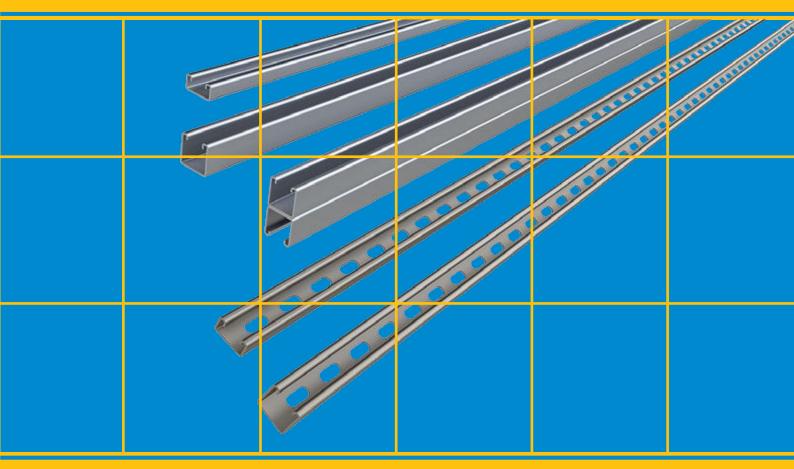
Power Solution Industries

DESIGN, ENGINEERING & MANUFACTURING COMPANY





PRODUCT CATALOGUE



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EDITION 2022



Engineered to Excellence



BSI KITEMARK CERTIFIED PRODUCTS

1 ST CABLE MANAGEMENT MANUFACTURING COMPANY IN MIDDLE EAST AND AFRICA

Power Solution Industries quality plan conforms comprehensivily to ISO 9001:2015, ISO 45001: 2018, ISO14001: 2015. The quality assessment and reviews are carried out by DET NORSKE VERITAS. The organization defines its quality objectives at the various levels of the company in order to achieve continual improvement in quality management system.

INTRODUCTION

Power Solution Industries offers a comprehensive Metal Framing System that conforms to BS 6946:1988. (Metal Channel Cable Support Systems for electrical installations)

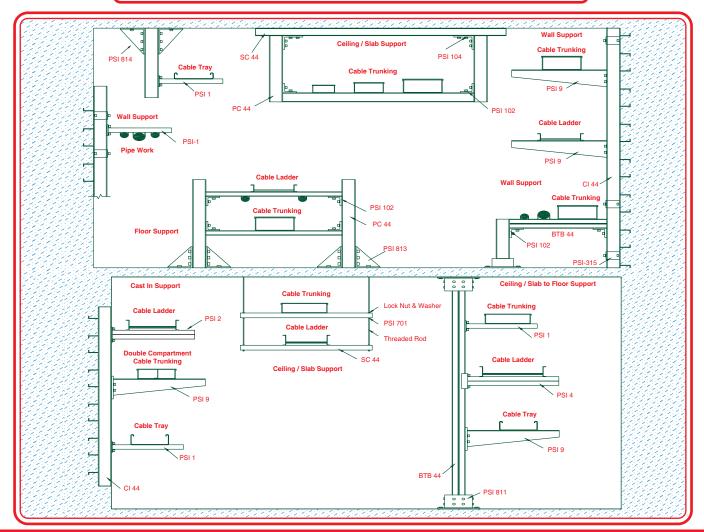
The Power Solution Industries Strut Metal Framing System incorporates the following features:

- Flexibility of elements of the system can be combined to create an unlimited range of structural designs.
- ★ Rigidity of easily assembled rigid structures can be created without the need for drilling and welding.
- ★ Adjustability of the position of components can be easily adjusted & structures can be demounted and components reused.
- ★ Competitiveness & high strength to weight and ease of assembly make this as a cost effective solution to support structural requirements.
- Multiple applications for structural support of mechanical as well as electrical services in a wide range of industries and construction projects.

