



# WEBBING SLINGS

### Round slings made of man-made fibers for general purpose use (TS EN 1492-2+A1) (Endless Polyester Slings)

**Definition:** Round flexible sling with or without connection units, fully covered with a woven core and containing a load bearing thread core. It is a lifting equipment used in general purpose lifting operations for lifting of objects and materials within the scope of safety factors or working load limits. It should not be used for lifting people, molten metals, and acid - based chemicals.

**General Information:**

**Operating Temperature Range:** Polyester and polyamide: -40 °C to 100 °C, Polypropylene: -40 °C to 80 °C.

**Multi - Leg Sling:** It is a round lifting device consisting of two, three or four identical rounded slings connected to the masterlink.

**Core:** It is the name given to the main thread that forms the load bearing part of the round sling.

**Cover:** It is a tubular material obtained from woven or woven fabric which takes the sling along its length and includes the yarn.

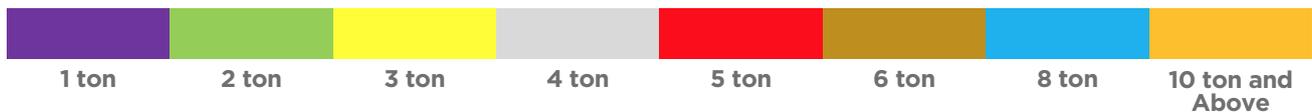
**Nominal length:** The distance between the two ends of the sling, including the fittings.

**Effective working length:** The actual length of the round sling including the fittings from bearing point to bearing point.

**Working load limit:** The greatest force that the round sling can sustain during vertical lifting applications or multi - leg slings during general lifting applications. This force is obtained by multiplying the straight lift force by the Mode Factor for multi - slings.

**Mode factor:** The factor applied to the working load limit of a round sling to obtain the working load limit of a specified sling group.

**Color coding:** The color coding of the cover is as follows.

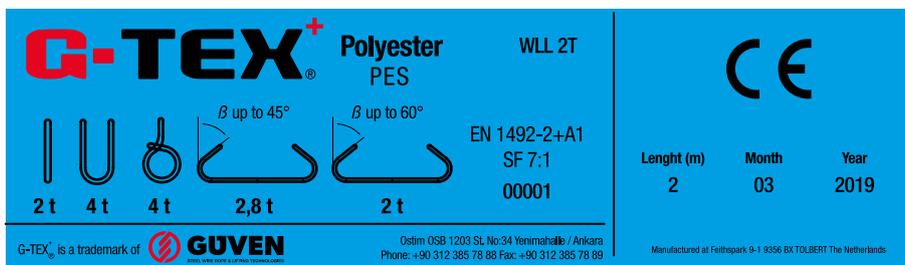


**Breaking force:** The minimum breaking force of the round sling in vertical lifting is equal to 7 times the working load limit. The cover material must not break at a load of less than 2 times the working load limit.

**Protection from sharp edges:** Various protective covers must be used to protect the round slings from sharp edges and corners. If not possible; instead of these covers, a protective material between the unit to be lifted and the sling will prolong the life of the sling.

**Indication:** The following information must be included in the marking of round slaps.

- ★ Working load limit
- ★ Manufacturing material of the Sling
- ★ Quality grade of the connection unit if used
- ★ Nominal length
- ★ Name, address, symbol, trademark or other explanatory information of the manufacturer
- ★ Traceability code



**Label color for woven webbing slings:**

The labels on the slings vary according to the type of material in which the slings are made of.



### **Polyester round sling manufacturer is obliged to give a certificate which contains the following information to the user.**

1. Name, address, symbol, trademark or other explanatory information of the manufacturer
2. Working load limit information for single and multi - arm slings (straight and angled)
3. Type of sling, including connection unit, arm count and nominal length
4. Expression that indicates the sling is round
5. Raw material of the sling is made of
6. Quality grade of the connection unit if used (Grade 80 - Grade 100)
7. If any protective material is used
8. Standard number of round sling
9. Type certificate
10. The safety coefficient of the round sling (according to TS EN 1492-2 is the minimum safety coefficient of 7:1)
11. Identification and signature of the person authorized to sign the document on behalf of the manufacturer and signature date
12. Static test coefficients of these materials when additional materials such as hooks, rings are used

### **Usage, maintenance and discard criteria:**

#### **Limitations due to usage and environmental conditions:**

##### **1- Resistance of certain materials against chemicals**

Fibers are highly resistant to chemicals which round sling made of;

- ★ Polyester (PES) is resistant to most mineral acids but gets damaged by alkaline materials.
- ★ Polyamide (PA) is resistant to alkalis, but gets damaged by mineral acids.
- ★ Polypropylene (PP) gets damaged by acid or alkali, but is highly resistant to solvent chemicals.

