

A c c u r a t e A i r , I n c .



" D o m i n a t i n g O u r C r a f t "

SAFETY POLICY MANUAL

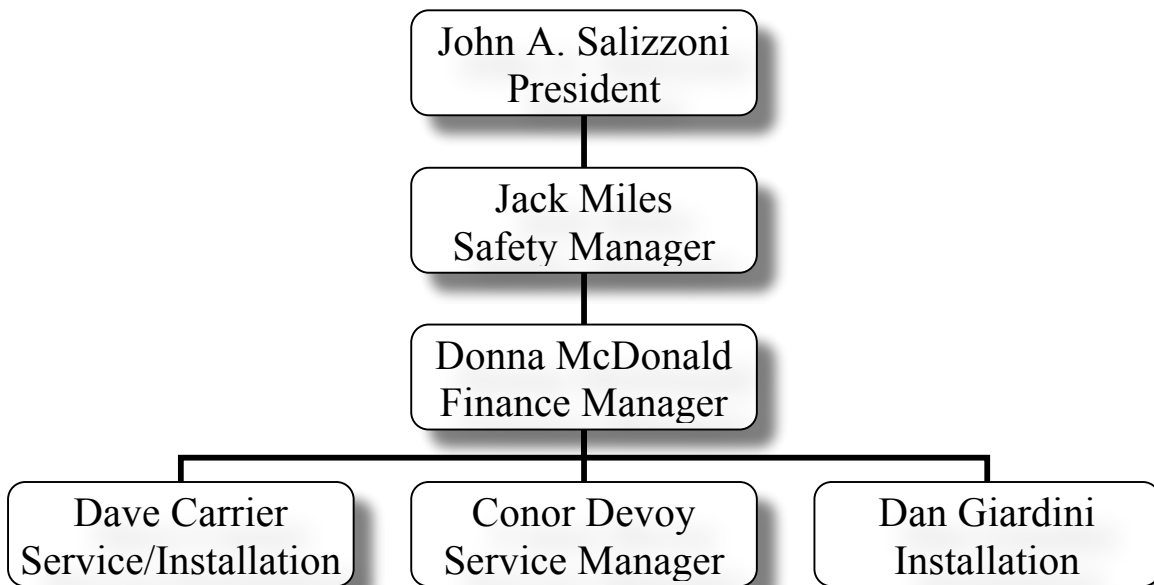
Table of Contents

ACCURATE AIR, INC. SAFETY COMMITTEE MISSION STATEMENT	1
DISCIPLINARY PROCEDURE	2
RESPONSIBILITIES	3
TRAINING	7
INJURY REPORTING PROCEDURE	10
HOUSEKEEPING.....	11
WEATHER ISSUES	12
ACCIDENT INVESTIGATION	13
JOBSITE INSPECTIONS.....	15
PROTECTIVE AND SAFETY EQUIPMENT	17
HAND & POWER TOOLS.....	19
ELECTRICAL SAFETY.....	22
LADDERS	25
FALL PROTECTION.....	28
FIRE SAFETY	32
EMERGENCY TELEPHONE NUMBERS	35
VEHICLE SAFETY.....	37
CRANE & HOISTING OPERATIONS	40
FORKLIFTS	42
HAZARD COMMUNICATION	43
BACK INJURY PREVENTION.....	45
SCAFFOLDS.....	46
ASBESTOS.....	47
CONFINED SPACES	51
LOCKOUT/TAGOUT.....	52
SUBSTANCE ABUSE POLICY	53
WELDING AND TORCH CUTTING	55
STEEL ERECTION	56
RESPIRATORY PROTECTION PROGRAM	59
HOT WORK SAFETY PROCEDURES	62
EXCAVATION & TRENCHING	67
AAI MSDS SHEETS.....	69

ACCURATE AIR, INC. SAFETY COMMITTEE MISSION STATEMENT

Accurate Air, Inc. Safety Committee is committed to preserve a high level of safety within the organization. We will instill in all employees a consciousness of safety at all times. We will encourage with incentive to all employees to follow all guidelines required by Accurate Air, Inc. and OSHA. We will promote continued education to reinforce guidelines required and to train employees on new guidelines that may change with time. The main focus of this program is to insure that all our employees will follow the procedures required to prevent them from injury or harm.

ACCURATE AIR, INC. ORGANIZATIONAL CHART OF SAFETY COMMITTEE



DISCIPLINARY PROCEDURE

Accurate Air Inc. will make every reasonable effort to perform its work in the safest manner possible. We accept responsibility for the safety of our employees and will take all necessary steps to prevent accidental injuries and losses to equipment and property.

Each employee shares in this responsibility. Accident prevention is not a separate function of management, but must be a cooperative effort on the part of each employee. Our moral and legal obligations will not allow us to tolerate repeated safe work practice violations. Therefore, willful disregard of known safety requirements will be sufficient cause for the following action:

1. First offense: Documented verbal warning.
2. Second offense: Written reprimand placed into personnel file.
3. Third offense: Suspension or discharge.

RESPONSIBILITIES

This section describes the safety responsibilities of each member of a successful operation. The responsibility for the success of the safety program extends from top management down through the ranks to every department and every worker.

Specific duties and responsibilities are outlined for various members of management. The organization may differ and titles may require combined duties for some projects depending on the size, staffing, and duration of the project.

COMPANY RESPONSIBILITY:

Accurate Air, Inc. recognizes the need for incorporating safe working practices within every project. AAI promotes the advancement of safety in the maintenance of equipment, maintenance of tools, hiring of skilled craftspeople and knowledgeable management. Supervisors have the additional duty of administering the safety program by communicating support and actively promoting safety throughout the company.

CORPORATE SAFETY DIRECTOR RESPONSIBILITY:

The Corporate Safety Director is responsible for providing support and information concerning safety matters and monitoring the effectiveness of AAI's safety program. He/she will be available as a resource to guide project managers who are directly responsible for site safety. The Corporate Safety Director will be expected to provide input about safety performance by project based on accident and safety activities.

The Corporate Safety Director will coordinate medical facilities to work with AAI site representatives in the prompt and quality treatment of any injured AAI employee. The Safety Director will review with the medical facility AAI's Loss Control Program so that the medical facility has a thorough knowledge of AAI's requirements.

PROJECT MANAGER RESPONSIBILITY:

Project managers are ultimately responsible for the safe operation of their projects. It is their responsibility to provide active leadership in developing safety awareness on the part of all employees particularly through adhering to safety rules and using personal protective equipment where designated and randomly participating in safety meetings/activities.

SUPERVISOR/FOREMAN RESPONSIBILITY:

Supervisors must consider it an essential part of their job to incorporate safety within their function to maintain an efficient operation. Project performance should include not only production or quality control, but also the effectiveness of safety activities. Job performance reviews will include safety performance. It cannot be overemphasized that the attitude

developed by employee suggestions, unsafe practices, site specific hazards, and your own adherence to safety rules is essential.

EMPLOYEE RESPONSIBILITIES:

All employees are required, as a condition of employment, to follow established safety practices, wear required personal protective equipment, and follow direction and rules established by their supervisors. All accidents must be reported immediately to a supervisor or foreman. Suggestions to improve safety related areas are encouraged. No employee should ever undertake a job that appears to be unsafe. Ask questions – it is not only your right, but also your responsibility.

SPECIFIC RESPONSIBILITIES

PROJECT MANAGER – SPECIFIC RESPONSIBILITIES

1. Communicate and actively support the company safety policy.
2. Establish annual loss control objectives for the project and supervisors. Results of these objectives should be reflected in performance evaluation.
3. Provides training opportunities. Plans work around training opportunities whenever possible to allow training for crafts and supervisors when applicable.
4. Coordinate with the Corporate Safety Director upon learning of any new project to establish necessary health care facilities near the project, discuss any pre-placement testing that may be required, and line-up rescue services, as necessary.

SUPERVISOR – SPECIFIC RESPONSIBILITIES

1. Ensure the availability of all necessary personal protective equipment, job safety facilities, and first-aid facilities.
2. Ensure that employees have received and understand all training materials required prior to commencement of duties.
3. Ensure all necessary documentation is maintained. This includes accident reports, weekly toolbox meetings, weekly safety inspections, employee instruction and OSHA recordkeeping.
4. Ensure to the greatest extent possible, subcontractor's compliance with company policy and applicable local, state, and federal safety standards/regulations.
5. Review all lost time injury and property damage reports. Relay specifics to employees to prevent reoccurrence.
6. Ensure that all safety-related information, such as Owner requirement, correspondence, and changing site conditions, are communicated to the field personnel.
7. Ensure all injuries are promptly cared for, investigated and properly reported.
8. Be responsible for housekeeping and conducting regular inspections of work areas for unsafe conditions and unsafe acts.
9. Ensure that all equipment is properly guarded and that guards are in place when equipment is in operation.
10. Set an example for employees by wearing all required personal protective equipment and enforcing use of this equipment by their employees.

11. Pay special attention to proper lifting technique. All management personnel should be trained in proper lifting, so that they know what to look for. Mechanical lifting aids should be used whenever possible.
12. Make employees aware that all injuries must be reported immediately.
13. Investigate all accidents and submit a report to the Corporate Safety Director for review. Since the supervisor is the most familiar with the operation and is responsible for the conduct of employees, it is their responsibility to conduct investigations and take action to prevent recurrence of similar accidents.
14. Make certain that any employee who has suffered an injury and requires professional medical services is escorted for treatment by either a project manager, site safety representative, supervisor or foreman. Never allow an injured employee to take himself/herself to the clinic, hospital, or doctor for treatment.
15. Make certain that whenever an injury does occur that the proper paperwork is provided to AAI's office, and to the client, as required.
16. Ensure the availability of all necessary personal protective equipment, plus proper use.
17. Act without delay, on all hazards (unsafe acts and conditions).
18. Inform supervisor or project manager of problems that lie beyond your position description.
19. Conduct and document weekly "Tool Box" safety meetings with your own personnel.

EMPLOYEE – SPECIFIC RESPONSIBILITIES:

1. Constantly observe work conditions, equipment, and tools for the purpose of preventing accidents. Make certain you are using the correct tool/equipment for the application. Make certain the tool/equipment selected for use is safe for use; if uncertain, check with your foreman or supervisor.
2. Comply with all safety instructions, which have been given to you. If you have questions, ASK; do not assume.
3. Correct unsafe acts or conditions, or ask for foreman or supervisor for action in correcting unsafe acts or conditions.
4. Stop work if conditions are such that there is immediate danger to life, limb or property.
5. Use your knowledge and influence in the prevention of accidents.
6. Become involved in inspecting, detecting, and correcting unsafe acts or conditions in your area. Contribute ideas, suggestions, and recommendation for improvement of the safety effort.
7. Wear personal protective equipment required for the job as a condition of your employment. Inspect your personal equipment prior to each use – make certain it is free of any defects.
8. If any defects are found, see your foreman or supervisor for a replacement prior to commencing work requiring its use. It is your responsibility to make certain that your personal protective equipment is in safe working order.
9. Maintain good housekeeping – trash and other tripping hazards must be picked up and put away. Take pride in your work area: it is a reflection of you and AAI.
10. Report all work injuries and/or sicknesses to your supervisor IMMEDIATELY. You must also report any property damage to your supervisor as soon as possible after occurrence.
11. Assist in the investigation of accidents with the objective of introducing measures to prevent a recurrence of a similar accident and/or offering any information you may have in the exact cause of an accident or injury.

SAFETY COMMITTEE – SPECIFIC RESPONSIBILITIES:

1. Safety committee members will become familiar with the Corporate Policy, Program and the responsibilities of each.
2. Assist in the development of safety procedures and assist the Corporate Safety Director in carrying out an effective safety program.
3. Review and discuss accident investigation reports having occurred during the previous month. The committee will determine whether or not effective corrective actions have been taken to prevent recurrence.
4. Members will actively participate in committee meetings and support committee activities.
5. Safety committee members in conjunction with the Corporate Safety Director will make regular inspections of projects and develop recommendations necessary to eliminate unsafe acts and unsafe conditions.
6. Committee members will monitor safety bulletin boards to make sure they are properly maintained and that current safety bulletins are posted.
7. Members of the committee will set an example within the organization by wearing required personal protective equipment and operating equipment in a safe manner at all times.

SAFETY COMMITTEE ACCOUNTABILITY:

Monthly accident records and safety committee meeting minutes will indicate the effectiveness of the committee and safety effort.

