

UK MANUFACTURERS OF HIGH QUALITY Architectural tension systems



STAINLESS STEEL ARCHITECTURAL Tension systems



CONTENTS

INTRODUCTION	3
TECHNICAL DATA	4
C1 SYSTEM - SWAGE STUDS	5
C2 SYSTEM - SYMMETRICAL ADJUSTMENT FORK	6
C3 SYSTEM - COMPACT TENSIONER ASSEMBLY	7
C4 SYSTEM - SWAGE FORK & SWAGE FORK TENSIONER	8
C5 SYSTEM - TOGGLE FORK & SWAGE TOGGLE TENSIONER	9
C6 SYSTEM - SWAGE FORK EACH END	10
C7 SYSTEM - SYMMETRICAL ASSEMBLY SWAGE FORK	
EACH END & IN-LINE TENSIONER	11
C8 - SWAGELESS COMPRESSION ASSEMBLY	12
SWAGELESS COMPRESSION TERMINALS	13
COMPRESSION COMPONENTS:	
- COMPRESSION FORK	13
- COMPRESSION TOGGLE	13
- COMPRESSION STUD	13
SWAGELESS COMPRESSION TERMINALS RIGGING SCREWS:	
- RIGGING SCREW TOGGLE	14
- RIGGING SCREW FORK	14
COMPACT STRAND WIRE	15
COMPACT STRAND - C1C, C2C & C4C ASSEMBLIES	16
TENSION BAR SYSTEMS	17
B1 ASSEMBLY	
B2 ASSEMBLY	19
TIE BAR CONNECTERS & ISOLATION DETAIL	20
PLATES/RINGS	21
NITRONIC ROD	
N1 - ROD ASSEMBLY	23
N2 - ROD CAP ASSEMBLY	
COMPONENTS:	
- MEMBRANE TOGGLE STRAP COMPONENTS	
- TOGGLE STRAP	
- FULL NUTS	26
- FORM B WASHERS	
-SPHERICAL WASHERS	
CERTIFICATES	27

INTRODUCTION

MODERN DEVELOPMENTS IN CONSTRUCTION TECHNOLOGY HAVE FOCUSED ON The production of light, sturdy structures. Tension member braced Structures are a key part of modern construction and can be expected to further increase in relevance.



Petersen have been supplying the architectural structures and tensile fabric markets for over 25 years with high-quality, UK manufactured terminals, tensioners, structural cable systems and tension bar systems. During this time we have been at the forefront of developing and manufacturing stainless steel tension member systems.

We have supplied products integral to many prestigious structures around the world. As a manufacturer Petersen are able to provide custom solutions to projects, adaptation of product with a fast and flexible approach, assured by our ISO9001:2008 and AS9100-C certified quality system. Full traceability and certification from the steel mill to the construction site is provided as standard. All of our fittings are manufactured from solid bar ensuring their structural integrity - no welding or casting.

TECHNICAL DATA

Petersen manufactures a wide range of stainless steel cables and tension bars for use in construction applications. Stainless steel offers the architect and engineer significant advantages over other materials, corrosion resistance, long life, appearance and relatively free from maintenance. Stainless steel tension cables offer a high strength to weight ratio when compared with traditional steel members. As standard we manufacture from 2.5mm to 32mm diameter cable assemblies.

CONSTRUCTIONAL STRETCH

There are several types of stretch/elongation to be considered in a cable assembly, constructional stretch (permanent extension) and elastic stretch. Strands are manufactured using multiple wires wound together which will move and settle when placed under load. This settling effect (bedding down of the cables) is called constructional stretch and is non-linear.

ELASTIC STRETCH

After the cable has been initially loaded and constructional stretch accounted for, it will be in a state of stable modulus where extension is proportional to load (Hooke's Law). The resistance to stretch being determined by the Modulus of Elasticity (E Value).

STRAND MODULUS

Rather than using Young's modulus for the material of the strand and applying that to the exact metallic area of the strand, we quote a strand modulus (E Value). Load extension data from an actual strand test is combined with the nominal diameter of the strand to calculate the cable modulus. A strand modulus is a more practical value and offers a direct comparison between strand types

PRE-STRESSING

This method is commonly used on structures where length is critical, such as large road bridges and stadium roofs and typically applies to larger diameter cables. Pre-stressing is a technique for removing constructional stretch from a cable prior to use. The cable is cyclically loaded between 10 and 50% of its MBL until an apparent stable modulus is achieved. Pre-stressing is not necessarily appropriate on structures where there is a method of adjustment included in the assembly. Pre-stressing is also only effective when the cables are measured and marked under load, as the cable will lose the effect of pre-stressing when coiled or wound on to a reel. Dyform or compact strand alleviates the requirement to pre-stress a cable having as little as 0.01% constructional stretch.



C1 SYSTEM - SWAGE STUDS

A swage stud is the simplest and most cost effective means of including length adjustment in a cable. It can simply be bolted through a plate connection. Tension is then applied by adjusting the nuts on the outside. The assembly can be ordered with left hand and right hand thread combination enabling tapped holes to be used. Imperial UNF threads are also avaliable.





Adjustment range is the maximum range of adjustment. Cable lengths will be calculated from end of stud to end of stud, it is advised to use 1/3rd engagement allowing 2/3rd for shortening the length. E.g. C1-5mm would have approximate adjustment of +18mm -36mm.

PRODUCT CODE	WIRE (W)	CBL (kN)	MBL (kN)	THR	OD	A/F	L	THREAD LENGTH EACH END (TL)
C1-3mm	3mm	6.678	7.42	M6	6.3	5	97	47
C1-4mm	4mm	11.88	13.20	M6	7.5	6	105	47
C1-4mm M8	4mm	11.88	13.20	M8	7.5	6	113	54
C1-5mm	5mm	18.54	20.60	M8	9.1	8	122	54
C1-5mm M10	5mm	18.54	20.60	M10	9.1	8	135	68
C1-6mm	6mm	26.73	29.70	M10	12.5	11	154	75
C1-6mm M12	6mm	26.73	29.70	M12	12.5	11	170	90
C1-7mm	7mm	34.02	37.80	M12	14.3	12	177	90
C1-8mm	8mm	44.46	49.40	M12	16.0	14	190	90
C1-8mm M16	8mm	44.46	49.40	M16	16.0	14	201	100
C1-10mm	10mm	69.48	77.20	M16	18.0	16	223	100
C1-12mm	12mm	93.6	104.00	M20	21.4	19	277	120
C1-14mm	14mm	125.1	139.00	M22	25.0	22	325	140
C1-16mm	16mm	162.9	181.00	M27	28.2	25	371	160
C1-19mm	19mm	209.7	233.00	M30	34.5	30	427	184
C1-22mm	22mm	269.1	299.00	M36	40.3	32	482	202
C1-26mm	26mm	374.4	416.00	M42	45.9	36	557	223

Sizes above 26mm also available, please contact us for details

C2 SYSTEM - SYMMETRICAL Adjustment fork

The C2 system offers the architect/ engineer symmetry in design with minimal intrusion from the end terminals providing an elegant solution. Adjustment is achieved by simultaneously turning both swage studs in the same direction. Adjustment range is the same as one equivalent sized turnbuckle.



PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL *.9	MBL (kN)	PIN	TH DIA	с	т	FORK LENGTH	ADJUSTMENT RANGE
C2-3mm	3mm	6.68	7.42	6.4	6.3	15	7.0	55	48
C2-4mm	4mm	11.88	13.20	8.0	7.9	16	7.9	70	64
C2-5mm	5mm	18.54	20.60	9.5	9.1	19	9.5	88	80
C2-6DS	6mm	26.73	29.70	9.5	9.1	19	9.5	88	80
C2-6mm	6mm	26.73	29.70	11.0	12.5	22	10.9	98	88
C2-7mm	7mm	34.02	37.80	13.0	14.3	30	12.7	120	96
C2-8DS	8mm	44.46	49.40	13.0	16.0	30	12.7	120	96
C2-8mm	8mm	44.46	49.40	16.0	16.0	32	15.8	142	128
C2-10mm	10mm	69.48	77.20	16.0	18.0	32	15.8	142	128
C2-12mm	12mm	93.60	104.00	19.0	21.4	38	19.0	160	142
C2-14mm	14mm	125.10	139.00	22.2	25.0	45	22.2	179	160
C2-16mm	16mm	162.90	181.00	25.4	28.2	50	25.0	207	180
C2-19mm	19mm	209.70	233.00	28.4	34.5	58	28.4	231	200
C2-22mm	22mm	269.10	299.00	32.0	40.3	64	32.0	252	220
C2-26mm	26mm	374.40	416.00	35.0	45.9	70	34.9	278	240

C3 SYSTEM - COMPACT TENSIONER Assembly

Compact tensioners offer minimised method of including a turnbuckle facility with an assembly. Especially useful on facade and curtain wall projects where larger turnbuckles interrupt lines of sight.







Adjustment range is the maximum range of adjustment. Cable lengths will be calculated with 1/3rd engagement allowing 2/3rd for shortening the length. E.g. C3-5mm would have approximate adjustment of +27 -53.

PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL *.9	MBL (kN)	PIN	с	т	MIN L	MAX L	OVERALL ADJUSTMENT
C3-3mm	3m	6.68	7.42	6	12.5	6	70	120	100
C3-4mm	4mm	11.88	13.20	8	17.0	8	95	165	140
C3-5mm	5mm	18.54	20.60	10	19.0	10	110	190	160
C3-6mm	6mm	26.73	29.70	11	22.0	11	125	215	180
C3-7mm	7mm	34.02	37.80	12	25.0	12	150	260	220
C3-8mm	8mm	44.46	49.40	14	28.0	14	170	290	240
C3-10mm	10mm	69.48	77.20	16	32.0	16	180	310	260
C3-12mm	12mm	93.60	104.00	19	38.0	19	210	350	280
C3-14mm	14mm	125.10	139.00	22	45.0	22	240	400	320
C3-16mm	16mm	162.90	181.00	25	50.0	25	285	475	380
C3-19mm	19mm	209.70	233.00	28	58.0	28	315	535	440
C3-22mm	22mm	269.10	299.00	32	64.0	32	345	585	480
C3-26mm	26mm	374.40	416.00	35	70.0	35	380	640	520

C4 SYSTEM - SWAGE FORK & SWAGE Fork tensioner

Including a rigging screw allows the length adjustment to be made from one end of the cable without inducing turn in the cable. This often makes installation simpler and allows future length adjustment, if required.



PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL *.9	MBL (kN)	PIN	TH DIA	с		MIN L	LAXL	ADJUSTMENT RANGE
C4-3mm	3mm	6.68	7.42	6.0	6.3	12.5	6.2	125	195	70
C4-4mm	4mm	11.88	13.20	8.0	7.9	17.0	7.9	150	228	78
C4-5DS	5mm	18.54	20.60	8.0	7.9	17.0	7.9	153	231	78
C4-5mm	5mm	18.54	20.60	9.5	9.1	19.0	9.9	184	284	100
C4-6DS	6mm	26.73	29.70	9.5	9.1	19.0	9.9	187	287	100
C4-6mm	6mm	26.73	29.70	11.0	12.5	22.0	10.9	202	310	108
C4-7mm	7mm	34.02	37.80	12.0	14.3	25.0	12.7	236	368	132
C4-8DS	8mm	44.46	49.40	12.0	16.0	25.0	12.7	239	371	132
C4-8mm	8mm	44.46	49.40	14.0	16.0	28.0	15.8	300	455	155
C4-10mm	10mm	69.48	77.20	16.0	18.0	32.0	15.8	312	468	156
C4-12mm	12mm	93.60	104.00	19.0	21.4	38.0	17.8	361	532	171
C4-14mm	14mm	125.10	139.00	22.0	25.0	45.0	22.0	403	600	197
C4-16mm	16mm	162.90	181.00	25.4	28.2	50.0	25.0	472	711	239
C4-19mm	19mm	209.70	233.00	28.0	34.5	58.0	28.2	531	801	270
C4-22mm	22mm	269.10	299.00	32.0	40.3	64.0	31.8	575	859	284
C4-26mm	26mm	374.40	416.00	35.0	45.9	70.0	34.9	655	979	324

C5 SYSTEM - TOGGLE FORK & SWAGE Toggle tensioner

Using toggles at each end of the assembly provides double articulation for the pins, allowing movement in two directions and reducing fatigue. The toggle can also be used to account for connection plate misalignments. Fabric structures and external cladding systems are typical applications.



PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL *.9	MBL (kN)	Ρ	с	т	ADJUSTMENT RANGE
C5-3mm	3mm	6.68	7.42	6.0	14	8	70
C5-4mm	4mm	11.88	13.20	8.0	20	9	78
C5-5mm	5mm	18.54	20.60	9.5	22	11	78
C5-6mm	6mm	26.73	29.70	11.0	26	13	100
C5-7mm	7mm	34.02	37.80	12.0	27	15	132
C5-8DS	8mm	44.46	49.40	12.0	27	15	132
C5-8mm	8mm	44.46	49.40	12.0	38	19	155
C5-10mm	10mm	69.48	77.20	16.0	38	19	156
C5-12mm	12mm	93.60	104.00	19.0	45	22	171
C5-14mm	14mm	125.10	139.00	22.0	54	25	197
C5-16mm	16mm	162.90	181.00	25.4	64	28	239
C5-19mm	19mm	209.70	233.00	28.0	68	32	270
C5-22mm	22mm	269.10	299.00	32.0	84	35	284
C5-26mm	26mm	374.40	416.00	35.0	98	38	284

C6 SYSTEM - SWAGE FORK EACH END

Fixed fork at each end does not allow for any length adjustment and is used for hanger cables, or cables where movement in the structure provides the tension.







PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL *.9	MBL	PIN	D	с	т
C6-3mm	3mm	6.68	7.42	6.0	6.3	12.5	6.2
C6-4mm	4mm	11.88	13.20	8.0	7.5	17.0	7.9
C6-5DS	5mm	18.54	20.60	9.5	9.1	19.0	9.9
C6-5mm	5mm	18.54	20.60	11.0	12.5	22.0	10.9
C6-6DS	6mm	26.73	29.70	11.0	12.5	22.0	10.9
C6-6mm	6mm	26.73	29.70	11.0	12.5	22.0	10.9
C6-7mm	7mm	34.02	37.80	12.0	14.3	25.0	12.7
C6-8DS	8mm	44.46	49.40	12.0	16.0	25.0	12.7
C6-8mm	8mm	44.46	49.40	14.0	16.0	28.0	13.8
C6-10mm	10mm	69.48	77.20	16.0	18.0	32.0	15.8
C6-12mm	12mm	93.60	104.00	19.0	21.4	38.0	17.8
C6-14mm	14mm	125.10	139.00	22.0	25.0	45.0	22.0
C6-16mm	16mm	162.90	181.00	25.4	28.2	50.0	25.0
C6-19mm	19mm	209.70	233.00	28.0	34.5	58.0	28.2
C6-22mm	22mm	269.10	299.00	32.0	40.3	64.0	31.8
C6-26mm	26mm	374.40	416.00	35.0	45.9	70.0	34.8

C7 SYSTEM - SYMMETRICAL ASSEMBLY SWAGE Fork Each end & in-line tensioner

A central turnbuckle can be used to create symmetry in a cable, sometimes as an architectural feature or sometimes as a practical method of centralising the location of the turnbuckle. The central turnbuckle is useful for joining two lengths of cable together to suit a particular steelwork or tensioning arrangement.



PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL *.9	MBL (kN)	PIN	TH DIA	с		TENSIONER MIN L	TENSIONER MAX L	ADJUSTMENT RANGE
C7-3mm	3mm	6.68	7.42	6.0	6.3	12.5	6.2	116	186	70
C7-4mm	4mm	18.54	13.20	8.0	7.9	17.0	7.9	136	214	78
C7-5DS	5mm	18.54	20.60	8.0	7.9	17.0	7.9	142	220	78
C7-5mm	5mm	26.73	20.60	9.5	9.1	19.0	9.9	167	267	100
C7-6DS	6mm	34.02	29.70	9.5	9.1	19.0	9.9	173	273	100
C7-6mm	6mm	26.73	29.70	11.0	12.5	22.0	10.9	182	290	108
C7-7mm	7mm	34.02	37.80	12.0	14.3	25.0	12.7	214	346	132
C7-8DS	8mm	44.46	49.40	12.0	16.0	25.0	12.7	220	352	132
C7-8mm	8mm	44.46	49.40	14.0	16.0	28.0	15.8	274	430	156
C7-10mm	10mm	69.48	77.20	16.0	18.0	32.0	15.8	278	434	156
C7-12mm	12mm	93.60	104.00	19.0	21.4	38.0	17.8	322	493	171
C7-14mm	14mm	125.10	139.00	22.0	25.0	45.0	22.0	362	559	197
C7-16mm	16mm	162.90	181.00	25.4	28.2	50.0	25.0	426	665	239
C7-19mm	19mm	209.70	233.00	28.0	34.5	58.0	28.2	476	746	270
C7-22mm	22mm	269.10	299.00	32.0	40.3	64.0	31.8	516	800	284
C7-26mm	26mm	374.40	416.00	35.0	45.9	70.0	34.9	594	918	324

C8 - SWAGELESS COMPRESSION ASSEMBLY

Petersen compression terminals can be fitted by hand on site easily offering flexibility to the installer. Cables can be threaded through ancillary components before termination. Where tendon lengths are difficult to determine, Petersen Terminals can accurately terminate the strand.

Petersen compression terminals are easy to assemble and are at least as strong as the rated breaking load of the wire rope to which they are fitted. The unique star shaped crown ring positions and holds the wires in place, eliminating the requirement for awkward wire bending. The shallow angled cone establishes direct mechanical grip on the core and all the outer strands. Manufactured from stainless steel grade EN10088 1.4404 (316L).

The C8 assembly can be supplied either fully assembled or loose for onsite assembly. The terminals are easy to assemble without the need for special tools (especially useful to alter cables on site or where lengths can not be determined in advance of installation).



