



THE ALUMINIUM SUPPORT SYSTEM



ALUMINIUM

THE MATERIAL

Principal amongst aluminium's properties is its low density, and thus its lack of weight. Aluminium is one third the weight of steel yet when it is alloyed its strength to weight ratio is superior to that of steel.

Other key properties are corrosion resistance and formability. Aluminium has a natural oxide film that provides resistance to corrosion and which reforms itself if damaged.

It is naturally durable and maintains its strength even when very cold.

Environmental considerations highlight other unique benefits of aluminium. It is non-toxic, safe to handle, causes no adverse run-off to groundwater and is endlessly recyclable.

In addition aluminium does not burn, is non-magnetic and has good electrical conductivity.

Non-toxicity means that aluminium is safe for plants, animals and humans.

Like most metals, aluminium does not burn and can be used to help provide fire resistance where appropriate.

Aluminium can be recycled again and again without loss of quality. The re-melting of aluminium requires little energy, recycled aluminium saves up to 95% of the energy required for primary aluminium production.

Recycling rates for used aluminium products are over 80% in building and over 95% in transport and 30% in packaging. With an ever-increasing proportion of recycled metal in use, aluminium can be accurately described as the ultimate sustainable material.

ALPHASTRUT™

THE PRODUCT

The above physical properties of aluminium make ALPHASTRUT™ an ideal product for construction. It is light, strong, durable and requires minimal maintenance.

Light weight means less strain on supporting structures, easier handling and reduced transport costs. High strength created through innovative design and choice of alloys means that ALPHASTRUT™ is comparable in performance to standard steel channel systems.

Resistance to corrosion means ALPHASTRUT™ has a longer life expectancy even in aggressive environments. Common industrial pollutants such as ammonia, carbon monoxide and carbon dioxide all have very little effect on aluminium. ALPHASTRUT™ is also excellent for use in coastal and marine environments because the effect of sodium chloride on the aluminium is minimal. ALPHASTRUT'S™ resistance to corrosion is further enhanced by anodising giving a minimal life expectancy of over 30 years in a marine environment

Aluminium's durability means that ALPHASTRUT™ has a long life with reduced maintenance requirements.

ALPHASTRUT™ is your complete supports solution system.

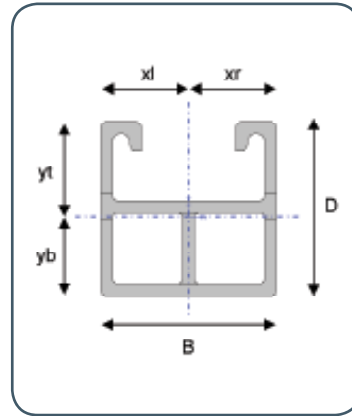
It is light, strong, durable and 100% recyclable.



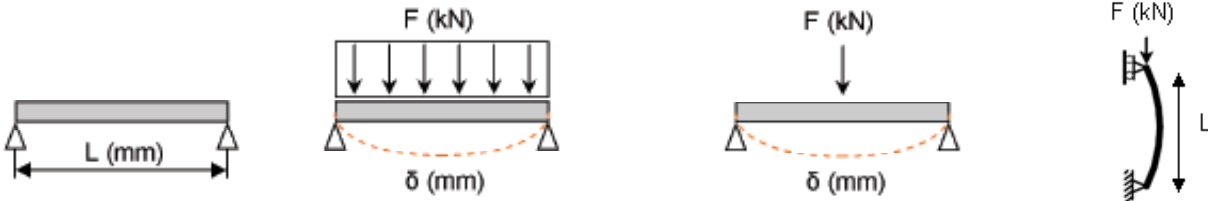
Cross-sectional properties:

A (cm ²)	5.433
M (kg/m)	1.467
D (mm)	42
B (mm)	42
tw (mm)	2.7
xl (mm)	21
xr (mm)	21
yt (mm)	23.176
yb (mm)	18.824

Material: Aluminium Alloy 6060-T6



Member Capacities: Capacity Results to BS8118:Part 1



Strut/Beam Span mm	F _{max} (kN) Max Deflection = L/200		F _{max} (kN) Max Deflection = L/200		F _{max} (kN)
	F _{UDL} (kN)	δ _{UDL} (mm)	F _{PL} (kN)	δ _{PL} (mm)	
250	9.095	0.3	6.297	0.3	33.0
500	6.293	1.5	3.143	1.2	28.3
750	4.189	3.4	2.089	2.7	22.6
1000	3.135	6.0	1.560	4.8	17.0
1250	2.502	9.4	1.241	7.5	12.5
1500	2.078	13.6	1.028	10.9	9.4
1750	1.774	18.5	0.874	14.8	7.3
2000	1.545	24.1	0.758	19.3	5.8
2250	1.366	30.5	0.666	24.4	4.7
2500	1.223	37.7	0.593	30.2	-

Notes:

Load capacity = UDL total characteristic (working) load in kN. Welding will reduce the member capacities, please seek advice!