SUBCONTRACTOR RESPONSIBILITIES:

1. Provide a written copy of Loss Control Program.
2. Designate a competent supervisor to carry out Loss Control Program.
3. Provide AAI with Subcontractors site Safety Designee's name in writing.
4. Strictly adhere to Federal, State, Local, and Contract safety regulations and requirements.
5. Conduct weekly job site safety inspections of own operations and equipment. Results must be documented coupled with comments on any corrective action taken or planned. A copy of documentation is to be submitted to AAI.
6. Conduct weekly "Tool Box" safety meetings or arrange to have employees participate in AAI weekly "Tool Box" safety meetings. If subcontractor opts to hold own weekly meeting a copy will be forwarded to AAI of the meeting on a weekly basis. If subcontractor with a copy of the meeting for their records.
7. Maintain accurate incident and accident and/or injury reports. A copy of all accident and/or injury reports must be supplied to AAI immediately. Incident logs/reports must be maintained by the subcontractor for periodic review by AAI upon request.
8. Immediately report all fatal or serious accidents and/or injuries to AAI's supervisor or project manager for necessary assistance in investigation procedures.
9. Have readily available to AAI employee safety training records.
10. Maintain "good housekeeping" at all times. All work areas must be kept neat, orderly and free from any obstructions or hazards.

TRAINING

SAFETY TRAINING OUTLINE:

Safety training is an integral part of the success of the AAI Safety Program. AAI will offer various in-house training sessions throughout the year, and employees are encouraged to participate. There are also other venues of training to help meet our needs. If you are interested in a class at organizations such as Associated Builders and Contractors (ABC), please contact the Corporate Safety Director. We encourage this training, as it helps make for a safer work environment, and keeps our employees current with safety in this ever-changing industry.

Training may include, but is not limited to the following:

- CPR and First-Aid
- Ladder Safety
- Lift Safety
- OSHA 10-Hour Course
- Fall Protection
- Hazardous Communications
- Regular “Tool Box” Talks

If any employee has a suggestion for training or needs to receive specific training, please contact the Corporate Safety Director.

All training shall be documented using AAI Safety Training Sign-Off Sheet. These forms should be forwarded to the Corporate Safety Director.

ORIENTATION OF NEW EMPLOYEES:

Introduction to the Company should be done on the employee’s first day on the job.

1. Coverage of general company policy and rules and discussion of various benefit programs (for example: hospitalization, pension plan, holidays, and sick leave).
2. Discussion of general rules and the loss control program. The Company’s handbook should be given to the new employee, and the Company’s safety policy statement should be explained. The “why” aspect of general rules should be explored with the employee, who is more likely to follow rules when he understands the reasons for them.
3. Point out and discuss the significant hazards present for foreseen in the work area.
4. Explain work methods and procedures to be observed with the particular assignment, including the safety precautions and use of personal protective equipment.
5. Require that all men be alert and they look out for each other.
6. Enumerate specific safety rules with the care and use of: (a) flame cutting and welding; (b) ladders and scaffolds; (c) housekeeping; (d) handling of materials; (e) reporting accidents and injuries; (f) only tools in safe condition are to be used for each job.

7. Point out location of nearest fire extinguisher, first aid, drinking water, sanitation facility and Material Safety Data Sheets.
8. Instruct each man to ask questions when he doesn't know, and make known to him that we will appreciate his suggestions for safety; also, make perfectly clear the extent of participation with safety measures that is expected from him.

GENERAL SAFETY MEETING:

At least once each year, a general safety meeting should be held. This meeting shall be attended by all divisions' managers and supervisors and superintendents. The chairman of this meeting will be the safety director assisted by the general superintendent. The purpose of this meeting will be to review the company's safety program the new year.

WEEKLY TAILGATE MEETINGS:

Tailgate meetings are a very effective weapon in promoting on-the-job safety. We want and need everyone to get involved.

Here are a few points to remember in making tailgate safety meetings as effective as they can be on the job site.

1. First of all, the meeting must be held once a week. Regular meetings will provide the feeling that they are a regular part of the job, and a valuable one.
2. Hold the meeting at the beginning of the shift, or right after lunch, or after a break. Perhaps the best time is at the beginning of a shift when everyone is alert.
3. Hold the meeting right on the job, preferably where men can sit and smoke.
4. Limit each meeting to between 5 and 10 minutes. If discussion gets hot and heavy (which is good in a way), continue it into another meeting – or maybe during lunch or after work if there is interest.
5. Discuss only a single point or subject. **THIS IS MOST IMPORTANT.** Tailgate meeting topics will be supplied and can easily be read by anyone in the crew. However, a topic chosen by the foreman to emphasize (for example: an unsafe work practice or near accident that occurred recently on the job) would be very effective in underscoring the importance of correcting the event or actions of employees involved. A good foreman or manager is one who uses the tools and time given to him to prevent losses from occurring.

Also, it is strongly recommended that unscheduled tailgate meetings be held for correction of serious job situations that come up. It is an important tool in correction of poor production and safety problems.

Documentation of scheduled and unscheduled safety meetings is required.

You will be supplied with Foreman's Tailgate Meeting Report Forms. They will be in triplicate with Foreman, Superintendent and Home Office receiving copies. All personnel attending will be asked to sign the tailgate meeting report and briefly describe the subject discussed.

Remember, tailgate meetings on a weekly basis are the most effective way to educating employees about the hazard of their work and safe job procedures in general.

INJURY REPORTING PROCEDURE

Accurate Air, Inc. strives to maintain a “no injury”, “no lost time” work environment. However, there are circumstances that occur when an employee receives an injury during the performance of his/her job that requires professional medical attention. AAI has established procedures that must be followed whenever an injury on the job has been sustained, to assure employees of emergency attention, qualified professional medical care, and immediate back-to-work assistance, whenever applicable.

PROCEDURES:

1. Report all injuries to the immediate supervisor or the site safety supervisor immediately.
2. Any employee sustaining injuries requiring professional medical treatment must be escorted to the medical facility by a foreman, supervisor, site safety supervisor, or project manager.
3. Medical facilities will have been previously established for your work vicinity and must be used whenever seeking professional medical treatment of a work-related injury.

Any AAI employee sustaining an on-the-job injury that has been restricted in his/her normal job activities by the physician, will be provided an alternate duty assignment, within the constraints of his/her restriction(s) as noted by approved attending physician. All restricted duty must be prescribed by a professional physician and be received in writing by AAI, specifying employee constraints and anticipated duration of restriction.

Employees will not be paid by AAI for time away from work for any work-related injury.

If any employee sustains an injury and makes every effort to report to work and be assigned to temporary light/restricted duty, AAI will pay the employee his/her regular pay (for a duration to be determined case-by-case).

Employees need to be aware that depending on the state that the injury was sustained in, workers' compensation payments (which are only a percentage of normal weekly pay) are not made until an employee is out of work anywhere from 5 to 10 days. Payments can take up to 16 days to reach the employee (in some cases, twice as long if there are delays in the paperwork; i.e., if the claim was not reported by the employee accurately).

AAI guarantees the employee light-duty/restricted work (as defined by attending physician) whenever possible with no lapse in wages, as long as the employee makes an effort to participate in daily work activities as assigned and reports to work daily.

HOUSEKEEPING

MATERIAL STORAGE AND SAFETY:

- All materials must be stored neatly and placed out of the way.
- All material debris must be picked up daily. A clean work area will invariably create a safer job site.
- Lift with your legs and not with your back.
- Always get help or use equipment when moving heavy and bulky material.
- Keep a clear path when moving materials.
- Never store or pile material near the roof edge.
- Never overload deck with material.
- **BE ESPECIALLY CAREFUL WHEN HANDLING MATERIAL NEAR THE ROOF EDGE.**

One of the easiest ways to prevent accidents is to maintain a neat and orderly job site. Professional HVAC crews take pride in maintaining a clean work site.

- Materials must be neatly stacked and placed away from foot traffic.
- Materials and equipment should not be stored within 6 feet from the edge of the roof.
- Tools and equipment must be put away after use.
- Where necessary, wheels on rolling equipment should be blocked.
- Trash and scrap are fire hazards and must be collected and disposed of immediately.
- All flammable liquids must be stored in an approved safety can.

WEATHER ISSUES

During outdoor work, such as roof work, weather is a concern. If severe weather strikes, know what to do to protect yourself, your coworkers, equipment, and materials. Watch for changing weather. If possible, listen to weather forecasts on the radio; this can provide you with advance warning of severe wind or rain. Most importantly, listen to your supervisor. If he or she tells you to come off the roof, don't wait – make your way to shelter immediately.

Your first responsibility is to ensure the safety of yourself and your fellow employees. However, if possible, try to prevent property damage to equipment, materials, and the building itself. This may require placing a tarp over equipment or exposed areas of the roof before a storm hits. Taking the time to prevent water or wind damage can save thousands of dollars in property losses.

RAIN:

- Wear shoes that won't slip in wet weather.
- Wear appropriate rain gear that will keep you dry.
- If you encounter lightening, high winds, hail, or heavy rain, seek shelter immediately.
- If possible, cover any materials, tools or equipment with plastic sheeting, tarps or other waterproof material to prevent water damage. Have enough to cover any exposed areas of the roof to prevent water damage to the roof or the interior of the building.
- Make sure any roof drains are clear of debris and unplugged. Good housekeeping will help roof drains remain clear of debris.

WIND:

Wind can be the most dangerous element you will face in roof work. It is important that you understand the hazards and know how to avoid injury.

- If possible, secure any materials on the ground and those that could be blown off the roof.
- If your supervisor warns you to leave the roof, do so immediately; don't wait to finish another duty.
- Watch for severe weather approaching.
- Leave the roof if excessive winds pick up. Seek shelter immediately.
- Remember, the most important wind damage issues are:
 - Lightweight insulation
 - Partially completed sheets of EPDM membrane that may not be completely fastened
 - Sheets of plywood
 - Perimeter metal fuscia (not installed)
 - Penetration curbs (not installed)
 - Ladders not properly tied off

ACCIDENT INVESTIGATION

Attached are the Accurate Air, Inc. Incident Reports, as well as the Supervisors Summary Report of Incident Investigation.

ALL incidents shall have thorough investigations immediately. The Report of Incident Investigation form will be used to report all incidents. These reports should be completed as fully as accurately as possible and should be filled out immediately. It is the responsibility of the Site Safety Officer and/or the Project Superintendent to complete these forms. When both forms are completed, they must be forwarded to the Corporate Safety Director and the Project Manager. Copies of all paperwork and related materials should be kept in the field safety file, job file and office insurance file.

Each project will keep a running log of all incidents.

Follow up information is needed if the individual reporting an incident needs to remain out of work under the advisement of a doctor. Narrative format of the incident is always helpful, especially if the case is complicated. Photographs should always be taken, and all witnesses interviewed.

NOTE: All information is important, including the subcontractors' incident report. A copy of all reports, forms, and photographs shall be forwarded to the Corporate Safety Director as soon as possible. If the incident appears to be serious in nature, the Corporate Safety Director shall be contacted immediately. The Project Superintendent will ensure that all incidents are noted in the Remarks Section of the Daily Report.

SUPERVISOR'S SUMMARY REPORT OF INCIDENT INVESTIGATION

Company _____ Location _____

Name of Parties Involved _____

Witnesses _____

Date of Incident _____ Date Reported _____

How long employed on a similar operation _____

Nature and extent of injury _____

Was First-Aid or medical treatment given? _____ If so, by whom? _____

Were photographs taken? _____

As a result of your investigation, describe what conditions or circumstances surrounded the incident: _____

What corrective action was taken to prevent a re-occurrence? _____

Signature of Supervisor

Date

JOBSITE INSPECTIONS

WHY HAVE SAFETY INSPECTIONS?

The primary reason for conducting safety inspections is to detect undesirable conditions and/or work practices before an accident or injury occurs so that appropriate action can be taken to prevent an accident or injury. In each case, the following three things must be done:

1. Recognize the hazardous condition or act.
2. Take the appropriate corrective action, which may include informing involved or exposed personnel as to the nature of the unsafe act or condition as well as the corrective measures required.
3. Follow up to see that the corrective action was taken and that the action was proper and adequate.

FREQUENCY OF INSPECTIONS:

Documented safety inspections will be performed by supervisors weekly on any job lasting more than five days in length.

DOCUMENTATION:

Records are needed to measure performance and comply with certain safety and health regulations. The results of all safety inspections and audits should be recorded and kept for future reference. If the same types of unsafe acts and conditions continue to crop up, there is a problem. Inspection reports should note the date and time they were performed; the name of the person who conducted the audit; any deficiencies noted; and, most importantly, the corrective action taken. It is also important to keep records as to when and why an employee was corrected for performing an unsafe act. This can be very important and helpful when progressive disciplinary action is used.

