

## **POLICY**

E & B Oilfield Services Inc. has implemented this policy to ensure proper safe work practices and procedures are followed to protect employees from the fall hazards.

## **REFERENCES**

- 29 Code of Federal Regulations
  - §1926 Subpart M—Fall Protection
  - §1926.500—Scope, Application and Definitions Applicable to this Subpart
  - §1926.501—Duty to have Fall Protection
  - §1926.502—Fall Protection Systems Criteria and Practices
  - §1926.503—Training Requirements
  - Appendix A, Determining Roof Widths—Non-mandatory Guidelines for Complying with 1926.501(b)(10)
  - Appendix B, Guardrail Systems—Non-mandatory Guidelines for Complying with 1926.502(b)
  - Appendix C, Personal Fall Arrest Systems—Non-mandatory Guidelines for Complying with 1926.502(d)
  - Appendix D, Positioning Device Systems—Non-mandatory Guidelines for Complying with 1926.502(e)
  - Appendix E, Sample Fall Protection Plan—Non-mandatory Guidelines for Complying with 1926.502(k)

## **RESPONSIBILITIES**

### **Employer Responsibilities**

E & B Oilfield Services Inc. will provide at no cost to employees fall protection such as guard rails, safety nets or personal fall arrest systems whenever employees are potentially exposed to falls to lower levels from heights of six (6) ft. or greater. This includes work near and around bins, tanks and excavations. Exception: When the standard methods of protection are not feasible or a greater hazard would be created, the employer will develop and implement a fall protection plan in accordance with § 1926.502(k). The exposure determination will be made without regards to the use of PPE.

E & B Oilfield Services Inc. is responsible for:

- Ensuring that safety inspections of the facility occur on a regular basis.
- Training personnel in the selection and use of fall protection equipment.
- Responding quickly to eliminate workplace hazards.
- Ensuring all equipment is kept in good repair.
- Ensuring employees follow safe job procedures.
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or when an injury or illness occurs.
- Ensuring that the PPE provided properly fits

## **Kirk Duncan Responsibilities**

Kirk Duncan is the Program Administrator – designated qualified person responsible for managing the Fall Protection Program. Kirk Duncan will specify a fall protection system for each worksite, supervise its implementation and inspect the system before use.

## **Safety Committee Responsibilities**

- Assist in fall protection program as necessary.
- Assist in training employees to identify and minimize workplace hazards.
- Monitor the workplace for hazards.
- Encourage employees to report hazards.
- Implement appropriate controls.
- Ensure corrective action is taken promptly.

## **Employee Responsibilities**

Employees will always comply with the fall protection program when working at heights of six (6) ft. or above and will wear appropriate personal protective equipment (PPE).

**NOTE:** The fall protection system used will be appropriate for the specific work location or situation using best practices.

All employees are expected to: Assist in job hazard analyses, follow safe job procedures, and report hazards to a supervisor immediately.

## **TRAINING**

Kirk Duncan will ensure that all employees who participate in work where fall hazards are present are trained in recognition of fall hazards, fall protection procedures, equipment and work practices. Written certification records will be maintained showing who was trained, types of training, dates of training, signature of person providing training and the date training was determined to be adequate.

Employees will be certified upon completion of training in the following areas:

- The nature of fall hazards in the work area.
- The correct procedures for erecting, maintaining, disassembling and inspecting the fall protection systems to be used.
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones and other protection to be used.
- The role of each employee in the safety monitoring system when this system is used.
- The limitations on mechanical equipment during the performance of roofing work on low-sloped roofs.
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of employees in the fall protection work plan.

Employee re-training in fall protection will be provided when: previous training is deemed deficient; changes in work environment occur which would necessitate additional training; changes in fall protection equipment or systems occur; employee is observed applying unsafe work practices.

## **PROCEDURES**

Before the start of work, Kirk Duncan will make an initial survey of the types of fall hazards which are expected to be encountered and develop a plan relative to providing the kind and number of safeguards that will protect against these fall hazards. Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is six (6) ft. or more above a lower level will be protected from falling by the use of guardrail systems, safety nets or personal fall arrest systems.

- All accidents and serious incidents involving E & B Oilfield Services Inc. employees will be reported immediately to the supervisor for the work location. All accidents/incidents will be investigated under the guidelines of the company Accident Investigation Program. Changes will be implemented to the Fall Protection Plan as necessary.
- E & B Oilfield Services Inc. will provide for prompt rescue of employees in the event of a fall or will assure the employees are able to rescue themselves.
- All materials and equipment purchased and used at E & B Oilfield Services Inc. for fall protection will comply to OSHA, ANSI and ASTM standards required for that material or equipment.

