

North Dakota State University

Hooks, Chains, Cables, Ropes and Slings

I. Introduction

Numerous positions at NDSU require the use of hooks, chains, cables, ropes, and slings. Some of these devices are permanent pieces of the equipment or facility, others are used for a specific period of time, and some of the devices are used only to assist in completing the job.

II. Purpose

The use of hooks, chains, cables, ropes, and slings requires caution in daily job performance and in non-routine job functions; therefore, NDSU has outlined guidelines to assist the employee in the safe operation of these devices.

III. Goals

NDSU's goal is to limit occupational exposure to injury or death when working, supervising, and ordering inspections of an area that requires the use of a hook, chain, cable, or ropes and slings.

IV. Procedures

When any hook, chain, cable, rope, or sling is used, the following practices will be observed:

1. Operate only the tools and equipment you are authorized to use.
2. Wear the appropriate personal protective equipment when working.
3. Always check the appropriate load chart to insure that the piece of equipment you intend to use will handle the load. Check the rated capacity and do not exceed the manufacturer's safe working load.
4. Be careful - most load charts are based on NEW equipment, and most lifts are made with USED equipment.
5. The life span of a hook, chain, cable, rope or sling varies greatly with the frequency of use, type of use, and how well they are taken care of. The decision to use old equipment must be made with care, caution, and thorough inspection.
6. Before use, inspect the equipment and its fastenings for cut or broken pieces, kinks, knots, twists, rust, corrosion, flat spots and abuse spots from dragging over hard or sharp objects.
7. Do not use a damaged or weak piece of equipment.
8. Perform additional inspections during use, where service conditions warrant.
9. Report damaged or defective equipment immediately to the supervisor and immediately remove from service.
10. Equipment shall be used for their intended purpose only. The design capacity shall not be exceeded by use of "homemade" or unauthorized attachments.
11. Check the attachments to the load prior to use - they must be secure.
12. Suspended loads shall be kept clear of all obstructions.
13. All employees shall be kept clear of loads about to be lifted or of suspended loads.
14. "Riding" a hook, chain, rope or on a load is prohibited.
15. Do not run equipment over hoses, cables, cords, or ropes.

16. Hands or fingers shall not be placed between the hook, chain, cable, rope or sling and its load while the hook, chain, cable, rope or sling is being tightened around the load.
17. All pieces of equipment should be protected from chemicals and heat - temperatures over 212 degrees F can damage fiber core cables. Temperatures over 400 degrees F will damage wire core cable. Chemicals can cause invisible internal damage and corrosion.
18. Avoid using devices that have been overloaded or have come into contact with high voltage.
19. When using chains, remember they are only as strong as their weakest link. This is why it is important to check each link for wear and damage.
20. To determine if chain stretch is within the manufacturer's allowable limits, measure a length of taut chain, then count the links and multiply by the correct length of one new link. The excess indicates the chain's stretch.