



GITA MARKETING CO.

COMPLIANCE DOCUMENT 2026

EN 12195-2 LASHING SYSTEMS

Compliance Reference · Cargo Securing Standards

Gita Marketing Co.

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EN 12195-2 — Standard Overview

EN 12195-2:2001 (*Load Restraining on Road Vehicles — Safety — Part 2: Web Lashing Made from Man-Made Fibres*) is the European standard governing polyester webbing ratchet lashing straps used for cargo securing on road vehicles, rail wagons, ships, and loading platforms.

The standard defines requirements for webbing material, ratchet mechanism performance, marking, testing, and the specific values that must be marked on every strap in commercial use. GMC's Star Lifting ratchet lashing range is manufactured, tested, and marked to full compliance with EN 12195-2.

Key Definitions — EN 12195-2

Understanding the correct EN 12195-2 terminology is essential for selecting and using lashing straps correctly and for performing load securing calculations per EN 12195-1:

Term	Abbreviation	Definition
Breaking Force	BF	The minimum force at which a strap assembly must rupture in a straight tensile test. Always expressed in kN or kg. Safety margin reference — NOT to be used as working load.
Lashing Capacity	LC	The maximum permissible tensile force permitted in the lashing strap during load securing, expressed in daN (decanewtons). LC is the value used in EN 12195-1 calculations.
Standard Tension Force	STF	The tension force in one part of the lashing (in daN) that can be applied by operating the ratchet mechanism by hand. Used in direct lashing calculations.
Pre-tensioning Force	PTF	Initial tension applied to the lashing before ratcheting. Not a separate marking requirement but relevant to friction/direct lashing calculations.
D-Ring / End Fitting	—	Attachment points at each end of the lashing strap — flat J-hook, claw hook, or safety hook. Must be rated to withstand forces at least equal to BF.

UNIT CLARIFICATION

Lashing Capacity (LC) under EN 12195-2 is expressed in daN (decanewtons). 1 daN ≈ 1.02 kgf. Expressing LC in 'ton' or 'tonne' is not compliant with the standard and leads to selection errors. Always use daN as marked on the strap label.

Mandatory EN 12195-2 Markings

Every ratchet lashing strap sold under EN 12195-2 must have the following information permanently marked on the strap webbing or on a sewn-in label. Verify this marking before purchasing or using any ratchet lashing strap for commercial cargo securing:

Required Marking	Example	Standard Ref
EN 12195-2 (standard reference)	EN 12195-2	Clause 6.1
Lashing Capacity in daN	LC 500 daN	Clause 6.1
Breaking Force in daN	BF 1500 daN	Clause 6.1
Standard Tension Force in daN	STF 100 daN	Clause 6.1
Manufacturer name or trademark	Star Lifting	Clause 6.1





Required Marking	Example	Standard Ref
Year of manufacture	2025	Clause 6.1
Material designation (polyester = PES)	PES	Clause 6.1
Temperature range	-35°C to +100°C	Clause 5.4

GMC Star Lifting Lashing Range — EN 12195-2 Compliance Data

Model	Width	BF (daN)	LC (daN)	STF (daN)	EN Marked
SL001	25 mm	6,671	2,500	500	Yes
SL002	35 mm	14,710	4,900	1,000	Yes
SL003	50 mm	24,516	9,800	2,000	Yes
SL004	50 mm HD	49,033	19,600	4,000	Yes
SL005	75 mm	98,066	39,200	7,000	Yes

All values above are in daN. BF values represent minimum breaking force to EN 12195-2 test method. LC is the marked working lashing capacity for use in EN 12195-1 calculations.

Lashing Calculation Principles — EN 12195-1

EN 12195-1 provides the method for calculating the number and arrangement of lashings required to secure a given load on a vehicle. Key concepts:

Direct Lashing

Lashings run directly from the cargo to anchor points. The total lashing capacity must equal or exceed the calculated forward, rearward, and lateral forces on the load. Minimum acceleration factors per EN 12195-1 for road vehicles: 0.8g forward, 0.5g rearward, 0.5g lateral.

Number of lashings required (direct, forward) = $(\text{Mass} \times 0.8g) / (\text{LC} \times \cos \alpha)$

Where: Mass = cargo mass in kg · g = 9.81 m/s² · α = lashing angle from horizontal

Over-the-Top (Loop) Lashing

Lashings run over the top of the cargo in a loop. Pre-tension is critical — the friction between cargo and deck, combined with strap tension, provides the restraining force. Minimum STF applies per strap. This method is suitable for loads resting flat on a surface with adequate friction coefficient.

Minimum number of straps (over-top) = $(\text{Mass} \times 0.8g) / (2 \times \text{STF} \times \mu)$

Where: μ = friction coefficient between load and deck surface (0.2 to 0.5 typical)

Inspection & Retirement — EN 12195-2

Pre-Use Inspection

- Verify EN 12195-2 label is legible and intact — LC, STF, BF, manufacturer, year all readable
- Inspect webbing for cuts, abrasion, UV degradation, or chemical damage
- Check ratchet mechanism operates smoothly — no cracked or deformed parts





- Verify hook ends are undistorted, safety latches function correctly

Mandatory Retirement Criteria

- EN 12195-2 label missing, defaced, or illegible — RETIRE IMMEDIATELY
- Webbing with cuts penetrating more than 10% of cross-section
- Knotted, twisted, or severely compressed webbing (not correctable by use)
- Corrosion or deformation of ratchet mechanism or hooks
- Exposure to temperatures outside -35°C to $+100^{\circ}\text{C}$ rated range
- Any known overload event (load exceeded LC)

References & Standards

EN 12195-1:2010	Load restraining on road vehicles — Calculation of lashing forces
EN 12195-2:2001	Load restraining on road vehicles — Web lashing from man-made fibres
EN 12195-3:2001	Load restraining on road vehicles — Web lashing made of natural fibres
EN 12195-4:2003	Load restraining on road vehicles — Lashing chains
EN 1492-1:2000	Textile slings — Flat woven webbing slings
EN 1492-2:2000	Textile slings — Round slings
ISO 4302	Cranes — Wind load assessment
Supplier	Gita Marketing Co. · Authorised Distributor — Star Lifting & Securing Pvt Ltd
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Contact	info@gitamarketing.com · +91-89040-35515 · www.gitamarketing.com
ISO Certifications	ISO 9001:2015 · ISO 14001:2015 · ISO 45001:2018