### **Fall Protection Locations**

Fall protection is required wherever the potential to fall six (6) ft. Or more exists. Fall protection is not needed if an employee or employees are on a low sloped roof for inspection/observation if they do not approach within eight (8) ft. of the roof's edge.

### **Fall Protection Work Plans**

Kirk Duncan will develop and implement a written fall-protection work plan including each area of the workplace where employees are assigned and where fall hazards of six (6) ft. or more exist. It is recommended that the written plan be upgraded as conditions change. The fall-protection work plan will:

- Identify all fall hazards in the work area as the project work progresses.
- Describe the method of fall arrest or fall restraint to be provided.
- Describe the procedures for assembly, maintenance and disassembly of the fall-protection system.
- Describe procedures for the handling, storage and securing of tools and materials.
- Describe the method of providing overhead protection for employees who may be in or pass through, the area below the work site.
- Be available on the job site for inspection.
- Ensure that employees are trained and instructed.
- Include inspection of fall protection devices (FPD) and systems to ensure compliance with applicable parts of this procedure.

## **Fall Restraint and Fall-Arrest Systems**

Kirk Duncan will ensure that fall-restraint or fall-arrest systems are provided, installed and implemented according to the following requirements. Fall-restraint and arrest protection will consist of:

### **Standard Guardrails**

- Top rail 39 to 45 inches above the working surface and will be smooth and of a shape to permit grasping easily.
- Midrail (center between riser and top rail), screen or mesh (continuous) or intermediate vertical members (not more than 19 inches apart) will be provided between the top rail and working surface.
- Guardrail systems will be capable of supporting 200 lb. in the downward or outward direction at any point along the top edge.
- Midrail will support a 150 lb. load in the downward or outward direction.
- Top rails and mid-rails will be at least 1/4 inch nominal thickness. Plastic or steel banding will not be used.
- Chain gates will be used to cover hoisting areas and the guardrails will extend six (6) ft. minimum on either side of the opening.
- Rails will be so constructed so as not to deflect under test loads. If cable or rope is used it will have tension-adjusting capability and remain taut at all times.
- Wood Railings: Wood components will be minimum 1500 lb.-ft. / in.<sup>2</sup> fiber (stress grade) construction grade lumber. Posts will be at least two (2) inches by 4 inches (5 cm x 10 cm) lumber spaced not more than eight (8) ft (2.4 m) apart on centers. The top rail will be at least two (2) inches by 4 inches (5 cm x 10 cm) lumber; the intermediate rail will be at least one (1) inch by 6 inches (2.5 cm x 15 cm) lumber.
- Pipe Railings: Post, top rails and intermediate railings will be at least 1 and 1/2 inches nominal diameter (schedule 40 pipe) with posts spaced not more than eight (8) ft. (2.4 m) apart on centers.
- Structural Steel Railings: Posts, top rails and intermediate rails will be at least 2 inches by 2 inches (5 cm x 10 cm) by 3/8 inch (1.1 cm) angles, with posts spaced not more than 8 ft. (2.4 m) apart on centers.

### **Portable Guardrails**

- Portable guardrails may be used in locations where permanent guardrails are not feasible
- Top rail 39 to 45 inches above the working surface and will be smooth and of a shape to permit grasping easily.
- Mid-rail (center between riser and top rail), screen or mesh (continuous) or intermediate vertical members (not more than 19 inches apart) will be provided between the top rail and working surface.
- Guardrail systems will be capable of supporting 200 lb. in the downward or outward direction at any point along the top edge.
- Mid-rail will support a 150 lb. load in the downward or outward direction.

