

LIGHT STEEL FRAME
PROFILES



BESTEEL PROFILES AND FRAMES

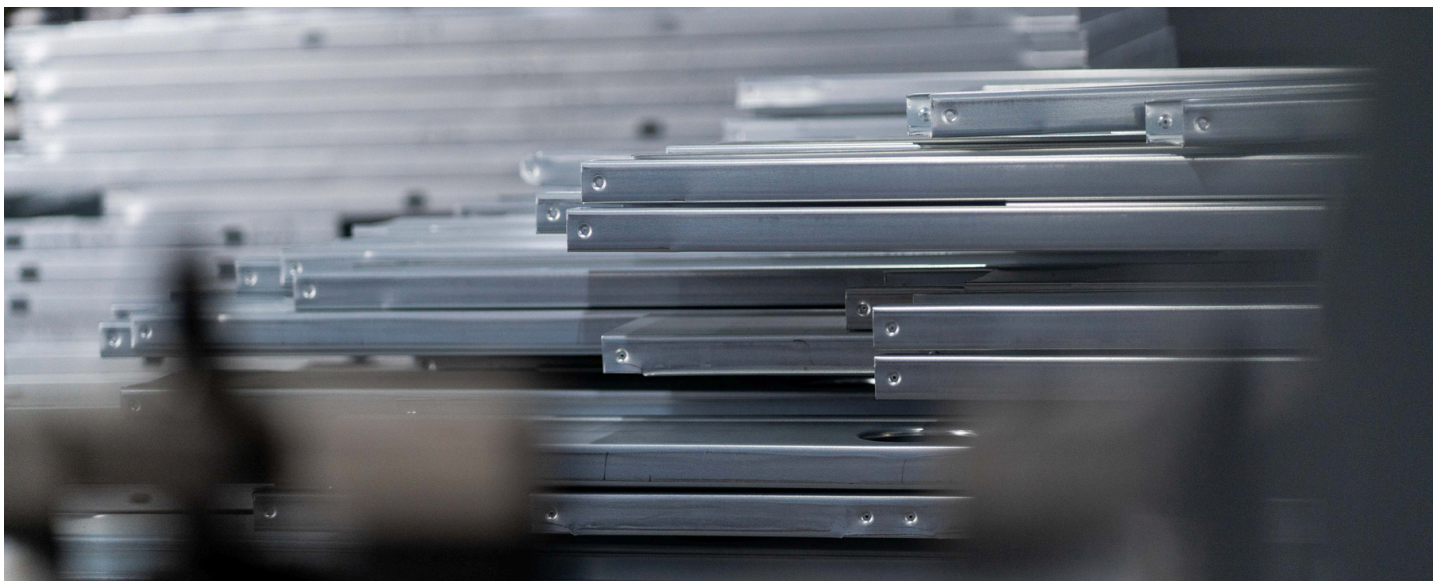
BESTEEL HIGH QUALITY C - PROFILES

At beSteel, we work with cold-rolled C-profiles made of **high-quality Magnelis® steel**. Put together in frames they form the **powerful load-bearing structure** and are suitable for any type of construction project. The frames are easily constructed from custom individual profiles and put together with self-tapping screws in flanges and holes.

MATERIAL: ARCELOR MITTAL MAGENLIS STEELFRAME

Steel grade: S350GD ZM310 (Magnelis® coating by ArcelorMittal®). **Magnelis® is a metallic zinc based coating**, in which Aluminium and Magnesium are added: respectively 3.5% of Aluminium and 3% of Magnesium. The corrosion resistance of a metallic coated steel is not only defined by the thickness of the coating, but also by its composition.

- Steel Type: Continuously hot-dip coated steel flat steel for cold forming (EN 10346)
- Steel grade: S350GD * (EN 10346)



MECHANICAL PROPERTIES

- ◆ Minimal Yield strength F_y : 350 N/mm² *
- ◆ Minimal Tensile strength F_u : 420 N/mm² *
- ◆ Minimal Elongation A80 : 16%

*S250GD (EN10346) used for C50 x 0,7 profiles (F_y 250 N/mm²)

COATING AND SURFACE: ZM250-A-CE (EN 10346)

- ◆ Type coating: Magnelis® (zinc, 3.5% aluminium, 3% magnesium)
- ◆ Minimum total coating mass, both surfaces : 250 g/m²
- ◆ Surface quality: as coated
- ◆ Surface treatment : E-passivation®, do not contain Chromium VI (Cr6+)
- ◆ Fire classification : A1 non combustible (EN 13501-1)

THE BASICS OF OUR PROFILES

By use of 3D CAD software beSteel produces a wide range of made to measures cold formed steel profiles in a **fully automated production system**. The profiles are assembled to light gauge wall frames, C joists floors or large span trusses.