C8-03	3mm	6	12.5	6.2	30	9.5	70	29
C8-04	4mm	8	17	7.9	40	11	78	60
C8-05	5mm	9.5	19	9.9	47	14	78	103
C8-06	6mm	11	22	10.9	50	19	100	159
C8-07	7mm	12	25	12.7	58	20	132	239
C8-08DS	8mm	12	25	12.7	63	22	132	323
C8-08	8mm	14	28	13.8	70	22	155	395
C8-08US	8mm	16	32	15.8	72	22	156	490
C8-10	10mm	16	32	15.8	78	26	156	542
C8-12	12mm	19	38	17.8	93	32	171	918
C8-14	14mm	22	45	22	106	36	197	1464
C8-16	16mm	25	50	25	126	40	239	2125
C8-19	19mm	28	58	28.2	133	44	270	2616
C8-22	22mm	32	64	31.8	146	52	284	3890
C8-26	26mm	35	70	34.8	167	64	284	6393

SWAGELESS COMPRESSION TERMINALS Components

CTF - FORK



CTT - TOGGLE



CTS - STUD



PRODUCT CODE	WIRE	Р	с	т	L	A/F B	NOMINAL WEIGHT (g)
CTF03	3mm	6	12.5	6.2	30	9.5	29
CTF04	4mm	8	17	7.9	40	11	60
CTF05	5mm	9.5	19	9.9	47	14	103
CTF06	6mm	11	22	10.9	50	19	159
CTF07	7mm	12	25	12.7	58	20	239
CTF08DS	8mm	12	25	12.7	63	22	323
CTF08	8mm	14	28	13.8	70	22	395
CTF08US	8mm	16	32	15.8	72	22	490
CTF10	10mm	16	32	15.8	78	26	542
CTF12	12mm	19	38	17.8	93	32	918
CTF14	14mm	22	45	22	106	36	1464
CTF16	16mm	25	50	25	126	40	2125
CTF19	19mm	28	58	28.2	133	44	2616
CTF22	22mm	32	64	31.8	146	52	3890
CTF26	26mm	35	70	34.8	167	64	6393

All dimensions in mm

PRODUCT CODE	WIRE	Р	с	т	L	A/F	NOMINAL WEIGHT (g)
CTT03	3mm	6.0	14	8	45	9.5	37
CTT04	4mm	8.0	20	9	53	11	71
CTT05	5mm	9.5	22	11	64	14	125
CTT06	6mm	11	26	13	78	19	258
CTT07	7mm	12.7	27	15	89	20	327
CTT08DS	8mm	12.7	27	15	92	22	397
CTT08US	8mm	16	38	19	116	22	700
CTT10	10mm	16	38	19	116	26	800
CTT12	12mm	19	47	22	157	32	1242
CTT14	14mm	22	53	25	174	36	2302
CTT16	16mm	25	67	28	194	40	3037
CTT19	19mm	28	69	32	215	44	4280
CTT22	22mm	32	84	35	235	52	6518
CTT26	26mm	35	98	38	296	64	9591

All dimensions in mm

PRODUCT CODE	WIRE	THREAD	т	L	A/F S	A/F B	NOMINAL WEIGHT (g)
CTSM6x03	3mm	M6	47	68	6	9.5	24
CTSM6X04	4mm	M6	47	68	8	9.5	42
CSTM8X04	4mm	M8	54	77	8	11.0	58
CTSM8X05	5mm	M8	54	81	9	14.0	75
CTSM10X05	5mm	M10	68	91	9	14.0	85
CTSM10X06	6mm	M10	68	97	11	17.0	130
CTSM12X06	6mm	M12	90	119	11	17.0	145
CTSM12X07	7mm	M12	90	121	14	20.0	199
CTSM12X08	8mm	M12	90	129	16	22.0	297
CTSM16X08	8mm	M16	100	137	16	22.0	347
CTSM16X10	10mm	M16	100	143	17	26.0	458

SWAGELESS COMPRESSION TERMINALS Rigging Screw Components

RSCT - TURNBUCKLE WITH TOGGLE



PRODUCT CODE	Wire	TH DIA (INCH)	Р	с	т	MIN L	MAX L
RSCT03	3mm	1/4"	6.0	14.0	6.2	152	209
RSCT04	4mm	5/16"	8.0	19.0	7.9	173	245
RSCT05	5mm	3/8"	9.5	21.0	9.9	209	304
RSCT06DS	6mm	3/8"	9.5	21.0	9.9	207	316
RSCT06	6mm	7/16"	11.0	26.0	10.9	263	338
RSCT07	7mm	1/2"	12.0	28.0	12.7	274	399
RSCT08	8mm	5/8 "	14.0	38.0	14.0	350	508
RSCT10	10mm	5/8 "	16.0	38.0	15.8	365	513
RSCT12	12mm	3/4"	19.0	45.0	17.8	436	598
RSCT14	14mm	7/8 "	22.0	54.0	22.0	489	676
RSCT16	16mm	1"	25.0	64.0	25.0	573	802
RSCT19	19mm	11/8"	28.0	68.0	28.2	641	900
RSCT22	22mm	11/4"	32.0	84.0	32.0	692	963
RSCT26	26mm	13/8"	35.0	98.0	35.0	805	1120

All dimensions in mm unless stated

RSCF - TURNBUCKLE WITH FORK



PRODUCT CODE	w	TH DIA (INCH)	Р	с	т	MIN L	MAX L
RSCF03	3mm	1/4"	6.0	12.5	6.2	137	202
RSCF04	4mm	5/16"	8.0	17.0	7.9	156	229
RSCF05	5mm	3/8"	9.5	19.0	9.9	192	287
RSC06	6mm	7/16"	9.5	19.0	9.9	242	378
RSCF07	7mm	1/2"	11.0	22.0	10.9	253	470
RSCF08	8mm	1/2"	12.0	25.0	12.7	350	508
RSCF10	10mm	5/8"	14.0	28.0	14.0	327	475
RSCF12	12mm	3/4"	16.0	32.0	15.8	385	548
RSCF14	14mm	7/8"	19.0	38.0	17.8	427	614
RSCF16	16mm	1"	22.0	45.0	22.0	503	732
RSCF19	19mm	11/8"	25.0	50.0	25.0	561	820
RSCF22	22mm	11/4"	28.0	58.0	28.2	602	873
RSCF26	26mm	13/8"	32.0	64.0	32.0	695	1010

All dimensions in mm unless stated

COMPACT STRAND WIRE

The low constructional stretch properties of our stainless steel compact strand makes it ideal for structural applications. Compact strand uses a unique manufacturing process that compresses the strand, increasing the metallic crosssectional area and removing the conditions from the strand, creating constructional stretch.

Constructional stretch is as low as 0.01% and is virtually eliminated on the initial loading. It is not usually necessary to pre-stress or subsequently re-tension compacted strand cables. In addition, the strength is increased by approximately 30% and the modulus is increased by a similar amount.

Compact strand has an increased surface area compared with conventional strands which makes it better suited to use with clamps.





