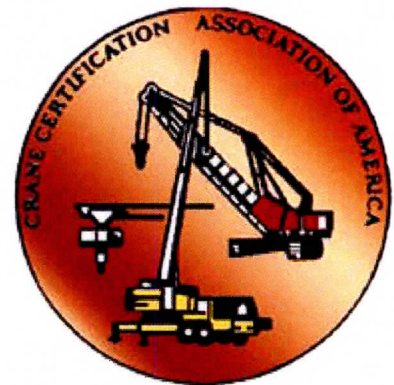


Is Your Crane Inspector Qualified?



CMCO Certified



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Is your crane inspector qualified?

This is the most important question any crane owner can ask when soliciting a third party inspection company for their services. This question is seldom asked, yet all crane owners fork over many dollars to have their overhead lifting equipment inspected and tested and they assume that the inspector is well trained in performing the task. If you really think about this the inspector has to determine whether or not the equipment is safe to operate. Let's look at some key elements of what to ask for in a qualified inspector.

Qualifications/Experience:

ASME uses the word "qualified person" *A person who, by possession of a recognized degree in an applicable field or certificate of professional standing, or who, by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems related to the subject matter and work.*

The majority of inspectors fall under the latter of the above definition in the overhead crane industry. Based on past experience some of the best inspectors come from the manufacturers and repair companies that have a strong background including structural, electrical, mechanical disciplines involving material handling equipment. A few government entities and organizations have actually stated their experience requirements in time:

State of California-5 years

State of Washington-5 years

CCAA-3 years (Crane Certification Association of America)

CMAA-2 years (Crane Manufacturer Association of America)

Knowledge/Continued Education:

Knowledge/Continued Education is by far the most important element. There are a wide range of Regulations and Standards just as there are a wide range of equipment. Whether you're inspecting a 100 ton crane or a small enclosed track work station crane there is a specific Safety Standard, Performance Standard, Design Standard or Design Specification that applies. As time goes by the Regulations and Standards can change and this alone becomes a continued education process.

One misconception in the overhead crane inspection business is if the equipment adheres to all the Regulations and Standards that the equipment is in compliance. Technically this would be correct. However, while the equipment may meet these Standards and Regulations it does not mean the equipment is safe to operate. First of all we are talking about minimum Standards. The manufacturers must always meet these minimum Standards, however many of these same manufacturers go beyond the minimum Standards in the design and operation of their product. To put it simply there could in fact be a major problem with the equipment even though the minimum Standard has been met. It is very important for all overhead crane inspectors to educate themselves on the various manufacturers, makes and models of equipment in use today. Anytime the manufacturers design is compromised and is overlooked during an inspection means that the inspector or crane owner can assume the liability if an accident occurs as a result of the equipment falling out of compliance with the manufacturers design. Again Continued Education is vital in understanding the manufacturers design.

When soliciting a crane inspection company always ask for company and employee references, Insurances, licenses and qualifications.





History of Overhead Crane Regulations & Standards

Not all ANSI standards are incorporated by reference. ANSI standards can also be interpreted as implicit regulations through our American legal system. The standards make a great reference on how a particular machine should be, or more likely in the case of a trial, “should have been”. The failure to comply can cause employers and manufacturers to increase their liability exposure, should an accident occur. It is difficult to persuade a jury that a particular document is just a voluntary document while the opposing lawyer advocates it is really the Holy Grail of safe guarding.

A good example of this is OSHA incorporates ANSI B30.2 that covers double girder cranes. OSHA does not incorporate the ANSI standards covering single girder cranes or monorails. These are found in ANSI B30.17 and B30.11. These two ANSI standards were not written at the time ANSI B30.2 was incorporated by reference. However, OSHA has cited the General Duty Clause in issuing citations on equipment that doesn't meet ANSI B30.17 and B30.11. The general duty provisions are used where there is no Federal Regulation that applies to a particular hazard.