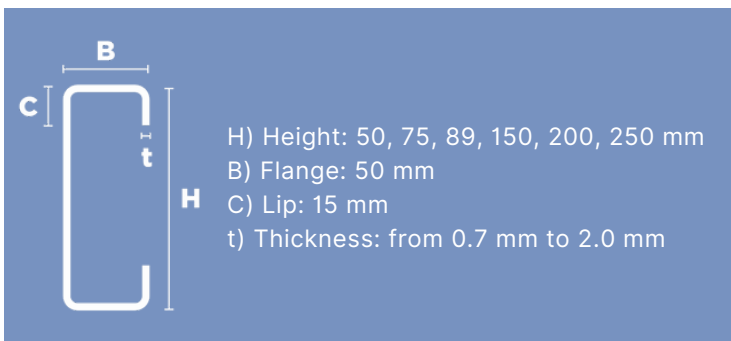
Composition and design of the steel frame construction must be project **specific engineered in accordance with EN 1993 EUROCODE 3** to meet requirements for **resistance, serviceability, durability, and fire resistance**.



beSteel profiles are labelled for an easy assembly. Cold forming process of C-profiles.

PROFILES DIMENSIONS & PROPERTIES

Our profiles are available in different sizes: from 50 to 250 mm wide and from 0,7 to 2 mm thick. These profiles are CE EN1993.

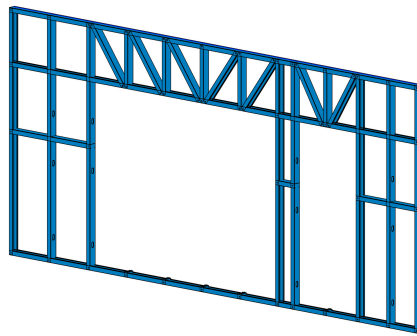


Profile type	H(mm)	B(mm)	C(mm)
C50	50	41	8
C75	75	50	15
C89	89	50	15
C150	150	50	15
C200	200	50	15
C250	250	50	15

DESIGN OF VERTICAL AND HORIZONTAL ELEMENTS

VERTICAL ELEMENTS

Wall frames (vertical elements) are typically composed of C sections with sizes of **C75, C89 or C150**. Thicknesses and centre-to-centre distances vary and are determined in a stability report - according to Eurocode 3.

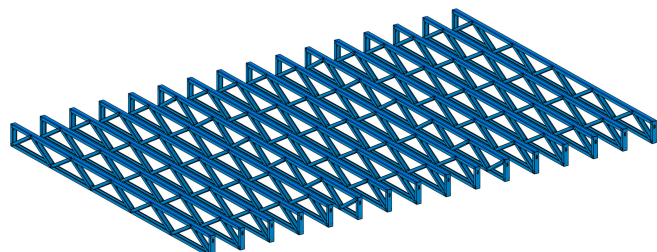
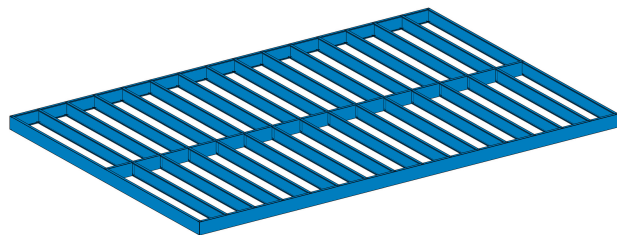


HORIZONTAL ELEMENTS

Panels (horizontal elements) can be composed in two ways:

- Panels made out of C sections with sizes C150, C200 or C250
- Trusses composed of C89 profiles

Thicknesses and centre-to-centre distances vary and are determined in a stability report - according to Eurocode 3.



GEOMETRY OF PROFILES

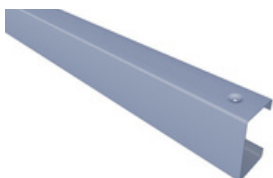
Profile	Standard	t	A	m	I _y	I _z	I _w	W _{pl,y}	W _{el,y}
		mm	mm ²	kg/m	cm ⁴	cm ⁴	cm ⁶	cm ³	cm ³
C50 x 0,7	Yes	0,7	98	0,8	4,41	2,22	13,1	1,96	1,76
C50 x 1,0	Yes	1	139	1,1	6,19	3,13	18,23	2,77	2,48
C75 x 1,0	Yes	1	195	1,53	18,55	7,14	109,21	5,63	4,95
C75 x 1,2	No	1,2	233	1,83	22,02	8,44	128,35	6,7	5,87
C89 x 1,0	Yes	1	209	1,64	27,41	7,6	149,76	7,04	6,16
C89 x 1,2	Yes	1,2	249	1,96	32,57	8,99	176,24	8,39	7,32
C89 x 1,5	Yes	1,5	310	2,43	40,11	11	213,93	10,37	9,01
C89 x 2,0	No	2	408	3,2	52,16	14,14	271,51	13,57	11,72
C150 x 1,0	No	1	270	2,12	91,68	9,06	433,25	14,34	12,22
C150 x 1,2	Yes	1,2	323	2,53	109,21	10,72	511,48	17,11	14,56
C150 x 1,5	Yes	1,5	401	3,15	134,99	13,12	623,8	21,21	18
C150 x 2,0	No	2	530	4,16	176,65	16,88	798,05	27,87	23,55
C200 x 1,5	Yes	1,5	476	3,74	267,66	14,25	1171,5	32,17	26,77
C200 x 2,0	No	2	630	4,95	351,21	18,33	1503,1	42,37	35,12
C250 x 1,5	Yes	1,5	551	4,33	459,86	15,07	1929,7	45,02	36,79
C250 x 2,0	No	2	730	5,73	604,52	19,39	2480,1	59,37	48,36