STANDARD FINISHES

- HDG Hot dip Galvanized to BS EN ISO 1461 : 2009
- PG Pre-galvanized to BS EN 10346 : 2015
- **PC** Powder Coating to suit clients requirements
- PP Polypropelene Coating to suit clients requirements
- Stainless steel finish to required grades BS EN 10088 2 : 2014

PSI STRUT METAL FRAMING SYSTEM / TYPICAL SUPPORTS



PLAIN CHANNEL 41 X 41 (PC 44)

 Material thickness
 : 1.5 / 2.0 / 2.5 mm

 Weight
 : 1.58 / 2.1 / 2.64 Kgs/m

PLAIN CHANNEL 41 X 21 (PC 42)

Material thickness : 1.5 / 2.0 / 2.5 mm Weight : 1.11 / 1.48 / 1.84 Kgs/m

BACK TO BACK CHANNEL 41 X 41 (BTB 44)

Material thickness : 1.5 / 2.0 / 2.5 mm Weight : 3.16 / 4.21 / 5.28 Kgs/m

BACK TO BACK CHANNEL 41 X 21 (BTB 42)

Material thickness : 1.5 / 2.0 / 2.5 mm Weight : 2.68 / 3.58 / 4.47 Kgs/m

BOX CHANNEL 41 X 41 X 41 (BC 444)

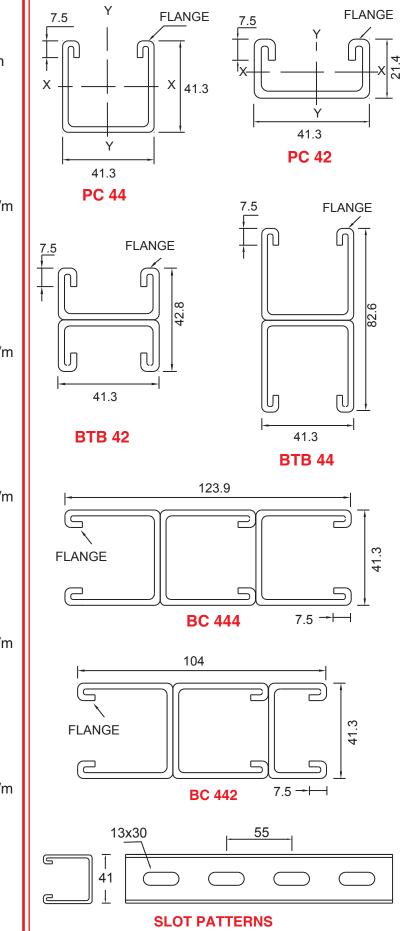
Material thickness : 1.5 / 2.0 / 2.5 mm Weight : 4.73 / 6.31 / 7.89 Kgs/m

BOX CHANNEL 41 X 41 X 21 (BC 442)

Material thickness : 1.5 / 2.0 / 2.5 mm Weight : 4.26 / 5.68 / 7.10 Kgs/m

SLOT PATTERNS

Strut channels are produced with slots also with a standard length of 3 mtrs. Extra long up to 6 mtrs. can also be produced on request.

