

FERRULE CATALOGUE



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We have more than six decades of knowledge and experience in techniques for the mechanical splicing of wire ropes; therefore we are able to offer an extensive range of ferrules for rope terminations.

Safety is a major focus, with this in mind our ferrules are strictly produced from seamless materials.



Form A
DIN EN 13411-3
(Size 2,5 – 60)



Form C
DIN EN 13411-3
(Size 8 – 52)



Aluminium
Round
(Size 1,5 – 40)



Aluminium Type S
(Size 7 – 40)



Aluminium Type
XL-Z
(Size 52 – 102)



Aluminium Syngrip
(Size 8 – 12)



Copper Type Z
(Size 1 – 28)



Copper Round
(Size 2 – 8)



Stainless Steel
Type Z
(Size 1 – 28)



Steel Type Z
(Size 5 – 18)



Steel Type ST
(Size ST 28 – ST 68)



Steel Flemish Eye
(Size ¼" – 6")



Ferrule Form A + B • according to EN 13411-3

Rope Ø mm nominal	Rope Ø mm measured min. max.		Ferrules according to EN 13411-3			
			single layer round strand ropes with fibre core and cable laid ropes	single layer round strand ropes with IWRC and rotation-resistant round strand ropes		spiral strands
				metallic cross sectional area factor C min. 0,283	C up to 0,487	
2,5	2,5	2,7	2,5	3	-	
3	2,8	3,2	3	3,5	-	
3,5	3,3	3,7	3,5	4	-	
4	3,8	4,3	4	4,5	-	
4,5	4,4	4,8	4,5	5	-	
5	4,9	5,4	5	6	-	
-	5,5	5,9			-	
6	6,0	6,4	6	6,5	7	
6,5	6,5	6,9	6,5	7	8	
7	7,0	7,4	7	8	9	
-	7,5	7,9			9	
8	8,0	8,4	8	9	10	
-	8,5	8,9			10	
9	9,0	9,5	9	10	11	
-	9,6	9,9			11	
10	10,0	10,5	10	11	12	
-	10,6	10,9			12	
11	11,0	11,6	11	12	13	
-	11,7	11,9			13	
12	12,0	12,6	12	13	14	
-	12,7	12,9			14	
13	13,0	13,7	13	14	16	
-	13,8	13,9			16	
14	14,0	14,7	14	16	18	
-	14,8	15,9			18	
16	16,0	16,8	16	18	20	
-	16,9	17,9			20	
18	18,0	18,9	18	20	22	
-	19,0	19,9			22	
20	20,0	21,0	20	22	24	
-	21,1	21,9			24	
22	22,0	23,1	22	24	26	
-	23,2	23,9			26	
24	24,0	25,2	24	26	28	
-	25,3	25,9			28	
26	26,0	27,3	26	28	30	
-	27,4	27,9			30	
28	28,0	29,4	28	30	32	
-	29,5	29,9			32	
30	30,0	31,5	30	32	34	
-	31,6	31,9			34	
32	32,0	33,6	32	34	36	
-	33,7	33,9			36	
34	34,0	35,7	34	36	38	
-	35,8	35,9			38	
36	36,0	37,8	36	38	40	
-	37,9	37,9			40	
38	38,0	39,9	38	40	44	
40	40,0	42,0	40	44	48	
-	42,1	43,9			48	
44	44,0	46,2	44	48	52	
-	46,3	47,9			52	
48	48,0	50,4	48	52	56	
-	50,5	51,9			56	
52	52,0	54,6	52	56	60	
-	54,7	55,9			-	
56	56,0	58,8	56	60	-	
-	58,9	59,9			-	
-			60	-	-	

Splicing instructions for our ferrules (Form A +B) according to EN 13411-3

1. Allocation ferrule to wire rope

Select the appropriate ferrule according to our splicing table. Wire rope constructions with a metallic cross-sectional area factor of less than 0,283 should not be used. These splicing instructions work for wire rope constructions according to EN 12385-4. Wire rope constructions with a tensile grade above 1960 N/mm² should not be used.

2. Preparation of the rope end

Ensure that the rope remains in lay after cutting and that no impurities (adhesive tape, etc.) will be within the pressed ferrule.

3. Selection of swaging dies

Form A should be swaged in our Cylindrical or Universal dies. Form B should only be swaged in our specially marked rounded dies. Ensure that the ferrule code No. and the No. of your swaging die set correspond.

