



AMERICAN PETROLEUM INSTITUTE
TRAINING PROGRAMS

API-U Training Provider Certification Program (TPCP)

Qualified Crane Inspector Compliance Checklist

VERSION 1_August2020

All API-U Approved courses through TCPD should include Hand Signals and Wire Rope Knowledge and Understanding. Course Materials must illustrate the following (**disregard if this section was filled out with another course compliance checklist**):

Compliance Check	Course Content and Testing	Notes
	<ul style="list-style-type: none"> <input type="checkbox"/> Identification and testing of test the student's ability to understand and perform the basic hand signals in this standard for the purposes of API 2D. <input type="checkbox"/> A thorough understanding of wire rope construction and its: construction effects on performance and applications, construction factors causing rope deterioration. <input type="checkbox"/> Testing of wire rope inspection responsibility <input type="checkbox"/> Testing of wire rope manufacturing <input type="checkbox"/> Testing of wire rope terminology <input type="checkbox"/> Practical assessment of steel wire rope characteristics <input type="checkbox"/> Testing of wire rope deterioration including rope terminations/end fittings, good, bad, and indifferent <input type="checkbox"/> Testing of wire rope inspection/examination procedures <input type="checkbox"/> Testing of discard/retirement criteria <input type="checkbox"/> Understanding of record keeping and reports <input type="checkbox"/> Identification of damaged/failed wire ropes 	

Qualified Crane Inspector Training

Qualified crane inspectors shall be trained as follows on the type of cranes they will inspect.

- Maintenance and troubleshooting of non-mechanical functions to include both hydraulic and electric.
- Maintenance and troubleshooting of mechanical functions (e.g. friction).

The following shall be included as requirements for qualified crane inspector training.

Classroom-type sessions with written and practical exercise examinations on the type of crane to be inspected by the qualified crane inspector.

- Such classroom-type sessions and examinations shall cover all major crane components; the operational and maintenance procedures appropriate for the type and rated capacity of crane to be operated; and all major issues and guidelines addressed in this document.
- Training shall also cover hoist overhaul and troubleshooting, structural aspects of offshore cranes, knowledge of structural critical components inspection area's and applicable local regulatory requirements.

Compliance Check	Course Content	Notes
Complete covering of all information within API 2D, and the appropriate section objectives to include the following objectives related to relative API 2C edition(s) (as applicable for when the crane was manufactured) for offshore pedestal mounted cranes, as appropriate for the type of crane used		
	<ul style="list-style-type: none"> <input type="checkbox"/> Critical components <input type="checkbox"/> API 2C definitions <input type="checkbox"/> Crane rated loads <input type="checkbox"/> Crane ratings <input type="checkbox"/> Allowable stresses <input type="checkbox"/> Design authentication and testing <input type="checkbox"/> Critical rigging components <input type="checkbox"/> Boom, load hoist, and telescoping boom components <input type="checkbox"/> Swing mechanism <input type="checkbox"/> Power plant <input type="checkbox"/> Controls <input type="checkbox"/> Cabs and enclosures <input type="checkbox"/> Miscellaneous requirements and equipment <input type="checkbox"/> Welding of critically stressed components <input type="checkbox"/> Nondestructive examination (NDE) of critical components; 	
Familiarize students with typical problems encounter in crane maintenance, troubleshooting and inspection for offshore pedestal mounted cranes as appropriate for the type of crane used and knowledge, to include"		
	<ul style="list-style-type: none"> <input type="checkbox"/> Mechanical and non-mechanical cranes (general): <ul style="list-style-type: none"> - load charts/information charts (correct and configure to crane) - importance of following manufacturer's recommendations - safety factors involved - hoists - structural aspects of offshore cranes - structurally critical components - critical inspection areas - applicable local regulatory requirements - basic knowledge of nondestructive examination (NDE) such as (dye penetrant procedures) 	

- what records are to be reviewed and maintained in accordance with API 2D
- how to review completed repair records and status of any open repairs
- knowledge and demonstration of measurement tools usage
- crane safety systems
- power plant (prime mover)
- boom inspection
- lubrication application and inspection (hydraulic, gear oil and greases)
- emergency load lowering procedures (as applicable)

Non-mechanical (specific basic hydraulic), inclusive of those specified above:

- hydraulic terminology
- transmission of force and energy
- simple hydraulic system
- operation at the suction side of pump
- actuators
- luffing cylinders
- check valves, accumulators
- flow control valves
- directional control valves
- pressure control valves
- pilot operated pressure control valve
- different types of pumps
- hydraulic motors
- reservoirs, coolers, and filters
- hydraulic symbols and schematic drawings
- knowledge of hoses and fittings

Non-mechanical (specific basic electric), inclusive of those specified above:

- electrical symbols and schematic drawings
- basic electrical terminology
- all applicable motors, controls, and panels

Mechanical (specific basic friction), inclusive of those specified above:

- mechanical terminology
- swing lock and brake
- vertical and horizontal swing shaft and bevel gear boxes
- applicable hook roller assemblies
- upper and lower reduction gear cases
- all hoist brakes and clutches
- clutch assemblies
- all applicable drum brakes
- boom hoist pawl
- chain case and pump
- applicable operational function controls and systems
- bearing-gear-shaft and housing inspection

Practical Exercises and Examination

General Guidelines

A pedestal-mounted crane shall be used for practical exercises and testing.

Practical Exercises	Notes
<ul style="list-style-type: none"> <input type="checkbox"/> Instructions on the proper usage of measuring and testing tools, as specified <input type="checkbox"/> Identification of stress, corrosion, and inspection practices. <input type="checkbox"/> Requirements for covering any failed portions of the examination immediately after exam completion. 	
Practical examination with all exercises in crane maintenance, troubleshooting and inspection centered on critical components for offshore pedestal mounted cranes as appropriate for the type of crane used, to include:	Notes
<ul style="list-style-type: none"> <input type="checkbox"/> Mechanical and non-mechanical cranes (basic general): <ul style="list-style-type: none"> – types of swing assemblies typically used on pedestal-mounted cranes – crane safety systems – wire rope (according to 4.5) – power plant (prime mover) – structural load path inspection – sheave – load and pull test procedures – hoist brake test – use of basic electrical tools and meters – emergency load lowering procedures (as applicable) <input type="checkbox"/> Non-mechanical (specific basic hydraulic): <ul style="list-style-type: none"> – hoist overhaul and troubleshooting – emergency load lowering <input type="checkbox"/> Non-Mechanical (specific basic electric) <input type="checkbox"/> Mechanical (specific basic friction): <ul style="list-style-type: none"> – demonstration of proper operation – boom band brake adjustments – control lever adjustments – master clutch adjustment 	