



Mezzanine
Design Guide

Steadmans is one of the UK's leading manufacturers and suppliers of **high-quality building envelope solutions.**

With a proud heritage dating back to 1911, we specialise in the manufacture of roofing and cladding systems, secondary steelwork, and associated accessories for a wide range of construction sectors including **Industrial, Agricultural, Offsite, Modular, and Commercial.**

Operating from our state-of-the-art manufacturing facility near Carlisle, Steadmans provides full **national coverage** supported by regional sales teams. We deliver reliable, high-performance solutions that support projects across the UK and Ireland.

Key Facts

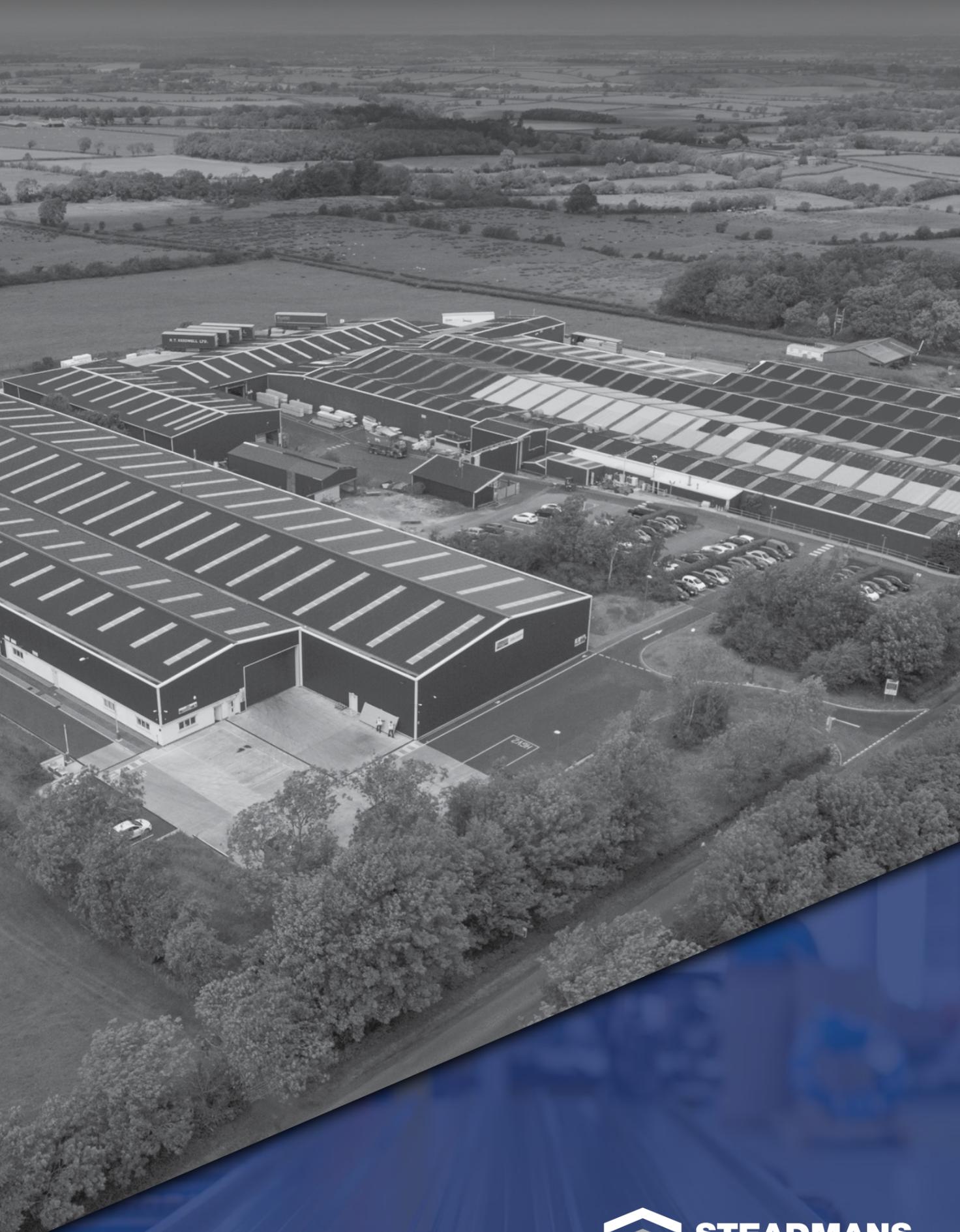
- Established over **100 years** ago, operating from our Warnell site since 1988
- Became **part of SIG plc** in 2008, now operating under Building Solutions (National) Ltd
- Employs over 150 staff including experienced designers, engineers, and production **specialists**
- Offers full **technical support** including CAD details, specification guidance, and design input
- Known for **reliable** lead times, **competitive** pricing, and a **comprehensive** product range

