FLATBEDDISPATCHERS

Chain, Binder and Strap WLL Chart

Default working load limits from 49 CFR 393.108. Values in pounds, kilograms in brackets. Use these only when the tiedown is not marked.

Welded steel chain: WLL in lb (kg)

Chain size	Grade 30 proof coil	Grade 43 high test	Grade 70 transport	Grade 80 alloy	Grade 100 alloy
1/4 in (7 mm)	1,300 (580)	2,600 (1,180)	3,150 (1,430)	3,500 (1,570)	4,300 (1,950)
5/16 in (8 mm)	1,900 (860)	3,900 (1,770)	4,700 (2,130)	4,500 (2,000)	5,700 (2,600)
3/8 in (10 mm)	2,650 (1,200)	5,400 (2,450)	6,600 (2,990)	7,100 (3,200)	8,800 (4,000)
7/16 in (11 mm)	3,700 (1,680)	7,200 (3,270)	8,750 (3,970)	none listed	none listed
1/2 in (13 mm)	4,500 (2,030)	9,200 (4,170)	11,300 (5,130)	12,000 (5,400)	15,000 (6,800)
5/8 in (16 mm)	6,900 (3,130)	13,000 (5,910)	15,800 (7,170)	18,100 (8,200)	22,600 (10,300)
Grade marks	3, 30 or 300	4, 43 or 430	7, 70 or 700	8, 80 or 800	10, 100 or 1000

Reproduced as printed in 393.108. The table lists 5/16 in Grade 80 (4,500 lb) below 5/16 in Grade 70 (4,700 lb), and gives no Grade 80 or 100 value for 7/16 in.

Synthetic webbing (straps)

Width	WLL lb (kg)
1 3/4 in (45 mm)	1,750 (790)
2 in (50 mm)	2,000 (910)
3 in (75 mm)	3,000 (1,360)
4 in (100 mm)	4,000 (1,810)

If the strap carries a readable maker tag, the tag WLL is the number to use. Tag missing or unreadable: use this table.

Marked or unmarked (393.108)

1. WLL of a tiedown = the lowest WLL of any part, binder or winch included, or of the anchor point, whichever is less.
2. Marked by the maker? The marked WLL counts, even if it differs from these tables.
3. Unmarked welded steel chain counts as Grade 30 proof coil.
4. Unmarked synthetic rope counts as polypropylene. Unmarked manila goes by diameter.
5. Unmarked wire rope = 1/4 of nominal strength in the Wire Rope Users Manual. Unknown construction counts as 6 x 37 fiber core.
6. Unrated friction mats resist 50% of the weight on the mat.

Quick math: the 50% rule

Total WLL of all tiedowns must be at least half the cargo weight (393.106(d)).

Over the load, anchored on the other side: 100%.
Over the load, back to the same side: 50%.
Trailer anchor straight to the cargo: 50%.

EXAMPLE: 36,000 lb of steel needs 18,000 lb of WLL. Five 3/8 in Grade 70 chains over the load to the other side: 5 x 6,600 = 33,000 lb. Passes.

Sources: 49 CFR 393.108 (default WLL tables and marking rules), 393.106(d) (how tiedowns count), 393.5 (definition of WLL). eCFR, checked November 2, 2026: ecfr.gov/current/title-49/section-393.108. Page 2 has wire rope, fiber rope and steel strapping. Tiedown counts by article length are in 393.110; commodity rules in 393.116 to 393.136 can require more.

General information, not legal advice. Check the current regulation and your equipment ratings before you load.

WLL chart, page 2: wire rope, fiber rope and steel strapping

Wire rope (6 x 37, fiber core)

Diameter	WLL lb (kg)
1/4 in (7 mm)	1,400 (640)
5/16 in (8 mm)	2,100 (950)
3/8 in (10 mm)	3,000 (1,360)
7/16 in (11 mm)	4,100 (1,860)
1/2 in (13 mm)	5,300 (2,400)
5/8 in (16 mm)	8,300 (3,770)
3/4 in (20 mm)	10,900 (4,940)
7/8 in (22 mm)	16,100 (7,300)
1 in (25 mm)	20,900 (9,480)

Steel strapping

Width x thickness	WLL lb (kg)
1 1/4 x 0.029 in	1,190 (540)
1 1/4 x 0.031 in	1,190 (540)
1 1/4 x 0.035 in	1,190 (540)
1 1/4 x 0.044 in	1,690 (770)
1 1/4 x 0.05 in	1,690 (770)
1 1/4 x 0.057 in	1,925 (870)
2 x 0.044 in	2,650 (1,200)
2 x 0.05 in	2,650 (1,200)

Fiber rope: WLL lb (kg)

Diameter	Manila	Polypropylene*	Polyester*	Nylon	Double braided nylon
3/8 in (10 mm)	205 (90)	400 (180)	555 (250)	278 (130)	336 (150)
7/16 in (11 mm)	265 (120)	525 (240)	750 (340)	410 (190)	502 (230)
1/2 in (13 mm)	315 (150)	625 (280)	960 (440)	525 (240)	655 (300)
5/8 in (16 mm)	465 (210)	925 (420)	1,500 (680)	935 (420)	1,130 (510)
3/4 in (20 mm)	640 (290)	1,275 (580)	1,880 (850)	1,420 (640)	1,840 (830)
1 in (25 mm)	1,050 (480)	2,100 (950)	3,300 (1,500)	2,520 (1,140)	3,250 (1,470)

* 3-strand and 8-strand constructions. Unmarked synthetic rope of any kind counts at the polypropylene value.

Tally your load

Cargo weight _____ lb ÷ 2 = _____ lb of WLL needed

Full-value tiedowns (over the load, other side): ____ x _____ lb = _____ lb

Half-value tiedowns (same side, or direct to cargo): ____ x _____ lb ÷ 2 = _____ lb

Total WLL _____ lb Enough? Yes / No Tiedown count from 393.110 met? Yes / No

Use the lowest-rated part of each assembly. A Grade 70 chain on a binder rated lower is a binder-rated tiedown. Check the anchor points on the trailer too.

Sources: 49 CFR 393.108 (default WLL tables and marking rules), 393.106(d) (how tiedowns count), 393.5 (definition of WLL). eCFR, checked November 2, 2026: ecfr.gov/current/title-49/section-393.108

General information, not legal advice. Check the current regulation and your equipment ratings before you load.