Limiting stresses:

$p_o = 150\text{N/mm}^2$, $p_s = 190\text{N/mm}^2$, $p_v = 105\text{N/mm}^2$

for use with BS8118:Part 1 design only!

Allowance for self weight of profile made i.e. stated F = Load applied to profile

No allowance made for bearing/local crushing due to concentrated load. Above table is not to use for replacement of detailed structural design! For design criteria deviating from BS8118, please seek advice!

SECTION AC-02

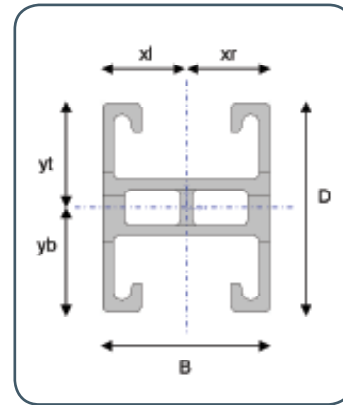
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TEL: 01274 743177



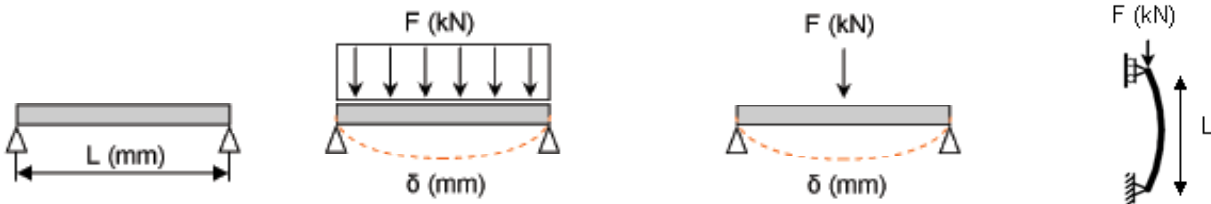
Cross-sectional properties:

A (cm ²)	7.008
M (kg/m)	1.892
D (mm)	53.0
B (mm)	42.0
tw (mm)	2.7
xl (mm)	21.0
xr (mm)	21.0
yt (mm)	26.5
yb (mm)	26.5

Material: Aluminium Alloy 6060-T6



Member Capacities: Capacity Results to BS8118:Part 1



Strut/Beam Span mm	F _{max} (kN) Max Deflection = L/200		F _{max} (kN) Max Deflection = L/200		F _{max} (kN)
	F _{UDL} (kN)	δ _{UDL} (mm)	F _{PL} (kN)	δ _{PL} (mm)	
250	12.221	0.2	8.455	0.3	49.5
500	8.451	1.3	4.221	1.1	43.2
750	5.626	3.0	2.806	2.4	35.7
1000	4.211	5.3	2.096	4.2	27.8
1250	3.360	8.3	1.668	6.6	21.0
1500	2.791	11.8	1.382	9.5	16.0
1750	2.384	16.1	1.175	12.9	12.5
2000	2.077	21.1	1.020	16.9	9.9
2250	1.837	26.7	0.897	21.4	8.1
2500	1.644	33.0	0.799	26.4	6.7

Notes:

Load capacity = UDL total characteristic (working) load in kN **Welding will reduce the member capacities, please seek advice!**

Limiting stresses:

po=150N/mm², pa=190N/mm², pv=105N/mm²

for use with BS8118: Part 1 design only!

