

Rapid installation system

The Metstrut rapid installation system offers end users and installers a substantial time saving during the installation process of up to 50%

Metstrut has developed a new rapid installation system that comprises of a unique 2mm thick ribbed channel and a range of pre assembled brackets.

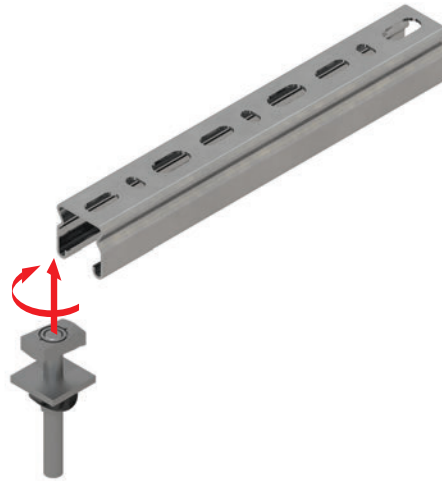


The high tensile spring washer draws the channel nut to engage the channel lips. The bracket is then held in place ready for final positioning and tightening to the correct torque.

Stud connectors are inserted in exactly the same way.

This process allows framework assemblies to be site built very quickly, to facilitate the implementation of fast track programmes.

On projects requiring a substantial amount of brackets, installation times can be reduced by over 50%.



The channel profile is available as standard in pre galvanised material, with post hot dip galvanised to order, in 2m, 4m and 6m lengths. Alternative lengths are available to order and Metstrut also offers a cut-to-length service. The Multi slot back allows for a flexible range of fixings from M6 to M12, at 100mm centres, to either the supporting structure or bracketry.

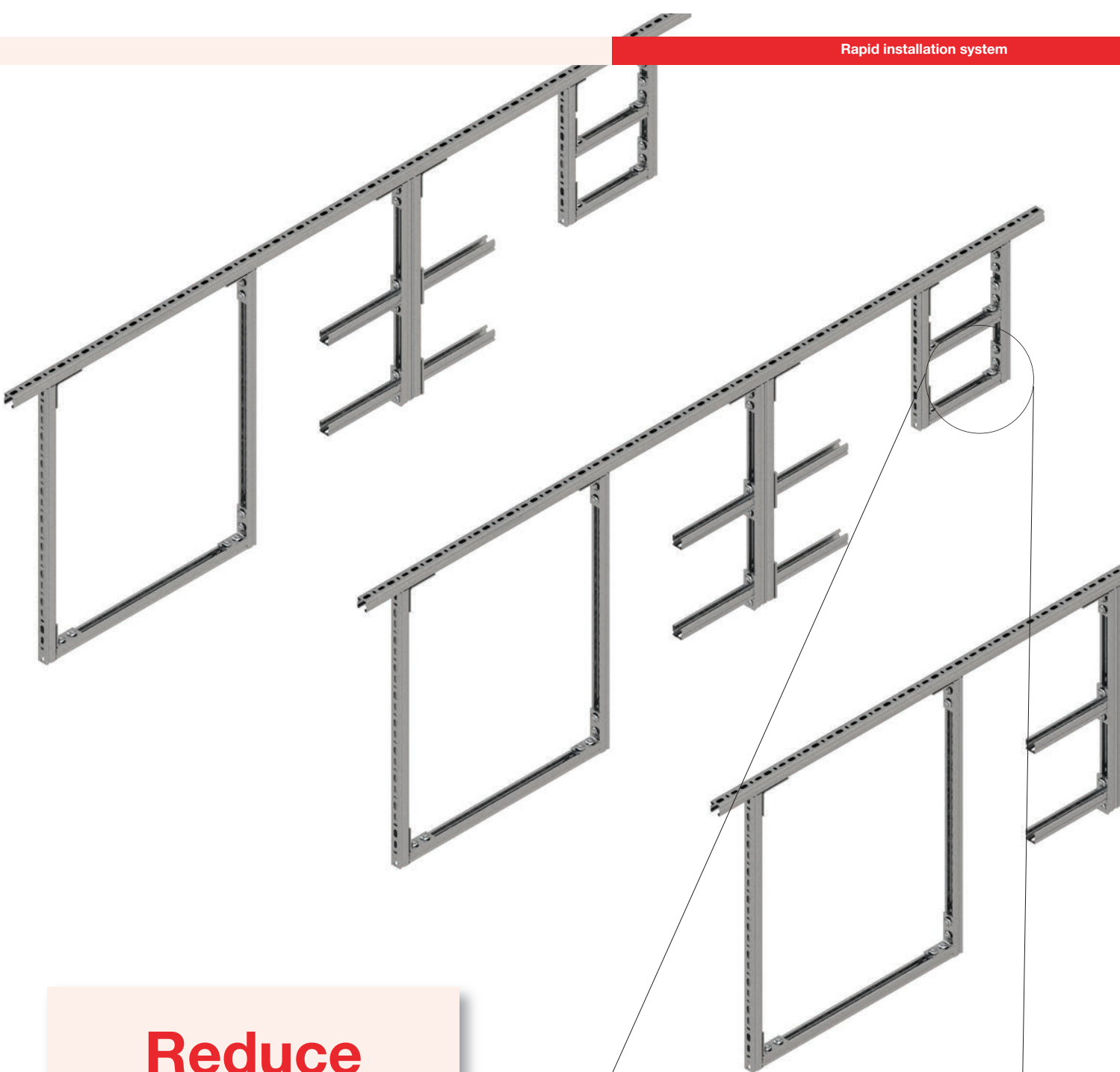
All components are fully compatible with other Metstrut Channels and brackets for a fully integrated system.

