User manual

Flatbraided wireslings “FWS” series

CERTEX Danmark A/S
Olievej 4 DK-6700 Esbjerg
Tel. +45 7513 0844

Revision 6
Date: 30.01.2020
Approved by: AAN

Product description

The FWS series is manufactured and testet by CERTEX Danmark A/S, Olievej 4, DK-6700 Esbjerg, Tel. +45 7513 0844

The manufacturing, testing and calculation is according to Machinerydirective 2006/42/EC, and has been witnessed by DNV GL.

Product identification
Ex. FWS16002 (stock number, WLL, wire lenght)
Manufactured of preformed aircraft wire – construction 7X19.
10 single wires are crossbraided together to one wire sling.
Standard end fitting: Taluritspliced – soft eyes

The wire slings are solely designed for lifting equipment and must be used as shown in the load diagram below. The wire slings are calculated with a safety factor of minimum 5:1

The wire slings must not be used for basket-lift with an angle exceeding 120°.
The wire slings must not be used for lifting people.

Load diagram

IMPORTANT:
Do not exceed the WLL/capacity and follow the instructions on the labeling.

Stock number	Sling width / Thickness (mm)	Weight (kg/m)	Diameter of used rope (mm)	Working diameter (mm)*	Straight lift WLL (ton)	Laced lift WLL (ton)	U-lift WLL (ton)	Basket 0-45° WLL (ton)	Basket 45-60° WLL (ton)
									
		Load factor			1	0.8 0.64 0.56	2 1.6 1.4	1.4 1.12 0.98	1 0.8 0.7
FWS0950	18/6	0.3	2.4	115 45 30	0.95	0.76 0.60 0.53	1.90 1.52 1.33	1.33 1.06 0.93	0.95 0.76 0.66
FWS1600	25/9	0.5	3.2	150 60 40	1.6	1.2 1.0 0.8	3.2 2.5 2.2	2.2 1.7 1.5	1.6 1.2 1.1
FWS2500	30/11	0.8	4.0	190 75 50	2.5	2.0 1.6 1.4	5.0 4.0 3.5	3.5 2.8 2.4	2.5 2.0 1.7
FWS3200	34/12	1.1	4.8	230 90 60	3.2	2.5 2.0 1.7	6.4 5.1 4.4	4.4 3.5 3.1	3.2 2.5 2.2
FWS4800	42/15	1.5	5.6	265 105 70	4.8	3.8 3.0 2.6	9.6 7.6 6.7	6.7 5.3 4.7	4.8 3.8 3.3
FWS5800	46/17	1.8	6.4	300 120 80	5.8	4.6 3.7 3.2	11.6 9.2 8.1	8.1 6.4 5.6	5.8 4.6 4.0
FWS8000	58/22	2.9	8.4	400 160 105	8.0	6.4 5.1 4.4	16.0 12.8 11.2	11.2 8.9 7.8	8.0 6.4 5.6
FWS11000	65/28	3.2	9.5	450 180 120	11.0	8.8 7.0 6.1	22.0 17.6 15.4	15.4 12.3 10.7	11.0 8.8 7.7

** The working diameter is determined by test results for u-lift and laced lift and must be complied with to meet SF 5:1*

All FWS wireslings in this series are marked in ferrule with WLL and date of manufacturing. Additional calculations/ tests on WLL are available for documentation of the above load diagram including the 5:1 safety factor.

CERTEX Danmark A/S
Trekanten 6-8
DK-6500 Vojens
Tlf.: +45 74 54 14 37
E-mail: info@certex.dk
www.certex.dk

Olievej 4
DK-6700 Esbjerg
Tlf.: +45 75 13 08 44

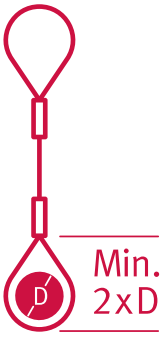
Jernholmen 43-47D
DK-2650 Hvidovre
Tlf.: +45 36 77 40 30

Virkelyst 17b
DK-9400 Nørresundby
Tlf.: +45 98 13 18 88

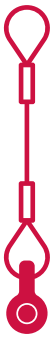
CERTEX Lifting Solutions Group
Axel Johnson International

Visualizing bending diameter D/d

Different types of lifts.