4. Installation and condition of the tooling

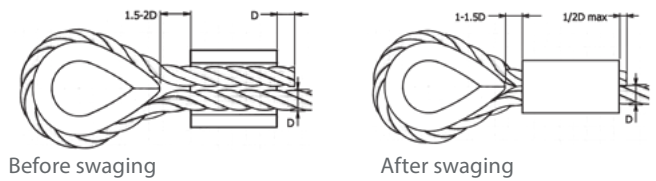
Swaging die faces with corresponding numbers need to be precisely aligned in the die pocket. Dies with worn out cutting edges do no longer assure an accurate swaging procedure according to EN 13411-3 and should be removed from service. Numbers must be on the same side and polished sides shall contact the die pocket.

5. Swaging procedure

The procedure shall be carried out by a competent person trained in ferrule securing. Ferrules code 4,5 and higher need to be swaged in hydraulic presses. Smaller sizes might as well be swaged with our hand swaging tools.

- Feed the wire rope through the ferrule in order to provide the required eye. Return the rope end and form the loop. If no thimble is fitted, the distance from the ferrule to the bearing-point should be at least 15 times the rope diameter.
- The rope diameter D should be the guide value of how far the dead end of the rope should protrude out of the ferrule before swaging. This needs to be checked after each swaging procedure and adjusted if necessary, according to the type of wire rope, tensile grade and diameter.
- For satisfactory results you need to first clean and then lubricate the die bore with mineral grease (no oil we suggest our Splice Glide grease) before each swaging procedure.
- Place the ferrule centered and ensure that it is truly vertical within the die bore.
- All ferrules shall be swaged in one step.
- Stop pressing immediately when the die faces meet. Do not repress 'flash' back into splice.

- For thimbles without points the gap between the thimble end and the pressed ferrule should be about 1,5 time the wire rope diameter D. For thimbles with points the gap should be 1 time the wire rope diameter D.
- After swaging the rope 'dead' end for form A + B should protrude from the pressed ferrule by up to half a rope diameter. For ropes that are severed by annealing process, ensure that the annealed rope portion remains outside the ferrule after pressing.



6. Ferrules after Swaging

On completion of swaging operation, resultant 'flash' must be removed. Swaging dies in good condition permit to either break the 'flash' off by hand or with a small hammer. Any residual edge may be filed or otherwise smoothed.

Every pressed ferrule needs to be checked for correct dimensions and position of the 'dead' rope end.

The temperature limits when used with a fibre core wire rope are -40° to +100° C

The temperature limits when used with a steel core wire rope are -40° to +150° C

7. Marking the ferrule

If the Ferrule secured Eye Termination (FSET) forms part of a wire rope assembly other than a sling:

- the ferrule shall be legibly and indelibly marked with the FSET manufacturer's name, symbol or mark.
- the assembly shall be legibly and durably marked with the traceability code identifying the assembly with the certificate in 7.2. of EN 13411-3.

For FSET forming part of a sling you will find further details in the standard EN 13414-1.

8. Remark

Our ferrule-secured system is in accordance with the type testing procedure of EN 13411-3 point 5.1.2. for steel wire ropes defined in EN 12385-4.

Ferrule secured eye terminations should be removed from service if badly distorted or if body is showing cracks or heavy wear.

Aluminium Ferrules outside of EN 13411-3 (Form A+B)

Ferrule No.	Rope Ø mm				Swaging Die No.	Pressed Ferrule Ø mm
	Fibre core		IWRC			
	min.	max.	min.	max.		
1	0,9	1	0,5	0,8	1	2
1,5	1,1	1,5	0,9	1,1	1,5	3
2	1,6	2	1,2	1,6	2	4



Ferrules

Form C • according to EN 13411-3

Rope Ø mm nominal d	Rope Ø mm measured min. max.		Ferrules according to EN 13411-3			
			single layer round strand ropes with fibre core and cable laid ropes	single layer round strand ropes with IWRC and rotation-resistant round strand ropes		spiral strands (2 ferrules)
			metallic cross sectional area factor C min. 0,283	C up to 0,487	C greater 0,487 up to 0,613	C max 0,613
6,5	6,5	6,9	-	-	8	8
7	7,0	7,4	-	8	9	9
-	7,5	7,9				
8	8,0	8,4	8	9	10	10
-	8,5	8,9				
9	9,0	9,5	9	10	11	11
-	9,6	9,9				
10	10,0	10,5	10	11	12	12
-	10,6	10,9				
11	11,0	11,6	11	12	13	13
-	11,7	11,9				
12	12,0	12,6	12	13	14	14
-	12,7	12,9				
13	13,0	13,7	13	14	16	16
-	13,8	13,9				
14	14,0	14,7	14	16	18	18
-	14,8	15,9				
16	16,0	16,8	16	18	20	20
-	16,9	17,9				
18	18,0	18,9	18	20	22	22
-	19,0	19,9				
20	20,0	21,0	20	22	24	24
-	21,1	21,9				
22	22,0	23,1	22	24	26	26
-	23,2	23,9				
24	24,0	25,2	24	26	28	28
-	25,3	25,9				
26	26,0	27,3	26	28	30	30
-	27,4	27,9				
28	28,0	29,4	28	30	32	32
-	29,5	29,9				
30	30,0	31,5	30	32	34	34
-	31,6	31,9				
32	32,0	33,6	32	34	36	36
-	33,7	33,9				
34	34,0	35,7	34	36	38	38
-	35,8	35,9				
36	36,0	37,8	36	38	40	40
-	37,9	37,9				
38	38,0	39,9	38	40	44	44
-	40,0	42,0				
40	40,0	42,0	40	44	48	48
-	42,1	43,9				
44	44,0	46,2	44	48	52	52
-	46,3	47,9				
48	48,0	50,4	48	52	-	-
-	50,5	51,9				
52	52,0	54,6	52	-	-	-