Harmless alkalis and acids become harmful by evaporation. In such cases, the sling should be discarded from use, immersed in cold water and should be used with expert personnel's decision.

Round slings combined with grade 8 chain, hook, ring, and these types of products should not be used in acidic environments.

If round slings are to be used in chemical environments, should refer to the manufacturer or supplier.

##### **2- Temperature values**

Round slings are suitable for use and storage in the following temperature ranges.

Polyester and polyamide: -40 °C to 100 °C, polypropylene: -40 °C to 80 °C.

At low temperatures ice formation will take place, in hollow structures of Sling mesh. This may act as a cutting agent and an abrasive causing internal damage to the sling. It is not recommended to use until it reaches to room temperature.

These ranges vary in a chemical environment, in which case the advice of the manufacturer or supplier should be sought.

##### **3- Shear and wear resistance**

Slings should not be exposed to sharp edges, friction and abrasion during use. If it is compulsory to use in one of these conditions, protective sheath should be used.

##### **4- Ultraviolet and radiation resistance**

Round slings should not be stored directly in sunlight, in the environment where ultraviolet and radiation sources exist.

### **Pre - use inspection criteria:**

#### **1- Manufacturer's certificate**

The identifying information on the sling should be complete and relevant to certificate

#### **2- Instructions and training information**

Sling user should be informed on the matter to act according to the instructions

### **Periodic inspection criteria:**

#### **1- Examination**

Round slings should be inspected prior to each use to determine defects, ensure that the identification and specification information are correct.

#### **2- Label inspection**

A sling without identifying information or a faulty sling should not be ever used and it should be examined by an expert staff.

### Discard criteria

- 1- Surface abrasion
- 2- Cuts
- 3- Exposed core
- 4- Chemical effect
- 5- Heat and friction damage
- 6- Damaged or deformed fittings.



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### Selection and use of round slings:

- ★ The assignment of the load mass and the determination of the center of gravity should be done. This determination should be done by considering the working load limit of the Sling.
- ★ The selected round sling must be both strong and long enough for the lifting process. If more than one sling is used for lifting should be identical to each other. However if connecting tools are used must be compatible with the sling.
- ★ The mode factor should be taken into consideration while selecting the sling and determining the working load limit.
- ★ Hanging, lifting and unloading procedures should be planned before the round sling is attached to the lifting hook.
- ★ Round slings should never be knotted or bent and the label should not be strangulated in a way which damages the label.
- ★ The load should be distributed homogeneously in multi - arm round slings. Otherwise dangerous situations may occur.
- ★ Actions should be taken to prevent the rotation of the load.
- ★ Round slings should never be exposed to shock loads.
- ★ During lifting there shouldn't be any personnel stands under lifted weight or near to it.
- ★ Round slings should be checked against the damages that may occur during use. Damaged slings must not ever stored as they are.

### Periodic maintenance and repair:

Examination periods should be determined by a competent person, taking into account the application type, environment, and frequency of use. Damaged slings should be withdrawn from service. Such slings must not ever tried to be repaired.

**Webbing slings made of man-made fibres for general purpose use (TS EN 1492-1+A1)**

**Definition:**

It is a lifting equipment used for lifting of materials within the framework of safety factors or working load limits in general purpose lifting operations. It should not be used for lifting people, molten metals and acidic - based chemical materials. Width range from 25 mm to 450 mm (inclusive), manufacture of polyester and polypropylene artificial fibers. It can be used as single, two, three and four - leg with or without fittings.

**General Information:**

Temperature range of use:  
 Polyester and poliamid: -40 °C to 100 °C  
 Polipropilen: -40 °C to 80 °C

**Eye:**

It is the part that is made to add a connection unit to the end parts or make it easier to attach the end part to the hook, which is created by rotating the fabric back to 180°.

**Webbing slings:**

Webbing slings are manufactured in order to attach easily to such equipment hook etc.

**Multi - layer sling:**

Webbing sling, which consists of two or more layers.

**Multi - leg sling assembly:**

Lifting equipment consisting of two, three or four identical webbing slings.

**Master link:**

It is a lifting accessory which is usually metal unit that can be attached to the end of the sling and/or attached to another lifting accessory.

