Department-Approved Course Requirements

Course Title: 8-Hour Special Rigger Renewal

Course Required for: ☑ Licensee Continuing Education

Purpose: This course is a renewal requirement for the holder of a NYC Special Riggers license.

Duration: 8 hours of instructional time, excluding breaks & meals

Class Size: 1 – 30 trainees

NYC Requirement: To renew a New York City Special Rigger license, licensees will need to complete 8 hours of training.

Facility Requirements: The Training Facility used by the Course Provider must:
  - Have sufficient room to accommodate all expected attendees and the equipment needed to perform hands-on exercises where required as part of the course;
  - Make provisions for the presentation of training material in all media types (computer, projector, video/DVD player, etc.); and
  - Comply with all applicable laws, rules & regulations relating to occupancy, zoning, egress, fire detection, fire suppression, light, ventilation, cleanliness, sanitary facilities, emergency notification & evacuation procedures.

Training may be held at construction sites, provided the above requirements are met.

Instructor Requirement: To deliver this course the instructor(s) must demonstrate that he or she is credentialed or trained in instructional methods and learning processes. The instructor(s) must also successfully demonstrate his or her ability to solve or resolve problems relating to the subject matter by possession of a recognized degree, certificate, licensure or professional standing, or by extensive knowledge, training, and experience, in the subject matter being taught. To the extent that the course instructor(s) holds, or has held, a trade license issued by the Department, it must be in good standing and not be surrendered to, suspended by or revoked by the Department.

Curriculum Requirement: All topics listed under Course Content Outline must be covered using the listed Instructional Delivery Method. The time dedicated to each outline topic should be appropriate for the course content and can vary depending on the trade or job performed by the trainee. The Instructional Delivery Materials used in this course must contain all current applicable NYC Construction Code references, current rules, policies & bulletins.
1. Introduction to Special Rigging
   - Include inspection, maintenance, repair, use, installation, hazards associated with the relevant sections of the building code & industry practice with regards to rigging.
   - Definition of Rigging such as the traditional uses for rigging in the construction & industrial environment, including industrial rope access (IRA).

2. Rigging Accidents
   - Common causes of rigging accidents
   - Overview of rigging incident statistics for the most current 24-month period: Failure; injury; death. Close review of two failure scenarios with emphasis on what went wrong & how the incident could have been prevented.

3. CFR 29 OSHA 1926 Overview
   - Subparts: E (PPS-Personal Protective Equipment), H (Material Handling, Storage), K (Electrical), L (Scaffolds), M (Fall Protection), CC (Cranes and Derricks in Construction)

4. NYC Construction Codes Overview
   - Cover all applicable code, rules, related department policy statements, regulatory notices, bulletins and memos, including: 2014 Building Code -Chapter 33; Reference Standard RS 19-2

5. NYC Department of Buildings Overview
   - Cover all applicable administrative standard operating procedures, policy procedure notices, permits/department notifications, forms, filing and site documents, plans, inspection checklists/logs and wind and weather advisories

6. Basic Plan Reading & Symbols
   - with emphasis on rigging & rigging equipment.

7. Design Criteria for Rigging & Factors of Safety

8. Basic Building Structure
   - Structural framing, floor, wall, roof framing, exterior envelope, roof parapet, masonry walls, columns, concrete slabs. Basic strength & weight of materials used & the deteriorating effects of exposure to elements over time, especially façade elements, such as masonry, curtain wall panels, decorative stone & tile, railings, embedded anchors, etc. Special emphasis on building structures traditionally used to support rigging equipment (floors, exterior walls, bearing & non-bearing, parapets, roof dunnage, structural steel beams & columns)

9. Rigging Math & Calculations
   - Mathematics of rigging, measurement, symbols, geometry, calculations, leverage, friction, fulcrum, center of gravity, uniform and concentrated loading. Also the wind effects on netting & other components.
   - Calculation of weight, loads, sling loads, drifting loads, balance & tipping points of objects, center of gravity, non-symmetrical center of gravity & buoyancy (lifting in water).