Our Portfolio

- Single Skin Profiles
- Composite Insulated Panels (AS35 & ASMR)
- Secondary Steelwork including Purlins, Side Rails, Eaves Beams & Mezzanine Beams
- Steelwork for Offsite and Modular application
- Flashings, Gutters, Fixings & Accessories



Our reputation is built on technical expertise, product quality, and a commitment to continuous investment in British manufacturing. Whether you're delivering large-scale industrial builds or fast-track modular installations, **Steadmans is your trusted supply partner.**



MC Mezzanine Sections.

Steadmans MC floor beams are **lipped Cee section profiles** manufactured from **pre-galvanised S450 grade steel**, with a minimum yield strength of 450N/mm².

The sections are designed to BS EN 1993-1-3:2006 using a combination of rational analysis and component testing.

Mezzanine Sections are manufactured under a management system certified as meeting the requirements of ISO 9001:2015, which covers all aspects of our operations.

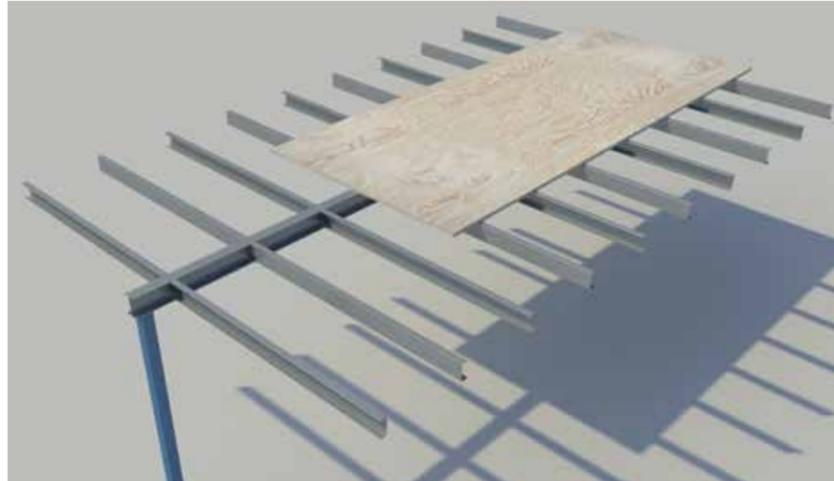
We have a full range of accessories to complement our mezzanine beams, along with design assistance and electronic detailing sheets.



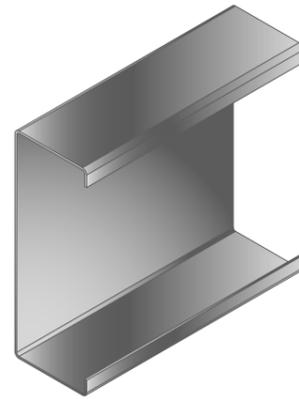
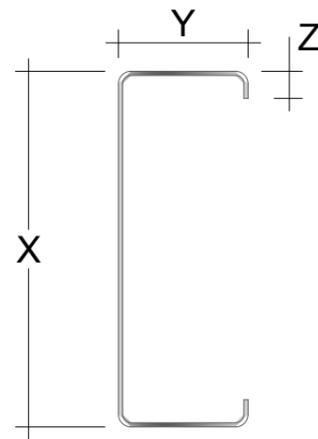
Mezzanine Sections

Steadmans MC floor beams are generally supported from hot rolled sections.