Splicing instructions for our ferrules (Form C) according to EN 13411-3

1. Allocation ferrule to wire rope

Select the appropriate ferrule according to our splicing table. Wire rope constructions with a metallic cross-sectional area factor of less than 0,283 should not be used. These splicing instructions work for wire rope constructions according to EN 12385-4. Wire rope constructions with a tensile grade above 1960 N/mm² should not be used.

2. Preparation of the rope end

Ensure that the rope remains in lay after cutting and that no impurities (adhesive tape, etc.) will be within the pressed ferrule. Ropes that are severed by annealing process cannot be used with zen[®] Form C according to EN 13411-3.

3. Selection of swaging dies

Use only Universal Conical Swaging Dies to swage zen[®] Form C according to EN 13411-3.

4. Installation and condition of the tooling

Swaging die faces with corresponding numbers need to be precisely aligned in the die pocket. Dies with worn out cutting edges do no longer assure an accurate swaging procedure according to EN 13411-3 and should be removed from service.

5. Swaging procedure

The procedure shall be carried out by a competent person trained in ferrule securing. zen[®] Form C need to be swaged in hydraulic swaging presses. Handtools are not allowed.

- Feed the wire rope through the ferrule in order to provide the required eye. Return the rope end and form the loop. If no thimble is fitted, the distance from the ferrule to the bearing-point should be at least 15 times the rope diameter.
- Insert the end of the wire rope into the ferrule to fill at least 2/3 of the control hole.
- For satisfactory results you need to first clean and then lubricate the die bore with mineral grease (no oil we suggest our Splice Glide grease) before each swaging procedure.
- Place the ferrule to fit the conical part of the swaging die and as shown in Pic 1- pull it slightly back (X) towards the cylindrical part of the swaging die. Ensure that the ferrule is truly vertical within the die bore when you start the swaging procedure.
- All ferrules shall be swaged in one step.
- Stop pressing immediately after the die faces meet. Do not repress 'flash' back into splice.
- For thimbles without points the gap between the thimble end and the pressed ferrule should be about 1,5 time the wire rope diameter D. For thimbles with points the gap should be 1 time the wire rope diameter D.

6. Ferrules after swaging

On completion of swaging operation, resultant 'flash' must be removed. Swaging dies in good condition permit to either break the 'flash' off by hand or with a small hammer. Any residual edge may be filed or otherwise smoothed where required. Every pressed ferrule needs to be checked for correct dimensions and position of the 'dead' rope end.

The temperature limits when used with a fibre core wire rope are -40° to +100° C

The temperature limits when used with a steel core wire rope are -40° to +150° C

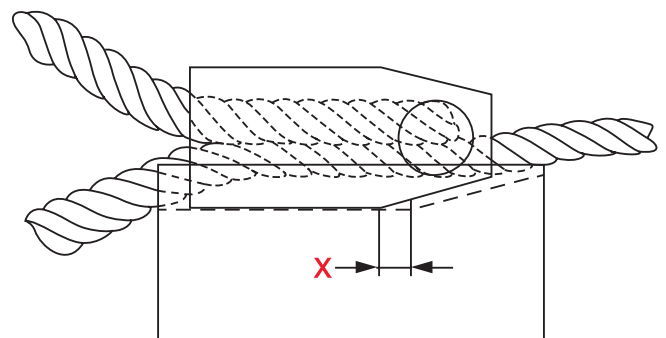
7. Marking the ferrule

If the Ferrule Secured Eye Termination (FSET) forms part of a wire rope assembly other than a sling:

- the ferrule shall be legibly and indelibly marked with the FSET manufacturer's name, symbol or mark; and
- the assembly shall be legibly and durably marked with the traceability code identifying the assembly with the certificate in 7.2. of EN 13411-3. For FSET forming part of a sling you will find further details in the standard EN 13414-1.