## **Harness, Lanyards, Lifelines and Anchor Points**

- An approved Class III full-body harness will be used.
- All full-body harness and lanyard hardware assemblies will be capable of withstanding a tensile loading of 3,600 lb. without cracking, breaking or taking a permanent deformation.
- Anchorage points used for fall restraint will support four (4) times the intended load.
- Restraint protection and positioning devices will be rigged to allow the movement of employees only as far as the sides and edges of the walking / working surface.
- Full-body harnesses will be attached to securely rigged restraint lines.
- Rope-grab devices are prohibited for fall-restraint applications unless they are part of a fall-restraint system designed specifically for the purpose by the manufacturer and used in strict accordance with the manufacturer's recommendations and instructions.
- Kirk Duncan will ensure component compatibility.
- Body-harness systems or components subject to impact loading will be immediately removed from service and will not be used again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.
- All safety lines and lanyards will be protected against being cut or abraded.
- Body-harness systems will be rigged to minimize free-fall distance with a maximum free-fall distance allowed of six (6) ft. and ensure that employees will not contact any lower level.
- Hardware will have a corrosion-resistant finish and all surfaces and edges will be smooth to prevent damage to the attached body harness or lanyard.
- When vertical lifelines (droplines) are used, not more than one employee will be attached to any one lifeline.
- Full-body harness systems will be secured to anchorages capable of supporting 5,000 lb. per employee, except when self-retracting lifelines or other deceleration devices are used which limit free fall to 2 ft.; in this case, anchorages will be capable of supporting 3,000 lb.
- Independent lifelines (droplines) will have a minimum tensile strength of 5,200 lb., except those self-retracting lifelines and lanyards, which automatically limit free-fall distance to 2 ft. or less, will have a minimum tensile strength of 3,000 lb.
- Horizontal lifelines will have a tensile strength capable of supporting a fall-impact load of at least 5,200 lb. per employee using the lifeline, applied anywhere along the lifeline.
- Lanyards will have a minimum tensile strength of 5,000 lb.
- All components of body-harness systems whose strength is not otherwise specified in this section will be capable of supporting a minimum fall-impact load of 5,000 lb. applied at the lanyard point of connection.
- Snap-hooks will not be connected to loops made in webbing-type lanyards.
- Snap-hooks will not be connected to each other.
- Not more than one snap-hook will be connected to any one (1) Dee-ring.
- Independent lifelines used on rock-scaling operations or in areas where the lifeline may be subjected to cutting or abrasion, will be a minimum of 7/8 inch wire core manila rope. For all other lifeline applications, a minimum of 3/4 inch manila rope or its equivalent, with a minimum breaking strength of 5,000 lb., will be used.

- Safety harnesses, lanyards and lifelines, independently attached or attended, will be used while performing the following types of work when other equivalent protection is not provided:
  - Work in hoppers, bins, silos, tanks or other confined spaces.
  - Work on hazardous slopes or dismantling safety nets.
  - Working on poles or from boatswains’ chairs at elevations.
- Fall protection will be used when working at heights greater than 6 (six) ft., on swinging scaffolds or other unguarded locations and work on skips and platforms used in shafts by crews when the skip or cage does not include the opening to within one foot of the sides of the shaft, unless cages are provided.
- Full-body harness systems will be inspected before each use for mildew, wear, damage and other deterioration and defective components will be removed from service if their function or strength has been adversely affected.

**Safety Nets**

- Safety nets will be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 ft. (9.1 m) below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net will be unobstructed.
- Safety nets will extend outward from the outermost projection of the work surface as follows:

Vertical distance from working level to horizontal plane of net	Minimum required horizontal distance of outer edge of net from the edge of the working surface
Up to 5 feet .....	8 feet
More than 5 feet up to 10 feet .....	10 feet
More than 10 feet .....	13 feet

Vertical distance from working level to horizontal plane of net	Minimum required horizontal distance of outer edge of net from the edge of the working surface
Up to 5 feet	8 feet.
More than 5 feet up to 10 feet	10 feet.
More than 10 feet	13 feet.

- Safety nets will be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test specified in the full-body harness section.
- Safety nets and their installations will be capable of absorbing an impact force equal to that produced by the drop test specified in the full-body harness section.
- Safety nets and safety-net installations will be drop-tested at the job site before being used as a fall-protection system. The drop-test will consist of a 400 lb. bag of sand 30±2 inches in diameter dropped into the net from the highest walking / working surface on which employees are to be protected, but not from less than 42 inches above that level. Exception: when the employer can demonstrate that a drop-test is not feasible or practicable, the net and net installation will be certified by a qualified person to be in compliance with the provisions of this section.
- Safety nets will be inspected weekly for mildew, wear, damage and other deterioration and defective components will be removed from service.
- Materials, scrap pieces and tools which have fallen into the safety net will be removed as soon as possible from the net and at least before the next work shift.

- The maximum size of each safety net mesh opening will not exceed 36 square inches nor be longer than six (6) inches on any side measured center-to-center of mesh ropes or webbing. All mesh crossings will be secured to prevent the enlargement of any mesh opening.
- Each safety net (or section of it) will have a border rope for webbing with a minimum breaking strength of 5,000 lb.
- Connections between the safety-net panels will be as strong as integral net components and will be spaced not more than 6 (six) inches apart.