The unique and patented "Rapid Installation System" has pre assembled channel nuts incorporated into the bracket complete with M10 hex head bolt.

The brackets are quickly attached to the channel by simply aligning the channel nut into the open face of the channel. This is followed by depressing the head of the bolt and twisting it through 90°, then releasing.

Where the channel is used in situations that require the fixing bolts to pass through the back of the channel from the inside, a thin wall socket tool is available for M10 fixings





**Reduce
installation
time by up to
50%**



Rapid installation system

Introduction to load tables

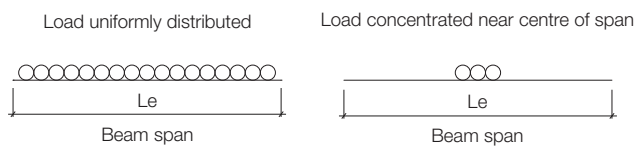
Comprehensive load tables are provided for each channel series.

Basis of design and formulation of load tables

1. Safe loads are calculated in accordance with BS 5950 - 5:1998
2. Minimum Yield Stress (Y_s) 280N/mm²
3. Beams are assumed simply supported and must be provided with adequate restraint for lateral torsional buckling on the given span.
4. Beam loads are supplied through the shear centre of the section in the direction indicated in the tables. Alternative beam safe loads are provided for a uniformly distributed load concentrated near the centre of the span.
5. Alternative column safe loads are provided for load applied at the centroid of the section or at the section face.
6. For greater eccentricities please consult Metstrut.
7. 'Le' is the beam span between supports or the column effective length determined in accordance with Table 9, BS 5950 - 5:1998.

NB: Maximum slenderness ratio for columns permitted by BS 5950 - 5:1998 is 180. If this is exceeded, then provide additional restraints or use a bigger section.

Example:



Beam loads and corresponding deflections are calculated at a stress of 175N/mm² i.e.: using a global factor of safety of 1.6 to determine safe working loads from limit state analysis (ultimate stress/1.6 = 175N/mm²).

Beam safe loads tabulated with corresponding deflections may be used in the rare case where excessive deflection does not impair the strength or efficiency of the structure or its components, or cause damage to the supported work.