CONSTRUCTION COMPACTED STRAND 1X19

PRODUCT CODE	DIAMETER (MM)	CONSTRUCTION	M.B.L (kN)	M.B.L (Kg)	WEIGHT Kg/100m
WR10(1x19)-C	10.0	1x19	98.04	10,000	57.0
WR12(1x19)-C	12.0	1x19	143.15	14,500	82.1



CONSTRUCTION COMPACTED STRAND 1X36								
PRODUCT CODE	DIAMETER (MM)	CONSTRUCTION	M.B.L (kN)	M.B.L (Kg)	WEIGHT Kg/100m			
WR14(1x36)-C	14.0	1x36	194.11	19,800	115.0			
WR16(1x36)-C	16.0	1x36	253.92	25,900	149.9			



CONSTRUCTION COMPACTED STRAND 1X31							
PRODUCT CODE	DIAMETER (MM)	CONSTRUCTION	M.B.L (kN)	M.B.L (Kg)	WEIGHT Kg/100m		
WR19(1x31)-C	19.0	1x31	313.92	32,000	206		

COMPACT STRAND - ASSEMBLIES

C1C SYSTEM - SWAGE STUDS



PRODUCT CODE	WIRE (W)	CBL (kN)	MBL (kN)	THR	OD	A/F		THREAD LENGTH EACH END (TL)
C1C-10mm	10mm	88.24	98.04	M20	18.0	132	277	120
C1C-12mm	12mm	128.84	143.15	M22	21.4	156	325	140
C1C-14mm	14mm	174.70	194.11	M27	25.0	176	371	160
C1C-16mm	16mm	228.53	253.92	M30	28.2	210	425	180
C1C-19mm	19mm	281.70	313.00	M36	34.5	242	482	200

All dimensions in mm

þ

Г

C2C SYSTEM - SYMMETRICAL Adjustment fork



PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL	MBL (kN)	PIN	TH DIA	с		FORK LENGTH	ADJUSTMENT RANGE
C2C-10mm	10mm	88.24	98.04	M20	18.0	132	277	120	128
C2C-12mm	12mm	128.84	143.15	M22	21.4	156	325	140	142
C2C-14mm	14mm	174.70	194.11	M27	25.0	176	371	160	180
C2C-16mm	16mm	228.53	253.92	M30	28.2	210	425	180	200
C2C-19mm	19mm	281.70	313.00	M36	34.5	242	482	200	220

All dimensions in mm

C4C SYSTEM - SWAGE FORK & Swage Fork tensioner



d []

PRODUCT CODE	WIRE DIA (W)	CBL (kN) MBL	MBL (kN)	PIN	TH DIA	с	т	MIN L	MAXL	ADJUSTMENT RANGE
C4C-12mm	10mm	88.24	98.04	19	21.4	38	17.8	361	532	171
C4C-14mm	12mm	128.84	143.15	22	25.0	45	22.0	403	600	197
C4C-16mm	14mm	174.70	194.11	25.4	28.2	50	25.0	472	711	239
C4C-19mm	16mm	228.53	253.92	28	34.5	58	28.2	531	801	270
C4C-22mm	19mm	281.70	313.00	32	40.3	64	31.8	575	859	284

All dimensions in mm

Ð

TENSION BAR SYSTEMS

Tension bars, also known as tension rods, ties and tie rods are manufactured in the UK by Petersen. The SBS450 fork and clevis pins are designed in accordance with BS5950-1:2000, EN1993-1-11:2006 and EN1993-1-8:2005 and are machined, not cast, from high strength duplex stainless steel. The Petersen SBS450 tie bar range is CE marked and manufactured under an EC Certificate of Factory Production Control (FPC) in compliance with Regulation 305/2011/EU of the European Parliament and the council of 9 March 2011 (The construction Products Regulation of CPR).

Tension bar systems consist of a threaded stainless steel tie bar terminated with an SBS450 fork clevis adjuster at each end. The SBS450 fork clevis allows a generous amount of adjustment and are normally supplied in pairs with one left hand and one right hand threaded each end. After installation the tension bar can be rotated to set the correct length and locked into position using the tapered lock cover nuts.

316 Tension bars are manufactured from specially drawn high tensile bar stock with rolled threads. Tension bar systems are available up to 6 metres single lengths or a coupler can be used to span further.



ASSEMBLY - B1

The SBS450 fork clevis ends allow a generous amount of adjustment and are normally supplied in pairs, with one left and one right hand threaded end. After installation, the tension bar can be rotated to set the correct length and locked into position using tapered lock cover nuts. The tension bar system is normally supplied with one left and one right hand threaded end.



PART CODE	THREAD (TH)	PIN (P)	т	с	F	ADJ (+ / -)	OD	L	0.2% (kN)	UTS (kN)
B1-M10	M10 x 1.50	10	10	20	11.2	20	25	68.7	26.1	40.6
B1-M12	M12 x 1.75	12	12	24	13.8	24	32	82.8	37.8	58.8
B1-M16	M16 x 2.00	16	15	32	18.4	32	40	109.9	70.7	109.9
B1-M20	M20 x 2.50	20	19	40	23.0	40	50	137.5	110.3	171.5
B1-M24	M24 x 3.00	24	24	48	27.6	48	60	165.6	158.9	247.1
B1-M27	M27 x 3.00	27	26	54	31.1	54	70	185.9	206.6	321.3
B1-M30	M30 x 3.50	30	29	60	34.5	60	75	206.5	252.6	392.7
B1-M33	M33 x 3.50	33	32	66	38.0	66	80	227.3	312.3	485.8
B1-M36	M36 x 4.00	36	34	72	41.4	72	90	247.4	376.7	571.9
B1-M39	M39 x 4.00	39	38	78	44.9	78	100	268.7	439.2	638.2
B1-M42	M42 x 4.5	40	40	84	48.0	167	100	289.0	504.5	784.7

 $\mathsf{ADJ}=\mathsf{Plus}$ or Minus as standard set in mid position All dimensions in mm

TECHNICAL DATA

The Petersen SBS450 bars are manufactured from stainless steel grade 316 EN10088 1.4401/04 which offers higher corrosion resistance. The pins are designed in accordance with BS5950-1:2000 and EN1993-1-8:2005. All components are produced at our manufacturing facility in the North East of England, using the latest technology in CNC equipment and produced in accordance with our quality system. Bar lengths are available up to 6 meters. Lengths exceeding 6 metres are also available by utilising a bar coupler. All accessories are finished to a N3 standard (240 grit satin). Bars are produced to a bright drawn finish. **NOTE** if the forks are a maximum adjustment, then half a diameter of thread will be visible after the taper nut has been fully tightened.