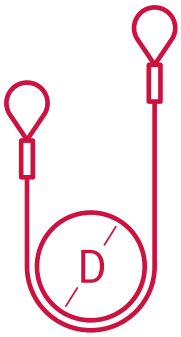


Eye length must not be smaller than twice the object diameter. e.g. Hook or shackle.



The diameter of the shackle has to be as wide as possible. Recommended shackles* for straight lift:
FWS0950 - 1,5 T shackle
FWS1600 - 2 T shackle
FWS2500 - 3,25 T shackle
FWS3200 - 4,75 T shackle
FWS4800 - 6,50 T shackle
FWS5800 - 8,5 T shackle
FWS8000 - 9,5 T shackle
FWS11000 - 12 T shackle
SF: 5:1

** Van Beest GP G-4163*

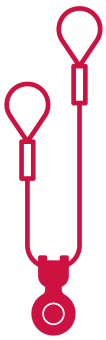


When the lift is a hitch lift, then it is very important that the minimum diameter is comply with the table to reach the sling SF 5:1.
See table on page 2.

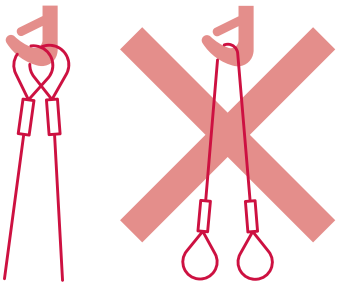
If the shackle or other object has a small diameter, then the max capacity of the sling is reduced significantly.

Fx. Hitch lift with FWS0950 with 115 mm installation diameter, then the sling is WLL 1900 kg SF 5:1

Hitch lift with FWS0950 with installation diameter 45 mm, then the sling has 1900 kg but lower SF. WLL reduced to 1520 kg, to keep the SF: 5:1. Se table on page 2.



It's better to use a larger shackle or object to get a large working diameter and therefore get SF 5:1.
Se table on page 2.



How to hook correctly:
If the way to hook the wire sling is done wrong, it could have serious consequences. Always make sure to hook the Flat braided Sling correct, and follow the instructions.

CERTEX Danmark A/S
Trekanten 6-8
DK-6500 Vojens
Tlf.: +45 74 54 14 37
E-mail: info@certex.dk
www.certex.dk

Olievej 4
DK-6700 Esbjerg
Tlf.: +45 75 13 08 44

Jernholmen 43-47D
DK-2650 Hvidovre
Tlf.: +45 36 77 40 30

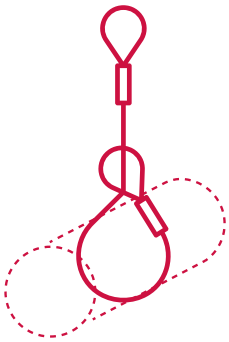
Virkelyst 17b
DK-9400 Nørresundby
Tlf.: +45 98 13 18 88

CERTEX Lifting Solutions Group
Axel Johnson International

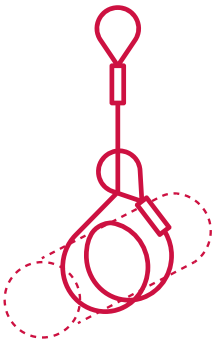
Correct use of Flat Braided Sling

Single sling.

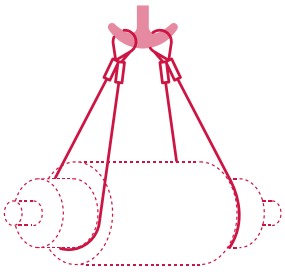
Straight lift:
Straight lift in eyes.
No sharp edges and
correct working diameter.
Ex. WLL 1 ton
WLL = 1 ton



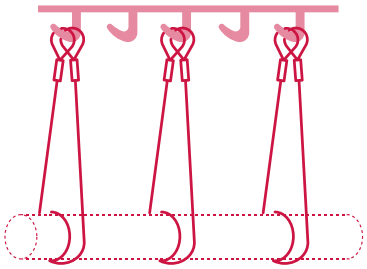
Straight lift laced:
Straight lift in the eyes.
No sharp edges and
correct working diameter.
Ex. WLL 1 ton
WLL = 0,8 ton