INSPECTION CHECKLIST:

Attached is the Accurate Air, Inc. Inspection Checklist, which should be used as outlined above.

JOB SITE VISIT INSPECTION FORM

Date: _____ Project Manager: _____

Project Name: _____ Foreman: _____

Project Location: _____ Owner/GC: _____

_____ Number of Crew on Site: _____

System: _____ Weather: _____

Safety Inspection:

	<u>Yes</u>	<u>No</u>
◆ Warning Line System in Place:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Motion Stopping Rails in Place:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Fire Extinguishers on the Roof:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Is Crew Properly Dressed:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Ladder Tied off to the Building:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Safety Glasses Being Used:	<input type="checkbox"/>	<input type="checkbox"/>
◆ GFIs in Use:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Extension Cords in good working order:	<input type="checkbox"/>	<input type="checkbox"/>
◆ First-Aid kit in Job Box:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Equipment in Good Working Order:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Clean Job Site:	<input type="checkbox"/>	<input type="checkbox"/>
◆ Other: _____		

Comments: _____

✓ Any Repairs Needed for the Equipment: _____

✓ Materials Needed: _____

✓ Crane Needs: _____

PROTECTIVE AND SAFETY EQUIPMENT

The following is a list, which includes but is not limited to the Protective and Safety Equipment that may be required for your project.

HARD HATS:

Hard hats must be worn if the construction site is declared a “Hard Hat Job”. This is in compliance with OSHA Regulations. Hard hats are also required if there is a possibility of overhead danger, electrical shock, or burns of any type. Accurate Air, Inc. hard hats are available from the Corporate Safety Director. Additional hard hats should be purchased for visitors to the site.

FOOT PROTECTION:

Heavy-soled work shoes of substantial material must be worn by ALL employees on AAI projects in order to help prevent injuries. This complies with OSHA regulation.

REBAR CAPS:

AAI requires that rebar caps be used if rebar work will be done on the project. Refer to the AAI contacts sheet for telephone numbers.

FIRE BLANKETS:

AAI requires that fire blankets be maintained at all projects. Contact the Corporate Safety Director to find out if there is a blanket available for your site.

FIRE EXTINGUISHERS:

Portable fire extinguishers shall be provided at each project. Fire extinguishers should be located, hung, and labeled in accessible areas in accordance with OSHA regulations. The Site Safety Officer should be familiar with OSHA regulations.

BACKBOARD AND CARRYING BASKET:

AAI requires that a backboard and/or carrying basket be maintained on the project. Contact the Corporate Safety Director for availability of these items.

SAFETY BELTS AND FULL-BODY HARNESES:

Safety belts are no longer an allowable form of fall protection. For fall protection, employees must use a full-body harness. It is the responsibility of the Site Safety Officer and/or the Project Superintendent to ensure that the employee wearing a full-body harness is trained in the use of this piece of equipment.

EYE PROTECTION:

Protective eye equipment shall be utilized whenever there is a reasonable probability of eye injury. This complies with OSHA regulations.

EAR PROTECTION:

Employees shall wear ear protection if the noise levels in the work area warrant it.

GLOVES:

Gloves must be worn when handling objects with sharp edges, or when the MSDS sheet for an item requires it.

RESPIRATORS:

If respirators are needed on-site, employees should be familiar with the Accurate Air, Inc. Respirator Program. Employees must be medically certified for respirator use, and may not have facial hair. For more information and training (if needed), contact the Corporate Safety Director.

CLOTHING:

Long pants and work boots with thick rubber soles are mandatory on the roof at all times. Note: If a worker is not properly dressed, he will not be allowed on the job site.

Properly fitted shirt and pants are required.

Rubber gloves must be worn when using splice primer.

Work gloves are suggested at all times.

When operating a roof cutter, cut-off saw and skill saw, eye protection is required. Note: When using the cut-off saw, the operator must wear a hard hat that provides eye and ear protection.

Hard hats are required when loading jobs with a crane and working in trash containers to protect from hazards above.

HAND & POWER TOOLS

Inspect power tools daily before using.

If a power tool is defective, do not use. Return all damaged tools to the shop and make sure they have been tagged.

Use eye protection at all times.

When using skill saws, always stand to one side and always be aware of a kickback.

Never force a tool.

If you are unfamiliar with a tool, ask for instructions.

Use the proper tool for the job.

When using gas-powered tools, always shut off the gas before leaving the job site.

Only use extension cords that are grounded.

Always keep tools clean and in good shape.

ALWAYS USE CAUTION WHEN OPERATING POWER EQUIPMENT AND POWER TOOLS. MAKE SURE SAFETY GUARDS ARE PROPERLY INSTALLED ON SKILL SAWS AND ROOF CUTTERS BEFORE OPERATING.

EQUIPMENT SAFETY:

The proper use of equipment and tools will make your job safer and more efficient. Before using tools, make sure you have been properly trained and fully understand their operation.

Improperly maintained tools and equipment lead to accidents, so please take the time to learn how to properly care for them.

Here are some general safety tips regarding the use and maintenance of tools and equipment:

- Inspect tools and equipment before and after each use for defects or problems.
- Immediately remove from service any tagged item that needs attention.
- Always lockout and tagout a machine before repairing or cleaning it.
- Always select the right tools or equipment for the job; don't take shortcuts.
- Always use appropriate personal protective equipment.
- Always be sure that the guards are properly in place and operative.

HAND TOOLS:

Hand tools are those that are manually powered, including everything from screwdrivers to handsaws.

- Do not use any tool if its handle is cracked, loose, or splintered.
- Wear appropriate personal protective equipment, such as safety glasses and gloves.
- Never use a tool as a pry bar.
- Maintain tools in good condition, i.e., properly sharpened, cleaned, and lubricated.
- Be aware that sparks caused by metal hand tools can be an ignition source for nearby flammables.
- Do not use chisels with mushroomed heads.

POWER TOOLS:

There are several types of power tools commonly used in roofing. Power tools are those powered pneumatically or by electricity, gasoline, hydraulics, or gun powder.

- Consult the owner's manual for proper use, maintenance, and repair instructions.
- Never carry a tool by its cord or hose.
- Wear eye and ear protection, as required.
- Never operate power tools while wearing loose clothing, jewelry, or anything else that could catch in moving parts.
- Never remove or modify safety guards, except during maintenance and cleaning. When you do remove a guard, immediately replace it upon completion. Never turn the tool on while the guard is removed.
- Keep your fingers away from moving parts. Always turn off the equipment before removing any debris.
- Do not use or store tools in a wet or damp location.
- Operate gasoline tools only in a well-ventilated area or outdoors.
- Always use safety cans for flammable and combustible liquids.
- Turn off gasoline-powered equipment before refueling.
- Be aware of others while operating a tool or piece of equipment that can shoot objects at very high speeds, such as pneumatic or powder-actuated tools.

MAINTENANCE:

It is important to follow all proper maintenance procedures for tools and equipment. When maintenance procedures are not followed, the equipment wears out quickly and can become hazardous.

- Don't allow saws, blades, and cutting tools to become dull. Sharpen them periodically, especially after heavy use.
- Check electrical equipment cords prior to each use for cut or frayed wires or loose or missing ground plugs.
- Consult and follow the equipment's owner's manual for instructions on proper maintenance.

- Make sure all moving parts are properly oiled and greased.
- Any broken or defective equipment should be immediately tagged and taken out of service until it is properly repaired.
- Gasoline engines should have their oil changed at frequent intervals.
- Air-cooled engines must have their cooling fins kept free of asphalt and other debris. Make sure they are cleaned regularly.

ELECTRICAL SAFETY

The use of electrical tools is common, making many jobs easier and more efficient. Electricity presents additional hazards. Not only are electrical tools and power cords a hazard, but everyone must be aware of power lines and other sources of electricity that can be found on a job site. It only requires a split second of carelessness for an electrocution to occur. All electrical hazards must be protected by either a ground fault circuit interrupter (GFCI) or an assured grounding program.

GROUND FAULT CIRCUIT INTERRUPTER:

A ground fault circuit interrupter (GFCI) is designed to trip or interrupt electrical current very quickly so as to prevent shock or electrocution.

- Check the GFCI regularly with the “Test” and “Reset” buttons.
- If a GFCI is found to be defective, it should be immediately removed from service and tagged.
- A GFCI must be used to protect all electrical tools and extension cords. To accomplish this, it must be placed at the source.

ASSURED GROUNDING PROGRAM:

An assured grounding program covers all receptacles that are not part of the permanent wiring of the building or structure, including all cord sets and any equipment connected by cord or plug. Two tests are required by OSHA. The first is a continuity test to ensure that the equipment grounding conductor is continuous. The second is performed on receptacles and plugs to make sure the equipment grounding conductor is connected to its proper terminal. These tests must be conducted quarterly for tools and cords and every six months for receptacles.

The following are safety requirements for extension cords:

- All extension cords are to be inspected before first use.
- Any cords that are frayed or cut or have exposed wires must be removed from service and tagged.
- Only use three-prong double-insulated extension cords.
- Make sure the grounding pin is present and connected. If not, the extension cord should be taken out of service.
- Extension cords should not be attached to the surface of any building.

The following are safety requirements for tools:

- All power tools must be the three-pronged type, unless the tool is double-insulated and clearly marked as such.
- Tools that are not double-insulated must be included in the assured grounding program.

- Make sure the ground wire on any three-prong, non-double insulated power tools is present and functioning properly. The ground wire will carry electricity to ground and away from your body in the event of a shock. This can be checked with continuity testing.
- Check all cords. If the insulation is exposed in any way, the power tool or extension cord must be taken out of service.

ELECTRICAL SAFETY/GFCI PROGRAM

POLICY:

Ground Fault Circuit Interrupter (GFCIs) are required for all 120-volt, single-phase 15 and 20 ampere receptacle outlets on our construction sites that are to be used by AAI employees. NO employees will use any equipment that has not met the requirements of this procedure.

IDENTIFICATION OF HAZARDS:

With the wide use of portable tools on our sites, the use of flexible cords often becomes necessary. Hazards are created when cords, cord connectors, receptacles and cord-and-plug-connected equipment are improperly used and maintained.

A flexible cord may be damaged by activities on the job, by door or window edges, by staples or fastenings, by abrasion from adjacent materials or simply by aging. If the electrical conductors become exposed there is danger of shocks, burns, or fire. A frequent hazard on construction sites is a cord assembly with improperly connected terminals.

When a cord connector is wet, hazardous leakage can occur to the equipment grounding conductor and to humans who pick up that connector if they also provide a path to ground. Such leakage is not limited to the face of the connector, but also develops at any wetted portion of it.

When the leakage current of tools is below 1 ampere, and the grounding conductor has a low resistance, no shock should be perceived. However, should the resistance of the equipment grounding conductor increase, the current through the body will also increase. Thus, if the resistance of the equipment grounding conductor is significantly greater than 1 ohm, tools with even small leakages become hazardous.

PREVENTING AND ELIMINATING HAZARDS:

GFCIs can be used successfully to reduce electrical hazards. Tripping of GFCIs – interruption of current flow – is sometimes caused by wet connectors and tools. It is AAI's practice to limit the exposure of connectors and tools to excessive moisture by using watertight or sealable containers or enclosing items in plastic waterproof bags when not in use.

Providing more GFCIs on shorter circuits can prevent tripping caused by the cumulative leakage from several tools or by leakages from extremely long circuits.

EXTENSION CORDS:

Receptacles on the ends of extension cords are not part of any permanent wiring and therefore must be protected by GFCIs whether or not the extension cord is plugged into permanent wiring.

These GFCIS monitor the current-to-the-load for leakage to ground. When this leakage exceeds 5mA +/- 1mA, the GFCI interrupts the current. They are rated to trip quickly enough to prevent electrocution.

REQUIREMENTS:

- A) Each cord set, attached cap, plug and receptacle of cord sets, and any equipment connected by cord and plug – except cord set that are fixed and not exposed to damage, will be visually inspected before each day's use for external defects such as deformed or missing pins or insulation damage and for indications of possible internal damage. Equipment or tools found to be damaged or defective will not be used until repaired.
- B) The following tests will be performed on all cord sets, receptacles that are not part of the permanent wiring of a building or structure, and cord and plug connected equipment required to be grounded:
 - 1) Equipment grounding conductors will be tested for continuity and will be electrically continuous.
 - 2) Each receptacle and attachment cap or plug will be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor will be connected to its proper terminal. **Double-check Terminal Connections!!!** All tests will be performed:
 - Before first use,
 - Before equipment is returned to service following repair,
 - Before equipment is used after any incident that can reasonably be expected to have caused damaged (for example, when a cord set is run over by a vehicle or large equipment),
 - At intervals not to exceed three (3) months (except cord sets and receptacles that are fixed and not exposed to damage; they must be tested no later than every six (6) month period).