Allowance for self weight of profile made i.e. stated F = Load applied to profile

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SECTION AC-02A

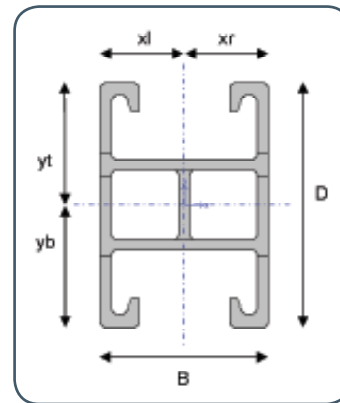
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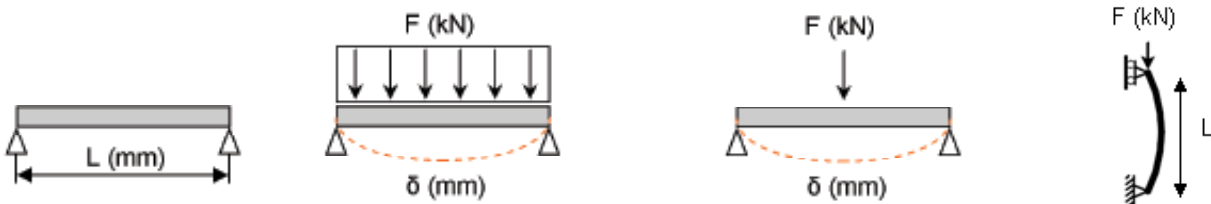
Cross-sectional properties:

A (cm ²)	7.146
M (kg/m)	1.929
D (mm)	61.3
B (mm)	42.0
tw (mm)	2.7
xl (mm)	21.0
xr (mm)	21.0
yt (mm)	30.65
yb (mm)	30.65

Material: Aluminium Alloy 6060-T6



Member Capacities: Capacity Results to BS8118:Part 1



Strut/Beam Span mm	F _{max} (kN) Max Deflection = L/200		F _{max} (kN) Max Deflection = L/200		F _{max} (kN)
	F _{UDL} (kN)	δ _{UDL} (mm)	F _{PL} (kN)	δ _{PL} (mm)	
250	14.495	0.2	11.192	0.2	51.1
500	11.187	1.1	5.589	0.9	45.2
750	7.450	2.6	3.718	2.1	38.4
1000	5.579	4.5	2.780	3.7	30.9
1250	4.455	7.1	2.215	5.7	24.0
1500	3.703	10.3	1.837	8.2	18.6
1750	3.165	13.9	1.566	11.2	14.6
2000	2.760	18.2	1.361	14.6	11.7
2250	2.445	23.0	1.201	18.5	9.5
2500	2.191	28.5	1.071	22.8	7.9

Notes:

Load capacity = UDL total characteristic (working) load in kN. Welding will reduce the member capacities, please seek advice!

Limiting stresses:

$p_o=150\text{N/mm}^2$, $p_a=190\text{N/mm}^2$, $p_v=105\text{N/mm}^2$

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Allowance for self weight of profile made i.e. stated F = Load applied to profile

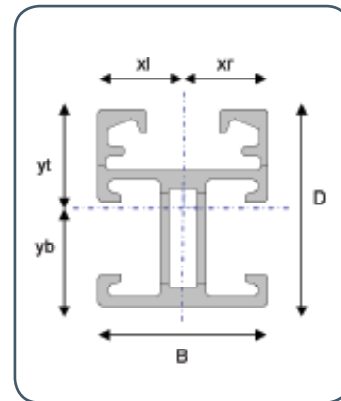
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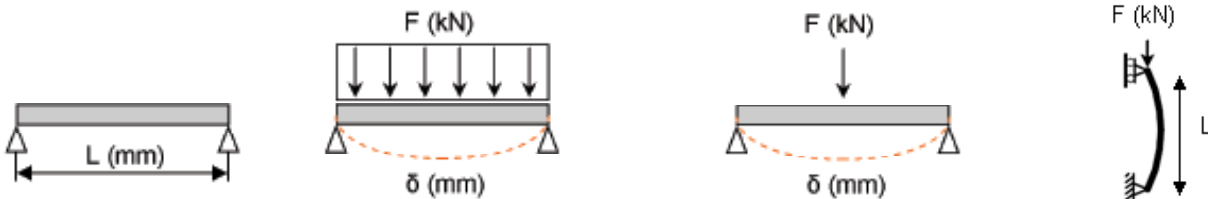
Cross-sectional properties:

A (cm ²)	9.280
M (kg/m)	2.505
D (mm)	61.3
B (mm)	53.0
tw (mm)	2.7
xl (mm)	26.5
xr (mm)	26.5
yt (mm)	31.05
yb (mm)	30.25