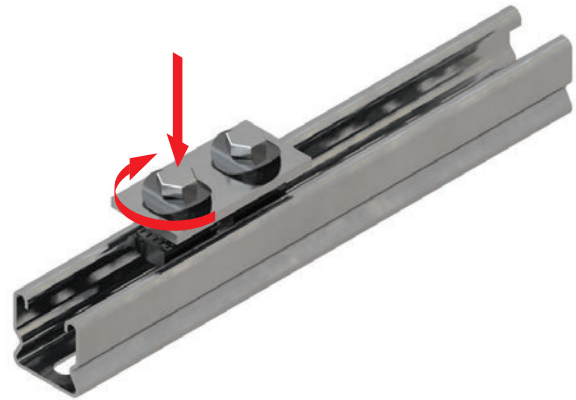
Alternative safe loads are tabulated with deflections limited to span/200 or span/360 at the discretion of the designer and recommended where deflections are critical. It is easily recognisable from the tables whether the design of the beam is governed by deflection or stress on a given span i.e.: the critical load is highlighted in colour.

Beam loads are generally applied at the column face via the connection bracket. Therefore column safe load tables are provided allowing for this eccentricity of load from the centroid of the section.

Connections

Integral fittings

Pre-assembled nuts are designed to be rapidly inserted into the channel and locked into position by a simple push and twist action. They can then be easily adjusted to their final position and tightened to the correct torque.



Channel sockets

To provide a totally flexible product range, specially designed sockets can be used to fit between the internal lips of the channel to facilitate tightening of bolts through the slotted back. This allows fixings to be used from both sides of the channel quickly and efficiently.

M10CS1/2

1/2in drive

M10SCS3/8

3/8in drive

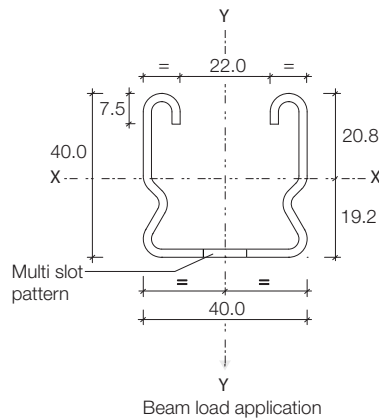
The sockets are available for M10 hex head bolts and with two drive sizes 1/2in and 3/8in.

Recommended maximum load 110Nm.



Section properties										Safe load tables										
										Le (m)	Safe working loads in kg uniform (kg) Load		Def. limit span/200 (kg)	Def. limit span/360 (kg)	Safe working loads in kg concentrated (kg) Load		Def. limit span/200 (kg)	Def. limit span/360 (kg)	Safe column loads kg at centroid	Safe column loads kg at face
Area	Wt	lxx	Zxx	Zxx	rxx	lyy	Zyy	ryy		0.6	530	1.41	530	530	265	1.13	265	265	3635	1198
cm ²	kg/m	cm ⁴	(top)	(btm)	cm	cm ⁴	cm ³	cm		0.7	454	1.92	454	454	227	1.54	227	227	3275	1140
			cm ³	cm ³						0.8	397	2.51	397	352	199	2.01	199	199	2883	1074
2.50	1.95	5.06	2.23	2.41	1.42	6.67	3.34	1.64		0.9	353	3.17	353	278	177	2.54	177	174	2514	1005
										1.0	318	3.92	318	225	159	3.13	159	141	2196	938
										1.1	289	4.74	289	186	144	3.79	144	116	1933	876
										1.2	265	5.64	265	157	132	4.51	132	98	1716	819
										1.3	245	6.62	240	133	122	5.30	122	83	1539	768
										1.4	227	7.68	207	115	114	6.14	114	72	1392	721
										1.5	212	8.82	180	100	106	7.05	106	63	1268	680
										1.6	199	10.03	158	88	99	8.02	99	55	1164	642
										1.7	187	11.32	140	78	93	9.06	88	49	1075	608
										1.8	177	12.69	125	70	88	10.16	78	43	998	577
										1.9	167	14.14	112	62	84	11.32	70	39	931	548
										2.0	159	15.67	101	56	79	12.54	63	35		
										2.1	151	17.28	92	51	76	13.82	57	32		
										2.2	144	18.96	84	47	72	15.17	52	29		
										2.3	138	20.73	77	43	69	16.58	48	27		
										2.4	132	22.57	70	39	66	18.05	44	24		
										2.5	127	24.49	65	36	64	19.59	41	23		
										2.6	122	26.49	60	33	61	21.19	38	21		
										2.7	118	28.56	56	31	59	22.85	35	19		
										2.8	114	30.72	52	29	57	24.57	32	18		
										2.9	110	32.95	48	27	55	26.36	30	17		
										3.0	106	35.26	45	25	53	28.21	28	16		