LADDERS

- Ladders present one of the major hazards in roofing work, and their improper use is the cause of many serious accidents. An analysis of accidents involving ladders reveals that the four principal causes of such accidents are: (1) ascending or descending improperly; (2) failure to secure the ladder at the top and/or bottom; (3) structural failure of the ladder itself; and (4) carrying objects in hands while ascending or descending.
- Great care should be used in the selection of the proper size and design of the ladder for the use intended, in the construction of built-up ladders on the job, and in maintenance and proper use of all types of ladders.
- Before using a ladder, carefully inspect it to determine whether it is in sound condition. If there is any defect, no matter how slight, withdraw it from use immediately. Have the ladder reinspected by a qualified person, and if it can not be placed in perfect condition, destroy it. Sub-standard ladders should never be kept, because they may be used and cause accidents.
- All portable ladders should be provided with safety feet. The type of safety feet will be determined by the surface upon which the ladder stands.
- Wooden ladders should be kept coated with a protective material, such as paint, varnish, lacquer, etc. Paint is a satisfactory coating for a new ladder if a careful pre-inspection is made by an experienced person, and the ladder is not to be sold.
- Ladders should not be placed in front of doors opening toward the ladder unless the door is blocked open, locked shut, or guarded by a worker.
- Ladders should never be lengthened by splicing additional sections to them. The only ladder that can be spliced is a fixed ladder that is permanently installed to a structure.
- Unattended ladders should not be left standing. They should be closed and lowered to the ground or floor.
- Portable ladder side rails should extend 3 feet above the landing surface and be secured at the top to prevent slipping.
- Always inspect the ladder, rungs, and rails at regular intervals for any cracks, defects, or corroded materials. Any ladder found to have defects must be taken out of service and tagged "Do Not Use".
- Never use a ladder with split or missing rungs.
- Never use a ladder with grease, oil, or any other slippery substance on the rungs or rails.
- Ascend and descend while facing the ladder
- Check to make sure you don't exceed the manufacturer's intended load limitations.
- Use extreme caution when using an aluminum ladder near electrical lines.
- The ladder base should be 1 foot away from the building for every 4 feet in eave height.
- Do not carry anything up or down a ladder that could cause a fall. Both hands should be free to hold the ladder.
- The area around the top and bottom of the ladder must be kept clear.

THE USE OF LADDERS:

- Workers should always face the ladder while ascending or descending it.
- In ascending or descending ladders, employees should face the ladder and use both hands to hold on to the side rails. If material must be moved from one level to another, a rope, block and tackle, or other means should be used. Material should not be hand-carried on ladders.
- Workers should always be certain that their shoes are free of mud and grease to prevent falls.
- The foot of the ladder should be placed approximately $\frac{1}{4}$ of its supported length away from the vertical plane of its top support. Only light, temporary work should be performed from ladders. Workmen should be cautioned frequently about the danger of trying to reach too far from a single setting.
- **Tie off all ladders.** Ladders leading to landings or walkways should extend at least 36 inches above the landing and be securely fastened. Long ladders should be braced at intermediate points as necessary to prevent movement.
- Both the top and bottom of the ladder should be secured to prevent displacement. Use ladder shoes, stakes, or other means of securing.
- Ladders should never be used in a horizontal position as runways or scaffolds.
- When not in use, all types of ladders should be supported at both ends and at intermediate points to prevent sagging of the middle section, which tends to loosen the rungs and warp the rails.

METAL LADDERS:

- Metal ladders will not be purchased. We also do not recommend their use.
- Frequent inspection of metal ladders is recommended. All parts should be checked for wear, corrosion, and structural failure.
- All metal ladders are electrical conductors. Their use around electrical circuits of any type, or places where they may come in contact with such circuits, is not recommended. Metal ladders will be marked with signs reading: "CAUTION – DO NOT USE AROUND ELECTRICAL EQUIPMENT."
- Rungs should be cleaned to prevent accumulation of materials that might destroy non-slipping properties, and all metal fittings should be carefully checked.

STEP LADDERS:

- The ladder should be equipped with an automatic locking device or spreader to hold it in an open position. Step ladders should always be used in a fully open position. They should not be used as straight ladders.
- Employees should not work from the top step of a step ladder.

INSPECTION AND MAINTENANCE:

All ladders should be carefully inspected when purchased to determine construction, materials, and condition. Re-inspection should be made regularly. Ladders should be lettered or numbered so that none will be overlooked during an inspection period.

CHICKEN LADDERS:

Chicken ladders or crawling boards are sometimes used in steep roofing operations and must be at least 10 inches wide and 1 inch by 1½ inch cleats. The cleats must be equal in length to the width of the board.

- Cleats should be spaced at intervals not to exceed 24 inches.
- The chicken ladder must be secured to the roof with ridge hooks or other means.
- The chicken ladder should extend from the roof peak to the eave.

FALL PROTECTION

One of the greatest hazards that HVAC faces is falling. As a result, it is very important that proper fall protection measures be used. Falls happen very quickly. The best way to avoid a fall is to use fall protection, before an accident occurs.

Fall protection is required for both steep-slope and low-slope roofing. A steep-slope roof is one with a slope greater than 4-in-12 (33 percent). A low-slope roof is one with a slope less than or equal to 4-in 12 (33 percent).

OSHA requires that some type of fall protection be used whenever there is a level-to-level distance of 6 feet or more. This section is intended to provide you with a brief description of various fall protection methods and how they prevent falls when used properly.

SCAFFOLDS

- Inspect the scaffold before starting work to make sure the handrails, midrails, toeboards, and decking are in place.
- A scaffold may be erected, moved, altered, or dismantled only under the supervision of a competent person.
- The base of the scaffold should be firmly in place and on a level area; the wheels on movable scaffolds should be locked.
- Place a toeboard on the scaffold when using tools or other objects that could fall.
- The working level of scaffolding must be completely planked. The planks should be placed so there is no space between them to allow tools or material to fall through.
- Scaffolds 10 feet or more in height must incorporate a fall protection system consisting of guardrails or personal fall arrest systems.
- Never place ladders or other makeshift devices on scaffolds to access higher elevations.
- Use a ladder to stairs to climb a scaffold.
- Never ride on a mobile scaffold that is being moved; remove or secure any tools or materials on the scaffold before moving it. Be certain to chock the wheels before climbing on the scaffold.
- Always be aware of electrical lines and make sure that the scaffold never touches or comes close to one.
- Never load a scaffold beyond its intended maximum load.
- Mobile scaffolds must not exceed a 4:1 height-to-width ratio.
- Scaffolds must be properly secured to the building every 26 feet vertically and 30 feet horizontally.

WARNING LINE SYSTEM

The warning line system can be used to provide fall protection on roofs with slopes of 4-in-12 (33 percent) or less. The warning line system must be erected on all open sides of the work area and consist of stanchion posts with flagged wire, rope, or chain.

- When mechanical equipment is not being used, the warning line must be erected at least 6 feet from the roof edge.
- If mechanical equipment is being used, the warning line must be erected at least 6 feet from roof edge and parallel to the direction of travel and at least 10 feet from the roof edge perpendicular to the direction of travel.
- Warning lines should consist of a strong rope, wire, or chain flagged at 6-foot intervals with high visibility material and should be at least 34 inches but not more than 39 inches from the surface.
- The stanchions must be capable of withstanding 16 pounds of tipping force before falling over.
- Employees are not allowed to enter the area between the warning line and the roof edge unless performing work in that area.
- Access areas that are not in use should be blocked off with a rope, chain, wire, or other barricade.
- Employees working outside of the warning line must be protected with a personal fall arrest system or a safety monitoring system.
- Do not store material or use mechanical equipment outside the warning line.

SAFETY MONITORING SYSTEM

The safety monitoring system (SMS) is a fall protection system where a competent person monitors workers and warns them when they are working in an unsafe manner or appear to be unaware of fall hazards. This system can be used as an exclusive fall protection system on roofs 50 feet or less in width. It can also be used in conjunction with a warning line system (WLS) when crew members are working outside the warning line. Mechanical equipment can not be used or stored when using the SMS.

The safety monitor must:

- Be a competent person able to recognize potential fall hazards.
- Warn employees of fall hazards or unsafe work practices.
- Be close enough to orally communicate with employees.
- Be on the same work surface and within sight of the employees.
- Not have other duties that distract him or her from properly monitoring the employees. Please note that certain states, such as California and Washington, specifically prohibit any other duties for the safety monitor.

SAFETY NET SYSTEM

Use of a safety net system is another fall protection option allowed by OSHA.

- The safety net should be installed as close to the working surface as possible, but not more than 30 feet below it.
- Safety nets must not have any openings greater than 36 square inches or longer than 6 inches on any side.
- After installation, relocation, repairs, or at least every six months if not moved, the safety net must be drop tested. The drop test should consist of 400-pound sandbags dropped from the working surface.

- Safety nets should be installed with enough ground clearance so that a person falling into the net will not touch the ground.
- Defective nets may not be used. Nets must be checked for defects weekly and after any occurrence.
- Objects that fall into the net must be removed immediately.

SLIDE GUARDS

Roofing slide guards (or roof jacks) may be used as a fall protection method during residential-type roofing work, where the roof slope is 8-in-12 (67 percent) or less and the ground-to-eave height is 25 feet or less.

- On residential construction roofs with a slope of 6-in-12 (50 percent) or less, roofing eave slide guards are to be installed after the first three courses of shingles are installed. Install the slide guards continuously along the eave at approximately a 90-degree angle to the roof.
- On residential construction roofs with slopes greater than 6-in-12 (50 percent), eave slide guards as mentioned above are required, and additional slide guards must be installed above the eave guards area at intervals of not more than 8 feet as you ascend the roof. These slide guards may be more level if desired.
- Remember to inspect the roof surface for slipping hazards.
- Damaged portions of the roof deck and holes must be covered or surrounded by guardrails.
- Once the roof is installed to the ridge, climb down to a lower plank and remove the slide guards at the higher level. Only after the job is complete can all slide guards be removed.
- NO one should be within 6 feet of the rake edge, unless such a limit of movement prevents the performance of work.
- Supplies and materials must not be stored within 6 feet of the rake edge or 3 feet for tile jobs.
- The area below the eaves and rake edges must be kept clear of materials and other objects that could be an impalement hazard.
- The SMS can be used on residential roofs with a slope of 4-in-12 (33 percent) or less. It can also be used on residential tile and metal roofs with a slope of 8 in 12 (67 percent) or less.

GUARDRAILS

The requirements for a guardrail system are the same for low-slope and steep-slope roofing, except that for steep-slope roofs, a toeboard must be added.

- The guardrail must not have surfaces that could puncture or lacerate employees or snag their clothing.
- If wire rope is used, it should be flagged every 6 feet.
- If a guardrail is used in a hoisting area, a chain, gate, or removable guardrail must be placed across the opening when hoisting operations are not taking place.
- Steel or plastic banding can not be used for top rails or midrails.

- Guardrails must be used at all material handling areas, such as hoists, trash chutes, crane landing areas, and bitumen outlet pipes.
- Parapets must be at least 39 inches high before guardrails are not required. A parapet can substitute as a midrail and a 4-inch parapet can substitute as a toeboard.

PERSONAL FALL ARREST SYSTEM

A personal fall arrest system basically consists of a full-body harness, a lanyard, a safety line, and an anchorage point.

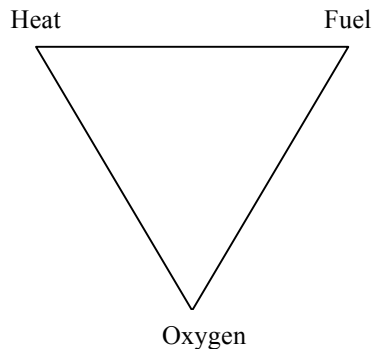
- Fall protection devices must be inspected for wear, damage, or deterioration before each use. Check for broken or deformed snap hooks or D-rings. Fall arrest equipment with defects should be taken out of service and tagged for repair or thrown away.
- A personal fall arrest system used to arrest a fall should be inspected by a competent person to determine if it is reusable.
- The rope and strap components must be made of synthetic fibers.
- An anchorage must be able to support a weight of at least 5,000 pounds for each worker attached.
- Avoid tying off around rough or sharp edges.
- An employee's fall must be limited to 6 feet.
- Always use locking snap hooks or D-rings.
- If vertical lifelines are used, each person must be attached to a separate lifeline.
- The snap hook or D-ring should always attach to the body harness at the center of the back near shoulder level.
- Fall arrest equipment should not be stored where it will be exposed to sunlight or extreme temperatures.
- Never use a body harness to hoist materials.
- Body belts may be used as a fall restraint or positioning device.