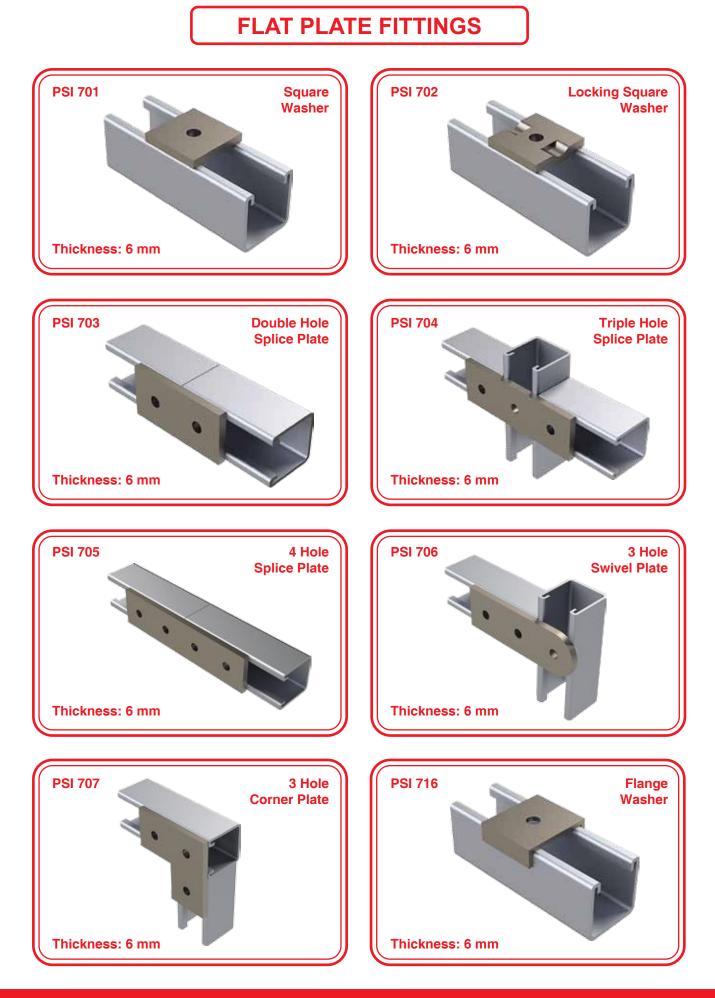


DECODIDITION	BINENOIONO	DESERVICE	TUIOK			
DESCRIPTION	DIMENSIONS	REFERENCE	THICK	THICKNESS (TH		
Plain channel	41 x 41 x 3000 mm	PC / 44 / THK / Finish	1.5	2.0	2.5	
Plain channel	41 x 21 x 3000 mm	PC / 42 / THK / Finish	1.5	2.0	2.5	
Slotted channel	41 x 41 x 3000 mm	SC / 44 / THK / Finish	1.5	2.0	2.5	
Slotted channel	41 x 21 x 3000 mm	SC / 42 / THK / Finish	1.5	2.0	2.5	
Back to Back channel	41 x 41 x 3000 mm	BTB / 44 / THK / Finish	1.5	2.0	2.5	
Back to Back channel	41 x 21 x 3000 mm	BTB / 42 / THK / Finish	1.5	2.0	2.5	
Box Channel	41 x 41 x 41 x 3000 mm	BC / 444 / THK / Finish	1.5	2.0	2.5	
Box Channel	41 x 41 x 21 x 3000 mm	BC / 442 / THK / Finish	1.5	2.0	2.5	
Concrete Inserts	41 x 41 x 3000 mm	CI / 44 / THK / Finish		2.0	2.5	
Concrete Inserts	41 x 21 x 3000 mm	CI / 42 / THK / Finish		2.0	2.5	
Channel End Caps	41 x 41	CEC / 44				
Channel End Caps	41 x 21	CEC / 42				