- t : Nominal thickness : t [mm]
- A : Cross section Area [mm²]
- m : Linear mass [kg/m]
- I_y : Moment of inertia - Y axis [cm⁴]
- I_z : Moment of inertia - Z axis [cm⁴]
- I_w : Warping constant [cm⁶]
- W_{pl,y} : Plastic section modulus - Y axis [cm³]
- W_{el,y} : Elastic section modulus - Y axis [cm³]



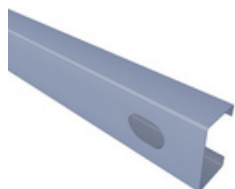
ALL TYPES OF BESTEEL STEEL PROFILES

SCREW HOLE



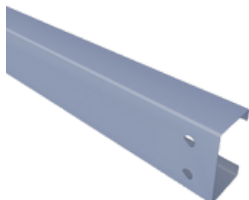
This screw hole is **zinc plated for an extra strong connection** and to minimize the thickening at the screw connection. **For fast, simple and precise assembly.** Is automatically provided regardless of the profile width whenever two profiles are to be connected.

SERVICE HOLE



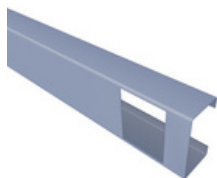
This opening with a width of 35 mm and a length of 70 mm is **suitable for the passage of electrical cables, home automation** etc. With a limited diameter. **This option is available on all our profiles.** Included in all wall panels as standard.

INDEX HOLE



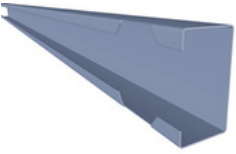
This small 13mm hole is **suitable for attaching two profiles** back to back with a bolt and nut. **This option is available on all our profiles.**

WEB NOTCH



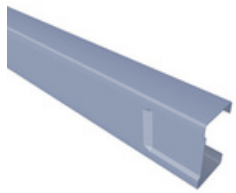
When two profiles cross each other, the machine removes the back of the profile so that the other profile can be pushed through. **This option is available on all our profiles.** The profiles fit through it **horizontally.**

LIP NOTCH



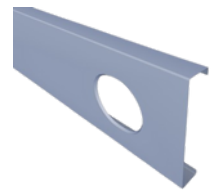
To make the connection between two profiles easier, the machine makes sure that **the profile in which the other is placed is open**. This is done by cutting away the lip locally. **This option is available on all our profiles.**

SWAGE ENDS



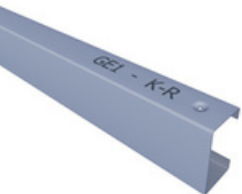
To make the connection between two profiles easier, the machine ensures that **the profile placed in the other is narrower**. This is done by deforming the back and pushing the sides inwards to a limited extent.

UTILITY SERVICE HOLE



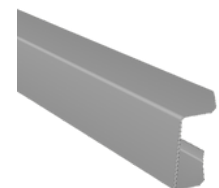
This opening of 120mm width and 140mm length is **suitable for the passage of all kinds of pipes** such as ventilation ducts, drains, etc. This option is **only available on the largest profiles: C200 and C250.**

PRINT ID LABEL



Time savings, clear installation. Panels are correctly labelled.

Chamfer (End Cuts)



This operation is performed automatically when one profile is not connected perpendicularly to another, so that they **fit together more easily**.

Manual miter cutting is therefore unnecessary. **Can also be provided with loose profiles** on the ends if desired.

ULTRA FAST CONSTRUCTION

Off-site production and assembly, avoiding delays on site thanks to controlled conditions for fast, precise on-site assembly.

SUSTAINABLE AND LIGHTWEIGHT

4x time lighter than wooden construction methods. A hybrid module made of light steel helps to reduce the CO2 impact of the construction sector.

360° EXPERTISE AND DIGITAL FOLLOW-UP

Production of lightweight steel structures and complete monitoring. So that your project meets the most strict technical and stability requirements, all in-house.

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OUR PRODUCTS AND SOLUTIONS**

