

Safety and health alert

08/02 Chain sling failure

Incident

A two-leg alloy chain sling of welded construction and working load limit of 9.4 tonnes at 60-degree lifting angle failed whilst positioning a 4.4 tonne load using a 50 tonne SWL bridge crane. A link in the chain sling broke at the weld area on its second day of use.

The new sling assembly, which was supplied the day before, was provided with a batch test certificate. Subsequent tests conducted on the remaining chains by an independent NATA approved laboratory demonstrated that the chain breaking force exceeded 23 tonnes.

Factors

Examination of the failed chain sling revealed that the link failed at the weld joint area that had initially held together with minimum weld and had elongated. The links on either side of the failed link showed no marks or elongation and did not appear to be stressed.

The incident was attributed to the failure of one link due to insufficient weld joining the link properly together in the chain sling assembly. The failure of the link in the chain sling assembly is therefore concluded to be due to a manufacture defect.

Recommendations

1. The working load limits (WLL) or rated capacity must be clearly tagged on chain slings.
2. Untagged chain slings must be taken out of service. The slings may be returned to service after being assessed by a competent person as to its condition, retested and retagged.
3. Prior to each use, chain slings must be checked by the dogger to ensure the slings are free from any significant damage or wear.
4. A competent person must regularly (preferably monthly) check chain slings for defects, fractures or wear. A sling inspection record should be maintained for each sling and all results recorded.

[Appendix B of Australian Standard AS 3775-1990 provides guidance on inspecting chain slings and should be followed].

Further Information

Further information can be obtained from the WorkSafe internet site www.worksafe.wa.gov.au, or by contacting customer service on 1300 307 877 or email: safety@docep.wa.gov.au.

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