FIRE SAFETY

A fire can be deadly. By incorporating a few common-sense principles, fire hazards can be reduced significantly.

Remember: Fires start when the three elements of the fire triangle are present. These elements are: heat, fuel (wood, paper, gas, or other flammables) and oxygen. Avoiding fires means not allowing all three to combine.

The Fire Triangle



HANDLING AN EMERGENCY:

- Know how to exit a roof in case of fire.
- Know where fire extinguishers are located.
- If you are trained in first-aid or CPR, you may want to offer assistance in an emergency.

STORAGE OF FLAMMABLES:

- Always keep flammables away from any ignition sources, such as heat, flames, or smoking materials.
- Make sure there is good ventilation in the storage area.
- Always keep fire doors and walkways clear.
- Do not store flammable and combustible liquids near stairways or exits.
- No more than 25 gallons (97.75l) of flammable and no more than 120 gallons (454.8l) of combustible liquids may be stored in a single cabinet, and no more than three cabinets may be located in a single storage area.
- Outdoor portable storage tanks containing flammable or combustible liquids must be stored at least 20 feet (6.096 m) from any building.
- Always keep flammable liquids in an approved safety container when not in use.
- Always bond and ground containers when transferring materials to prevent a buildup of static electricity, which potentially could create a spark. The bond wire connecting the

two containers should be set up prior to the transfer. The ground wire should be connected to one of the containers and to a proper ground. The ground will eliminate any static electrical charges created.

FIRE EXTINGUISHERS:

- Fire classes are based upon the item that is burning:
 - A – for fire involving wood or paper
 - B – for flammable liquids and gas fires
 - C – for electrical fires
 - D – for combustible metals, such as magnesium or sodium
- Be sure to use the right type of extinguisher. An ABC rated fire extinguisher is the best to have on hand because it will put out almost all types of fire encountered in the roofing workplace.
- All fire extinguishers must be inspected monthly and records maintained indicating the date of inspection and the inspector's name or initials.
- Know where the fire extinguisher(s) are located on each job and how to use them.
- Familiarize yourself with the operation of the fire extinguisher(s) on the job by reading the instruction labels.
- Memorize the PASS system for extinguishing a fire:
 - P – Pull the pin.
 - A – Aim the nozzle at the base of the fire.
 - S – Squeeze the handle.
 - S – Sweep from side to side to cover the entire fire.

PROPANE TORCHES:

Torches are extremely dangerous tools. Torch heads reach temperatures of 2,000°F (1,093°C). A moment of carelessness can result in serious injury or property damage. Make sure you completely understand how to operate a torch before using one.

- Always inspect the torch head, valve, hoses, gauges, connection, and fittings for any defects. Never use any equipment, including the LP gas cylinders, unless they are in good working order.
- Observe all of the manufacturer's guidelines.
- Do not use torches near combustible materials. Be especially cautious on structures with wood decks or large amounts of lint and dust such as laundries, paper mills, etc.
- Never leave a lit torch unattended.
- Never point a torch at anyone.
- Always keep propane cylinders at least 10 feet (3.048m) away from any torch.
- Only use a spark lighter to ignite a torch; never use a match or cigarette lighter.
- When you are finished with the torch, close the propane container valve, and allow the propane remaining in the hose to burn off.

- The supervisor or his designee should walk the roof for at least one hour after the last torch has been turned off to check for hot spots and smoldering fires. It is also a good idea to check inside the building – especially the underside of the deck whenever possible – for early signs of fire.
- Wear leather gloves and eye protection when working with torches.

LIQUEFIED PETROLEUM (LP) GAS CYLINDERS:

- Cylinders must be marked “flammable gas”.
- Cylinders should not be dropped or allowed to strike each other.
- When storing, using or transporting cylinders, keep them securely fastened in an upright position and be sure that the container valve is closed and covered with a safety cap or collar.
- Do not store LP cylinders indoors.
- Never hoist cylinders by attaching lines to valves or collars.
- Cylinders should be moved by means of a hand truck. If it is absolutely necessary to move one by hand, roll it on its edge; never drag it.
- Make sure the pressure regulator is properly adjusted and is not damaged.
- Check the hose prior to use for cuts, cracks, or worn places.
- Use a heat shield to protect the containers when they are mounted on a kettle.
- When in doubt, always consider cylinders full and handle them accordingly.
- When not in use, turn off the fuel supply at the tank.
- When in use, keep all LP gas tanks at least 10 feet (3.048 m) away from the kettle.
- Keep bulk propane and storage tanks at least 25 feet (7.620 m) away from the kettle, tanker, or building.
- If a propane cylinder frosts, it means the cylinder is too small. Never turn it on its side or use a torch to defrost the cylinder.

EMERGENCY TELEPHONE NUMBERS

Emergency Telephone Numbers for y our project location must be posted in the trailer near a telephone per OSHA Regulation 1926.50.

Upon arrival at the site, the Site Safety Officer and/or the Project Superintendent will be responsible for locating the appropriate telephone numbers for emergency purposes.

The telephone number and addresses of the project should also be posted alongside the emergency telephone number. It can not be assumed that the person placing the emergency call will now this information.

If pay telephones are located on the project, the posting shall also be posted in an area where someone making an emergency telephone call will be able to access this information.

EMERGENCY NUMBERS

(Post in a conspicuous location near the telephone.)

DOCTOR _____

HOSPITAL _____

AMBULANCE _____

FIRE _____

POLICE _____

RESCUE SQUAD _____

POISON CONTROL CENTER _____

VEHICLE SAFETY

Safe driving is really about using common sense. Follow the rules of the road, drive within the speed limit, be alert at all times, and maintain a safe distance between your vehicle and other vehicles. Driving defensively is the best way to keep yourself and your vehicle out of danger.

VEHICLE OPERATIONS:

- Always check the load before you drive, insuring that it is evenly distributed and properly tied down or secured. If you are transporting LP gas cylinders, they should be secured upright.
- Always have fire extinguisher and first-aid kit in the cab of the truck.
- Be sure the backup alarm is functioning properly.
- When backing up, have an outside observer direct the truck if you are unable to see behind you.
- If you are towing a trailer, make sure the hitches and safety chains are in good condition and securely attached. Test the taillights and brakes to insure that all are operational.
- When towing, remember to allow an extra margin of distance to stop.
- Use extra caution in adverse weather conditions.
- Close the kettle lid securely before towing.
- If you are involved in an accident, report it to your office immediately.
- Learn and follow the requirements for record keeping and maintenance as specified by the DOT's Federal Motor Carrier Safety Regulations.
- Report all traffic violations to your company.
- Always wear your seatbelt.
- Observe all posted speed limits.
- When driving, always maintain a proper stopping distance between your vehicle and the car in front of you.

VEHICLE MAINTENANCE:

Good vehicle maintenance is very important. A vehicle maintenance program will assure that the vehicles you drive are operating safely and properly. In the end, you will have fewer mechanical problems and accidents and will be more efficient.

- All vehicles and equipment should be checked before each work shift for defects or mechanical problems. Any problems should be reported immediately.
- Thorough maintenance records should be kept for all vehicles.

VEHICLES:

- Obey all rules of the road.
- Obey speed limits. If a violation should occur, the driver must report it to the home office and he/she is responsible for paying the ticket.

- No alcoholic beverages or drugs are permitted in Accurate Air's vehicles. Note: This is a strict policy at Accurate Air and any abuse of this policy will mean immediate termination from AAI. This policy also applies to the work site and Accurate Air's warehouse and office area.
- Keep all vehicles clean and organized.
- Check oil, tires, and all other fluids when filling up with gas. Note: Vehicle condition must be inspected on a daily basis by the foreman.
- Keep all vehicles locked at all times at job sites.
- When loading vehicles, make sure the load is evenly distributed.
- All equipment must be properly secured in truck beds and trailers.
- Make sure propane tanks are upright and do not load other equipment on top of propane tanks.
- Remember when your vehicle is loaded down, it will not stop quickly. Allow extra distance for a slower stop.
- When using the trailer, you must use safety chain and always secure the load with tie-down straps. Always check brake lights and braking system. Note: Notify us if any problems exist before you use the trailer.
- When moving trash with the trailer, you must tarp down the load.
- When using the crew cabs, remember you have blind spots behind them. Don't back up without help from outside the vehicle.
- Make sure all ladders are properly secured.
- Always know where the first-aid kit is in the vehicle.
- If an accident should occur, the driver is responsible for calling the office immediately and reporting the accident to the proper authorities. The driver is responsible for completing all the proper accident report forms.
- The driver involved in the accident will be responsible for paying the insurance deductible if he/she is found to be at fault.
- Registration and accident forms are in the glove compartment.

DISCIPLINARY ACTION:

1. Unauthorized use of AAI's vehicle for personal use:

First Offense: Loss of vehicle privileges for six months

Second Offense: Loss of vehicle privileges for one year

Third Offense: Loss of vehicle privileges

2. Accident with AAI's vehicle:

Vehicle privileges to be reviewed after accident

Driver will pay insurance deductible

3. Driving while under the influence:

Loss of vehicle privileges

4. Vehicle neglect:

First Offense: Loss of vehicle privileges for two months

Second Offense: Loss of vehicle privileges for six months

Third Offense: Loss of vehicle privileges for one year

CRANE & HOISTING OPERATIONS

CRANES:

It is important to remember that anyone operating a crane must be competent and thoroughly trained. The operators should always know the weight of the load before lifting and whether it is within the weight capacity of the crane. All cranes should be inspected on a regular basis by a competent person. Critical parts such as slings, chains, ropes, hooks, hydraulic system components, and other operating components should be inspected on a daily basis. Inspection records should be maintained.

- Load rating charts should be posted near the operator's position.
- Remember, if a crane has a telescoping boom, the load rating will change according to the boom length and angle; the load rating will decrease as the boom is extended and brought closer to the horizontal plane.
- Maintain a minimum distance of 10 feet (3.048 m) around power lines.
- Review all hand signals between the crane operator and other personnel responsible for transporting materials or equipment from ground to roof. If a view is totally obstructed, the use of wireless head sets or other two-way communications may be appropriate.
- Always plan a lift so that obstacle clearance is maintained and load restrictions are not exceeded.
- Outriggers on mobile cranes must be deployed onto a firm surface so as to level the crane.
- Slings, hoisting wires, chains, and ropes must always be free of kinks.
- Check that the load is well secured and balanced by lifting just off the ground for a moment before the lift.
- Never carry a load over people.
- Ground personnel must wear hard hats and stay out from under overhead loads.
- Be aware of any ground-level weight constraints from underground parking areas, basements, or subway systems.
- Make sure the crane is resting on a surface that can handle the weight.

HOISTS:

Inspect the hoist daily. Look for frayed cables, broken welds, bent struts, or faulty mechanical parts. Make sure guards are intact and in place.

- If possible, set materials on a pallet to make handling them easier.
- Never leave a suspended load unattended.
- Slings, hooks, and rigging should be inspected prior to each use.
- Check to make sure the hoisting area is free of debris.
- Use barricades to limit pedestrian travel near the hoisting area.
- Do not exceed the rated capacity of the hoist.
- Do not assume that your equipment is in the same condition as when you last left the job.

- Rig loads with properly rated slings and safety hooks. Safety hooks must be equipped with a spring-loaded latch. Lift the load momentarily to check the securement of the load and its balance.
- Always use enough counterweight. As a rule of thumb, use 2 pounds (0.90 kg) of counterweight for every 1 pound (0.45 kg) of load. Do not use construction materials as counterweight, nor materials that flow such as water or sand. Always follow the manufacturer's specifications.
- All ground personnel must wear hard hats. Stay out from under suspended loads.

FORKLIFTS

All forklift operators are required by OSHA to be trained before driving a forklift.

