



Crane Inspection And The Engineer's Role

More and more, crane owners are being asked to have their crane inspected and signed off by a professional engineer before it can go to work. The requirement is already found in Canadian standards and in parts of provincial regulations. In addition, pending amendments to Ontario law will almost certainly mandate that an engineer supervise the annual inspection for every crane on a construction site by requiring that cranes be inspected and maintained in accordance with CSA standard Z-150-1998.

Most inspection companies do not have engineering capabilities and therefore hire an engineer to sign off their crane inspections. Usually, the company has their own method of inspection and the engineer's role is reduced to reviewing the inspector's field reports and stamping the formal report. Further, when repairs become involved, the repair recommendations often come from the inspector instead of the engineer!

The point is, the engineer is responsible for the inspection – not the inspector. The inspector is the engineer's "eyes" in the field. While he must be knowledgeable, the inspector is not there to make decisions or recommendations. That is the engineer's job, and to do it properly, he must be a part of every aspect of the inspection. In fact, this involvement should begin before the inspection even starts. For the engineer to carry out his duties effectively, he should be an integral part of the inspection company and not simply retained to sign off field reports. Here are a few reasons why:



Crane Testing Becoming Mandatory

A major crane insurer in Ontario is beginning to require that cranes be operated and maintained in accordance with CSA Z-150-98 "Safety Code on Mobile Cranes" as a condition of providing insurance coverage.

This requirement includes full nondestructive inspection for every insured crane on an annual basis. We are already providing this service to new clients to satisfy this requirement.

Other provisions from the standard may also be required by the insurance industry.

Visit our web site (www.domson.ca) for more information about Canada's new crane standard. Once in the site, click on Technical Notes.

1. The engineer must prepare and/or approve test procedures for each crane type indicating what to test and how. Procedures should include requirements set by legislation, standards, and manufacturer's guidelines and should be based on sound engineering principals.
2. The engineer must be involved in training and testing of the inspectors. Periodic retraining is also required to ensure inspectors continue to follow procedures and are knowledgeable.

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3. While the engineer cannot attend every inspection, he must perform random on site quality audits to satisfy himself that inspections are being carried out correctly.
4. The engineer must be part of the job before the inspector leaves for the site. This allows him to instruct the inspector of any special requirements.
5. The engineer must be apprised of the inspection progress so as to guide the inspector through questionable findings. For example, an item may be acceptable as is or may need more inspection.
6. The engineer must be informed of any defects prior to repair to ensure proper handling. In some cases, special weld procedures are required, especially when high strength steel is involved. The engineer may have to view the damage on site before preparing a procedure.
7. The engineer must be available to the inspector to provide knowledge about legislation, standards, manufacturing practice, strength of materials, material properties etc.
8. Where unauthorized modifications or repairs are found, the engineer must be informed in order to determine the suitability of those items for future operation.
9. The last, and easiest, step is to review all the field reports to verify that the results allow the engineer to sign off the crane.
10. Cranes are specialized equipment and their design is constantly evolving. To keep up with the technology, the engineer should have continuous and extensive experience in the field. An engineer employed by a company specializing in crane inspection will likely be better equipped to provide the necessary expertise than one who is retained by a company who dabbles at it

It is possible for the retained engineer to accomplish all the above tasks, however, economics constrains inspection companies to offer little compensation as a retainer. For the engineer to remain profitable, there's just time to review the field reports and make up his own stamped report. The other items are often either missed or done in a hurried fashion.

On the other hand, where the engineer is employed, his cost to the company is much less than his full rate. This leaves a lot more time for perfecting the system and directing the inspection as is his duty.

As mentioned earlier, cranes are specialized equipment so the engineers who inspect them should be specialized to deal with them. To make sure you've hired the right engineer and/or inspection company to look at your equipment, ask

- ✓ Is the supervising engineer employed with the inspection company?
- ✓ Has the engineer actually inspected cranes himself?
- ✓ Is the engineer competent with the welded repair of high strength steel? Is he qualified as a welding engineer?
- ✓ Are the inspectors specifically trained in crane inspection? Who directs the inspector's training? (it should be the supervising engineer)
- ✓ How many cranes do they inspect on a monthly basis? A company who specializes in crane inspection will inspect at least ten cranes per month.

It's your equipment. Make sure you get the right people to help you look after it!

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