

Safety Alert

Chain recoil causes fatal injuries

The purpose of this Safety Alert is to highlight the risk of serious injury or death when using chains in towing or recovery operations.

Background

In March 2020, a 50-year-old worker in Maningrida was fatally injured when a chain used in a towing operation failed.

The worker was operating an excavator to tow another excavator, which had broken down. The chain was attached to the chassis (frame) of the broken down excavator and to the quick clamp of the other excavator. The excavator being towed weighed approximately 36 tonne.

The chain, when it broke, recoiled, striking the worker who was sitting in the excavator cabin.

The [latest Safe Work Australia data](#) shows the occupation with the highest number of fatalities were machinery operators and drivers.

Possible contributing factors

- A risk assessment was not completed and safe work procedure were not developed for the recovery of the broken down excavator.
- The chain used may not have been suitable for towing.
- Some links in the chain showed signs of wear and damage.
- The quick clamp on the excavator, where the chain was attached, was raised at the height of the cabin.
- The excavator had previously been vandalised and the cabin glass was missing.

Action required

- Conduct a risk assessment before you start work.
- Consider covering the recovery equipment with a damper to absorb most of the energy in the equipment and reduce the risk of recoil from failure.
- Consider the use of recovery tow stops instead of chains when recovering any vehicle/equipment.
- If you choose to use chains (including accessories such as hooks and shackles), determine what you can use the equipment for by checking for any identification markings and referring to the manufacturers product guide.
 - The manufacturer's information will provide the safe working load limit (WLL) of the chain and accessories, and if the equipment is suitable for how you want to use it.
 - The identification markings indicate a chain complies with the mechanical properties and testing requirements for a specific Australian Standard.
- Make sure the weight of the object you are towing is within the WLL of the chain used.
- Inspect the chains before use for signs of damage or wear. Do not use chains with damaged links.
- Refer to the excavator's operating manual for appropriate attachment points for towing; avoid attachment points, which are in line with the cabin or the operator.

- If your risk assessment has identified the potential for objects penetrating the cabin, consider installing cabin protective guards to provide an additional level of protection for the operator.



Image 1: The 4344-38 identification marking on this chain means it complies with Australian Standard 4344 and has a 3.8 tonne capacity.

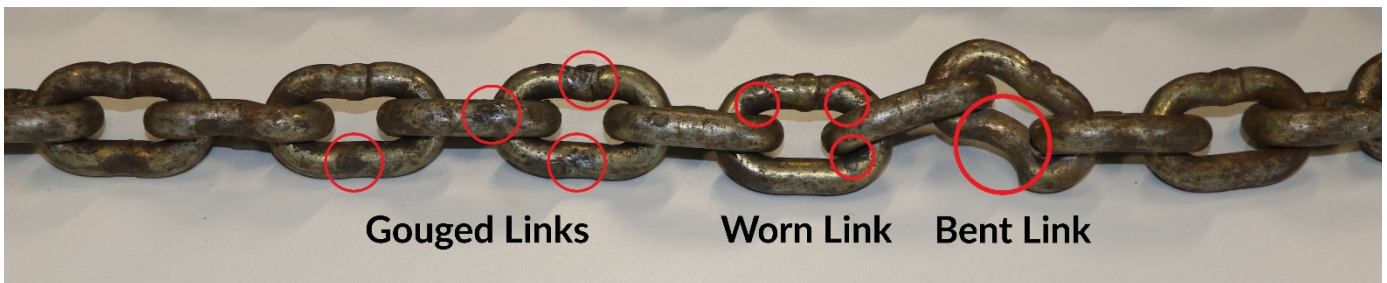


Image 2: A section of chain, with examples of wear and damage.

Further information

For further information, please refer to the following:

Codes of Practice

- [Managing the risk of plant in the workplace](#)

Safety Alerts

- [Broken pull chain results in fatality](#) (Mine Safety NSW)

Guides

- Always refer to the manufacturers product guide for the equipment safety information.

Disclaimer

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