STRUT CHANNELS



* All Strut Channels are produced to the standard length of 3 mts

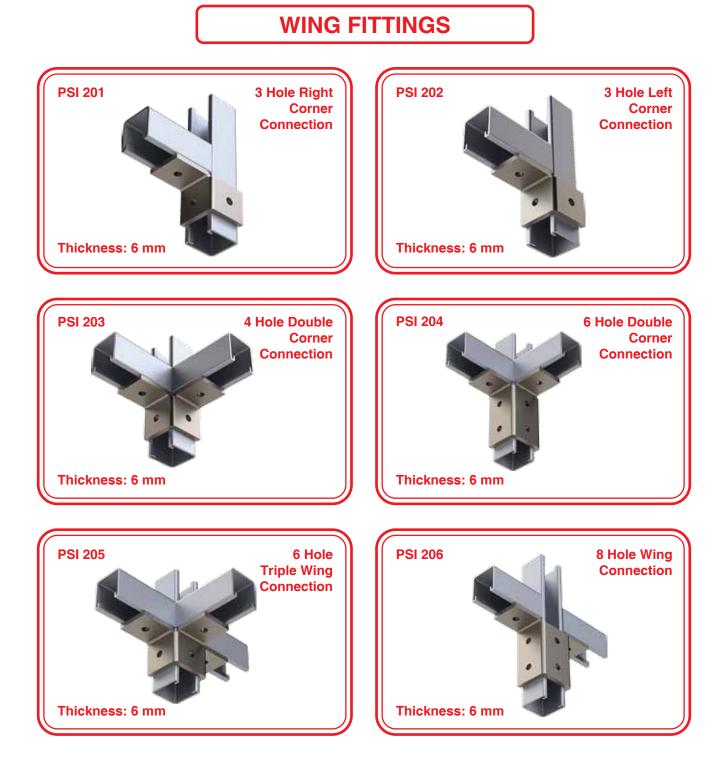




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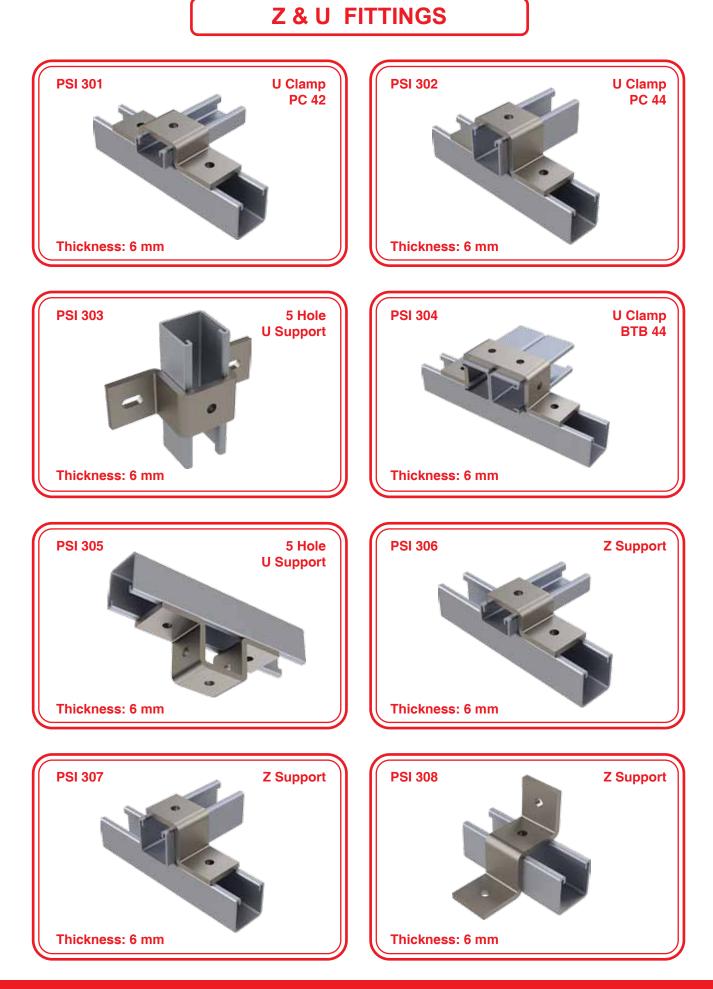
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CHANNEL NUTS