RS4020-S



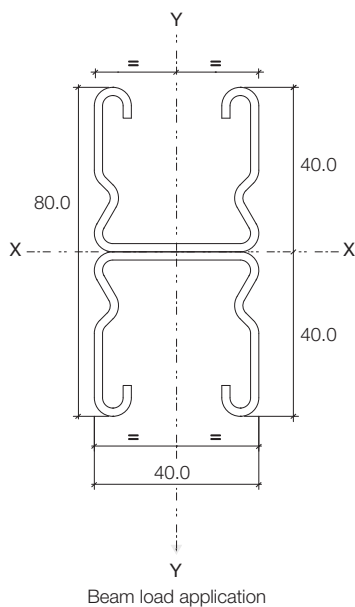
										2.0	159	15.67	101	56	79	12.54	63	35		
										2.1	151	17.28	92	51	76	13.82	57	32		
										2.2	144	18.96	84	47	72	15.17	52	29		
										2.3	138	20.73	77	43	69	16.58	48	27		
										2.4	132	22.57	70	39	66	18.05	44	24		
										2.5	127	24.49	65	36	64	19.59	41	23		
										2.6	122	26.49	60	33	61	21.19	38	21		
										2.7	118	28.56	56	31	59	22.85	35	19		
										2.8	114	30.72	52	29	57	24.57	32	18		
										2.9	110	32.95	48	27	55	26.36	30	17		
										3.0	106	35.26	45	25	53	28.21	28	16		

$\frac{\alpha Le}{r_{xx}} > 180$

Area	Wt	lxx	Zxx	Zxx	rxx	lyy	Zyy	ryy	0.6	1645	0.80	1645	1645	823	0.64	823	823	9496	2288
cm ²	kg/m	cm ⁴	(top)	(btm)	cm	cm ⁴	cm ³	cm	0.7	1410	1.09	1410	1410	705	0.87	705	705	9308	2262
			cm ³	cm ³					0.8	1234	1.42	1234	1234	617	1.14	617	617	9086	2233
5.56	3.90	27.67	6.92	6.92	2.23	13.70	6.85	1.60	0.9	1097	1.80	1097	1097	548	1.44	548	548	8819	2200
									1.0	987	2.22	987	987	494	1.78	494	494	8494	2161
									1.1	897	2.69	897	897	449	2.15	449	449	8101	2116
									1.2	823	3.20	823	823	411	2.56	411	411	7638	2058
									1.3	759	3.76	759	730	380	3.01	380	380	7118	1990
									1.4	705	4.36	705	629	353	3.49	353	353	6569	1916
									1.5	658	5.00	658	548	329	4.00	329	329	6020	1836
									1.6	617	5.69	617	482	308	4.55	308	301	5495	1754
									1.7	581	6.42	581	427	290	5.14	290	267	5010	1670
									1.8	548	7.20	548	381	274	5.76	274	238	4569	1586
									1.9	520	8.03	520	342	260	6.42	260	214	4174	1504
									2.0	494	8.89	494	308	247	7.11	247	193	3821	1423
									2.1	470	9.80	470	280	235	7.84	235	175	3506	1346
									2.2	449	10.76	449	255	224	8.61	224	159	3226	1271
									2.3	429	11.76	420	233	215	9.41	215	146	2976	1199
									2.4	411	12.80	385	214	206	10.24	206	134	2753	1132
									2.5	395	13.89	355	197	197	11.12	197	123	2553	1068
									2.6	380	15.03	328	182	190	12.02	190	114	2373	1007
									2.7	366	16.21	305	169	183	12.96	183	106	2211	951
									2.8	353	17.43	283	157	176	13.94	176	98	2065	898
									2.9	340	18.70	264	147	170	14.96	165	92		
									3.0	329	20.01	247	137	165	16.01	154	86		