8. Remark

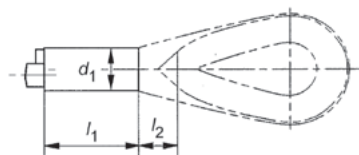
Our ferrule-secured system is in accordance with the type testing procedure of EN 13411-3 point 5.1.2. for steel wire ropes defined in EN 12385-4 Ferrule secured eye terminations should be removed from service if badly distorted or if body is reduced to 95% of its original diameter.



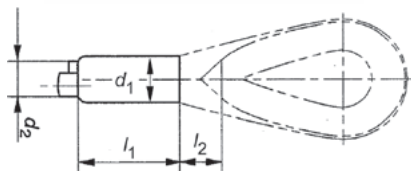
Pic.1

Distance X

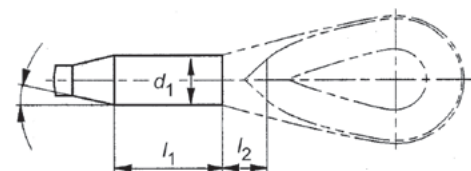
- code zen[®] 8 - 14 approx. 5 mm
- code zen[®] 16 - 24 approx. 8 mm
- code zen[®] 26 onwards approx. 10 mm



Form A



Form B



Form C

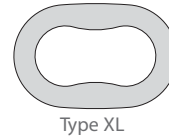
Pressed ferrule dimensions

Pressed ferrule dimensions						
zen Code No.	d ₁ mm	tolerance in mm	d ₂ min mm	L before swaging	l ₁ mm*	l ₂ mm*
2,5	5	+0,2 0	-	9	12	3,75
3	6		-	11	14	4,5
3,5	7		-	13	16	5,25
4	8		-	14	18	6
4,5	9		8	16	20	6,75
5	10	9	18	23	7,5	
6	12	+0,4 0	11	21	27	9
6,5	13		12	23	29	9,75
7	14		13	25	32	10,5
8	16		14,5	28	36	12
9	18		16,5	32	40	13,5
10	20	18	35	45	15	
11	22	+0,5 0	20	39	50	16,5
12	24		22	42	54	18
13	26		24	46	59	19,5
14	28	+0,7 0	25	49	63	21
16	32		29	56	72	24
18	36	+0,9 0	32	63	81	27
20	40		36	70	90	30
22	44		39	77	99	33
24	48	+1,1 0	43	84	108	36
26	52		46	91	117	39
28	56		50	98	126	42
30	60	+1,4 0	53	105	135	45
32	64		56	112	144	48
34	68		59	119	153	51
36	72	+1,6 0	63	126	162	54
38	76		66	133	171	57
40	80		69	140	180	60
44	88	+1,9	75	154	198	66
48	96		81	168	216	72
52	104		+2,1	87	182	234
56	112	+2,3	93	196	252	84
60	120	+2,4	99	210	270	90

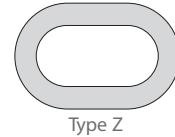
* approx. dimensions



Aluminium Type XL-Z



Type XL



Type Z

Round strand rope with Steel core - metallic area C up to 0,487				Ferrules		
Rope Ø measured 1770 N/mm ² grade		Rope Ø measured 1960 N/mm ² grade		Ferrule No.	Pressed XL Ferrule Dimensions Ø mm	Tolerance mm
min.	max.	min.	max.			
46,3	50,7	45,6	48,9	XL 52	100	+2,1
50,8	54,3	49	51,5	XL 54	108	+2,3
54,4	58,2	51,6	55,8	XL 56	116	+2,4
58,3	61,9	55,9	59,2	XL 60	124	+2,5
62	65,8	59,3	63,4	XL 64	132	+2,6
65,9	69,7	63,5	66,9	XL 68	140	+2,8
69,8	73,6	67	71,2	XL 72	148	+3,0
73,7	77,4	71,3	74,5	XL 76	156	+3,2
77,5	81,3	74,6	78,8	XL 80	164	+3,3
81,4	85,2	78,9	82,1	XL 84	172	+3,5
89,2	93,1	86,6	90,1	XL 90	188	+3,8
		90,2	95,1	Z 94	190	+3,8
		95,2	101,5	Z 102	212	+3,8
		101,6	106,8	Z 102	214	+3,8

For accommodation of steel wire ropes with a higher tensile grade than 1960 N/mm² please refer to our technical department.