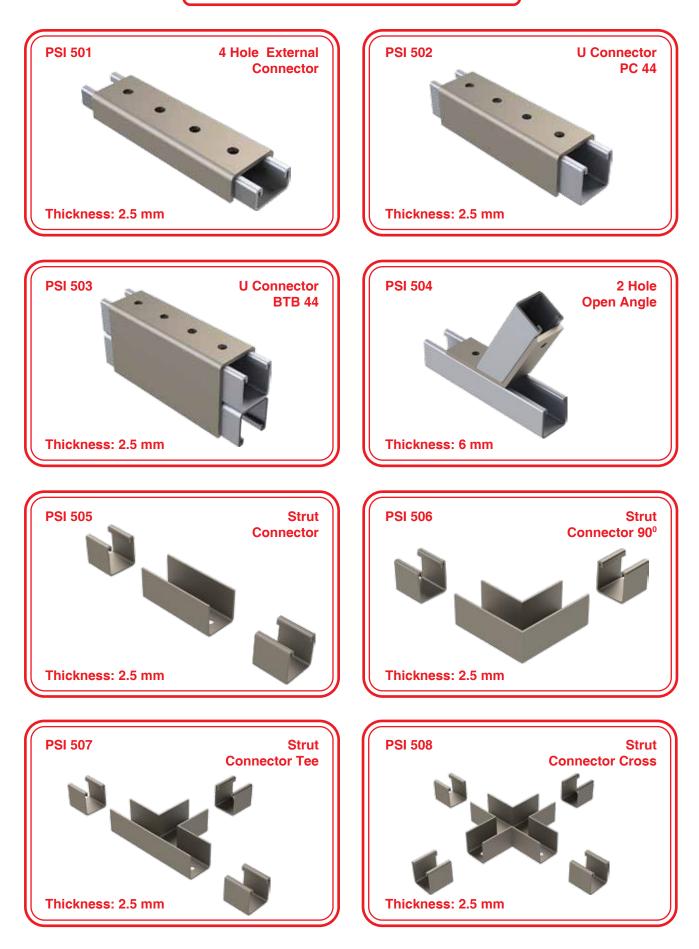
DESCRIPTION	6 mm	8 mm	10 mm	12 mm
Channel Nut Without Spring	M6 / CNWS	M8 / CNWS	M10 / CNWS	M12/CNWS
Channel Nut With Short Spring	M6 / CNSS	M8 / CNSS	M10 / CNSS	M12 / CNSS
Channel Nut With Long Spring	M6 / CNLS	M8 / CNLS	M10 / CNLS	M12 / CNLS

