

Instructor Notes: Knowing that chains are the lifeblood of the towing and recovery industry, it makes sense that every towing operator have more than a general working knowledge of the “tools of the trade.” Use this opportunity to discuss chains and their specific applications before someone gets hurt or hurts someone else.



Safety Meeting 2016 #9 – Chains, Pains and Automobiles



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There is a wide variety of chains manufactured in the United States and beyond but not all chains are created equal and not every chain is recommended for the towing and recovery industry. According to the National Association of Chain Manufacturers (NACM), there are generally five categories of welded steel chains produced in the U.S. Depending on the source, the term “Grade” or “System” will be used to identify the chain’s category:

- Grade 30 (System 3) – Proof Coil Chain
- Grade 43 (System 4) – High Test Chain
- Grade 70 (System 7) – Transport Chain
- Grade 80 (System 8) – Alloy Chain
- Grade 100 (System 10) – Alloy Chain

While a sixth category has been recently introduced (Grade 120 – Alloy Chain), this chain is typically imported and the NACM has not included it in their chain specifications yet.

Chain Grade

The “grade” refers to the tensile strength of the metal. The grade number used by manufacturers is an indicator of the ultimate breaking strength of chain, so the higher the grade, the greater the chain’s capacity. When considering which grade to use for towing and recovery, remember that the chain must fit the job and towing is very different from recovery. Depending on the manufacturer, the chain’s grade is stamped on the actual link or a metal tag is attached. If there are no grade markings, you have to assume the worse and treat the chain as Proof Coil and exclude it from towing or recovery applications.

Proof Coil Chain

Grade 30 chain is not heat-treated and an extremely low grade of chain that should never be used by towing professionals. The safe working load for 3/8-inch Proof Coil chain is about 2,650 lbs.

High Test Chain

Grade 40 chain is also not heat-treated but is suitable for most light-duty towing applications such as hook-up chains or car carrier bridles. The safe working load for 3/8-inch High Test chain is about 5,400 lbs.

Transport Chain

Grade 70 chain is made of heat-treated carbon steel and as the name suggests it’s widely used as load securement with chain binders and is well suited for general towing applications. The safe working load for 3/8-inch Transport chain is about 6,600 lbs.

Alloy Chain

Grade 80 chain is a heat-treated steel chain with a high strength-to-weight ratio. Its strength makes it suitable for overhead lifting and is excellent for uses such as recovery, safety and towing. The safe working load for 3/8-inch Grade 80 chain is about 7,100 lbs. Grade 100 chain is a newer product and is becoming popular as a replacement for Grade 80 chain. Considered premium quality by chain manufacturers, it provides about 25 percent higher working load limits (WLL) than Grade 80 chain. The safe working load for 3/8-inch Grade 100 chain is about 8,800 lbs. Grade 120 is also a newer

category of high-performance chain, offering the highest strength in the industry. The square link style creates increased contact between the link surfaces, which reduces pressure on the chain as well as provides increased fatigue and bending resistance. WLLs are 50 percent higher than Grade 80 chain and 20 percent higher than Grade 100 chain. The safe working load for 3/8-inch Grade 120 chain is about 10,600 lbs.

Maintenance and Replacement

Towing and recovery chains should be stored indoors, adequately maintained and periodically inspected. When inspecting chains, examine chain links closely – link by link – for defects such as stretch, wear, distortion, cracks, nicks or gouges. Wear is generally confined to the ends of the links where the adjoining links rub together. If wear is greater than 25 percent of the original thickness, remove the entire chain from service. Any sign of binding at link-to-link points indicates a collapse of the link due to stretch – a dangerous condition – and that chain should be removed from service as well.

If you need ideas on how to present this information to your drivers, call 847-894-0042 or email pgratz548@comcast.net.

This article is a part of TowSafe, a safety program designed for tow-ers. For more information contact April at 407-706-6796.