RS4020-C2

(Combination comprising 2 no RS4020)



										2.0	494	8.89	494	308	247	7.11	247	193	3821	1423
										2.1	470	9.80	470	280	235	7.84	235	175	3506	1346
										2.2	449	10.76	449	255	224	8.61	224	159	3226	1271
										2.3	429	11.76	420	233	215	9.41	215	146	2976	1199
										2.4	411	12.80	385	214	206	10.24	206	134	2753	1132
										2.5	395	13.89	355	197	197	11.12	197	123	2553	1068
										2.6	380	15.03	328	182	190	12.02	190	114	2373	1007
										2.7	366	16.21	305	169	183	12.96	183	106	2211	951
										2.8	353	17.43	283	157	176	13.94	176	98	2065	898
										2.9	340	18.70	264	147	170	14.96	165	92		
										3.0	329	20.01	247	137	165	16.01	154	86		

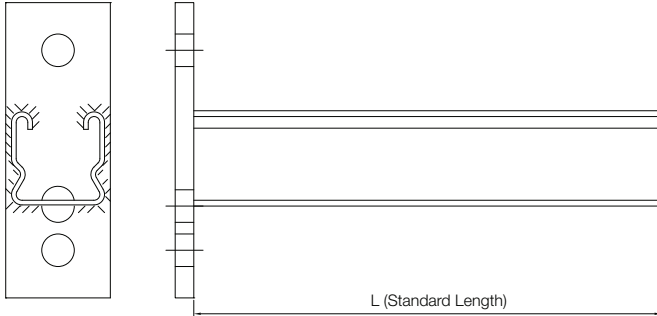
$\frac{\alpha Le}{r_{yy}} > 180$

Rapid installation system

Rapid cantilever arm details Cantilever arms - single

Finish: Post hot dip galvanised as standard

Ref	L (mm)	Wt (kg)
RS150A	150	0.69
RS300A	300	1.01
RS450A	450	1.33
RS600A	600	1.65
RS750A	750	1.97



Recommended safe loads (kg.) for arm bolted to 2.0mm thick channel (M12 bolt torque 65Nm)

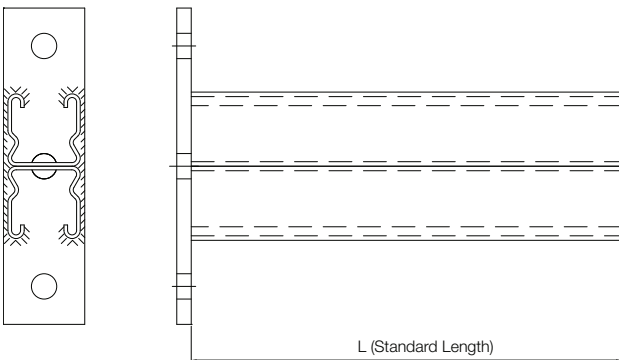
X (m)	Total uniformly distributed load	Concentrated load
0.10	412	361
0.15	385	265
0.20	361	199
0.25	318	159
0.30	265	133
0.35	227	114
0.40	199	99
0.45	177	88
0.50	159	80
0.55	145	72
0.60	133	66
0.65	122	61
0.70	114	57
0.75	106	53

NB: Arms have been independently tested (M12 bolt torque 65 Nm). Tabulated safe loads satisfy minimum factor of safety of 3 on continuous slip and limited design stresses in channel arms and their fixings.