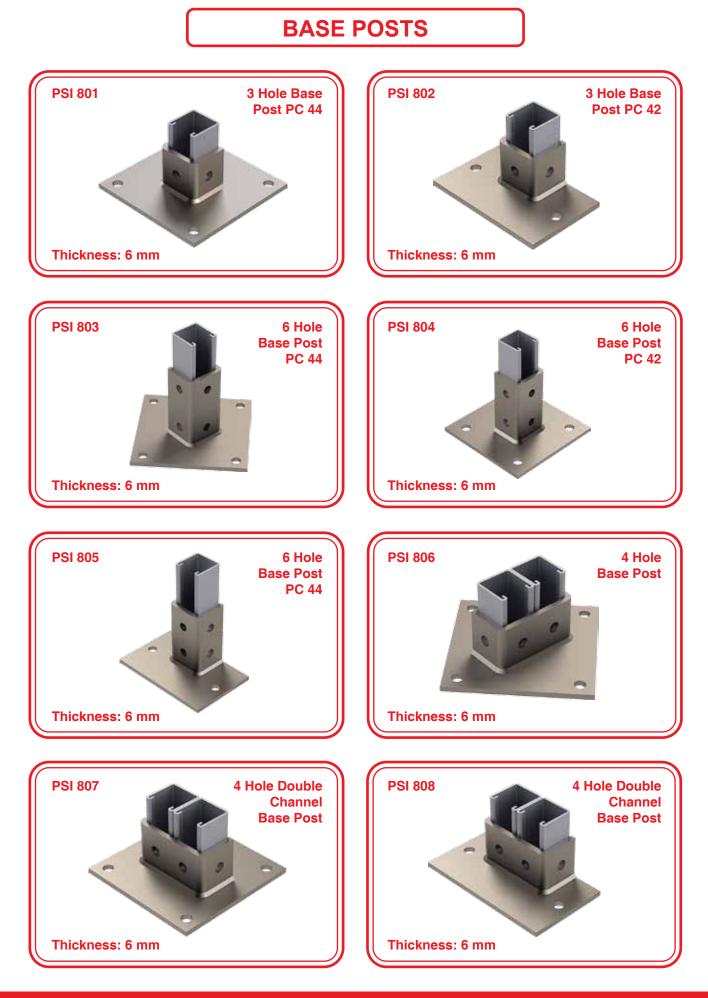


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CHANNEL CONNECTORS







CANTILEVERS

DESCRIPTION	SIZE	REFERENCE
All	dimensions are i	n mm
Cantilever Arm	75	TYPE / CA / 75 / THK / Finish
Cantilever Arm	100	TYPE / CA / 100 / THK / Finish
Cantilever Arm	150	TYPE / CA / 150 / THK / Finish
Cantilever Arm	225	TYPE / CA / 225 / THK / Finish
Cantilever Arm	300	TYPE / CA / 300 / THK / Finish
Cantilever Arm	450	TYPE / CA / 450 / THK / Finish
Cantilever Arm	600	TYPE / CA / 600 / THK / Finish
Cantilever Arm	750	TYPE / CA / 750 / THK / Finish
Cantilever Arm	900	TYPE / CA / 900 / THK / Finish
Cantilever Arm	1000	TYPE / CA / 1000 / THK / Finish

 \star For the selection of thickness refer page 2

DESCRIPTION	ТҮРЕ
Cantilever Arm	PSI 1
Cantilever Arm	PSI 2
Cantilever Arm	PSI 3
Cantilever Arm	PSI 4
Cantilever Arm	PSI 5
Cantilever Arm	PSI 6
Cantilever Arm	PSI 7
Cantilever Arm	PSI 8
Cantilever Arm	PSI 9
Cantilever Arm	PSI 10



STANDARD FINISHES

- HDG Hot dip Galvanized to BS EN ISO 1461 : 2009
- PG Pre-galvanized to BS EN 10346 : 2015
- **PC** Powder Coating to suit clients requirements
- PP Polypropelene Coating to suit clients requirements
- SS Stainless steel finish to required grades BS EN 10088 2 : 2014
- To order the Cantilever Arms for your designed installation, specify the type of the Cantilever that is required.
- Thickness of the Cantilever is to be considered 2.0 mm if not specified.
- \star Types are given in the table above and displayed on the next page.







FASTENERS



PROPERTIES OF SECTION PROFILES

	AXIS ' XX '												
Component	Moment	of Inertia '	l'mm ⁴	Section	Modulus '	Z'mm ³	Radius of Gyration ' R ' mm			Maximum Bending Moment ' M ' Nm			
	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	
PC 44	58605	75513	91181	3285	4272	5205	16.88	16.73	16.59	482.48	627.43	764.52	
PC 42	7929	9819	11393	981	1241	1470	7.43	7.25	7.07	144.07	182.27	215.88	
BTB 44	228178	294233	355559	7487	9767	11941	23.55	23.36	23.16	1099.60	1434.53	1753.86	
BTB 42	68004	87029	104349	4099	5290	6395	15.39	15.26	15.13	602.02	776.92	939.23	
BC 444	760764	988644	1204305	18833	24572	30057	35.04	34.9	34.76	2766.07	3609.08	4414.58	
BC 442	500712	647930	786033	14489	18819	22916	29.97	29.82	29.66	2128.10	2763.98	3365.84	