- Make sure the backup signals, horns, and lights are working properly before operating.
- Forklift drivers should always be aware of overhead structures.
- Be aware of any electrical lines and maintain a distance of at least 10 feet (3.048 m).
- Never allow anyone to ride on the forks or any place else where a seat has not been provided.
- Only stable or safely arranged loads should be handled.
- Turn off the engine when refueling.
- Never drive up to anyone standing in front of fixed objects, such as benches or walls. If you do not stop fast enough, you could pin them against the object.
- All ground personnel must wear hard hats and stay out from under loads.
- Do not place arms or legs between the mast and the forklift.
- Never leave a forklift with an elevated load unattended. You should lower the load, set the brakes and turn off the engine before leaving.
- Always block the wheels of the forklift and set the parking brake when not in use.
- All forklifts must have roll protection for the driver.
- Wear the seat belt at all times if the forklift is equipped with one.

HAZARD COMMUNICATION

In order to comply with OSHA 1910.1200, Hazard Communication Standard, the following written Hazard Communication Program has been established for Accurate Air, Inc.

All work units of the company are included within this program. The written program will be available in all fleet vehicles and supervisor's office for review by an interested employee.

MATERIAL SAFETY DATA SHEET:

The Safety Supervisor will be responsible for obtaining and maintaining the data sheet system for the company.

When toxic or hazardous substances are received without an MLSDS, a letter with a copy to file will be sent to the supplier requesting the MSDS.

All incoming data sheets will be reviewed for new and significant health/safety information.

Any and all new information is passed on to the affected employee.

Copies of MSDSs for all toxic and hazardous substances to which employees of this company may be exposed will be kept in all company vehicles and supervisor's office.

EMPLOYEE TRAINING AND INFORMATION:

The safety supervisor is responsible for the employee training program. He will ensure that all elements specified below are carried out.

Prior to starting work, each new employee of Accurate Air, Inc. will attend a health and safety orientation and will receive information and training on the following:

- AN overview of the requirements contained in the OSHA Hazard Communication Standard 1910.1200.
- Chemicals present in their workplace operations.
- Location and availability of our written hazard program.
- Physical and health affects of the toxic or hazardous substances.
- Methods and observation techniques used to determine the presence or release of toxic and hazardous substances in the work area.
- How to use toxic and hazardous substances in the safest possible manner, including safe work practices and personal protective equipment requirements.
- Steps the company has taken to lessen or prevent exposure to toxic and hazardous substances.
- How to read labels and review MSDSs to obtain appropriate hazardous information.
- Location of MSDS file and location of toxic and hazardous substance list.

- After attending the training class, each employee will sign a form to verify that they attended the training, received the written materials and understood the companies' policy on hazard communication.
- Prior to a new chemical hazard being introduced into any section of this company, each employee will be given the information as outlined above.

HAZARDOUS NON-ROUTINE TASKS:

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on each project, each employee involved will be given the information about hazardous chemicals to which they may be exposed during such activity.

This information will include:

- Specific hazards;
- Protective/safety measures the employee can take;
- Measure the company has taken to lessen the hazards including ventilation, respirators, presence of another employee and emergency procedures.

INFORMING CONTRACTOR:

The responsibility of Accurate Air, Inc. is to provide the contractor with the following information:

- Toxic and hazardous substances to which they may be exposed to while on the job site.
- Precautions the employee may take to lessen the possibility of exposure by usage of appropriate protective measures.

Accurate Air, Inc. will be responsible for contacting each contractor before work is started in the company to gather any and all information concerning chemical hazards that the contractor is bringing to the workplace.

LABELING:

It is the policy of Accurate Air, Inc. to ensure that each container or product of hazardous chemicals on a job site are properly labeled. **It is also the policy at Accurate Air, Inc. that, before you open any containers, you read the label and if you have any questions, ask your foreman for further explanation.** The labels will list:

- a) The contents of the container or product, and;
- b) Appropriate hazard warnings.

Example: Every piece of pressure treated lumber has an identification tag stapled to one end.

To further ensure that employees are aware of the chemical hazards of materials used in their work areas, it is our policy to label all secondary containers. Secondary containers will be labeled with either an extra copy of the manufacturer's label or with a sign or generic label that lists the container's or product's contents and appropriate hazard warnings.

BACK INJURY PREVENTION

Back injuries are the most common and one of the most debilitating afflictions that roofers experience. Many back injuries are not caused by a single incident, but by the cumulative stress of using poor lifting techniques, as well as other factors, such as fatigue and poor physical condition. Eventually, these bad habits catch up with a worker, and back pain develops. However, by learning proper lifting techniques and following common sense guidelines, most back injuries are preventable. The purpose of this section is to help you keep your back healthy.

PROPER LIFTING TECHNIQUES:

The best method of preventing back injuries is to learn to lift properly and to get help with heavy loads. A few common sense tips can help you avoid back strain.

- If possible, use equipment, such as hoists, dollies, handcarts, and forklifts, to help your lifting.
- Frequently stretch to loosen up and prepare your muscles for work.
- Before you move an object, check the intended path of travel and insure that it is obstruction-free.
- Before you lift something, check the weight of the object.
- If the object is too heavy or bulky, **get help**. Do not try to be a hero.
- Place one foot beside the load and one foot behind it. Make sure your feet are securely placed on the roof or ground to avoid slipping.
- Firmly grasp the object you are lifting. Tuck your arms and elbows in.
- Holding your head up when you lift helps keep your spine in its natural curved position.
- Lift with your legs to support the weight. Lift the object straight up and don't twist or lean forward.
- Always keep the object you are lifting close to your body. Holding the load away from your body puts more strain on your back muscles.

TEAMWORK:

It is very important to realize that you don't have to do all of the heavy lifting by yourself. Too often, employees think that, by asking others to help them, they are not doing their job or are just lazy. In reality, getting assistance from other employees will help you do your job more efficiently and prevent injuries.

- Always check the load to find out how heavy it is. Don't try to pick it up, but lift a corner to get a sense of its weight. If it is too heavy, find a coworker to assist you.
- Try to rotate jobs with other employees. Switching jobs avoids repetition and saves on long-term aches and pains and injury.
- Communicate with the person assisting you, so you lift and set the load down at the same time.
- If possible, both persons should try to carry the load while facing forward.
- If the load is very heavy, take rest breaks.

SCAFFOLDS

- Inspect the scaffold before starting work to make sure the handrails, midrails, toeboards and decking are in place.
- A scaffold may be erected, moved, altered, or dismantled only under the supervision of a competent person.
- The base of the scaffold should be firmly in place and on a level area; the wheels on movable scaffolds should be locked.
- Place a toeboard on the scaffold when using tools or other objects that could fall.
- The working level of scaffolding must be completely planked. The planks should be placed so there is no space between them to allow tools or material to fall through.
- Scaffolds 10 feet or more in height must incorporate a fall protection system consisting of guardrails or personal fall arrest systems.
- Never place ladders or other makeshift devices on scaffolds to access higher elevations.
- Use a ladder or stairs to climb a scaffold.
- Never ride on a mobile scaffold that is being moved; remove or secure any tools or materials on the scaffold before moving it. Be certain to chock the wheels before climbing on the scaffold.
- Always be aware of electrical lines and make sure that the scaffold never touches or comes close to one.
- Never load a scaffold beyond its intended maximum load.
- Mobile scaffolds must not exceed a 4:1 height-to-width ratio.
- Scaffolds must be properly secured to the building every 26 feet vertically and 30 feet horizontally.

ASBESTOS

To handle asbestos-containing material, you must be trained. The following chart explains the OSHA and EPA requirements for the removal, installation, repair, or maintenance of asbestos-containing material.

SUMMARY OF KEY PROVISIONS OF THE OSHA & EPA ASBESTOS STANDARDS

Exempt Operations	No categorical exemptions apply in either standard. The following are exempt from EPA's NESH/AP but not the OSHA standard: (i) residential structures with four dwelling units or less; (ii) removal of nonfriable ACRM using proper work practices (see Note) other than power roof cutters; (iii) removal of less than 5,580 square feet (518 m ²) of nonfriable BUR using a power roof cutter; and (iv) removal of less than 160 square feet (15 m ²) of material that is friable or contaminated with ACRM-related dust or debris.	
Regulatory Requirement	Nonfriable (intact) Incidental ACRM	Removal or Repair of Primary ACRM (OSHA Class II Operations)
Competent Person Supervision	No, but the condition of the material must be inspected prior to and during the job as needed.	Yes, primary functions include initial inspection of the ACRM's condition, setup of the regulated area and making an exposure assessment; inspections of the ACRM operations are required as needed to ensure compliance and at reasonable employee request; supervisor does not need to be on site for all ACRM work, except for operations that are subject to EPA's NESHAP.
Initial Exposure Assessment	No	Yes, a competent person may make a negative exposure assessment (NEA) based on NRCA's data compilation provided material is nonfriable (intact), worker training requirements are met and required roof removal methods are used; otherwise, an NEA can be made only on the basis of: (i) "historical" or "objective" data prior to the start of the job or (ii) on-the-job exposure monitoring.
Exposure Monitoring	No	No, if an NEA is made before the start of the job; otherwise, representative daily monitoring is required until compliance with the new OSHA permissible exposure limits (0.1 f/cc, eight-hour TWA; 1.0 f/cc, 30-minutes excursion) is demonstrated.

Accurate Air Inc Supervisor Safety Policy Manual

Regulatory Requirement	Nonfriable (intact) Incidental ACRM	Removal or Repair of Primary ACRM (OSHA Class II Operations)
Regulated Areas	No	Yes, the demarcation requirement can be met by posting warning signs at points of access to the roof; neither demarcation nor warning signs are required where an NEA is made and no untrained workers have access.
Wet Methods	No	No, if material is nonfriable (intact) and proper roof removal methods (see Note) are used, except that the cutting blade of power roof cutters must be misted continuously inside the shroud; yes, for all ACRM and related dust and debris, but only if the material is friable (nonintact).
HEPA Dust Collector and/or Vacuums	No	No, if the material is nonfriable (intact) and proper roof removal methods (see Note) are used, except for dust and debris created by power roof cutters on aggregate-surfaced roof systems (gentle sweeping and/or wet wiping is permitted for collection of power roof cutter dust and debris on intact, smooth-surfaced roof systems); yes, for all ACRM-related dust and debris, but only if the material is friable (nonintact).
Bagging/Wrapping/Labeling of Removed ACRM	No	No, if the material is nonfriable (intact) and proper roof removal methods (see Note) are used, except for dust and debris created by power roof cutters; yes, for all ACRM-related dust and debris, but only if the material is friable (nonintact).
Prescribed Lowering Methods	Yes, all removed ACRM (see adjacent block).	Yes, all removed ACRM, including related dust and debris, must be lowered by prescribed methods – i.e., by hand, crane, hoist, or dust-tight chute. In no case can ACRM be tossed or thrown off the roof to a lower level.
Roof Level Air Intakes Isolated or Shut Down	No	Yes, intakes may be isolated by covering them with plastic or other material.
Respirators and Protective Clothing	No	No, if an NEA is produced before the start of the job; otherwise, required unless or until an NEA is made based on exposure monitoring.
Equipment Area	No	No, if an NEA is produced before the start of the job; otherwise, required unless or until an NEA is made based on exposure monitoring.
Smoking Ban	No	Yes

Accurate Air Inc Supervisor Safety Policy Manual

Regulatory Requirement	Nonfriable (intact) Incidental ACRM	Removal or Repair of Primary ACRM (OSHA Class II Operations)
Notifications	Potentially may be required for some installation work.	No to OSHA. Otherwise, required as follows: (i) to EPA prior to start of the job (unless exempt from NESHAP), and (ii) to employees, building owners, and other employers on site, when and as applicable.
Worker Training	Yes, baseline training; no minimum duration; refresher courses not required.	Yes, baseline worker training under ¶ (k)(9)(viii) of the OSHA standard plus “hands-on” training on proper removal methods; eight-hour minimum for initial training; annual refresher courses required (duration unspecified, but two-hour, hands-on refresher training recommended by OSHA).
Supervisor (Competent Person) Training	No, but competent person must be “knowledgeable”	Yes, AHERA five-day supervisor training course or equivalent, but shorter EPA or state-approved roofing specific courses acceptable; annual refresher training required (duration unspecified, but AHERA criteria requires eight-hour training refresher training).
Medical Surveillance	No	Yes, for each worker who: (i) works on Class II ACRM removal or repair jobs for 30 or more days per year, excluding days involving one hour or less of such work if proper roof removal methods (see Note) are used, or (ii) is required to wear a negative pressure respirator.
Disposal of ACRM as Regulated Asbestos Waste	No	No, if material is nonfriable (intact) and proper roof removal methods (see Note) are used, except for dust and debris created by a power roof cutter; yes, for all ACRM and related dust and debris if material is friable (nonintact), unless exempt from EPA’s NESHAP.
Record Keeping	No	Yes, for any exposure monitoring, objective data, training, medical surveillance or regulated waste disposal records and jobs where wetting is not used because of freezing temperatures (unless exempt from EPA’s NESHAP).