Aluminium Syngrip



Rope / Cable Ø mm	inner dim. Ø mm	Ferrule length / mm L	Ferrules		
			Ferrule No.	# SYNGRIP	Pressed Ferrule Dimensions Ø mm
8	9	23	8	8	13,9
10	11	28	10	10	15,9
12	14	36	12	12	18,7

Special SYNGRIP swaging dies (due to dimensions of the pressed ferrule)

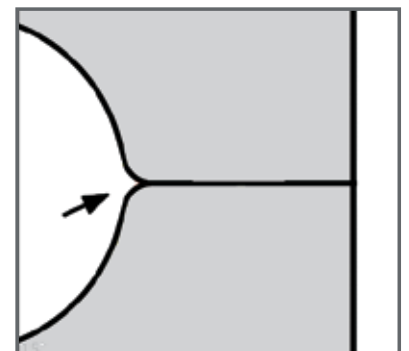
- The SYNGRIP ferrule folds in while swaged and thus no flash needs to be removed.
- Each rope and ferrule combination requires testing in order to satisfy the User of general splice efficiency.
- The range of different rope materials and constructions precludes a guarantee of specific splice efficiency.
- Typical efficiency may be 40 % of the MBL or greater.
- Using two ferrules or longer cut lengths will increase efficiency.

Swaging with a too small bore diameter will lead to breaking the rope inside the ferrule. Swaging with a too big bore diameter will lead to the rope slipping out of the ferrule. Following reasons might lead to breaking ropes within the ferrule:

- swaging dies too small
- rope diameter too big
- high density in prestretched rope

GENERAL:

- Ferrule material is not seamless and does not meet the requirements of EN 13411-3



SYNGRIP swaging dies with rounded edges without cutting edges

Aluminium Type S



Rope Ø mm				Ferrules		
fibre core		steel core		Ferrule No.	Swaging Die No.	Pressed Ferrule Ø mm
min.	max.	min.	max.			
6,7	7,2	6,1	6,5	7	6,5	13
7,3	8,2	6,6	7,2	8	7,5	15
8,3	9,2	7,3	8	9	8	16
9,3	10,2	8,1	9	10	9	18
10,3	11,2	9,1	10	11	10	20
11,3	12,2	10,1	11	12	11	22
12,3	13,2	11,1	12	13	12	24
13,3	14,2	12,1	13	14	13	26
14,3	16,2	13,1	15	16	15	30
16,3	18,2	15,1	17	18	17	34
18,3	20,2	17,1	19	20	18	36
20,3	22,3	19,1	21	22	20	40
22,4	24,3	21,1	23	24	22	44
24,4	26,3	23,1	25	26	24	48
26,4	28,3	25,1	27	28	26	52
28,4	30,3	27,1	29	30	28	56
30,4	32,3	29,1	31	32	30	60
32,4	34,3	31,1	33	34	32	64
34,4	36,3	33,1	35	36	34	68
36,4	38,3	35,1	37	38	36	72
38,4	40,3	37,1	39	40	38	76

Splicing instructions for our S Ferrules:

Select the appropriate ferrule according to our splicing table. Wire rope constructions with a metallic cross-sectional area factor of less than 0,283 should not be used. These splicing instructions work for wire rope constructions according to EN 12385-4. Wire

rope constructions with a tensile grade above 1770 N/mm² should not be used.

Please refer to our instructions for ZEN® ferrules Form A-B.



Aluminium Round

Round ferrules are not to be used for lifting purposes.
A load test must be always performed to verify the strength of the ferrule secured termination. As a guideline you can anticipate a result reaching approximately 50 % of the MBL of the wire rope.

Rope Ø mm fibre and steel core		Ferrules		
		Ferrule No.	Swaging Die No.	Pressed Ferrule Ø mm
min.	max.			
1,5	1,6	1,5	1,5	3
2,0	2,2	2	2	4
3,0	3,2	3	3	6
4,0	4,2	4	4	8
5,0	5,3	5	5	10
6,0	6,3	6	6	12
6,5	6,8	6,5	6,5	13
7,0	7,4	7	7	14
8,0	8,3	8	8	16
9,0	9,4	9	9	18
10,0	10,5	10	10	20
11,0	11,5	11	11	22
12,0	12,6	12	12	24
13,0	13,5	13	13	26
14,0	14,7	14	14	28
16,0	16,8	16	16	32
18,0	18,9	18	18	36
20,0	21,0	20	20	40
22,0	23,1	22	22	44
24,0	25,2	24	24	48
26,0	27,3	26	26	52
28,0	29,4	28	28	56
30,0	31,5	30	30	60
32,0	33,4	32	32	64
36,0	37,8	36	36	72
40,0	40,9	40	40	80



Copper Round

Round ferrules are not to be used for lifting purposes.
A load test must be always performed to verify the strength of the ferrule secured termination. As a guideline you can anticipate a result reaching approximately 50 % of the MBL of the wire rope.