Material: Aluminium Alloy 6060-T6



Member Capacities: Capacity Results to BS8118:Part 1



Strut/Beam Span mm	F _{max} (kN) Max Deflection = L/200		F _{max} (kN) Max Deflection = L/200		F _{max} (kN)
	F _{UDL} (kN)	δ _{UDL} (mm)	F _{PL} (kN)	δ _{PL} (mm)	
250	11.937	0.1	11.931	0.1	69.6
500	11.937	0.7	9.457	0.9	62.3
750	11.937	2.4	6.294	2.0	53.9
1000	9.445	4.5	4.710	3.6	44.5
1250	7.544	7.0	3.757	5.6	35.4
1500	6.275	10.1	3.119	8.1	27.8
1750	5.367	13.8	2.662	11.0	22.1
2000	4.685	18.0	2.317	14.4	17.8
2250	4.152	22.8	2.048	18.3	14.6
2500	3.725	28.1	1.831	22.5	12.1

Notes:

Load capacity = UDL total characteristic (working) load in kN. **Welding will reduce the member capacities, please seek advice!**

Limiting stresses:

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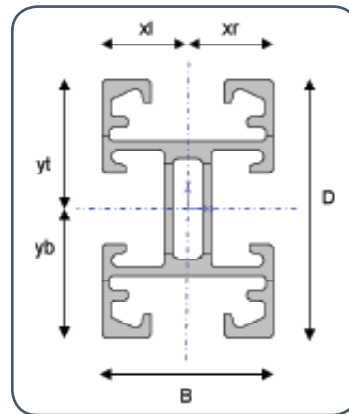
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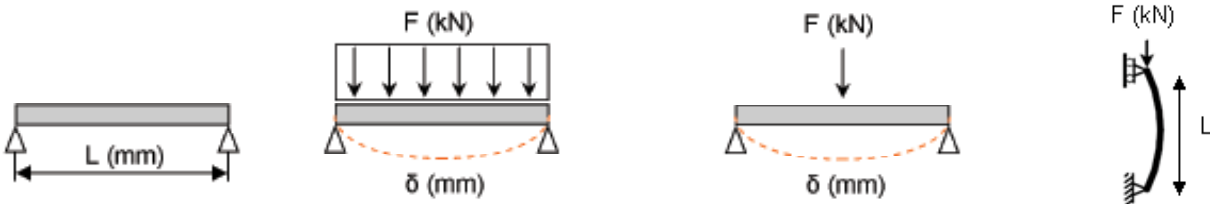
Cross-sectional properties:

A (cm ²)	11.841
M (kg/m)	3.197
D (mm)	80.5
B (mm)	53.0
tw (mm)	2.7
xl (mm)	26.5
xr (mm)	26.5
yt (mm)	40.25
yb (mm)	40.25

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	F _{UDL} (kN)	δ _{UDL} (mm)	F _{PL} (kN)	δ _{PL} (mm)	
250	27.209	0.1	27.201	0.2	87.9
500	27.209	0.8	14.261	0.7	79.3
750	19.012	2.0	9.494	1.6	69.6
1000	14.245	3.5	7.107	2.8	58.6
1250	11.382	5.4	5.671	4.3	47.6
1500	9.470	7.8	4.711	6.3	38.0
1750	8.102	10.6	4.023	8.5	30.4
2000	7.074	13.9	3.505	11.1	24.6
2250	6.273	17.5	3.101	14.1	20.3
2500	5.631	21.7	2.776	17.4	16.9