ASSEMBLY - B2

B2 bars are threaded at each end to allow bolting through the main structure. Bars can be supplied with either right hand thread both ends or RH and LH thread.



PART CODE	THREAD (METRIC)	ULTIMATE STRESS (kN)	YIELD STRESS (kN)	STRESS AREA (mm ²)	YIELD LOAD (kN)	ULTIMATE LOAD (kN)
SBM10	M10 x 1.50	700	450	58	36.1	40.6
SBM12	M12 x 1.75	700	450	54	37.8	58.8
SBM16	M16 x 2.00	700	450	157	70.7	109.9
SBM20	M20 x 2.50	700	450	245	110.3	171.5
SBM24	M24 x 3.00	700	450	353	159.9	247.1
SBM27	M27 x 3.00	700	450	459	206.6	321.3
SBM30	M30 x 3.50	700	450	561	252.6	392.7
SBM33	M33 x 3.50	700	450	694	312.3	485.8
SBM36	M36 x 4.00	700	450	817	367.7	571.9
SBM39	M39 x 4.00	700	450	976	439.0	638.2

All dimensions in mm

DOUBLE HEADED - CLEVIS PINS & TAPERED LOCK NUTS

PART CODE		OD	HD	C/S SCREW
BDHP10	25	10	12.7	M3 x 6
BDHP12	32	12	14.0	M5 x 12
BDHP16	40	16	19.0	M5 x 12
BDHP20	50	20	24.0	M6 x 12
BDHP24	60	24	28.0	M6 x 12
BDHP27	70	27	32.0	M6 x 12
BDHP30	75	30	35.0	M8 x 16
BDHP33	80	33	38.0	M8 x 16
BDHP36	90	36	42.0	M8 x 16
BDHP39	100	39	45.0	M8 x 16



PART CODE	тн	OD	L	с
TLNM10	M10 x 1.50	15	17.0	3.5
TLNM12	M12 x 1.75	19	20.4	3.5
TLNM16	M16 x 2.00	25	27.2	3.5
TLNM20	M20 x 2.50	30	34.0	3.5
TLNM24	M24 x 3.00	36	40.8	4.0
TLNM27	M27 x 3.00	42	45.9	4.0
TLNM30	M30 x 3.50	45	51.0	4.0
TLNM33	M33 x 3.50	48	56.1	5.0
TLNM36	M36 x 4.00	54	61.2	5.0
TLNM39	M39 x 4.00	60	66.3	5.0

TIE BAR CONNECTORS

PART CODE	L	OD	THREAD
SBCM10	35	16	M10
SBCM12	45	20	M12
SBCM16	55	22	M16
SBCM20	65	30	M20
SBCM22	75	32	M22
SBCM24	85	38	M24
SBCM27	95	40	M27
SBCM30	105	45	M30
SBCM36	120	50	M36

Tie bar connectors can be manufactured in 1.4401/04 Stainless Steel or 1.436 All dimensions in $\rm mm$



COMPONENTS - ISOLATION DETAIL





ISOLATION SLEEVE



ISOLATION WASHER

ISOLATION SLEEVE

PRODUCT CODE	LENGTH (L)	INSIDE DIAMETER (ID)	OUTSIDE DIAMETER (OD)	TIE BAR SIZE
IS10	10	11.5	14	M10
IS12	12	13	16	M12
IS16	15	17	20	M16
IS20	20	21	24	M20
IS24	24	25	28	M24
IS27	26	28	32	M27
IS30	29	31	35	M30
IS33	33	34	38	M33
IS36	31	37	42	M36
IS39	35	40	45	M39
IS42	37	43	48	M42

ISOLATION WASHER

PRODUCT CODE	LENGTH (L)	INSIDE DIAMETER (ID)	OUTSIDE DIAMETER (OD)	USED IN CONJUCTION WITH:
IVV10	0.5	14	23	IS10
IW12	0.5	16	30	IS12
IVV16	0.5	20	38	IS16
IVV20	1	24	48	IS20
IVV24	1	28	58	IS24
IW27	1	32	68	IS27
IVV30	2	35	73	IS30
IW33	2	38	78	IS33
IVV36	2	42	88	IS36
IW39	3	45	98	IS39
IW42	3	48	98	IS42

PLATES/RINGS

Petersen manufacture many bespoke and semi-custom plates to connect multiple tendons at node points. Plates can be designed to minimise weight and visual impact or as a statement piece, according to requirement. Node plates are typically made from 316 stainless steel and are best supplied with a polished finish, although other finishes are available on request.

Triangular node plates are commonly used to connect vertical hangers to support long, horizontal tendons which would otherwise sag under self-weight. Circular node plates are used where two tendons need to cross in the same plane, typically on crossbracing of rectangular apertures. Where multiple tendons must connect to a node from a variety of different directions, careful design can result in architecturally interesting focal points, as illustrated in the images below.









NITRONIC ROD

The Petersen rod system offers a hybrid solution, combining the benefits of stainless steel cable and solid bar. Size for size Nitronic 50 rod is stronger than cable and has a much higher modulus of elasticity. The tensile strength of Nitronic 50, almost double that of 316 bar, allows a large reduction in self-weight and visual impact. Rod can be supplied in virtually any length and can be coiled for ease of transport. Rod can be bent around fixed points on site, reducing and simplifying some steelwork details. The combination of its high strength and minimal diameter, makes rod the most elegant solution available for the support of large glazed areas and other modern structures.

In architectural rigging, bar is the name given to a solid tendon of 316 stainless which would normally be threaded to allow terminal connections. "Rod" is the term in rigging, used to describe a solid tendon of high-strength Nitronic 50 alloy stainless steel. The alloy was developed for performance rigging applications to meet the demands of steel with high tensile strength and better corrosion resistance than 316 (BS EN 1.4401).

Nitronic rod does not experience constructional stretch or creep, therefore extension is proportional to load. The resistance to stretch is determined by the Modulus of Elasticity (E Value).