**Nominal length:**

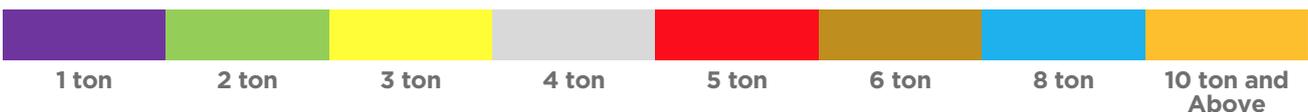
Specified length of the sling, inclusive of fittings, from bearing point to bearing point.

**Working load limit (WLL):**

Maximum mass which the sewn webbing component of a webbing sling is designed to sustain in vertical lifting and which a sling or sling assembly is authorized to sustain in general lifting service. This force is obtained by multiplying the vertical lifting force with the “mod factor” in multiple blades.

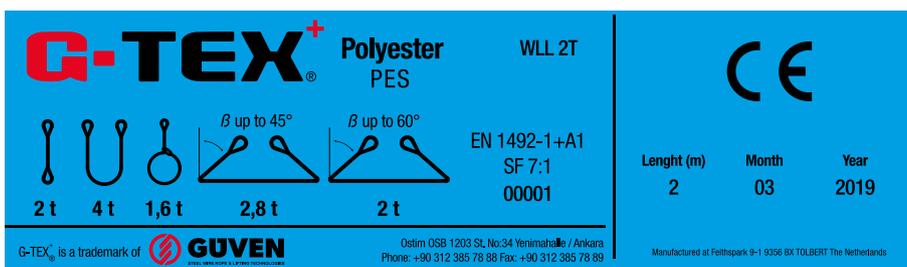
**Mode factor (M):** Factor applied to the WLL of a webbing sling in order to calculate the WLL of a group of a webbing sling.

**Color coding:** The color coding of the coating is as follows.



**Marking:** The marking of webbing slings should include the following information.

- ★ Working load limit
- ★ Manufacturing material of the Sling
- ★ Quality grade if connection unit used
- ★ Nominal length
- ★ Name, address, symbol, trademark or other explanatory information of the manufacturer
- ★ Traceability code



**Label color for webbing slings**

The labels on the slings vary according to the type of material in which the slings are made.



**Certificate to be issued by the manufacturer:** Polyester webbing sling manufacturer is obliged to give a certificate which contains the following information to the user.

1. Name, address, symbol, trademark or other explanatory information of the manufacturer
2. Working load limit information for single and multi - arm slings (straight and angled)
3. Type of sling, including connection unit, arm count and nominal length
4. Expression that indicates the sling is webbing sling
5. Raw material of the sling is made of
6. Quality grade of the connection unit if used (Grade 80 - Grade 100)
7. If any protective material is used
8. Standard number of webbing sling
9. Type certificate
10. The safety coefficient of the woven webbing sling (according to TS EN 1492-1 is the minimum safety coefficient of 7:1)
11. Identification and signature of the person authorized to sign the document on behalf of the manufacturer and signature date
12. Static test coefficients of these materials when additional materials such as hooks, rings are used

**Usage, maintenance and discard criteria:**

**Limitations due to usage and environmental conditions:**

**1- Resistance of certain materials against chemicals**

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Harmless alkalis and acids become harmful by evaporation. In such cases, the sling should be discarded from use, immersed in cold water and should be used with expert personnel's decision.

Woven webbing slings combined with grade 8 chain, hook, ring, and these types of products should not be used in acidic environments.

If woven webbing slings are to be used in chemical environments, should refer to the manufacturer or supplier.

**2- Temperature values**

Woven webbing slings are suitable for use and storage in the following temperature ranges.

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At low temperatures ice formation will take place, in hollow structures of sling mesh. This may act as a cutting agent and an abrasive causing internal damage to the sling. It is not recommended to use until it reaches to room temperature.

These ranges vary in a chemical environment, in which case the advice of the manufacturer or supplier should be sought.

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**1- Examination**

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**2- Label inspection**

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### Discard criteria:

1. Surface abrasion
2. Cuts
3. Chemical effect
4. Heat and friction damage
5. Damaged or deformed fittings.
6. Unreadable label



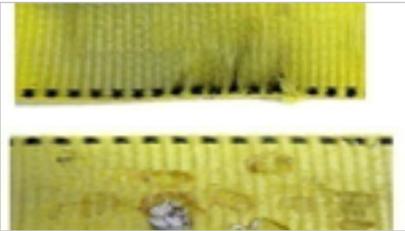
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