Note: Proper roof removal methods include: (i) required methods as summarized in this table, and (ii) the use of methods that have been found not to render ACRM friable (nonintact). Proper manual methods include the use of spud, spade, flat blade or slicing tools (such as axes, mattocks, pry bars, crowbars, spud bars, shovels, flat blade knives and utility knives) to slice, strip off, shear under or pry up the roofing material. Sanding, grinding, abrading and cutting

with serrated edge hand tools, such as hand saws, are prohibited. Proper removal methods also include careful handling and stacking of removed materials without throwing or intentionally breaking or crushing the materials. Proper mechanical methods include power removers, “power slicers” and “power plows”. Power slicers and power plows, though not presently available commercially, can be fabricated to slice through asbestos-containing BUR felts. When used, EPA’s NESHAP is not applicable, as long as the ACRM is nonfriable (intact).

CONFINED SPACES

OSHA defines a Permit Required Confined Space (PRCS) as any space that has a limited means of entry or exit and:

- Is not designated for continuous capacity;
- Is large enough so someone can get inside and perform a task; and
- Meets one of the following conditions:
 - Has the potential to contain hazardous atmospheres;
 - Has a material that could trap an entrant; or
 - Is designed so that someone could trap an entrant.

You must receive specialized training before entering a PRCS meeting these requirements. The training will cover:

- Testing of the atmosphere for oxygen deficiency and toxic or flammable gases that may be present;
- Ventilation requirements;
- How to safely enter and exit;
- How to fill out entry permits correctly; and
- Rescue procedures.

When do you need to be concerned about this?

- When inside tankers;
- When performing waterproofing in trenches or inside a building or structure;
- When working around HVAC units or other tight spots.

If you are unsure, contact your supervisor or the NRCA Risk Management Department.

Do not enter any confined space until properly trained and until all steps are required by 29 CFR 1910.146 have been fulfilled.

LOCKOUT/TAGOUT

Lockout/Tagout is the name of an OSHA standard that aims to prevent accidents from occurring when workers are servicing machinery. The rule has requirements to restrict access to a switch, valve, or piece of equipment that should not be operated when it is being serviced. The tag indicates the equipment is locked out and should not be used. The lock prevents anyone from accidentally starting the equipment.

- Only lock and tag a piece of equipment upon the instruction of a supervisor.
- Use a brightly colored “Danger – Do Not Operate” tag.
- Make sure the tag is prominently displayed.
- Sign the tag and date it.
- Many pieces of equipment have multiple energy sources. Be certain each is locked out and the energy source is relieved before servicing.
- Never attempt to use equipment, switches, or valves that are locked and tagged.
- You are required to perform all activities in accordance with 29 CFR 1910.147.
- Lockout/Tagout requires specialized training for those employees who may be effected by or conduct servicing or maintenance projects. Do not attempt to lockout/tagout a piece of equipment until you are thoroughly trained.
- Do not remove locks and tags belonging to other workers.
- If you are trained in lockout/tagout procedures, make sure to:
 - Shut down equipment in a predetermined manner;
 - Place logs and tags accordingly;
 - Relieve energy sources slowly;
 - Attempt to restart equipment to ensure that power is shut off; and
 - Perform maintenance activity.
- Before restarting the equipment:
 - Remove any tools from the maintenance area;
 - Remove any unnecessary people from the maintenance area;
 - Remove locks and tags; and
 - Restart equipment.

SUBSTANCE ABUSE POLICY

Accurate Air, Inc. intends to maintain a drug-free workforce and a drug-free workplace for the safety and well-being of all its teammates and the general public. To meet this goal, the company will continue to be selective in its recruiting process, require a pre-employment drug test on all newly hired teammates and implement a company-wide drug testing program.

The Drug-Free Workplace Program has two separate components. The first component is denoted as Plan 1 and is mandated by federal law. The second component is denoted as Plan 2 and is a self-imposed plan.

Plan 1 is for DOT-mandated rules and will apply to all teammates who have CDL Class-A and Class-B licenses.

Plan 2 will be for all other teammates.

Note: All newly hired teammates will be tested prior to employment.

The following definitions are designated for the purposes of these plans:

Field Teammate – any teammate whose primary job function is working on a job in the field or working in the garage.

Support Teammate – any teammate whose primary job function is performed in the office; Equipment and Facility Manager is considered a support position.

Safety Sensitive Position – All field positions and support positions that require frequent visits to the field. Teammate support positions of Controller, Office Manager and office support clerical positions are not considered safety sensitive positions.

New Hire – a job applicant who has been offered a position as a teammate.

For Cause – when a trained supervisor observes changes in a teammate's behavior or appearance that may indicate the use of drugs or alcohol.

PLAN 1 COMPREHENSIVE DOT DRUG TESTING PROGRAM

- 1) All teammates with CDL-A or –B licenses will be in a pool comprised of Accurate Air, Inc. teammates. ON an annual basis, 50% of this pool will be randomly tested for the use of drugs.
- 2) Teammates in this pool will also have post-accident tests, for cause tests, and return to duty tests (after testing positive to a drug test).
- 3) A Medical Review Officer (MRO) will be assigned to review the results of all tests and take the appropriate action regarding positive tests to insure the test is accurate before

informing the company. Once positive test results are shared with the company, the MRO responsibilities will end and the Substance Abuse Counselor will take over.

- 4) If a teammate tests positive, he/she will be suspended from duty and follow an Employee Assistance Program that is part of our Plan. The teammate will be assigned to a Substance Abuse Counselor who will recommend a plan of action, provide limited return to duty monitoring and set a date for a return to duty drug test. If the teammate fails the return to duty drug test, he/she will be terminated. If the teammate tests positive on subsequent random tests, he/she will be terminated.
- 5) Any teammate who tests positive and subsequently returns to work by testing negative will be required to be tested six times within the next year. The cost of these tests will be the responsibility of the teammate.

PLAN 2 COMPREHENSIVE DOT DRUG TESTING PROGRAM

- 1) Support teammates who are not in safety sensitive positions will not be included in a random testing pool and will be subject to “for cause” testing only.
- 2) All teammates not included in Plan 1 will be included in Plan 2.
- 3) Teammates in Plan 2 will be in a pool comprised of Accurate Air, Inc. teammates. On an annual basis, 25% of this pool will be randomly tested for the use of drugs.
- 4) Teammates in Plan 2 will be subject to for cause testing, return to duty testing (after testing positive to a drug test), and may be subject to post-accident testing.
- 5) A Medical Review Officer (MRO) will be assigned to review the results of all tests and take the appropriate action regarding positive tests to insure the test is accurate before informing the company. Once positive test results are shared with the company, the MRO responsibilities will end and the Substance Abuse Counselor will take over.
- 6) If a teammate tests positive, he/she will be suspended from duty and follow an Employee Assistance Program that is part of our Plan. The teammate will be assigned to a Substance Abuse Counselor who will recommend a plan of action, provide limited return to duty monitoring and set a date for a return to duty drug test. If the teammate fails the return to duty drug test, he/she will be terminated. If the teammate tests positive on subsequent random tests, he/she will be terminated.
- 7) Any teammate who tests positive and subsequently returns to work by testing negative will be required to be tested six times within the next year. The cost of these tests will be the responsibility of the teammate.

Note: All new employees who test positive on their pre-employment drug test will be required to submit to a follow-up test within the next 30-60 days. The date for this test will be randomly selected and will not be disclosed in advance. Any employee who tests positive on their follow-up drug test may be subject to termination.

WELDING AND TORCH CUTTING

- Employees must be trained before operating any welding equipment.
- When torch cutting, wear proper personal protective equipment, such as leather gloves, a leather apron, and a face shield with properly tinted lenses.
- Inspect all equipment prior to use, including any compressed gas cylinders, hoses, regulators, and torches. Any defective parts should immediately be taken out of service.
- Check the valves for dirt or debris.
- An ABC-rated fire extinguisher (see section 12C for an explanation of fire extinguisher ratings) must be located within easy access during any welding or cutting operations.
- Make sure there are no flammable materials or oily rags located near the welding or cutting operation. Remember to check for and be aware of flammable vapors that may be present.
- When you have completed your welding job, always turn off the acetylene and oxygen at the tanks.
- Conduct welding and soldering operations in well-ventilated areas. Respiratory protection may be required. Check with your supervisor.
- Never cut or weld on a tank, drum, or other container, unless it has been thoroughly cleaned and inspected by a supervisor.
- Arc welding requires the use of appropriately tinted eye protection to protect against the bright light generated.

STEEL ERECTION

KEY PROVISIONS FROM OSHA 1926 SUBPART R

Under OSHA's current Steel Erection Standard, fall protection is required if the fall hazard exceeds 25 feet unless a floor exists within 30 feet. Fall protection is also required when the fall hazard exceeds 25 feet at the outer perimeter. Scaffolds with standard guardrails or nets may be used to satisfy these requirements.

A safety railing of ½-inch wire rope or equal must be installed approximately 42 inches high around the periphery of all temporary planked or temporary metal decked floors or tier buildings and other multi-floored structures during structural steel assembly.

When gathering and stacking temporary floor planks from the last panel, employees must be protected by safety belts with safety lines attached to a catenary line or other substantial anchorage.

OSHA also has recognized the improvements in fall protection and are sometimes citing connectors for failure to use fall protection equipment when connecting steel. These citations are being made under the general duty clause.

Practical workers should always be protected from potential fall hazards.

PROPOSED CHANGES TO SUBPART R

On or about December 1, 1995, the Steel Erection Negotiated Rulemaking Advisory Committee (SENRAAC) completed its final draft on a recommended Steel Erection Standard to replace the current 1926 Subpart R Standard. The proposal will be presented to OSHA, who will then hold public hearings on the matter. The following is a summary of the proposed fall protection requirements:

Fall Protection

Fall protection is required when walking/working surface fall hazards exceeds 15 feet except for Connectors, and Workers in Controlled Decking Zones (CDZ).

Connectors

Connectors must:

- Be protected from falls of more than 30 feet or two floors, whichever is less;
- Complete CDZ/Erector training;
- Be provided with personal fall arrest/restraint system or other means of fall protection;
- and
- Be able to tie off.

Controlled Deck Zones

A Controlled Decking Zone (CDZ) may be established in the area of a structure over 14 and up and 30 feet above a lower level where metal deck is initially being installed, and forms the leading edge of a work area. In each CDZ, the following conditions apply:

- Fall protection is required if the leading edge fall hazard exceeds 30 feet or two floors, whichever is less;
- CDZ has limited access and clearly identified boundaries;
- Workers have completed CDZ training;
- Proper support for initial deck placement;
- Unsecured decking in CDZ shall not exceed 3,000 square feet;
- Safety deck attachments must be secured with at least 2 attachments per deck panel; and
- Final deck attachment can not be done in CDZ.

Minimum Ratings

Minimum Ratings for Floor and Roof Opening Covers are:

- 30 psf for roofs
- 50 psf for floors, or
- Twice the expected weight of employees and equipment

Covers

Covers shall be:

- Secured in place, and
- Marked “Hole” or “Cover”

Note: Skylights are MPT covers unless properly rated.

Training

Fall Hazard Training must include:

- Recognition and identification of fall hazards in work area;
- Use and operation of fall protection systems provided;
- Erection, maintenance, disassembly and inspection procedures for systems provided;
- Fall protection procedures;
- Requirements of OSHA 1926.760;
- Erection zone procedures; and
- Controlled decking zone procedures.

Methods of Fall Protection

- Platforms with guardrails
- JLG lifts
- Nets
- Personal fall protection
- Fall protection plans

RESPIRATORY PROTECTION PROGRAM

GUIDELINES

1. The guidelines in this program are designed to help reduce employee exposures against occupational dusts, fumes, mists, radionuclides, gases and vapors.
2. The primary objective is to prevent excessive exposure to these contaminants.
3. Where feasible, exposure to contaminants will be eliminated by engineering controls (example; general and local ventilation, enclosure or isolation, and substitution of a less hazardous process or material).
4. When effective engineering controls are not feasible, use of personal respiratory protective equipment may be required to achieve this goal.