	AXIS 'YY '												
Component	Moment	of Inertia	l'mm ⁴	Section	Modulus	'Z'mm ³	Radius of Gyration ' R ' mm			Maximum Bending Moment ' M ' Nm			
Component	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	
PC 44	45952	58672	70200	2788	3603	4364	14.95	14.75	14.56	409.49	529.24	640.94	
PC 42	34002	43514	52174	2049	2645	3197	15.39	15.26	15.13	301.01	388.46	469.61	
BTB 44	117208	151028	182362	6570	8544	10410	16.88	16.73	16.59	965.01	1254.87	1529.04	
BTB 42	35932	45520	54061	2401	3110	3775	11.19	11.04	10.89	352.60	456.77	554.49	
BC 444	176522	227251	274253	9899	12859	15660	16.88	16.73	16.59	1453.94	1888.73	2299.99	
BC 442	151918	195252	235246	8663	11232	13652	16.51	16.37	16.23	1272.43	1649.76	2005.08	

LOADING TABLES

Distance				PLAIN	CHANN	EL 41 x 4	41 (PC	44)				
between Supports		orking Load across Span		UDL at L / 180 Deflection kN			UDL at L / 360 Deflection kN			Maximum Axial Column Load kN		
mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm
500	7.72	10.04	12.23							17.22	22.58	27.75
1000	3.86	5.02	6.12				2.63	3.38	4.08	14.78	19.38	23.82
1500	2.57	3.35	4.08	2.33	3.01	3.63	1.17	1.50	1.82	12.34	14.66	18.02
2000	1.93	2.51	3.06	1.31	1.69	2.04	0.66	0.85	1.02	8.87	10.45	12.84
2500	1.54	2.01	2.45	0.84	1.08	1.31	0.42	0.54	0.65	6.43	7.58	9.32
3000	1.29	1.67	2.04	0.58	0.75	0.91	0.29	0.38	0.45	4.63	5.56	6.83

Distance				PLAI	N CHAN	NEL 41 ×	21 (PC	42)					
between supports		orking Load across Span		UDL at L / 180 Deflection kN			UDL at L / 360 Deflection kN			Maximum Axial Column Load kN			
(mm)	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	
500	2.31	2.92	3.45				1.42	1.76	2.04	10.32	13.43	15.10	
1000	1.15	1.46	1.73	0.71	0.88	1.02	0.36	0.44	0.51	4.93	6.42	7.12	
1500	0.77	0.97	1.15	0.32	0.39	0.45	0.16	0.20	0.23	2.42	3.15	3.56	
2000	0.58	0.73	0.86	0.18	0.22	0.26	0.09	0.11	0.13	1.61	2.10	2.56	
2500	0.46	0.58	0.69	0.11	0.14	0.16	0.06	0.07	0.08	1.61	2.10	2.56	
3000	0.38	0.49	0.58	0.08	0.10	0.11	0.04	0.05	0.06	1.61	2.10	2.56	

Distance between			BACI	к то ва	СК СНА	NNEL 41	x 41 (B	TB 44)				
supports		orking Load across Span		UDL at L / 180 Deflection kN			UDL at L / 360 Deflection kN			Maximum Axial Column Load kN		
(mm)	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm
500	17.59	22.95	28.06							35.22	46.18	56.75
1000	8.80	11.48	14.03							33.16	43.48	53.43
1500	5.86	7.65	9.35				4.54	5.86	7.08	29.56	38.76	47.63
2000	4.40	5.74	7.02				2.56	3.29	3.98	24.68	32.36	39.76
2500	3.52	4.59	5.61	3.27	4.22	5.10	1.64	2.11	2.55	20.05	26.29	32.31
3000	2.93	3.83	4.68	2.27	2.93	3.54	1.14	1.46	1.77	15.94	20.90	22.78

