobacco use areas only. This means that smoking is prohibited inside or around buildings, inside or around vehicles, in or around vehicle parking lots, and at other areas on base that are not designated tobacco use areas.

3.2. Smoking materials will be disposed of in approved smoking materials containers or in metal receptacles containing water to ensure that all possible sources of ignition are eliminated.

4. **Waste Disposal.**

4.1. Combustible waste material, dust and debris shall be removed from buildings and their vicinity and properly disposed of at the end of each day, or more frequently if necessary for safety.

4.2. Burning rubbish from construction, alteration, demolition, or repair work is strictly prohibited.

4.3. Oily rags and other materials subject to spontaneous ignition shall be stored in UL-listed disposal containers. Do not dispose of these items in dumpsters or trash cans.

5. **Flammable and Combustible Liquids and Gases.**

5.1. Flammable and combustible liquid storage cabinets and containers shall meet NFPA requirements.

5.2. Do not store flammable and combustible liquids inside buildings under construction, alteration, demolition, or repair.

5.3. Open flame devices and smoking are not permitted in flammable and combustible liquid storage areas.

- 5.4. Keep flammable and combustible liquid storage containers closed when not in use.
- 5.5. Leakage and spills will be handled promptly, safely and in accordance with acceptable environmental practices.
- 5.6. Do not use flammable liquids for cleaning purposes.
- 5.7. Provide adequate ventilation to prevent the accumulation of flammable vapors to hazardous levels in all areas where flammable and combustible liquids are handled or used.
- 5.8. Do not store flammable and combustible liquids in areas used for exits, stairways or the safe passage of people.
- 5.9. Keep unopened containers of flammable and combustible liquids, such as paints, varnishes, lacquers, thinners, and solvents, in a well-ventilated location that is free from excessive heat, smoke, sparks, flame, or direct rays from the sun.
- 5.10. Equipment Refueling.
 - 5.10.1. Do not refuel or service fuel-driven equipment inside any structure that is under construction, alteration, demolition, or repair.
 - 5.10.2. Do not store fuel for equipment inside any structure under construction, alteration, demolition, or repair.
 - 5.10.3. Shut down all fuel-driven equipment and allow it to cool before refueling.
- 5.11. Flammable and combustible gases shall not be stored inside any building or structure under construction, alteration, demolition, or repair.

6. Electrical Utilities.

- 6.1. All electrical devices shall be maintained in a safe condition at all times. They shall be inspected frequently for signs of fraying, cracking, wearing, or any damage that could indicate possible short-circuiting.
- 6.2. Electrical extension cords shall not be used as a substitute for fixed wiring. Do not run them through holes in walls, ceilings, floors, doorways, windows, or similar openings. Do not run extension cords where concealed behind walls, dropped ceilings, or floors. Do not tape, staple, or tack extension cords to building surfaces. Extension cords shall not be spliced, coiled or placed where they may be damaged or create a hazard. Cords shall not be walked on nor will equipment be allowed to run over them. If cords must be placed in travel lanes, they shall be protected by molded housings or bridges. Do not excessively kink, bend, or stretch cords.
- 6.3. Equipment connected by flexible extension cords shall be grounded either by a three-wire cord or by a separate ground wire (except double-insulated equipment). A grommet, stress relief device, or some means of clamping approved by the National Electric Code will be installed where cords pass through equipment housings to prevent abrasion of the cord insulation. The means used will hold the cord firmly so there is no pull or strain put on the cords internal wiring.
- 6.4. Extension cords used with portable tools and equipment shall be designed with three-prong plugs. Two-wire extension cords are prohibited except for double insulated tools and

low amp devices. The minimum amperage rating of the extension cord shall be at least equal to, but not less than, the amperage rating of the item being powered from the cord.

6.5. Cords shall be of the proper size and (or) rating for the equipment it services. Defective cords must be removed from service immediately.