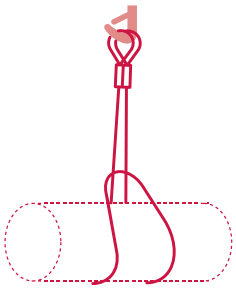
Straight lift double laced
Straight lift in the eyes.
No sharp edges and
correct working diameter.
Ex. WLL 1 ton
WLL = 0,8 ton



Basket Lift:
Basket lift in the eyes with
the correct working diameter
(at least 15:1)
No sharp edges and correct
working diameter.
Ex. WLL 1 ton
WLL = 1.4 x 1 ton = 1.4 ton
(pr. sling)



Basket Lift with doubbelt lace:
Basket Lift, with lift in the
eyes and doubbelt laced.
No sharp edges and
correct working diameter.
Ex. WLL 1 tonn
WLL = 1.4 x 1 ton = 1.4 ton
(pr. sling)



**Basket lift with double
and choke hitch:**
Basket lift with single sling
double and choke hitch.
No sharp edges and
correct working diameter.
Ex. WLL 1 tonn
WLL = 2 part x 0.8 x 1 ton = 1,6 ton

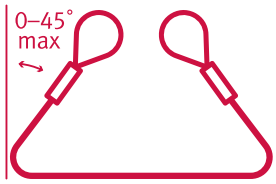
CERTEX Danmark A/S
Trekanten 6-8
DK-6500 Vojens
Tlf.: +45 74 54 14 37
E-mail: info@certex.dk
www.certex.dk

Olievej 4
DK-6700 Esbjerg
Tlf.: +45 75 13 08 44

Jernholmen 43-47D
DK-2650 Hvidovre
Tlf.: +45 36 77 40 30

Virkelyst 17b
DK-9400 Nørresundby
Tlf.: +45 98 13 18 88

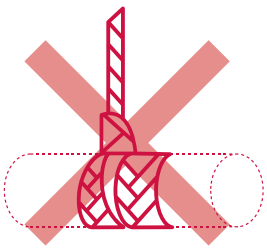
When the Flat Braided sling is used as basket sling, with both eyes in the hook, or correct sized shackle, and it has an angle 0-45° from vertical.The max load must not exceed 1.4 x WLL, as marked on the sling.



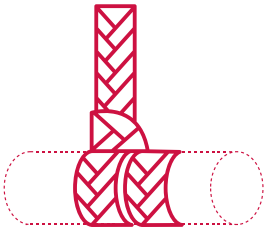
Ex. WLL 1 ton
1.4 x 1 ton = WLL 1.4 ton*

*1.4 are deducted due to the 0-45° angle

NB: No twisting of the sling



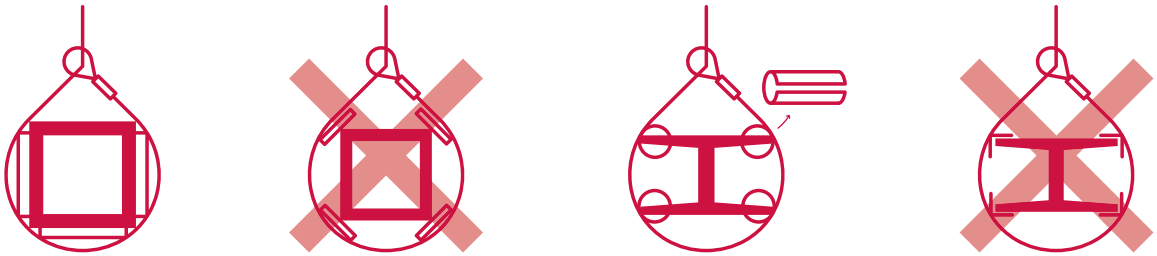
Wrong placement of sling (twisted)



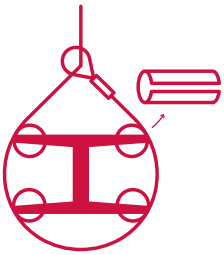
Correct placement of sling

Protection and distribution of weight

Always make sure to place the load correct in the sling, to prevent chock affect.