E Value 199N/mm²

PRODUCT CODE	ROD SIZE	ROD DIA (mm)	M.B.L (Kg)	WEIGHT (Kg/m)	STRETCH (mm/mm) 1000Kg
NITRONIC50-04	-04	4.37	2130	0.118	0.003865
NITRONIC50-06	-06	5.03	2860	0.156	0.002916
NITRONIC50-08	-08	5.72	3720	0.202	0.002258
NITRONIC50-10	-10	6.35	4670	0.249	0.001829
NITRONIC50-12	-12	7.14	5670	0.314	0.001448
NITRONIC50-15	-15	7.52	6460	0.349	0.001305
NITRONIC50-17	-17	8.38	7940	0.434	0.001050
NITRONIC50-22	-22	9.53	10200	0.560	0.000813
NITRONIC50-30	-30	11.11	13600	0.761	0.000599
NITRONIC50-40	-40	12.70	17200	0.996	0.000457
NITRONIC50-48	-48	14.27	21800	1.258	0.000362
NITRONIC50-60	-60	16.76	27200	1.735	0.000262

N1 - ROD ASSEMBLY

N1 assemblies are supplied with a fork at each end, complete with adjustable rod nose and thread cover nut. Long lengths can be supplied without the need for mid span connections. Adjustment is achieved by turning the nose.



PRODUCT CODE	ROD DIA	THREAD	PIN (P)	Т	с	F	OD	ADJ +/-	0.2% YEILD (kN)	UTS (kN)
N1-04	4.37	M10	10	10	20	11.2	25	20	18.0	20.89
N1-06	5.03	M12	12	12	24	13.8	32	24	23.8	28.05
N1-08	5.72	M12	12	12	24	13.8	32	32	30.8	36.48
N1-10	6.35	M12	12	12	24	13.8	32	32	38.0	45.80
N1-12	7.14	M12	12	12	24	13.8	32	40	48.0	55.61
N1-15	7.52	M16	16	16	32	18.4	40	103	53.3	63.35
N1-17	8.38	M16	16	16	32	18.4	40	103	66.2	77.87
N1-22	9.53	M20	20	20	40	23.0	50	123	85.6	100.03
N1-30	11.10	M20	20	20	40	23.0	50	143	116	133.38
N1-40	12.70	M24	24	24	48	27.6	60	162	152	168.68
N1-48	14.27	M27	27	26	54	31.1	70	180	191	213.79
N1-60	16.76	M30	30	29	60	34.2	75	202	264	266.75

Suitable for use in bracing applications where the thread from the assembly can be bolted through the supporting steel structure. Tension is applied by the adjustment of the nut on the outside of the structure.



PRODUCT CODE	ROD DIA	0.2% YEILD	UTS	THREAD	ACROSS FLATS	L	THREAD LENGTH (T)
N2-04	4.37	18.0	20.89	M10	8	94	71
N2-06	5.03	23.8	28.05	M12	11	105	88
N2-08	5.72	30.8	36.48	M12	11	113	88
N2-10	6.35	38.0	45.80	M12	11	113	88
N2-12	7.14	48.0	55.61	M12	11	113	88
N2-15	7.52	53.3	63.35	M16	14	137	103
N2-17	8.38	66.2	77.87	M16	14	137	103
N2-22	9.53	85.6	100.03	M20	17	162	123
N2-30	11.10	116	133.38	M20	20	198	143
N2-40	12.70	152	168.68	M24	22	220	162
N2-48	14.27	191	213.79	M27	24	250	180
N2-60	16.76	264	266.75	M30	25	267	202

COMPONENTS - MEMBRANE TOGGLE STRAP



PRODUCT CODE	THREAD	PIN	т	с	L	от
TS#07*-460	M12	12.7	15	28	533	460
TS#10*-460	M16	16.0	19	37	560	460
TS#12*-460	M20	19.0	22	45	608	460
TS#14*-460	M20	22.0	25	54	630	460
TS#16*-460	M24	25.0	28	64	656	460

Dimensions in mm

COMPONENTS - TOGGLE STRAP



PRODUCT CODE	THREAD	Ρ	т	с	L	от	NOMINAL WEIGHT (g)
TS#03	1/4" unf	6.0	8	14	82	42	30
TS#04	5/16" unf	8.0	9	19	100	49	64
TS#05	3/8" unf	9.5	11	21	120	63	110
TS#06	7/16" unf	11.0	13	26	134	68	208
TS#07	1/2" unf	12.7	15	28	158	83	284
TS#10	5/8" unf	16.0	19	37	190	93	593
TS#12	3/4" unf	19.0	22	45	223	111	1062
TS#14	7/8″ unf	22.0	25	54	259	130	1882
TS#16	1" unf	25.0	28	64	299	150	2523
TS#19	1 1/8″ unf	28.0	32	68	334	168	3917
TS#22	1 1/4" unf	32.0	35	84	380	188	5628
TS#26	1 3/8″ unf	35.0	38	98	425	208	7409

Replace # with C for Closed Body Style or O for Open style. Suffix R or L for Right Or Left Hand Thread. Dimensions in mm

COMPONENTS - FULL NUTS





PRODUCT CODE	THREAD	WIDTH	SPANNER SIZE
FNUTM6*A4	M6	3.2	10
FNUTM8*A4	M8	4.0	13
FNUTM10*A4	M10	5.0	17
FNUTM12*A4	M12	6.0	19
FNUTM16*A4	M16	8.0	24
FNUTM20*A4	M20	10.0	30
FNUTM22*A4	M22	11.0	32
FNUTM24*A4	M24	12.0	36
FNUTM27*A4	M27	13.5	41
FNUTM30*A4	M30	15.0	46
FNUTM33*A4	M33	16.5	50
FNUTM36*A4	M36	18.0	55
FNUTM39*A4	M39	19.5	60

Replace the * with R or L for Left or Rigth hand threads. Hex nuts are manufactured from A4 material to Din 439 All dimensions in mm

COMPONENTS - FORM B WASHERS



PRODUCT CODE	OD	ID	L
WASHERM6-A4	6.7	12.5	0.9
WASHERM8-A4	8.7	17.0	1.1
WASHERM10-A4	10.9	21.0	1.5
WASHERM12-A4	13.4	24.0	1.8
WASHERM16-A4	17.4	30.0	2.2
WASHERM20-A4	21.5	37.0	2.2
WASHERM22-A4	23.5	39.0	2.2
WASHERM24-A4	25.5	44.0	2.7
WASHERM27-A4	28.5	50.0	2.7
WASHERM30-A4	31.6	56.0	2.7
WASHERM33-A4	34.6	60.0	3.3
WASHERM36-A4	37.6	66.0	3.3
WASHERM39-A4	40.6	72.0	3.3