6.6. When possible, electrical power cords used with equipment shall be suspended from overhead in rigid raceways.

6.7. Equipment connected by an extension cord shall be disconnected when not in use and at the end of the work shift.

6.8. Electrical wiring or conduits shall not be used as hangers for clothing or supports of any nature.

7. Temporary Construction Equipment and Storage.

7.1. The separation distances between temporary offices, sheds, storage facilities and buildings under construction, alteration, demolition, and repair shall comply with the requirements in NFPA 241, Chapter 4, Table 4.2.1.

7.2. Temporary Heating Equipment.

7.2.1. Temporary heating equipment must be installed, used, and maintained in accordance with the manufacturer's instructions.

7.2.2. Only UL-listed electric space heaters are authorized for use inside buildings. LPG or kerosene heaters are not authorized for use inside any building or structure.

7.2.2.1. Electric space heaters shall be equipped with an automatic shut-off device that will shut off the heater if it tips over, an overheat protection device, and an automatic thermostat control.

7.2.2.2. Plug electrical space heaters directly into a wall receptacle. Do not use an extension cord or a multiple plug device.

7.2.2.3. Keep combustible materials at least 36 inches from space heaters.

7.2.2.4. Space heaters shall not be left on when unattended. Unplug electrical space heaters when not in use and at the end of each work day.

7.2.2.5. Position space heaters on the floor so they will be secure. Do not place them on a table or in a chair.

7.2.3. LP gas patio heaters may be used outside of buildings only. They shall be UL listed and used only in accordance with the manufacturer's instructions. They shall not be placed any closer than 10 feet from the exterior of a building.

8. Hot Work.

8.1. Hot work shall meet the requirements of 29 CFR 1910.252, *Welding, Cutting, and Brazing (General Requirements)*, NFPA 241, and this instruction.

8.2. Hot work shall not be performed without obtaining a permit from the Fire Department. AF Form 592, *USAF Hot Work Permit*, will be issued for all hot work operations. To obtain a permit at Maxwell AFB, call (334) 953-5870 or (334) 953-7449. To obtain a permit at Gunter Annex, call (334) 416-4818.

8.3. Hot work permits may be issued for a period of 30 days for the construction of new facilities. When fire loading in new facilities becomes potentially hazardous, permits will be issued for a 1-week period only.

8.4. Hot work permits may be issued for a 30-day period for projects involving the entire demolition of a facility.

8.5. Hot work permits may be issued for a 1-week period only for work in existing facilities.

8.6. Hot work permits will only be issued for a 1-day period for work in hazardous locations.

8.7. Call the fire department at Maxwell AFB or Gunter Annex as applicable to close out the permit when the work is completed. If the work has not been completed by the expiration date of the permit, call the fire department to close out the current permit and request an additional permit.

8.8. Only the tasks authorized by the original permit shall be accomplished. Additional tasks shall require a new permit.

8.9. Hot work is prohibited:

8.9.1. In buildings with inoperable fire suppression systems unless approved by the fire department and alternative means of fire detection, suppression, and reporting are available.

8.9.2. In explosive atmospheres or where explosives atmospheres may develop.

8.9.3. Within 50 feet of explosives locations (to include conveyances or material handling equipment loaded with explosives items), aircraft, and liquid oxygen carts.

8.9.4. Within 50 feet of flammable or combustible liquids.

8.9.5. Within 35 feet of combustible materials unless they are covered and protected as required by NFPA standards.

8.10. Use caution when working in areas protected by fire detection and suppression systems to avoid accidental activation of these systems.