RESPONSIBILITIES

1. **Management**
It is management's responsibility to determine what specific applications require use of respiratory equipment. Management must also provide proper respiratory equipment to meet the needs of each specific application. Employees must be provided with adequate training and instructions of all equipment.
2. **Management/Supervisory**
Superintendents, supervisors, or foremen of each jobsite are responsible for insuring that all personnel under their control are completely knowledgeable of the respiratory protection requirements for the jobsites in which they work. They are also responsible for insuring that their subordinates comply with all facets of this respiratory program, including respirator inspection and maintenance.
3. **Employees**
It is the responsibility of the employee to have an awareness of the respiratory protection requirements for their work areas (as explained by management). Employees are also responsible for wearing the appropriate respiratory equipment according to proper instructions and for maintaining the equipment in a clean and operable condition.

ADMINISTRATION

1. **Name:** _____ **Signature:** _____
Management, Safety Department, Personnel
Is responsible for overall program administration.
2. **Name:** _____ **Signature:** _____
Industrial Hygiene, Insurance Carrier or Consultant
Is responsible for contaminant identification and measurement, including technical support, air sampling, and laboratory analysis.

3. **Name:** _____ **Signature:** _____
Physician, Occupational Health Nurse
Is responsible for monitoring the health of company employees via a comprehensive medical and health program, including physical examinations.
4. **Name:** _____ **Signature:** _____
Engineering, Safety Department, Industrial Hygiene, Other
Is responsible for directing and coordinating engineering projects, which are directly related to respiratory protection.
5. **Name:** _____ **Signature:** _____
Safety Department, Industrial Hygiene, Other
Is responsible for selection, issuance, training, and fit testing of all respirators used in this company, including recordkeeping of “Respirator Issuance and Training” card and “Job Description – Respirator Specification” form.

EMPLOYEE MEDICAL MONITORING

1. Pre-employment physical examinations are conducted on all employees to assure that they are in adequate healthy condition (physically able to perform their work and can use respiratory equipment as required).
2. Periodic physical examinations will be given to regular employees in order to assist them in maintaining their health.

RESPIRATOR SELECTION

Respirators are selected and approved by management. The selection is based upon the physical and chemical properties of the air contaminants and the concentration level likely to be encountered by the employee. The respirator program administrator will make a respirator available immediately to each employee who is placed as a new hire or as a transferee in a job that requires respiratory protection. Replacement respirators/pre-filters will be made available as required.

Respirators currently approved by this company are:

1. _____
Job Task

Respirator _____ Model _____
2. _____
Job Task

Respirator _____ Model _____
3. _____
Job Task

Respirator _____ Model _____

4.

Job Task

Respirator

Model

EMPLOYEE TRAINING

Each employee, upon assignment to an area requiring respirators, must be instructed by his superintendent, supervisor, or foreman relative to their responsibilities in the respiratory program. They will also be instructed in need, use, limitation, and care of their respirator(s).

EMPLOYEE FIT TESTING

Employees required to wear a respirator must be fitted properly and tested for a face seal prior to use of the respirator in a contaminated area.

RESPIRATORY INSPECTION AND MAINTENANCE

The following points should be considered for respirator inspection and maintenance:

1. The wearer of a respirator will inspect it daily whenever it is in use.
2. Supervisor or foreman will periodically spot check respirators for fit, usage, and condition.
3. Respirators not discarded after one shift use, will be cleaned on a daily basis, according to the manufacturer's instructions, by the assigned employee or other person designated by the respirator program coordinator.
4. Respirators not discarded after one shift use will be stored in a suitable container away from areas of contamination.
5. Whenever feasible, respirators not discarded after one shift use will be marked or stored in such a manner to assure that they are worn only by the assigned employee.
6. Each area requiring the regular use of respirators will maintain a log book. Employees not discarding respirators after one shift should sign this log book daily in order to document the inspection and maintenance of their respirators.

Hot Work Safety Procedures

Purpose

Welding and Hot Work, such as brazing or grinding present a significant opportunity for fire and injury. All precautions of this program must be applied prior to commencing any welding or hot work by company employees or contractors. Reference: OSHA 29 CFR 1910.252

Responsibilities

Management

- Provide training for all employees whose task include heat, spark or flame producing operations such as welding, brazing, or grinding.
- Develop and monitor effective hot work procedures
- Provide safe equipment for hot work
- Provide proper and effective PPE for all hot work

Supervisors

- Monitor all hot work operations
- Ensure all hot work equipment and PPE are in safe working order
- Allow only trained and authorized employees to conduct hot work
- Ensure permits are used for all hot work outside authorized areas

Employees

- Follow all hot work procedures
- Properly use appropriate hot work PPE
- Inspect all hot work equipment before use
- Report any equipment problems
- Not use damaged hot work equipment

Definitions

Welding/Hot Works Procedures: any activity which results in sparks, fire, molten slag, or hot material which has the potential to cause fires or explosions.

Examples of Hot Works: Cutting, Brazing, Soldering, Thawing Pipes, Torch Applied Roofing, Grinding and Welding.

Special Hazard Occupancies: Any area containing Flammable Liquids, Dust Accumulation, Gases, Plastics, Rubber and Paper Products.

Hazards

- Fires & Explosions
- Skin burns

- Welding "blindness"
- Respiratory hazards from fumes & smoke

Training

Training shall include:

- Review of requirements listed in OSHA 1910.252
- Use of Hot Works Permit System
- Supervisor Responsibilities
- Fire Watch Responsibilities - specifically, the fire watch must know:
 1. That their ONLY duty is Fire Watch
 2. When they can terminate the watch
 3. How to use the provided fire extinguisher
 4. How to activate fire alarm if fire is beyond the incipient stage
- Operator Responsibilities
- Contractors Responsibilities
- Documentation requirements
- Respirator Usage requirements
- Fire Extinguisher training

Hot Works Procedures

OSHA 29 CFR 1910.252 required fire prevention actions for welding/hot works.

Where practicable all combustibles shall be relocated at least 35 feet from the work site. **Where relocation is impractical, combustibles shall be protected with flame proof covers, shielded with metal, guards, curtains, or wet down material to help prevent ignition of material.**

Ducts, conveyor systems, and augers that might carry sparks to distant combustibles **shall be protected or shut down.**

Where cutting or welding is done near walls, partitions, ceilings, or a roof of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition.

If welding is to be done on a metal wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation of heat. **Where combustibles cannot be relocated on the opposite side of the work, a fire watch person shall be provided on the opposite side of the work.**

Welding shall not be attempted on a metal partition, wall, ceiling or roof having a covering nor on walls having combustible sandwich panel construction.

Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs shall not be undertaken if the work is close enough to cause ignition by combustion.

Cutting or welding shall not be permitted in the following situations:

- In areas not authorized by management.
- In sprinkled buildings while such protection is impaired.
- In the presence of potentially explosive atmospheres, e.g., a flammable
- In areas near the storage of large quantities of exposed, readily ignitable materials.
- In areas where there is dust accumulation of greater than 1/16 inch within 35 feet of the area where welding/hot works will be conducted. *All dust accumulation should be cleaned up following the housekeeping program of the facility before welding/hot works are permitted.*

Suitable extinguishers shall be provided and maintained ready for instant use.

A fire watch person shall be provided during and for 2 hours past the completion of the welding project.

A cutting/welding permit will be issued on all welding or cutting outside of the designated welding area.

Welding & Hot Work fire prevention measures

A designated welding area should be established to meet the following requirements:

- a. Floors swept and clean of combustibles within 35 ft. of work area.
- b. Flammable and combustible liquids and material will be kept 35 ft. from work area.
- c. Adequate ventilation providing 20 air changes per hour, such as a suction hood system should be provided to the work area.
- d. At least one 10 lb. dry chemical fire extinguisher should be within access of the 35 ft. of work area.
- e. Protective dividers such as welding curtains or non-combustible walls will be provided to contain sparks and slag to the combustible free area.

Requirements for welding conducted outside the designated welding area.

- a. Portable welding curtains or shields must be used to protect other workers in the welding area.
- b. A hot works permit must be completed and complied with prior to welding operation.
- c. Respiratory protection is mandatory unless an adequate monitored air flow away from the welder and others present can be established and maintained.

- d. Plastic materials be covered with welding tarps during welding procedures
- e. Fire Watch must be provided for all hot work operations.

Welding Standard Operating Procedures

The following pages list the *Welding Standard Operating Procedures* (SOP) and are applicable for all electric and gas welding. These SOPs are to be posted at each Designated Welding & Hot Work Area for quick reference and review.

SOP - Electric Welding

Perform Safety Check on all equipment

Ensure fire extinguisher is charged and available

Ensure electrical cord, electrode holder and cables are free from defects (no cable splices are allowed with in 10 feet of the electrode holder.

Ensure PPE (welding hood, gloves, rubber boots/soled shoes, aprons) are available and have no defects.

Ensure the welding unit is properly grounded.

All defective equipment must be repaired or replaced before use.

Remove flammables and combustibles

No welding is permitted on or near containers of flammable material, combustible material or unprotected flammable structures.

Place welding screen or suitable barricade around work area to provide a fire safety zone and prevent injuries to passersby (Do not block emergency exits or restrict ventilation)

Ensure Adequate Ventilation and Lighting

Execute Hot Work Permit procedures

Set Voltage Regulator

No higher than the following for:

Manual Alternating Current Welders - 80 volts

Automatic Alternating Current Welders - 100 volts

Manual or automatic Direct Current Welders -100 volts

Uncoil and spread out welding cable

To avoid overheating, ensure proper contact of work leads and connections, remove any metal fragments from magnetic work clamps (to avoid electric shock do not wrap welding cables around a body part and avoid welding in wet conditions)

Fire watch for one hour after welding & until all welds have cooled

Perform final fire watch and terminate permit.

SOP: Gas Welding

Perform Safety Check on all equipment

Ensure tanks have gas and fittings are tight

Ensure fire extinguisher is charged and available

Ensure hoses have no defects

Ensure PPE (welding hood, gloves, rubber boots/soled shoes, aprons) are available and have no defects.

All defective equipment must be repaired or replace before uses.

Remove flammables and combustibles

No welding is permitted on or near containers of flammable material, combustible material or unprotected flammable structures.

Place welding screen or suitable barricade around work area to provide a fire safety zone and prevent injuries to passersby (Do not block emergency exits or restrict ventilation)

Ensure Adequate Ventilation and Lighting

Execute Hot Work Permit procedures

Open Valves on Oxygen and Gas tanks to desired flow

Shut Tank Valves & relieve hose pressure. Store hoses

Fire watch for one hour after welding & until all welds have cooled

Perform final fire watch and terminate permit.

Sample - Daily Inspection Checklist for Excavations & Trenches

Project:		Date:	Weather:	Soil Type:
Trench Depth:	Length:	Width:	Type of Protective System:	

Yes	No	N/A	Excavation
			Excavations and Protective Systems inspected by Competent Person daily, before start of work.
			Competent Person has authority to remove workers from excavation immediately.
			Surface encumbrances supported or removed.
			Employees protected from loose rock or soil.
			Hard hats worn by all employees.
			Spoils, materials, and equipment set back a minimum of 2' from edge of excavation.
			Barriers provided at all remote excavations, wells, pits, shafts, etc.
			Walkways and bridges over excavations 6' or more in depth equipped with guardrails.
			Warning vests, or other highly visible PPE provided and worn by all employees exposed to vehicular traffic.
			Employees prohibited from working or walking under suspended loads.
			Employees prohibited from working on faces of sloped or benched excavations above other employees.
			Warning system established and used when mobile equipment is operating near edge of excavation.

Yes	No	N/A	Utilities
			Utility companies contacted and/or utilities located.
			Exact location of utilities marked when near excavation.
			Underground installations protected, supported, or removed when excavation is open.

Yes	No	N/A	Wet Conditions
			Precautions taken to protect employees from accumulation of water.
			Water removal equipment monitored by Competent Person .
			Surface water controlled or diverted.
			Inspection made after each rainstorm.

Yes	No	N/A	Hazardous Atmosphere
			Atmosphere tested when there is a possibility of oxygen deficiency or build-up of hazardous gases.

Accurate Air Inc Supervisor Safety Policy Manual

			Oxygen content is between 19.5% and 21%.
			Ventilation provided to prevent flammable gas build-up to 20% of lower explosive limit of the gas.
			Testing conducted to ensure that atmosphere remains safe.
			Emergency Response Equipment readily available where a hazardous atmosphere could or does exist.
			Employees trained in the use of Personal Protective and Emergency Response Equipment.
			Safety harness and life line individually attended when employees enter deep confined excavation.

Signature of Competent Person , Date	
--	--

AAI MSDS SHEETS