Form B Washers are manufactured from A4 material to Din 4320 B

All dimensions in mm

COMPONENTS - SPHERICAL WASHERS



PRODUCT CODE	TIE BAR SIZE	OD	D1	D2	R
SWM6	M6	28	2	5.5	28
SWM8	M8	28	2	5.3	28
SWM10	M10	28	2	5.1	28
SWM12	M12	35	2	6.0	35
SWM16	M16	35	2	5.5	35
SWM20	M20	44	3	7.5	44
SWM22	M22	44	3	7.2	44
SWM24	M24	50	3	8.0	50
SWM27	M27	62	3	9.6	62
SWM30	M30	62	3	9.2	62

CERTIFICATES

X	Reat Construct 4 Whitehall Court Tel: +44 (03 20) Fac: +44 (03 20) 6 mail reconstruct www.stellconstru-	on Certification Schema Limite L. Westminister, London SW1A 2E 839 3960 Praf ange actioneruction.org action org
	EC Certificate	
	of	
Fa	ctory Production Control	(FPC)
	2273 - CPR - 0556	
in compliance with	Regulation 305/2011/EU of the European Parliament and of (the Construction Products Regulation or CPR) it has been stated that the construction product:	the Council of Ill March 2011
	Structural Components for Steel Structur	**
Marmonieed 85 EN 1090-1: 2009 + A1 2011	Type / Execution Class of the Construction Product Load bearing structural steal components up to EXC 4 according to SS EN 1080-22008+41.2011	Declaration Method 1, 2, 3e and 3b table A,1 of BS EN 1020-1, 2000 + A1/2011
-	placed on the market by	
	Petersen Stainless Rigging	Ltd
	and produced in the factory(ies)	
	Cowen Road, Blaydon on Tyne, Tyne and Wear NE	21 STW
is submitted by the r further testing of sam No. 2273 – Steel Cor the factory productor	reanulacturer to the mittal hype-leading of the product, a factory ples taken at the factory in according with a presentation base simulation Certification Scheme ILI - New performed the initial in control and performs the continuous surveillance, aslansmin production control.	production control and to the plan and that the neithed body impection of the factory and of ent and approval of the factory
Attestation	This certificate atteats that all provisions conce production control described in Arnes ZA of th BS EN 1090-1: 2009 + A1:2011 were applied.	rring the attestation of factory e standard
Date of Next Issue	September 2018	
Same of the second	and the state of t	
Date of this issue	to behavioer the	
Date of this issue Date of expiry	19 September 2018	
Date of this issue Date of expiry Validity Period	15 September 2018 19 September 2018 This certificate remains velid as long as the framovised standard in reference or the manufac or the FPC lear leve not model applicantly	conditions laid down in the turing conditions in the factory
Date of this lawse Date of expiry Validity Period This certificate will ren This will be inocitize scope of this certificat to obtered by consul	28 seguences are 19 September 2018 This cartificate remain wells as long as the factorised standard in reference or the manufac- or the FTC ball are on conditional significantly table current subject to the company mantelenge is system to request to the company mantelenge is system to request to the second standard standard standards to end the applicability of the relevant standards requirement for Stee Construction Conditionation requirement	conditions laid down in the buring conditions in the factory the required standard, other cardination requiring the to (see writing certificate) may
Date of this issue Date of expiry Validity Period This certificate will re- This will be monitored access of this certifica- te obtained by canad	20 september 2019 19 September 2019 This confliction remain weld as long as the networks of sandward in reference of the mouder or the FPC bard are not modified significantly tain current subject to the company mantaleng its system to inspany by titele Construction Certification (Subtene LM in and the application) of the insure transfer insurement tog Steer Construction Certification Scheme LM.	conditions laid down in the mining conditions are the factory the required standard, offer controllation requesting the to (one weeking contribute) may L. B.B.L.Donon .

sccs M	Beel Construction Certification Scheme Linited Whithmail Court, Westminister, London SWIA 253 Min + 44 (0) 20 7747 4799 Email score)intercontinuetors ing www.instecharter.ong	
ва	EN 1090-1:2009 + A1:2011	
Pet	ersen Stainless Rigging Ltd	
F	actory Production Control Schedule ertificate number: 2273 – CPR - 0556	
Product Type(s)/Range(s)		
Mason'y supports Vitridposts and parapet post Special fabrications Steel to-concents fabcony conne Steel to-concents fabcony or Teeston and compression to Sheer load connectors	n cloni clon	
Parent material(s)		
Material Grades from Group	e 1, 2, 3, 8 and 10 as defined in Table 1 of PD CEN ISO/TH 15508 2013	
Execution class(se) (in acc	ordance with BS EN 1093-2,2000)	
Eac 1, 2, 3 and 4		
Limitations (where applical	A)	
None		
Weiding Processes: (As pr	r EN (504963)	
Not Applicable		
Responsible Welding Co-	edinature: (As por EN ISO 54731)	
Not Applicable		
Date of first leave	September 2016	
Date of this issue	20 September 2018	
Date of expiry	19 September 2019	
Validity Period	This certificate remains walk as long as the conditions led down in the technical specification in reference (in connection with BC EN 1000- 12000-A12011) of the manufacturing conditions in the factory or the FPC teal as not encotine algorithmitis	
This certificate will remain o This will be monitored regul scope of this certificate and be obtained by consulting S	uned subject to the company maintaining its system to the mounted standard; will be their Countraction Cardinaution Scheme List. Further clashfolder regionating the man applicable of the network strandards requirements does welding cardinate) may see Construction Centrification Scheme LM.	
Slar	SL. Blackman.	
Chairman: Dr 5 Pika UnioNil CEng	Scherve Manager: St, Blackmen Sty Weoder Ein Die kescer Absilie Absilie Sty Weoder Ein Die kescer Absilie Absilie	

CONTACT US

For any more information on our architectural tension systems, please visit www.petersen-structural.co.uk Alternatively call us on +44 (0)191 414 0156 or email sales@petersen-structural.co.uk

Head Office Petersen Structural Rigging Limited Cowen Road, Blaydon on Tyne, Tyne & Wear, NE21 5TW

t: +44 (0) 191 414 0156 f: +44 (0) 191 499 0041 e: sales@petersen-structural.<u>co.uk</u> Scandinavia and Baltic Region Petersen Stainless Rigging AB Gothenburg

t: +46 73-388 23 88 e: sales@petersen-stainless.se South East Asia and Australasia Petersen Stainless SEA

Kuala Lumpur

t: +60 18 322 9178 e: SEA@petersen-stainless.co.uk