8.11. Fire Watcher.

8.11.1. A fire watcher shall be appointed for hot work operations when:

8.11.1.1. Combustible materials cannot be moved at least 35 feet from the operation.

8.11.1.2. Combustible materials are more than 35 feet away but are easily ignited.

8.11.1.3. Wall or floor openings expose combustible materials.

8.11.1.4. Combustible materials on the opposite side of partitions, walls, ceilings, or roofs are likely to be ignited.

8.11.1.5. Specified by the PAI.

8.11.2. The fire watcher shall be proficient in the operation of available fire extinguishing equipment. The fire watcher shall also be trained in the inherent hazards associated with welding, cutting, and other hot work, and the procedures for sounding an alarm in the event of a fire. The fire watcher shall:

- 8.11.2.1. Ensure that safe conditions are maintained during all hot work operations.
- 8.11.2.2. Stop hot work operations when unsafe conditions develop.
- 8.11.2.3. Ensure a fully charged and operable fire extinguisher with a minimum rating of 3A:40BC is readily available for use.
- 8.11.2.4. Watch for fires in all exposed areas and attempt to extinguish them only when he or she can do so safely. If the fire cannot be extinguished safely, sound the alarm immediately.
- 8.11.2.5. Remain at the hot work site for at least 30 minutes after completion of the work. The length of the fire watch period may be extended if the fire prevention program manager or PAI determines an extension is warranted.
- 8.11.2.6. Inspect the following areas upon completion of the operation:
 - 8.11.2.6.1. The work area and all areas within 5 feet of the work area.
 - 8.11.2.6.2. If the work area is on a roof or floor above, the ceiling area and floor area on the level below the work area and all void areas between the floors/roof.
 - 8.11.2.6.3. If the work area is in or above any vertical chase area, the chase area on the floor below, any chase areas in the void between the work area and the floor below, and the lowest level of the vertical chase.

9. Asphalt and Tar Roofing Kettles.

- 9.1. The Fire Prevention Office must approve the location of all asphalt and tar roofing kettles before roofing operations begin.
- 9.2. Asphalt and tar roofing kettles and associated equipment shall be located in a safe location outside of the building at a minimum distance of 25 feet from any structure.
- 9.3. Do not block exits, means of egress, gates, roadways, or entrances with roofing kettles.
- 9.4. Do not place roofing kettles on roofs.
- 9.5. While in use, roofing kettles shall be attended by at least one employee who is knowledgeable of its operation.
- 9.6. There shall be at least one portable fire extinguisher with a minimum 20B rating within 25 feet of the roofing kettle while it is in use.
- 9.7. Turn roofing kettles off at least 30 minutes prior to the end of each workday.

10. Demolition Operations.

- 10.1. Exercise extreme caution during all demolition work.
- 10.2. Protect existing fire protection and life safety systems that are to remain in place.
- 10.3. The use of explosives during demolition work is prohibited.

11. False Fire Alarms. False fire alarms take firefighters away from their normal duties and any real or actual emergencies that take place. All personnel performing construction, alteration, demolition, or repair work on Maxwell AFB and Gunter Annex are responsible for preventing false fire alarm activations. This can be accomplished by:

11.1. Developing and enforcing policies to prevent false fire alarms during scheduled work activities.

11.2. Placing protective covers over smoke detectors to prevent the accumulation of dust and dirt.

11.3. Using caution when working around heat detectors, smoke detectors, manual fire alarm pull stations, and fire suppression systems to ensure they are not hit or damaged.

11.4. Temporarily disabling, deactivating or isolating fire alarm, detection, and suppression systems. Call the ECC at (334) 953-7470 or (334) 953-6131 to notify them of disabled systems. Ensure disabled, deactivated, or isolated fire protection systems are placed back in service as soon as possible and the ECC is notified.

TRENT H. EDWARDS, Col, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

OSHA Standard 29 CFR 1910.252, *Welding, Cutting and Brazing (General Requirements)*, 26 March 2012

AFPD 32-20, *Fire Emergency Services*, 21 June 2012

EM 385-1-1, *Safety and Health Requirements*, 15 September 2008

NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 2013 Edition

Adopted Forms

AF Form 592, *USAF Hot Work Permit*

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

CE—Civil Engineer

COR—Contracting Officer Representative

EM—Engineer Manual

ECC—Emergency Communications Center

NFPA—National Fire Protection Association

OPR—Office of Primary Responsibility

PAI—Permit Authorizing Individual

UL—Underwriters Laboratory