

COURSE: NR-35 – SAFETY COURSE FOR WORKING AT HEIGHTS

SCOPE AND APPLICABILITY:

Train and certify offshore personnel properly and safely perform different types of work at heights and other related activities.

REGULATIONS & STANDARDS

- NR-01 - General Provisions and Management of Occupational Risks
- NR-06 - Personal Protective Equipment (PPE)
- NR-18 - Occupational Health and Safety in the Construction Industry
- NR-30 - Safety and Health at Waterway Work
- NR-33 - Safety and Health at Work in Confined Spaces
- NR-34 - Working Conditions and Environment in the Shipbuilding and Repair Industry
- NR-35 - Work at height
- NBR15595 an Petzl Manuals and Protocols
- OSHA 1926 Subpart M
- OSHA 1926 Subpart X
- Health and Safety Authority (HSA) - Occupational Safety, Health and Welfare Guide - Part 4: Working at Height

COURSE CONTENT:

1. Standardization

- a. General considerations;
- b. Law No. 8213 of June 24, 1991: Accident at Work;
- c. NR 01 - General Provisions;
- d. NR 06 – EPI;
- e. OSHA - 1926 Subpart M;
- f. NR 18 - Safety in the Construction Industry;
- g. NR 30 - Safety and Health at Waterway Work;
- h. NR 33 - Confined Spaces;
- i. NR 34 - Work Environment;
- j. NR 35 – Work at Heights;
- k. NR 29 – Harbor Work.

2. Introduction to Work at Heights

- a. Work at Heights Examples;
- b. Fall Control Hierarchy;
- c. Prevention Measures;
- d. Implementation;
- e. Safe Attitude;
- f. Main Reasons for Accidents at Height;
- g. Activity Planning Items.

3. Risk Analysis and Impeditive Conditions

- a. Objective;
- b. Danger x Risk;
- c. Failure Modes and Effects Analysis – FMEA;
- d. Fault Tree;
- e. Chain of Events;
- f. Checklist;
- g. Preliminary Risk Analysis.

4. Inherent Risks, Prevention and Control Measures

- a. IADC;
- b. Attention;
- c. Human Factor;
- d. Improvisation;
- e. Material Inspection;
- f. Equipment's lifespan;
- g. Pendulum;
- h. Back Anchor Point;
- i. Chest Anchor Point;
- j. Hanging Body;
- k. Suspension Trauma;
- l. Fall Factor;
- m. FFZ - Free Fall Zone;
- n. OSHA - 1926 Subpart M;
- o. UK government.

5. Systems, Equipment and Procedures for Collective Protection

- a. Types of Protections;
- b. OSHA - 1926 Subpart M;
- c. General Guidelines;
- d. Collective Protection Measures;
- e. Telescopic Extension Pole;
- f. Lifelines;
- g. Steel Cable Care;
- h. Ladders;
- i. Scaffolding;
- j. Stability of the supporting structure;
- k. Safety on work platforms;
- l. Loading the work platform;
- m. Fragile Surfaces;
- n. Man-Riding - Hand Signals;
- o. Man-Riding - Winch Operator;

Work at Heights

- p. Tower Access;
- q. Toolbox Talk.

6. Safe Use of Single Use Ladder

- a. HSA - Health and Safety;
- b. Authority;
- c. NR-35;
- d. NR-18;
- e. OSHA - Subpart X — Stairways and Ladders;
- f. Good habits;
- g. Technique;
- h. OSHA – General Recommendations.

7. PPE: Selection, Inspection, Conservation and Limitation of Use

- a. Definition;
- b. Technical Requirements;
- c. Equipment Care;
- d. Supports;
- e. Paratrooper Harness;
- f. Cliber's Harness;
- g. Harness Maintenance and Check;
- h. Hook - Method of Use;
- i. Energy Absorber;
- j. Y-lanyard – Maintenance and Verification;
- k. Positioning Lanyard;
- l. Sliding Fall Arrest;
- m. Self-Braking Descender;
- n. Self Retracting Lifeline;
- o. Carabiner;
- p. Pulleys/Reels;
- q. Ropes;
- r. Straps and Slings;
- s. Complementary Equipment;
- t. UK Government.

8. International Knots and Anchor Points

- a. Figure Eight Loop - Anchorage/Insurer;
- b. Marchand – Brake;
- c. Guide Eight Loop;
- d. Blenonesi – Brake;
- e. Bunny Knot;
- f. Cote – Finish;
- g. Single and Double Fisherman Knots – Amendment;
- h. Ordinary Knots – Amendment;
- i. Pretzel Knot – Amendment;
- j. Prusik Loop;
- k. Granny Knot – Amendment;
- l. Clove Hitch - Anchorage/Insurer;
- m. Trapa - Anchorage/Insurer;
- n. U.I.A.A ou Dynamic Knot – Blocking;
- o. Anchor Points;
- p. NR 35 - Annex I;
- q. Rope access or positioning technique.

9. Conduct in Emergency Situations

- a. Rescue;
- b. International Labor Organization (ILO);
- c. Risk Perception;
- d. Protection From Falling Objects;
- e. Legislation;
- f. First Aid – APH;
- g. Profile of a Rescuer;
- h. Vital signs;
- i. Immobilizing a Victim.
- j. Handling Techniques: 90° roll;
- k. Handling Techniques: 180° roll;
- l. Manipulation Techniques: Elevation;
- m. Emergency Situations.

COURSE DESIGN:

Theoretical – 4 hours

Practical – 4 hours

TOTAL: 8 hours

PREREQUISITE(S):

None.

MINIMUM/MAXIMUM NUMBER OF ATTENDEES

This course requires a minimum of 1, and a maximum number of 12 trainees.

To offshore trainings, the course number of attendees will comply with the vessels/rig necessity.

MAIN SAFETY ISSUES:

- Fitting and adjusting the belt;
- Risk perception about the work environment;
- Anchor points;
- Inspections of PPE's e CPE's;
- Avoiding trips, slips and falls;
- The importance of keeping organization;
- Area Clearance;
- Dropped objects awareness;
- Cares during special work at heights conditions.

REQUIRED EQUIPMENT:

- Safety harness (minimum 3 points);
- Simple lanyards;
- Double lanyards;
- Lanyards with shock absorber;
- Eyebolts;
- Hooks;
- Fall-arrestment device;
- Self-retractable lifeline;
- Lifeline;
- Vertical ladder.

PROCEDURE FOR PRACTICAL EXERCISES:

- Risk analysis/pre-task meeting practical demonstration;
- Practical demonstration on fitting and adjusting the safety harnesses and lanyards;
- Anchor points demonstration;
- Working at Heights PPE correct selection, use and inspection demonstration;
- The instructor will use a vertical ladder to demonstrate the correct use of several different WAH equipment and the safest methods of displacement and working at heights. Students will then be individually evaluated. (NOTE: For safety purposes, the Working at Heights Practical exercise MUST be done on a height not greater than 1,8 meters, in order to avoid unnecessarily exposing the students and instructor to any risk).

CERTIFICATION:

Training certificate signed by responsible Engineer accredited by Brazilian CREA.

CERTIFICATE VALIDITY PERIOD:

2 years.