Rope Ø mm fibre and steel core		Ferrules		
		Ferrule No.	Swaging Die No.	Pressed Ferrule Ø mm
min.	max.			
2,0	2,2	2	2	4
3,0	3,2	3	3	6
4,0	4,2	4	4	8
5,0	5,3	5	5	10
6,0	6,3	6	6	12
6,5	6,8	6,5	6,5	13
7,0	7,4	7	7	14
8,0	8,3	8	8	16



Copper Type Z

Rope Ø mm nominal	Rope Ø mm measured		Ferrules	
	min.	max.	Fibre core ropes	Steel core ropes
1	0,5	1,0	1	1,5
1,5	1,1	1,5	1,5	2,0
2	1,6	2,0	2	2,5
2,5	2,5	2,7	2,5	3
3	2,8	3,2	3	3,5
3,5	3,3	3,7	3,5	4
4	3,8	4,3	4	4,5
4,5	4,4	4,8	4,5	5
5	4,9	5,4	5	6
6	5,5	6,4	6	6,5
6,5	6,5	6,9	6,5	7
7	7,0	7,4	7	8
8	7,5	8,4	8	9
9	8,5	9,5	9	10
10	9,6	10,5	10	11
11	10,6	11,6	11	12
12	11,7	12,6	12	13
13	12,7	13,7	13	14
14	13,8	14,7	14	16
16	14,8	16,8	16	18
18	16,9	18,9	18	20
20	19,0	21,0	20	22
22	21,1	23,1	22	24
24	23,2	25,2	24	26
26	25,3	27,3	26	28
28	27,4	29,4	28	

A widely used solution in combination with stainless steel wire ropes, where aluminium ferrules will cause galvanic corrosion, and stainless-steel ferrules might represent a budgetary concern. A load test must be always performed to verify the strength of the ferrule-secured termination. If performed according to the splicing instructions below, the strength of the sling can be expected to reach approximately 90 % of the MBL of the wire rope.

Splicing instructions for our copper ferrules:

Select the appropriate ferrule according to our splicing table. Wire rope constructions with a metallic cross-sectional area factor of less than 0,283 should not be used.

These splicing instructions work for wire rope constructions accor

- Please pay attention to the correct assignment of the ferrule and swaging dies. The swaging dies size always corresponds to the size of the ferrules.

The pressed outer diameter corresponds to the ferrule size x 2 in mm (e.g. size 8 x 2 = 16mm outer diameter).

ding to EN 12385-4. Wire rope constructions with a tensile grade above 1770 N/mm² should not be used.

Please refer to our instructions for our ZEN® ferrules Form A - B



Stainless Steel

Rope Ø mm fibre and steel core		Ferrules		
		Ferrule No.	Swaging Die No.	Pressed Ferrule Ø mm
min.	max.			
1,0	1,1	1	1,5	3
1,5	1,6	1,5	1,5	3
2,0	2,1	2	2	4
2,5	2,6	2,5	2,5	5
3,0	3,2	3	3	6
3,5	3,7	3,5	3,5	7
4,0	4,2	4	4	8
4,5	4,7	4,5	4,5	9
5,0	5,2	5	5	10
6,0	6,3	6	6	12
7,0	7,3	7	7	14
8,0	8,3	8	8	16
10,0	10,4	10	10	20
12,0	12,4	12	12	24
14,0	14,4	14	14	28
16,0	16,5	16	16	32
18,0	18,5	18	18	36
20,0	20,5	20	20	40
22,0	23,0	22	22	44
24,0	25,0	24	24	48
26,0	27,0	26	26	52
28,0	29,0	28	28	56

Wire ropes with only one layer of wires per strand (such as 6 x 9 + 7fc., 6 x 12 + 7fc., 6 x 15 + 7fc., 6 x 18 + 7fc.)* are not suitable for swaging.

Use only CYLINDRICAL DIES WITHOUT CUTTING EDGES which are marked accordingly.

Ensure that ferrule and swaging die numbers correspond.

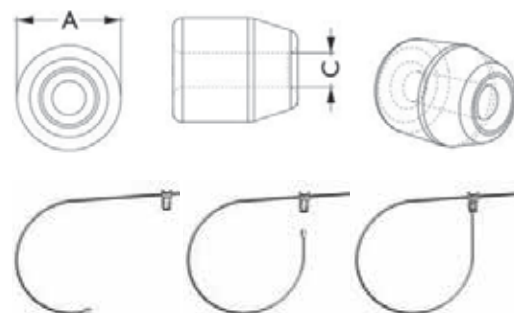
*fc. = "fibre core"

Proceed as follows:

- Select appropriate ferrule for the rope as per splicing table.
- Thread rope through ferrule and form a loop as required or over a thimble.
- Lubricate the bore of the swaging dies before each swaging operation.
- Place ferrule with rope in centre of the lower half of swaging die. Ensure during swaging operation that the ferrule is positioned in swaging die vertically and not tilted.
- Swaging is completed when swaging die faces make contact.
- Release swaging dies.