It's always important to protect the edges against sharp edges. It can cause the cuts in the wire, and damaged the sling lifetime and the slings capacity. It's also important to have as large round edges as possible, to have a diameter large enough. Working diameter in Load diagram on page 2 has to be followed to ensure SF 5:1



CERTEX Danmark A/S
Trekanten 6-8
DK-6500 Vojens
Tlf.: +45 74 54 14 37
E-mail: info@certex.dk
www.certex.dk

Olievej 4
DK-6700 Esbjerg
Tlf.: +45 75 13 08 44

Jernholmen 43-47D
DK-2650 Hvidovre
Tlf.: +45 36 77 40 30

Virkelyst 17b
DK-9400 Nørresundby
Tlf.: +45 98 13 18 88

Instructions for use and safety

All lifts using the wire slings must be planned, possibly, according to the individual instructions.

The personal who is using the lifting gear, should be trained and instructed in safe use and safe work.

The user is obliged to familiarise himself with the national requirements.

This document must be available to users for planning the lift.

As a minimum planning must include:
1. Choosing the correct wire sling, according to the load diagram.
   (when using more than one wire sling WLL and length must be the same).
2. Checking the WLL as well as the date on the sling (must be present).
3. Checking the weight of the load and the balance.
4. Checking for no sharp edges and that it is installed with correct working diameter.
5. The condition of the wire sling (must be checked for defects before and after use).
6. Securing and the actual lift (make sure if there are special requirements to training).
7. No twisting of the sling. (See page 6)

At no time during use must the wire sling be:
- Overloaded.
- Twisted.
- Exposed to shock impacts .
- Exposed toor to very sharp edges.

If this can not be avoided, the sling must not be used again until it has been inspected by an expert

If used around sharp edges the wire sling must always be protected by an appropriate material and special caution must be shown.

Steel wires, in general, must not be unnecessarily exposed to damaging chemicals, e.g. acid, lime etc.

General visual control must be carried out before every use of the wire sling. If the sling is significantly damaged or worn it must be discarded immediately.

The wire sling must be discarded when, the following points apply:
- more than 10% of the sling's nominal diameter is worn
- more than 1/3 of the diameter of the individual thread is worn
- the number of breaches on a rotation length exceeds 10
- there are kinks (i.e. a loop that is pulled out)
- the sling is flattened or edged
- the threads in a cordel are bend, e.g. due to exposure to sharp edges
- the sling is damaged by rust or chemical exposure

And / or other damages that questions the ability of the wire sling.

CERTEX Danmark A/S
Trekanten 6-8
DK-6500 Vojens
Tlf.: +45 74 54 14 37
E-mail: info@certex.dk
www.certex.dk

Olievej 4
DK-6700 Esbjerg
Tlf.: +45 75 13 08 44

Jernholmen 43-47D
DK-2650 Hvidovre
Tlf.: +45 36 77 40 30

Virkelyst 17b
DK-9400 Nørresundby
Tlf.: +45 98 13 18 88

CERTEX Lifting Solutions Group
Axel Johnson International

Maintenance

When used for securing, the wire sling must be kept in good condition, and thorough examented after applicable law and rules. A specially trained expert must carry out the overhaul.

When inspecting and maintaining the wire sling it is important to pay attention to the critical places e.g. eye /sling deformation.

If a wire sling has been exposed to damaging chemicals a particularly thorough examination may be necessary to reveal possible damages.

Wire slings must, if possible, be kept in a dry, airy place.

Information

Instructions should be according to this “instruction for use” and should include all safety actions demanded on how to hook.

Before using the lifting gear, the instructions for use should be read and understood. It’s attended as help to get a well and safe use of the gear. The instructions of use are containing information on how the lifting gear is working in a safe and correct way.

If the Lifting gear is used in correct compliance with these instructions, then danger and accidents can be avoided.

Every personal using the lifting gear should read and act in correct compliance to instructions for use.
We also refer to all national instructions and laws on sites.

IMPORTANT! – WLL CAPACITY MUST NOT BE EXCEEDED AND INSTRUCTIONS ON THE MARKING HAS TO BE FOLLOWED.