### **Catch Platforms**

A catch platform will be installed within 10 ft. (vertical) of the work area. The catch platform's width will equal the distance of the fall but will be a minimum of 45 inches wide and will be equipped with standard guardrails on all open sides.

### **Guarding of Low-Pitched Roof Perimeters**

During the performance of work on low-pitched roofs with a ground-to-eaves height greater than 6 (six) ft., Kirk Duncan will ensure that employees engaged in such work be protected from falling from all unprotected sides and edges of the roof as follows:

- By the use of a fall-restraint or fall-arrest system, as defined in applicable OSHA or state regulations.
- Mechanical equipment will be used or stored only in areas where employees are protected by a warning line system or fall-restraint or fall-arrest systems as described in applicable OSHA or state regulations. Mechanical equipment may not be used or stored where only protection is provided by the use of a safety monitor.
- The general provisions section of this section does not apply at points of access such as stairways, ladders and ramps or when employees are on the roof only to inspect, investigate or estimate roof-level conditions. Roof-edge materials handling areas and materials storage areas will be guarded as provided in the roof-edge materials handling section of this section.
- Employees engaged in built-up roofing on low-pitched roofs less than 50 ft. wide may use a safety system without warning lines where the use of hot tar poses additional hazards.

### **Warning-Line Systems and Access Paths**

- When mechanical equipment is not being used, the warning line will be erected not less than six (6) ft. (1.8 m) from the roof edge.
- When mechanical equipment is being used, the warning line will be erected not less than six (6) ft. (1.8 m) from the roof edge which is parallel to the direction of mechanical equipment operation and not less than 10 ft. (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation.
- Points of access, materials handling areas, storage areas and hoisting areas will be connected to the work area by an access path formed by two warning lines.
- When the path to a point of access is not in use, a rope, wire, chain or other barricade, equivalent in strength and height to the warning line, will be placed across the path at the point where the path intersects the warning line erected around the work area or the path will be offset such that a person cannot walk directly into the work area.
- Warning lines will be erected around all sides of the work area for work six (6) to 10 ft. from the roof edge.

- A warning-line system as prescribed in 29 CFR 1926.500 and supplemented by the use of a safety-monitor system as prescribed in 29 CFR 1926.500 to protect any employee engaged in duties between the forward edge of the warning line and the unprotected sides and edges, including the leading edge, of a low-pitched roof or walking/working surface.
- Warning line and safety monitor systems as described in 29 CFR 1926.500 are prohibited on surfaces exceeding a 4/12 pitch and on any surface whose dimensions are less than 45 inches in all directions.
- The warning line will consist of a rope, wire or chain and supporting stanchions
- The rope, wire or chain will be flagged at not more than 6 (six) ft. intervals with high-visibility material.
- The rope, wire or chain will be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches from the roof surface and its highest point is no more than 39 inches from the roof surface.
- After being erected, with the rope, wire or chain attached, stanchions will be capable of resisting, without tipping over, a force of at least 16 lb. applied horizontally against the stanchion, 30 inches above the roof surface, perpendicular to the warning line and in the direction of the roof edge.
- The rope, wire or chain will have a minimum tensile strength of 500 lb., and after being attached to the stanchions, will be capable of supporting, without breaking, the loads applied to the stanchions.
- The line will be attached at each stanchion in such a way that pulling of one section of line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.
- Access paths: points of access, materials-handling areas and storage areas will be connected to the work area by a clear access path formed by two warning lines.
- When the path to a point of access is not in use, a rope, wire or chain, equal in strength and height to the warning line, will be placed at the point where the path intersects the warning line erected around the work area.

### **Roof-edge Materials-Handling Areas & Materials Storage**

Employees working in a roof-edge materials-handling or materials storage area location on a low-pitched roof with a ground-to-work-area height greater than six (6) ft. will be protected from falling along all unprotected roof sides and edges of the area.

- When guardrails are used at hoisting areas, a minimum of four (4) ft. of guardrail will be erected on each side of the access point through which materials are hoisted.
- A chain or gate will be placed across the opening between the guardrail sections when hoisting operations are not taking place.
- When guardrails are used at bitumen pipe outlets, a minimum of four (4) ft. of guardrail will be erected on each side of the pipe.
- When safety-harness systems are used, they will not be attached to the hoist.
- When fall-restraint systems are used, they will be rigged to allow the movement of employees only as far as the roof edge.
- Materials will not be stored within six (6) ft. of the roof edge unless guardrails are erected at the roof edge.

