

TECHNICAL INFORMATION SHEET

Webbing straps and ratchets

Webbing straps in combination with ratchet tensioners must be used on a number of Tata Steel products to ensure the customer receives only the highest quality product.

1. Terminology

Lashing capacity

Maximum allowable tension in the lashing.

- **Lashing capacity is NOT to be mistaken for the allowable weight of product the lashing can safely restrain.**
- When designing a restraint system and determining the required number of restraints, it is the lashing capacity and not the breaking force which must be taken into account.
- A 2-tonne lashing capacity webbing strap will be denoted by LC 2000daN.

Breaking force

Maximum force the web lashing withstands when tested complete with ratchet and end fittings.

- The breaking force of the lashing assembly will be twice the lashing capacity.

2. Identification

Lashing capacity	LC daN
Standard hand force*	S_{HF} 50 daN
Standard tension force	S_{TF} daN
Webbing material	POLYESTER
Length	... m
	"NOT FOR LIFTING!"
Name of manufacturer or supplier	
Manufacturer's traceability code	CODE NR #####
Year of manufacture	DD MM YYYY
Standard	BS EN 12195-2

Blue label

- Preferred option.
- Polyester (PES) webbing.
- Resistant to mineral acids.
- Attacked by alkalis.

Green label

- Polyamide (PA) webbing.
- Virtually immune to effects of alkalis.
- Attacked by mineral acids.

Brown label

- Not to be used on steel products.
- Polypropylene (PP) webbing.
- Little affected by mineral acids and alkalis.
- Low lashing capacities.



Tata Steel recognises the fact that the identification label of a webbing strap or tensioner may become damaged without any consequence to the integrity of the restraining equipment. The minimum information which must remain legible are the lashing capacity and the standard to which the item has been manufactured, i.e. EN 12195-2.

* An applied force of 50kg (daN) to the handle, will typically result in 350kg (daN) of tension in the lashing.

3. Web lashing types

- Webbing straps and ratchets with the following lashing capacities are suitable for use on Tata Steel products:
 - LC 2000daN, LC 2500daN and LC 4000daN (typically 50mm wide)
 - LC 5000daN (typically 75mm wide)

Ratchets are available as *Pull up to tension* or *Pull down to tension*, to ensure the most ergonomic action for the orientation of the ratchet.

- Short handle ratchets can achieve a Pre-Tension in the region of 200-450 daN.
- Long handle ratchets can achieve a Pre-Tension in the region of 300-600 daN.

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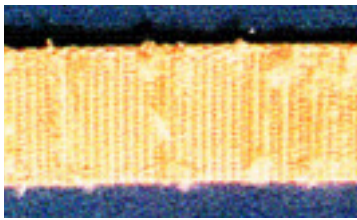
Webbing straps and ratchets

4. Inspections

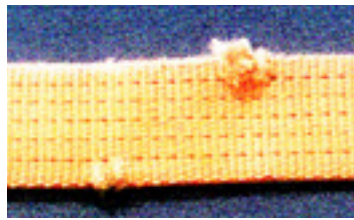
- Check the identification label of the equipment to ensure they are manufactured to EN 12195-2 and that the lashing capacity corresponds with the adopted securing method.
- Inspect the equipment for wear and tear as detailed below.

The following criteria are considered to be signs of damage:

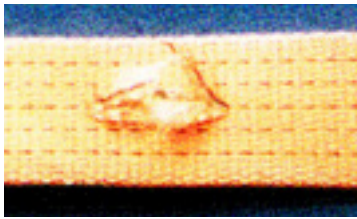
- For web lashings: tears, cuts, nicks and breaks in load bearing fibres and retaining stitches; as well as deformations resulting from exposure to heat.
- For end fittings and tensioning devices: deformations, splits, pronounced signs of wear, signs of corrosion.
- Accidental contact with chemical products.



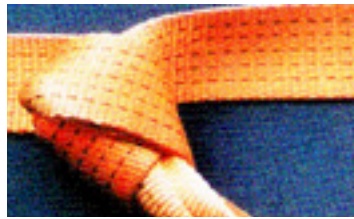
X
Cuts/chafing across width.
Result of inadequate edge protection.



X
Frayed edge.
No more than 10% damage across the width is permissible.



X
Damaged core.

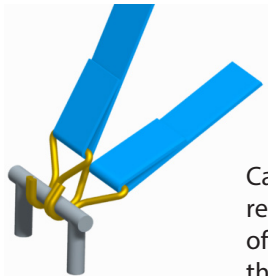


X
Never use with knots.
Knots can reduce the capacity by a half.

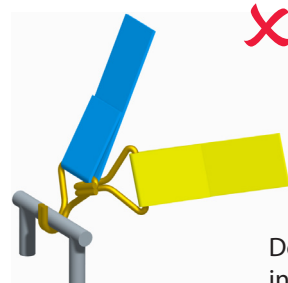
5. Failure modes

- Clean cut through strap is an indication of slicing failure. Likely cause is inadequate edge protection.
 - Suitable edge protection required on all unprotected, sharp edges with radius less than 3mm.
 - Edge protection recommended on all abrasive products in order to extend lifetime of webbing strap.
 - See Technical Information Sheet on Edge Protection for more detailed information. Ref No. TIS-0005.
- Frizzy ends are an indication of tension failure. Likely cause is an inadequate number of restraints.

6. Anchoring



Capacity of webbing strap is reduced by 50% when both ends of the same strap are attached to the same anchor point.



Do not anchor a webbing strap into the hook of another.

Warning!

Do NOT substitute a chain with a webbing strap. Do NOT substitute a webbing strap with a chain.

Lashing capacities and stretch characteristics of webbing straps and chains differ significantly.

When loaded to lashing capacity a webbing may stretch by up to 7%, whereas a chain will only stretch 2%.

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