10. Inspection, Maintenance & Repair of Rigging &-Ropes
    - Inspection process & safety checklists, including: what to inspect, how to inspect, how frequently to inspect, how to identify hazards, steps to take if hazard discovered including rigging systems, anchorage, individual components, slings, hoists mortars, etc. Identification of wear, defects, failure signs in all rigging equipment. Handling, maintenance, repair/replacement of rigging equipment, rope, hardware, etc. Rope (wire & fiber), hardware used in rigging, type, strength, application, manufacturers' specifications, limitations, handling. Connection & termination of wire/fiber rope (fasteners, knots, hitches, hooks, shackles, thimbles, eyes, tackle blocks, etc.) including connection to suspended work platforms, ie., scaffold platforms; hoist loads (materials, equipment). Identification of wear, defects, failure signs in all rigging equipment. Handling, maintenance, repair/replacement of rigging equipment, rope, hardware, etc. Types of maintenance required; Who can maintain ropes? Who can repair ropes? Safeguards to take before beginning maintenance or repairs

11. Hoisting & Hoisting Equipment
    - Manual, electric, etc., pulley, block/tackle, sheaves, drums, slings (all types), chains, electric hoist motors, capacity, rigging of motors, mechanical/electrical safety devices and their operation, critical picks.

12. Suspension Methods & Setup
    - slings, chocks, outrigger beams, clamps, counterweights, shoring scaffolds (outrigger supports), masonry & concrete anchors (expansion, adhesive, screw), pull testing of anchorage devices, off-the shelf hardware, as well as site-built hardware/eyesystems must be included; ground conditions, deviation from plans not permitted, danger to underground infrastructure, excavations, foundations, etc.
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Course Content Outline

13. Lifting & Lowering Loads
   - Weights & materials, center of gravity; rigging requirements, critical picks, hoisting &
     hoisting equipment (manual, electric, etc.), pulley, block/tackle, sheaves, drums, slings
     (all types), chains, electric hoist motors, capacity, rigging of motors, mechanical/electrical
     safety devices & their operation, critical picks. Construction & use of suspended working
     platforms, manufacturer’s specifications, limitations, max spans, guardrails, planking,
     debris netting, stirrups, maneuvering, drifting, securing of platform during & end of shift.
     Suspension methods, slings, c-hooks, outrigger beams, clamps, counterweights, shoring,
     scaffolds (outrigger supports), masonry & concrete anchors (expansion, adhesive, screw),
     pull testing of anchorage devices. Off-the-shelf hardware, as well as site-built hardware
     systems must be included. Communication between workers & supervisors while rigging:
     radios; hand signals; flags; etc. Material handling during rigging as well as the use of
     rigging for intended purpose (hoisting, scaffold, facade repair, etc.)

   - Construction, use, manufacturers specifications, limitations, max spans, guardrails,
     planking, debris netting, stirrups, maneuvering, drifting, securing of platform during
     & at end of shift, (manual, electric, etc.), pulley, block/tackle, sheaves, drums, slings
     (all types), chains, electric hoist motors, capacity, rigging of motors, mechanical/
     electrical safety devices & their operation, critical picks

15. Safety Protocols/Personal Protective Equipment/Operational Aids
   - Types of aids, safety devices, functions, how to use, steps to take if operational aid/safety
     device not working. Acceptable means to substitute for a malfunctioning aid/safety device
     Personal fall-arrest systems, use, storage, maintenance, installation & anchorage. Other
     types of personal protection (hard hats, respirators, gloves, shoes, eye protection, clothing).
     Overhead protection & safety exclusion zones during rigging; hoisting; use of scaffolding;
     sidewalk sheds, barriers, flag persons, hazard signage. Electrical safety during rigging
     installation & use, including work performed from suspended working decks (welding,
     use of electrical equipment, etc.).

16. Hazardous/Flammable/Caustic Materials
   - Work safety, effect on and protection of rigging hardware from damaging materials.
     Welding/burning operations.

17. Emergency Procedures during Scaffold Incidents
   - Failure, Malfunction, Power loss, etc.)

18. Logs & Record Keeping
   - Including maintenance records for equipment, pre-task & safety meetings

19. Evaluation of Training, Employment, & Qualifications of
    Rigging & Specialty crews.

20. General Construction Site Hazards

21. NYC Buildings Unsafe Condition (311) Notification Procedure
    - Provide Copy to Trainee & Discuss

22. NYC/DOI Buildings Integrity Training Contact Information Sheet
    - Provide Copy to Trainee & Discuss

23. Review all Training Topics
    - Discussion with Questions & Answers

24. Written (Multiple Choice) Assessment
    - Classroom