Industry standards or practices are other examples. One of these is CMAA. CMAA is a design specification. OSHA does reference CMAA however the reference only applies to clearances from obstructions. ANSI B30.2 also references CMAA however this reference applies to rails and bridge girder design and installation. Both OSHA and ANSI reference only a small part of the specification. The specification is a complete design specification that includes electrical, mechanical and structural design criteria and CMAA also states that inspection and maintenance be performed in accordance with ANSI B30.2 and the CMAA “Overhead Crane Inspection Checklist”.

Why is all this important if OSHA and ANSI does not incorporate the entire CMAA specifications? It can be important in a court of law because virtually all overhead crane builders design and manufacture their overhead cranes to CMAA specifications. This has become an Industry Standard. While OSHA may never write a citation referencing the CMAA specification, you can bet the opposing lawyer will hang the crane inspector out to dry if in fact the inspector neglected to ensure that the crane complied with CMAA specifications and this non-compliance resulted in an accident. Remember all the lawyer has to do is convince a jury with the help of an expert witness that the equipment did not comply with Industry Standards.

In summary, the overhead crane industry does have a long list of Standards, Regulations and Specifications that the equipment must adhere to and this doesn't include the changes in technology, design and safety that OSHA or ANSI has not kept up with. Being an overhead crane inspector is a constant learning process. To error in this process could find you before a jury.

AOC Library of Standards, Regulations & Specifications (03/15/10)