## **Leading-Edge Control Zone**

When performing leading-edge work, Kirk Duncan will ensure that a control zone is established according to the following requirements:

- The control zone will begin a minimum of six (6) ft. back from the leading edge to prevent exposure by employees who are not protected by fall-restraint or fall-arrest systems.
- The control zone will be separated from other areas of the low-pitched roof or walking/working surface by the erection of a warning-line system.
- The warning-line system will consist of wire, rope or chain supported on stanchions or a method which provides equivalent protection.
- The spacing of the stanchions and support of the line will be such that the lowest point of the line (including sag) is not less than 34 inches from the walking / working surface and its highest point is not more than 39 inches from the working / walking surface.
- Each line will have a minimum tensile strength of 500 lb.
- Each line will be flagged or clearly marked with high-visibility materials at intervals not to exceed six (6) ft.

## **Safety-Monitor System**

The employer will designate a competent person to monitor the safety of other employees and the employer will ensure that the safety monitor complies with the following requirements:

- Be competent to recognize fall hazards.
- Warn the monitored employee(s) when it appears, they are unaware of a fall hazard or is acting in an unsafe manner.
- The safety monitor will be on the same walking/working surface and within visual sighting distance of the employee(s) being monitored.
- The safety monitor will be close enough to communicate orally with the employee(s) being monitored.
- The safety monitor will have no other responsibilities that will take his/her attention from the monitoring function.
- The safety monitoring system will not be used as a fall protection system for any work other than roofing work on roof slopes of 2 in 12 (vertical to horizontal) or less.
- Use of a safety monitoring system alone (i.e., without the warning line system) is not permitted on roofs more than 50 ft. (15.25 m) in width.
- When selected, the employer will ensure that the safety-monitor system will be addressed in the fall-protection work plan, include the name of the safety monitor(s) and the extent of their training in both the safety-monitor and warning-line systems and will ensure that the following requirements are met:
  - The safety-monitor system will not be used when adverse weather conditions create additional hazards.
  - A person acting in the capacity of a safety monitor will be trained in the function of both the safety-monitor and warning-lines systems.

- The safety monitor will:
  - Be a competent person as defined in 29 CFR 1926.32(f).
  - Have control authority over the work as it relates to fall protection.
  - Be instantly distinguishable from members of the work crew.
  - Engage in no other duties while acting as safety monitor.
  - Be positioned in relation to the employees under their protection, so as to have a clear, unobstructed view and be able to maintain normal voice communication.
  - Not supervise more than eight (8) exposed employees at one time.
- Control zone employees will be distinguished from other members of the crew by wearing a high-visibility vest only while in the control zone.

### **General Safety Considerations**

The company will ensure prompt rescue of employees in the event of a fall or will assure that employees are able to rescue themselves.

Fall arrest systems will be inspected before each use for wear, damage and other deterioration and defective components will be removed from service.

If Fall protection plans are utilized, site specific plans will be prepared or modified by a Qualified Person and maintained at the job site. The plan will be under the supervision of a Competent Person and the plan will address why the use of conventional fall protection is infeasible or why their use would cause a greater hazard.

If fall protection plans are utilized, Kirk Duncan will post a written notice of how is designated to work in controlled access zones. No other employees may enter controlled access zones.

Areas will be designated as controlled access zones if other methods of fall protection are not utilized and a safety monitoring system will be implemented.

If Fall protection plans are utilized and in the event an employee falls or some other related, serious incident occurs, (e.g., a near miss) the company will investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g., new practices, procedures or training) and will implement those changes to prevent similar types of falls or incidents.

All affected employees will undergo training to recognize fall hazards and how to minimize these hazards. Retraining will occur when the following conditions occur it is determined that employees already trained do not have the necessary understanding or skill, workplace changes and/or fall protection systems or equipment changes that render previous training obsolete. This training is documented and the latest training certification is maintained.

## **Hole Covers**

Covers located in roadways and vehicular aisles will be capable of supporting at least twice the maximum axle load of the largest vehicle expected to cross over the cover without failing.

All other covers will be capable of supporting, without failure, at least twice the weight of employees, equipment and materials that may be imposed on the cover at any one time.

In order to prevent accidental displacement by the wind, equipment or employees, all covers will be secured when installed.

All covers will be color coded or be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

**NOTE:** This provision does not apply to cast iron manhole covers or steel grates used on streets or roadways.