The decking above the Cee sections helps spread the loads of the floor evenly and varies in thickness depending on the loads.



MC Section Range	Gauge / mm
140	1.4, 1.5, 1.6, 1.8, 2.0
170	1.4, 1.5, 1.6, 1.8, 2.0, 2.5
200	1.4, 1.5, 1.6, 1.8, 2.0, 2.5
240	1.5, 1.6, 1.8, 2.0, 2.5, 3.0
300	2.0, 2.5, 3.0



Depth (x) / mm	Flange (y) / mm	Lip (z) / mm
140	62	13
170	62	13
200	70	15
240	74	17
300	95	19

MC Sections Properties

Section	Weight (kg/m)	Area (cm ²)	Zxe (cm ³)	Zyy (cm ³)	Ixx (cm ⁴)	Iyy (cm ⁴)	rx (mm)	ry (mm)	Po (N/mm ²)	xna (mm)	yna (mm)	Mc (kNm)
MC140x62x1.4	3.05	3.81	13.30	3.81	119.31	19.2	55.9	22.4	396.9	18.9	70	5.98
MC140x62x1.5	3.26	4.09	14.87	4.17	127.68	20.5	55.9	22.4	404.6	18.9	70	6.69
MC140x62x1.6	3.48	4.36	16.44	4.53	136.01	21.8	55.8	22.3	411.2	18.9	70	7.40
MC140x62x1.8	3.92	4.91	19.56	5.23	152.49	24.3	55.7	22.2	422.3	18.9	70	8.80
MC140x62x2.0	4.35	5.45	22.55	5.91	168.77	26.7	55.6	22.2	431.1	18.9	70	10.15
MC170x62x1.4	3.37	4.22	16.57	3.67	187.10	20.4	66.6	22.0	373.0	17.1	85	7.46
MC170x62x1.5	3.61	4.53	18.56	4.04	200.30	21.8	66.5	21.9	382.3	17.1	85	8.35
MC170x62x1.6	3.86	4.83	20.54	4.41	213.43	23.2	66.5	21.9	390.4	17.1	85	9.24
MC170x62x1.8	4.34	5.44	24.46	5.13	239.46	25.8	66.4	21.8	403.8	17.1	85	11.01
MC170x62x2.0	4.82	6.04	28.25	5.82	265.19	28.5	66.3	21.7	414.5	17.2	85	12.71
MC170x62x2.5	6.01	7.53	37.11	7.47	328.21	34.8	66.0	21.5	433.6	17.2	85	16.70
MC200x70x1.4	3.91	4.90	20.48	4.45	299.22	30.3	78.1	24.9	349.1	19.0	100	9.21
MC200x70x1.5	4.20	5.26	23.09	4.93	320.46	32.4	78.1	24.8	360.0	19.0	100	10.39
MC200x70x1.6	4.48	5.61	25.75	5.42	341.59	34.4	78.0	24.8	369.5	19.0	100	11.59
MC200x70x1.8	5.04	6.32	31.10	6.37	383.55	38.5	77.9	24.7	385.3	19.0	100	14.00
MC200x70x2.0	5.60	7.02	36.38	7.30	425.09	42.5	77.8	24.6	397.9	19.0	100	16.37
MC200x70x2.5	6.99	8.76	48.89	9.52	527.16	52.0	77.6	24.4	420.4	19.1	100	22.00
MC240x74x1.5	4.80	6.02	28.61	5.31	514.83	40.9	92.5	26.1	330.3	19.0	120	12.88
MC240x74x1.6	5.13	6.42	32.08	5.87	548.95	43.5	92.5	26.0	341.7	19.1	120	14.44
MC240x74x1.8	5.77	7.23	39.11	6.99	616.75	48.7	92.4	25.9	360.7	19.1	120	17.60
MC240x74x2.0	6.42	8.04	46.10	8.09	683.97	53.7	92.3	25.9	375.8	19.1	120	20.74
MC240x74x2.5	8.02	10.04	62.87	10.73	849.50	65.9	92.0	25.6	402.8	19.1	120	28.29
MC240x74x3.0	9.60	12.02	78.67	13.22	1011.45	77.6	91.7	25.4	420.6	19.2	120	35.40
MC300x95x2.0	8.08	10.11	62.99	11.49	1359.10	110.2	115.9	33.0	342.6	24.1	150	28.34
MC300x95x2.5	10.10	12.65	90.72	15.84	1691.63	135.9	115.7	32.8	376.3	24.1	150	40.82
MC300x95x3.0	12.10	15.16	117.60	20.00	2918.48	160.6	115.4	32.6	398.6	24.1	150	52.92