Cantilever arms - double

Finish: Post hot dip galvanised as standard

Ref	L (mm)	Wt (kg)
RS150E	150	1.10
RS300E	300	1.75
RS450E	450	2.39
RS600E	600	3.04
RS750E	750	3.57



Recommended safe loads (kg.) for arm bolted to 2.0mm thick channel (M12 bolt torque 65Nm)

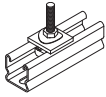
X (m)	Total uniformly distributed load	Concentrated load
0.10	412	361
0.15	385	322
0.20	361	290
0.25	340	264
0.30	322	242
0.35	305	224
0.40	290	208
0.45	276	194
0.50	264	182
0.55	253	171
0.60	242	162
0.65	233	153
0.70	224	146
0.75	215	139

NB: Arms have been independently tested (M12 bolt torque 65 Nm). Tabulated safe loads satisfy minimum factor of safety of 3 on continuous slip and limited design stresses in channel arms and their fixings.

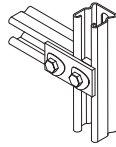
Brackets

Finish: post hot dip galvanised as standard

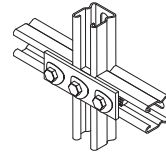
RSF501



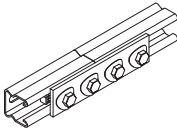
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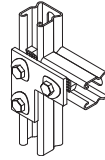
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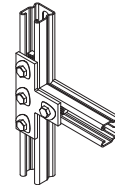
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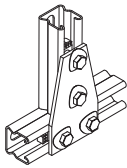
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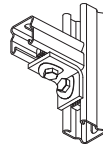
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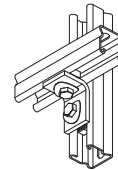
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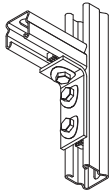
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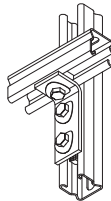
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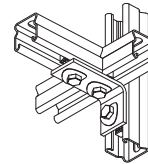
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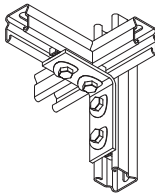
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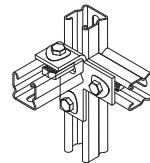
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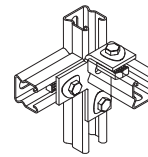
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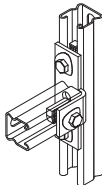
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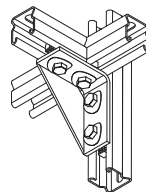
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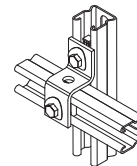
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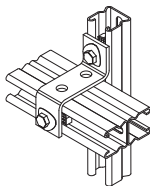
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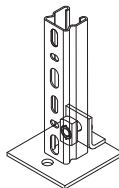
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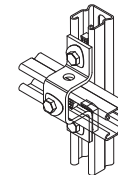
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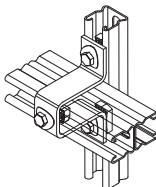
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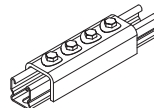
RSU801



RSU802



RSU806



Product range summary

Manufacturing solutions

Metstrut manufactures a broad range of cable management products that includes Cable Tray, Cable Ladder, Cable Trunking, Metal Framing and Rapid Installation systems.

Centrally located within the West Midlands close to major motorway networks, Metstrut is able to offer a National service through major electrical and mechanical distributors.

With over 10,000 m² of manufacturing and warehouse space, and state of the art equipment, a strong emphasis is placed on service, and a high level of 'on-time in-full' delivery performance is maintained.