STEEL CHOKER

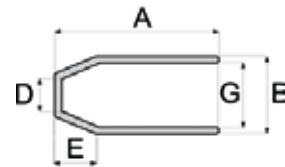


Our Steel Choker Ferrule in use

Rope Ø		Dimensions before swaging (mm)		after swaging (mm)
mm	inch	A	C	A
11	7/16 "	31,8	12,7	27,4
12, 13	1/2 "	31,8	13,5	27,4
14	9/16 "	31,8	15,1	27,4



Steel Flemish Eye



Ferrule dimensions

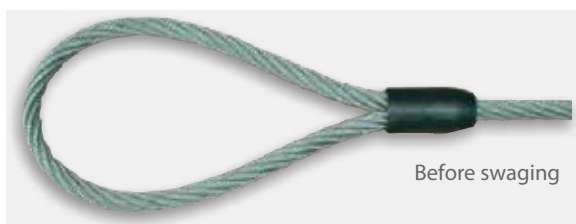
Ferrule No. inch	Rope Ø mm	Swaging Die No.	Nominal Ferrule-Dimensions mm					Max. Pressed Ferrule Ø mm
			A	B	G	D	E	
1/4"	6	1/4"	25	16,8	12,0	7,9	7,1	14,5
5/16"	8	3/8"	38	23,0	15,8	9,7	11,2	19,1
3/8"	9 - 10	3/8"	38	23,0	16,7	11,9	9,9	19,1
7/16"	11	1/2"	51	31,0	21,4	14,3	16,5	25,7
1/2"	12 - 13	1/2"	51	31,0	23,0	15,9	14,2	25,7
9/16"	14	5/8"	70	37,3	26,2	17,8	16,0	31,5
5/8"	16	5/8"	70	37,3	27,8	19,1	16,0	31,5
3/4"	19	3/4"	81	43,7	32,5	23,1	21,3	37,1
7/8"	22	7/8"	90	51,6	38,9	26,0	25,4	42,7
1"	25 - 26	1"	102	58,0	43,7	30,0	28,6	49,0
1 1/8"	28	1 1/8"	122	63,5	49,2	33,0	31,8	54,1
1 1/4"	32	1 1/4"	132	70,6	54,8	37,0	35,8	58,9
1 3/8"	34 - 36	1 3/8"	148	76,2	60,3	40,0	39,7	64,0
1 1/2"	38	1 1/2"	159	82,6	66,7	44,0	42,9	68,8
1 3/4"	44	1 3/4"	184	97,6	79,4	50,0	50,0	78,7
2"	50 - 52	2"	216	111,0	92,1	58,0	57,0	90,4
2 1/4"	56	2 1/4"	243	127,8	102,4	64,0	64,5	104,6
2 1/2"	62 - 64	2 1/2"	267	139,7	114,3	70,0	71,5	114,3
2 3/4"	68 - 70	2 3/4"	292	146,0	120,0	76,0	78,5	119,4
3"	76 - 77	3"	305	152,4	127,0	83,0	86,0	126,0
3 1/4"	82 - 84	3 1/4"	330	165,0	138,0	98,0	90,0	136,5
3 1/2"	87 - 89	3 1/2"	356	178,0	148,0	99,0	100,0	146,6
3 3/4"	93 - 96	3 3/4"	381	191,0	160,0	103,0	108,0	158,2
4"	100 - 105	4"	406	206,0	173,0	111,0	114,0	169,9
4 1/2"	112 - 114	4 1/2"	457	232,0	195,0	124,0	129,0	189,2
5"	126 - 128	5"	508	267,0	222,0	140,0	143,0	222,3
6"	152 - 156	6"	610	319,0	259,0	165,0	171,0	264,0

Dies 1/4" through to 1" are tapered dies.

Sleeves 1.1/8" and above require 1st and 2nd stage dies.

2nd stage dies for 1.1/8" through to 1.3/4" are tapered dies.

Both 1st and 2nd stage dies for sleeves from 2" and upwards are plain bore with no taper.



Splicing instructions for our Flemish Eye ferrules

1. Allocation ferrule to wire rope

Select the appropriate ferrule according to our splicing table. Wire rope constructions with a metallic cross-sectional area factor of less than 0,283 should not be used. These splicing instructions work for wire rope constructions according to EN 12385-4. Wire rope constructions with a tensile grade above 1960 N/mm² should not be used.

2. Preparation of the rope

Slide the ferrule down the rope. Un-lay the wire rope. For IWRC rope 3 strands and core in one group and 3 strands in the other group. For FC rope un-lay with 3 strands in each group and cut away the fibre core. Cross and lay the one group of strands into the other group of strands forming a natural weave. Continue to reweave the group of strands together to form the eye. The remaining tails must be as long as the cylindrical part of the ferrule. At the end of the eye collect the tails around the outside of rope dispersing equally and slide the ferrule over the tails and as far up towards the eye as possible.