Steadmans offer a section sizing service.

To facilitate this service our Technical Team will need to know the following information:

- Support centres
- Proposed beam spacing
- Dead load
- Imposed load
- Deflection limit

Please email info@steadmans.co.uk with your project information and we will be able to assess your enquiry.

Typical Imposed Loads **	Loads kN/m ²
Office / Light Industrial / Access	3.0
General Purpose Industrial	5.0
Plantroom / Heavy Duty Industrial	7.5
Storage 1 - Extra Heavy Duty	10.0
Storage 2 - Ultra Heavy Duty	15.0

** Typical Imposed Loads to BS EN 1991-1-1:2002

MC Cleats

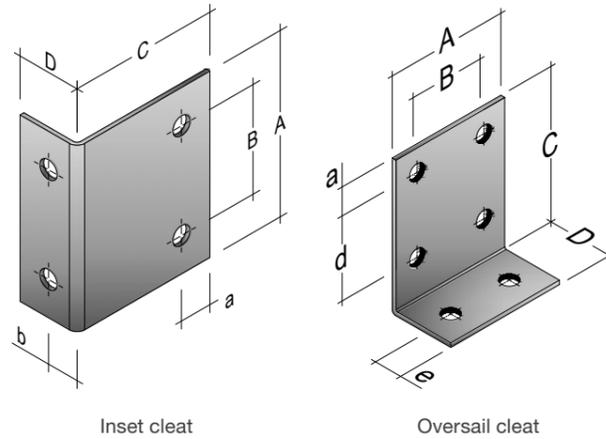
Steadman's Mezzanine floor beams are suitable for installation over or between hot rolled sections.

Oversail cleats can be used when there is no limitation on finished system height. Inset cleats, fixing to the web of hot rolled sections, are most suitable to maximise the available headroom.

Standard mezzanine cleats are manufactured from 4mm pre-hot dipped galvanised steel, S390GD Z275 material.

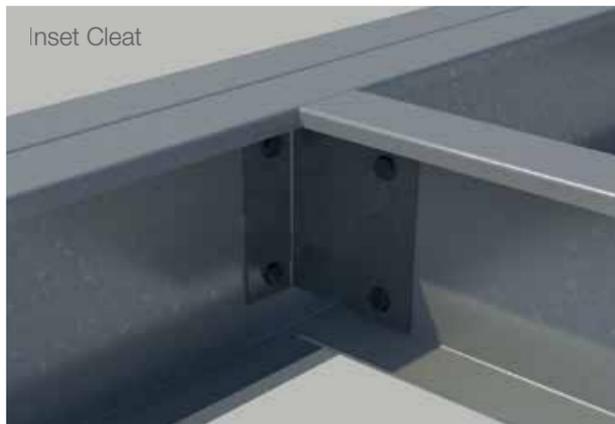
All holes are Ø18mm for M16 bolts grade 8.8.