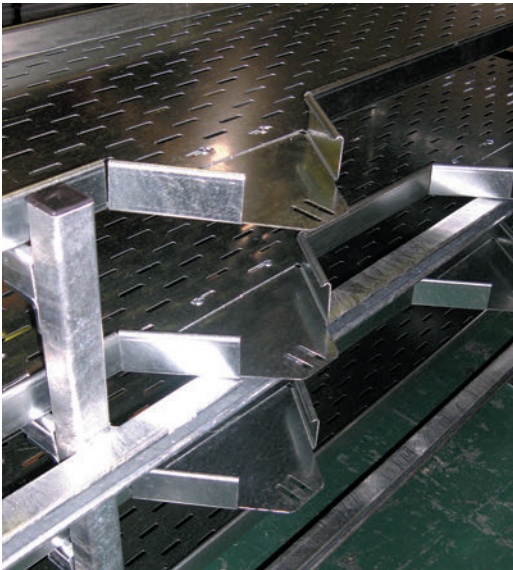
Comprehensive stocks are carried at all times and replenished through lean manufacturing principles.

With the ever-increasing demand from clients for value added products and services, Metstrut offers a comprehensive pre-fabrication facility that ranges from cut lengths of channel to bolted or welded frames both in 2D and 3D configuration. Cable tray, ladder and trunking can be pre-installed if required. This allows the contractor to schedule his requirements to overcome space and labour restrictions on site. Waste is also greatly reduced and site safety enhanced.



Significant cost savings can be achieved by opting for prefabrication off site and skilled electricians are released to do what they are best at.

Metstrut also offers a full design service for its products and services to ensure the correct selection is made for the most cost effective solution. When required, CAD drawings are produced to ensure a full understanding of the solution is achieved.



Product range

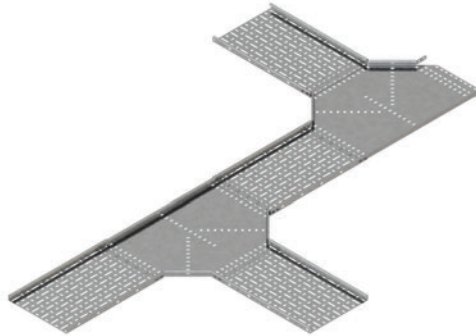
Cable ladder systems

Metstrut cable ladder systems are widely accepted due to their strength to weight ratio and simplicity of design. Easily installed and with a comprehensive range of accessories, Metstrut cable ladder systems can be found in applications throughout the UK, Ireland and mainland Europe.



Cable tray systems

Metstrut cable tray systems have been designed after considerable consultation with end users and installers to arrive at a final design that satisfies all of their requirements. Each cable tray range features a unique slotting pattern in the base and the return flange ranges have slotted sides. Additionally, each tray range has the same footprint to aid setting out when final loadings are not yet available.



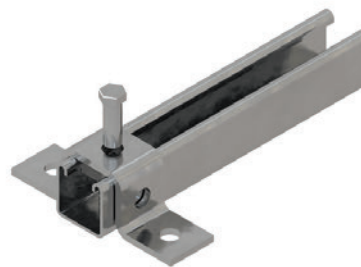
Cable trunking systems

Metstrut cable trunking systems are available as standard distribution trunking and also as lighting trunking. Manufactured on state of the art computer controlled equipment with a high level of automation, Metstrut cable trunking is of economic design to provide competitive solutions.



Metal framing systems

Metstrut offers the traditional channel system in a variety of profiles and gauges with a large range of fittings and fasteners. The fully tested system can be reliably used for a wide application base for the support of mechanical and electrical services.



A Rapid Installation version is also available with a unique channel profile and pre-assembled fittings with integral fixings. By using this product range, installation times are drastically reduced.

Both systems can be fully integrated for total flexibility.