3. Installation and condition of the tooling

Swaging die faces with corresponding numbers need to be precisely aligned in the die pocket. Dies 1/4" through to 1" are tapered dies. Sleeves 1.1/8" and above require 1st and 2nd stage dies. 2nd stage dies for 1.1/8" through to 1.3/4" are tapered dies. Both 1st and 2nd stage dies for sleeves from 2" and upwards are plain bore with no taper.

4. Swaging procedure

A competent person, trained in ferrule securing shall carry out the procedure.

First stage dies

- Lubricate both die bores.
- Close dies until initial contact is made between ferrule and die (STEP 1).
- Swage down 1/2 the distance and then rotate the ferrule 45-90° (STEP 2).
- Repeat STEP 2 three times.
- Swage down until die faces meet with 5th pass.
- Rotate again ferrule 90° and swage down until die faces meet.
- Swap dies.

Second stage dies

- Lubricate both die bores.
- Carry out STEP 2 six times.
- Swage down until die faces meet with 7th pass.
- Rotate ferrule 90°.
- Swage down until die faces meet and ferrule is round.

5. Ferrules after swaging

The temperature limits when used with a steel core wire rope are -60° to +250° C

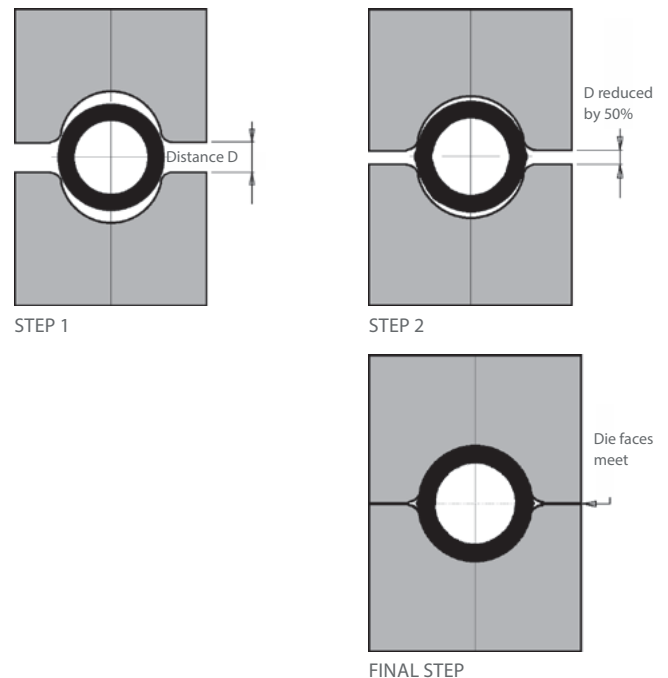
6. Marking the ferrule

If the Ferrule Secured Eye Termination (FSET) forms part of a wire rope assembly other than a sling:

- the ferrule shall be legibly and indelibly marked with the FSET manufacturer's name, symbol or mark; and
- the assembly shall be legibly and durably marked with the traceability code identifying the assembly with the certificate in 7.2. of EN 13411-3.

For FSET forming part of a sling you will find further details in the standard EN 13414-1 ANY STAMPING should be carried out using rounded character stamps and to a maximum depth of 0,4mm.

The area for stamping should be restricted to the sleeve surface along the plane of the eye. Stamped characters should start or finish a minimum of 6mm from either end of the sleeve.





Steel Type Z

Rope Ø mm	Ferrules			
	Ferrule No.	Swaging Die No.	Ferrule length / mm	Pressed Ferrule Ø mm
5	5	5	18	10
6	6	6	21	12
7	7	7	25	14
8	8	8	28	16
9	9	9	32	18
10	10	10	35	20
12	12	12	42	24
14	14	14	49	28
16	16	16	56	32
18	18	18	63	36



Steel Type ST

Rope Ø mm	Ferrules			
	Ferrule No.	Swaging Die No.	Ferrule length / mm	Pressed Ferrule Ø mm
16		14	52	28
17	28	15	52	30
18		16	58	32
19	32	17	58	34
20		17	63	34
21	34	18	63	36
22		19	68	38
23	38	20	68	40
24		21	83	42
25	42	21	83	42
26		22	86	44
27	44	22	86	44
28		23	86	46
29	48	24	96	48
30		24	96	48
31	52	26	100	52
32		26	100	52
33	56	28	107	56
34		28	107	56
35	60	30	113	60
36		30	113	60
39	68	34	127	68
40		34	127	68



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