Where required, Steadmans can manufacture customer designed cleats.



Oversail Cleat	Section	A/mm	B/mm	C/mm	D/mm	a/mm	d/mm	e/mm	Ø hole
	140	130	80	131	70	25	58	30	18mm
	170	130	80	161	70	25	88	30	18mm
	200	130	80	191	70	25	118	30	18mm
	240	130	80	231	70	25	158	30	18mm
	300	130	80	291	70	25	218	30	18mm

Inset Cleat	Section	A/mm	B/mm	C/mm	D/mm	a/mm	b/mm	Ø hole
	140	100	56	160	60	30	30	18mm
	170	120	70	160	60	30	30	18mm
	200	140	90	160	60	30	30	18mm
	240	180	110	160	60	30	30	18mm
	300	220	150	160	60	30	30	18mm



Restraints / Stud Ties

Stud ties are used to restrain the Cee sections to prevent the floor beam from twisting. All flooring applications must have stud ties.

Stud ties are fitted at mid span location of the Cee section and are fixed at the lower holes.

Stud ties must be installed before the laying of any decking.

Manufactured from M16 studding and comes complete with 2 nuts and washers per end. Non-standard lengths available upon request.



Stud Tie Rod Lengths

MC Section Depth	400mm Centres	600mm Centres
140mm	515mm	715mm
170mm	515mm	715mm
200mm	515mm	715mm
240mm	595mm	805mm
300mm	595mm	805mm

STEADMANS SECONDARY STEELWORK

We have a full range of purlins, rails and eaves beams available.

Our Zed section and Cee section range covers 140, 170, 200, 240 & 300mm deep sections which are available in a range of thicknesses. We have two Eaves beam designs:

- Indented eaves beams - 200 & 240mm
- Flat backed eaves beam - 300mm

Our facilities enable us to produce an almost unlimited range of bespoke metal sheeting and forming for our customers including punching and de-coiling, slit and re-coil, flat sheet manufacture and cutting.

QUALITY ASSURED

We manufacture all of our products to the highest quality standard, operating an accredited Quality Management System in compliance with the requirements of ISO 9001.

Our products are manufactured from the materials from our approved supply chain, using state-of-the-art production facilities which are rigorously controlled through inspection and testing at each production stage. Our products are designed and

manufactured in accordance with all related and prevailing standards.

CONFORMITY ASSESSMENT

Conformity assessment is mandatory for secondary steelwork systems covered by either a harmonised European Standard or UK Designated Standard.

The entire supply and distribution chain is responsible for ensuring correct conformity assessment of products.

Manufacturers, importers, and distributors must be aware of essential characteristics and specification requirements of the product for the member state they are selling in.

Steadmans can supply certification and a declaration of performance to CE or UKCA upon client request.

HEALTH & SAFETY

Our Business Delivery is managed efficiently and responsibly through the practise of our accredited Occupational Health and Safety Management System in compliance with the requirements of ISO 45001.

Through our Management System we promote a safe and healthy working environment by providing a framework that allows our organisation to identify and control its health and safety risks, reduce the potential for accidents, ensure legislative compliance and improve overall performance.

ENVIRONMENT

We operate in a responsible manner with regards to our environmental through the procedures and processes described in our Environmental Management System certified as meeting the requirements of ISO 14001.

We strive to be a sustainable manufacturer with minimal detrimental impact.

Let's Work Together

Whether you're working on a large-scale industrial build, a modular project, or a bespoke agricultural installation, our team is here to help

Steadmans offers nationwide service, with expert support at every stage from specification to delivery.



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Whatever your project requirements, Steadmans has the products, capabilities, and technical expertise to deliver.

Get in touch with our team today for quotes, advice or to arrange a site meeting.





To find out more, visit

www.steadmans.co.uk



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