LOADING TABLES

Distance	BACK TO BACK CHANNEL 41 x 21 (BTB 42)												
between Supports		orking Load across Spar		UDL at L / 180 Deflection kN UDL at L / 3				_ / 360 Defle	ction kN	Maximum Axial Column Load kN			
mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	
500	9.63	12.43	15.03							24.04	31.30	38.17	
1000	4.82	6.22	7.51				3.05	3.90	4.67	20.64	26.86	32.76	
1500	3.21	4.14	5.01	2.71	3.47	4.16	1.35	1.73	2.08	15.61	20.32	22.22	
2000	2.41	3.11	3.76	1.52	1.95	2.34	0.76	0.97	1.17	9.87	12.85	15.67	
2500	1.93	2.49	3.01	0.97	1.25	1.50	0.49	0.62	0.75	7.18	9.34	11.39	
3000	1.61	2.07	2.50	0.68	0.87	1.04	0.34	0.43	0.52	5.38	7.01	8.55	

Distance				BOX C	HANNEI	_ 41 x 41	x 41 (B	C 444)					
between Supports		orking Load across Spai	Load as total Span kN UDL at L / 180 Deflection k			ction kN	UDL at	L / 360 Defle	ection kN	Maximum Axial Column Load kN			
mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	
500	44.26	57.75	70.63							53.45	70.01	85.98	
1000	22.13	28.87	35.32							53.06	69.50	85.35	
1500	14.75	19.25	23.54							49.96	65.44	80.37	
2000	11.06	14.44	17.66				8.52	11.07	13.49	47.64	62.4	76.63	
2500	8.85	11.55	14.13				5.45	7.09	8.63	41.05	53.77	66.04	
3000	7.38	9.62	11.77				3.79	4.92	5.99	37.18	48.70	59.81	

Distance between Supports mm	BOX CHANNEL 41 x 41 x 21 (BC 442)											
	Safe Working Load as total UDL across Span kN			UDL at L / 180 Deflection kN			UDL at L / 360 Deflection kN			Maximum Axial Column Load kN		
	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm	1.5 mm	2.0 mm	2.5 mm
500	34.05	44.22	53.85							48.09	62.86	77.05
1000	17.02	22.11	26.93							46.70	61.04	74.82
1500	11.35	14.74	17.95				9.97	12.90	15.65	42.86	56.03	68.67
2000	8.51	11.06	13.46				5.61	7.26	8.80	40.07	52.39	64.21
2500	6.81	8.84	10.77				3.59	4.64	5.63	33.45	43.73	53.60
3000	5.67	7.37	8.98	4.98	6.45	7.83	2.49	3.22	3.91	27.18	35.53	43.55

★ The values mentioned in the table in red colour indicate the Slender Sections

 \star In case of no values mentioned the load as per the respective safe working load shall be considered

Important notes on loading data supplied: Loads have been treated as imposed loads in accordance with BS 5950 with a load factor of 1.6

Beam Load Assumptions

- ★ Beams are simply supported over span L.
- \star Load is applied perpendicular to the axis XX.
- \star There is lateral restraint to the beams.
- ★ No restriction to loads which may exceed slip resistance of bracket fixings.

Column Load Assumptions

- ★ Distance between supports is the "effective length" of column.
- \star Slenderness ratio is calculated with the lesser value of radius of gyration of the profile, and restricted to L/r < 180.
- In practical assembly conditions, using brackets, it will be necessary to calculate the bending moment and combine with axial column loading to establish a safe working load.

Strut Channel Bolt (Grade 4.6)	Recommended Maximum Load kN (0.8 x A _t x P _t)				
M12	16.18				
M10	11.13				
M 8	7.03				
M 6	3.86				

PULL OUT LOADS

Resistance to Slip:

- ★ To provide resistance to slip at bolted connections it is recommended that M12 set bolt (Gr. 4.6) should be used with M12 strut channel nuts, torque tightened to 40 N-m
- ★ The loading data for bracket connection is given with other data on brackets, thiis incoperates resistance to slip.

QUALITY CERTIFICATIONS

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Quality Policy

"Excellence in Engineering"

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DESIGN, ENGINEERING & MANUFACTURING COMPANY

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Engineered to Excellence

Power Solution Industries