- AISC Steel Construction Manual 13th Edition
AISE/AIST-1991, 2005 Technical Report #6 Mill Duty Cranes
ANSI B30.2-2005, 2001, 1996, 1990, 1943 Overhead & Gantry Cranes (TRDG)
ANSI B30.3-1984 Hammer Head Tower Cranes
ANSI B30.4-2003 Portal, Tower & Pedestal Cranes Reaffirmed 2009
ANSI B30.5-2007, 2004, 1991, 1989 Mobile, Locomotive Cranes
ANSI B30.6-1984 Derricks
ANSI B30.9-2003, 1990, 1991 Slings
ANSI B30.10-2005, 1990, 1987 Hooks
ANSI B30.11-2004, 1990, 1989, 1988 Monorails & Underhung Cranes
ANSI B30.13-2003 Storage/Retrieval (S/R) Machines
ANSI B30.16-2003, 1990, 1988, 1987 Overhead Hoists Underhung
ANSI B30.17-2003, 1990, 1988, 1987, 1985 Overhead & Gantry Cranes (TRSG & SGUH)
ANSI B30.18-2004 Stacker Cranes
ANSI B30.20-2006, 2003, 1990, Below the Hook Lifting Devices (See below BTH-1-2005 design)
ANSI B30.21-2005, 1989 Lever Hoists
ANSI B30.22-1993 Articulating Boom Cranes
ANSI MH27.1-1996, 2009 Patented Track Underhung Cranes & Monorails
ANSI MH27.2-2003, 2009 Enclosed Track Underhung Cranes & Monorail Systems
ANSI/ALI ALOIM-2000, 1994 Automotive Lifts
ANSI/SIA A92.2-2001 Vehicle-Mounted Elevating & Rotating Aerial Devices
ANSI/SIA A92.3-1990 Manually Propelled Elevating Aerial Platforms
ANSI/SIA A92.5-1992 Boom-Supported Elevating Work Platforms
ASME BTH-1-2005-Design of Below the Hook Devices
ASME HST-1M-1989 Electric Chain Hoists (Reaffirmed 1995)
ASME HST-2M-1989 Hand Chain Hoists (Reaffirmed 1995)
ASME HST-3M-1999 & 1991 Lever Hoists
ASME HST-4M-1991 Electric Wire Rope Hoists (Reaffirmed 1996)
ASME HST-5M-1991 Air Chain Hoists (Reaffirmed 1996)
ASME HST-6M-1986 Air Wire Rope Hoists
ASME NOG-1-2004 Construction of EOT Nuclear Cranes
API 2C-1995 Specifications for Offshore Cranes
API 2D-1995 Operation & Maintenance of Offshore Cranes
API Q1-1994 Quality Control
ASTM-E2349-05 Requirements for Metal Casting (Hot Metal Cranes)
AWS D14-1-1970 Specifications for Industrial & Mill Duty Cranes
AWS QC3 & QC7 1989, 1993 Standard for Certified Welders
AWS QC4-1989 Standard for Accreditation of Test Facilities for AWS Welder Program
AWS QC 5-1991 Certification of Welding Educators
AWS QC7-1993 Chemical Plant & Petroleum Piping
AWS QC7-1993 Performance Qualification Test
AWS QC7-1993 Qualification Sheet Metal Test Requirements
BS1 7074-1989 Repair & Inspection Offshore (British Standards)
BS1 7121: Part 1-1989 Safe Use of Cranes (British Standards)
CCAA B001-R05/07 EOT Load Test Procedures
CCAA B003-R12/09 Overhead Crane Inspectors Checklist
CMAA #70-2000, 1988 Top Running & Gantry Cranes Multiple Girder Cranes
CMAA #74-2000, 1988 Top Running & Under Running Single Girder Cranes
CMAA #78-2002 Standards & Guide Lines for Professional Services
CFR 1910.179 Pre-1971 Crane Ruling
CFR'S 29 Complete Set
CFR'S 33-2000 Part 1 Through Part 200 Navigation & Navigable Waters
HMI-2003 Manually Lever Operated Hoists (Operators Manual)
EOCI Specification 61 EOT Cranes (See new CMAA specifications)
ISO Standards Hand Book Volume #1 Use Operations & Maintenance (1996 Paper Back First Addition).
ISO Standards Hand Book Volume #2 Design Requirements & Accessories
ISO 9927-1 2009 Cranes-Inspections Part 1
ISO 14001-1995 Specification with Guidance for use
ISO 14004-1996 General Guidelines on Principles, Systems & Supporting Techniques
ISO 14010-1996 Guidelines for Environmental Auditing
ISO 14011-1996 Audit Procedures
ISO 23814-2009 Cranes-Competency Requirements for Crane Inspectors
MMA (Monorail Manufacturers Association) Specifications for Underhung Cranes & Monorails
NEC-2008, 2005, 2002, 1984, 1978, 1899
NEC-2008-Pocket Guide to Commercial & Industrial Installations (Paper Back)
NAVFAC P-307-2006 Navy Material Handling Specifications
PCSA Standard #2 Mobile Hydraulic Cranes
PCSA Standard #4 Supersedes #1 & #2
US Coast Guard Inspection Reports
Various State OSHA:
California Title 8
Michigan General Industry Standards
Nevada (partial)
Oregon Chapter 437-Division 89 Cranes Amended 1990
Washington WAC 296-24-23503 through 29431-2007
Mil. Specifications:
A-A-50585 1997 Gentries, Hoist, Portable (Shop Type)
Superseding MIL-G-28673C 1994

MIL-H-904J 1991-Hoists, Chain, Hand-Operated, Hook & Trolley Suspension
Superseding MIL-H-904H 1977

MIL-S-12645C 1984 Slings-Endless, Fiber & Nylon Webbing
Superseding MIL-S-2645B 1973

A-A-59212 1998-Winches, Drums, Power Operated, Diesel/Engine Driven
Superseding MIL-W-29158B (YD) 1989

00-W-2803 1992-Drum, Hand-Operated Safety Type for Pontoon Barges
Superseding MIL-W-28547B 1981

Miscellaneous:
Whiting Crane Hand Book-Forth Edition (Hard Bond)
US Steel Corporation-D.C. Crane Control Print Reading-1956 (Paper Back)
Materials Handling Handbook-Second Addition-1985-Sponsored by ASME (Hard Bond)
Crane Handbook, Dickie First Addition-1975 (Hard Bond)

Need help with a particular Standard, give us a call

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