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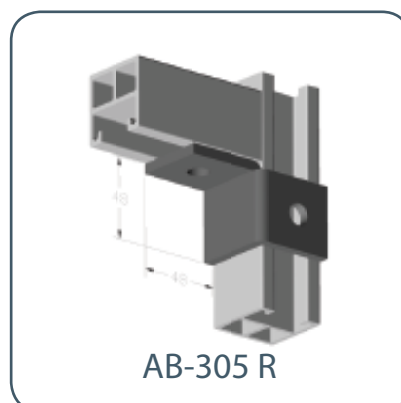
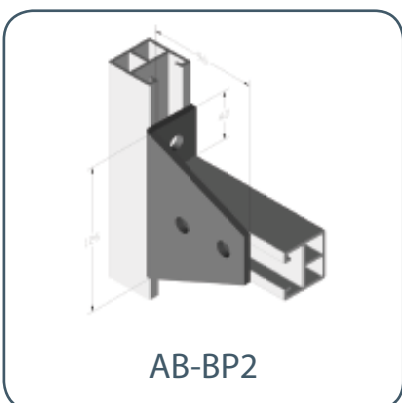
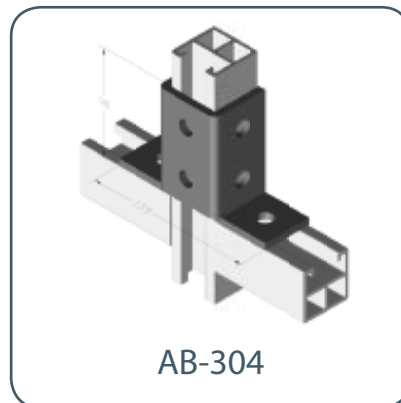
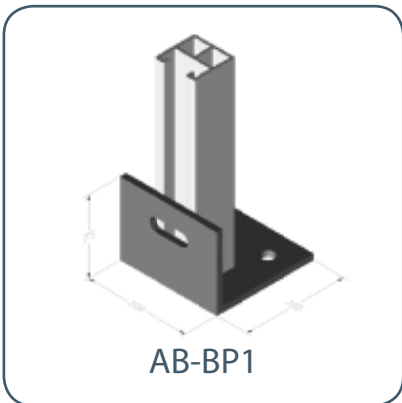
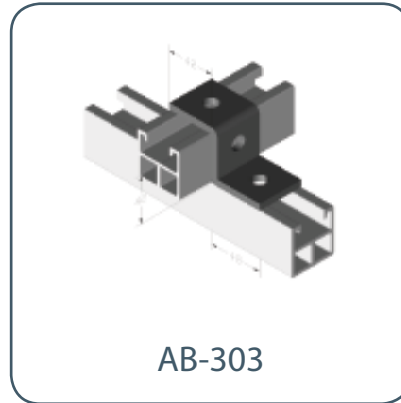
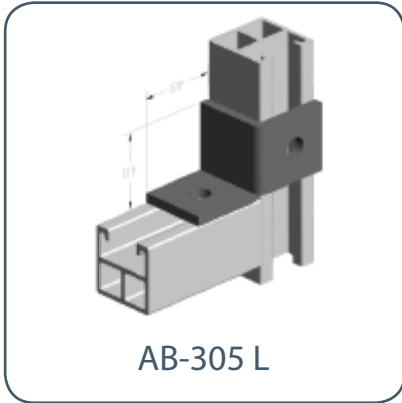
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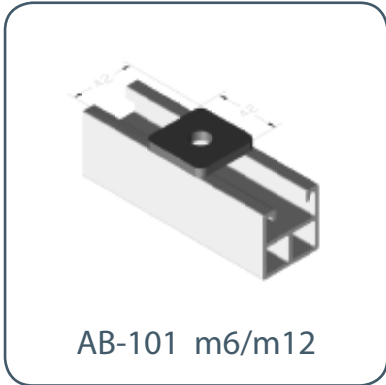
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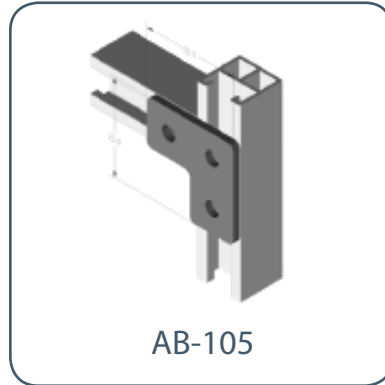


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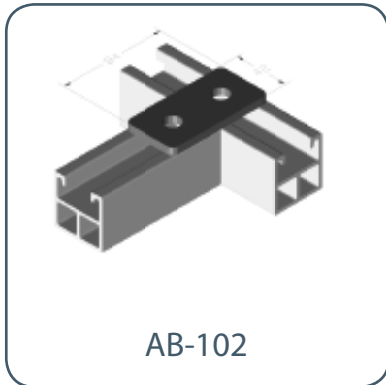
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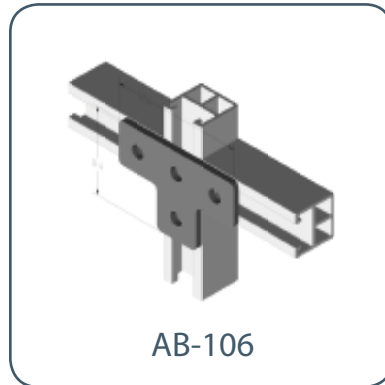
AB-101 m6/m12



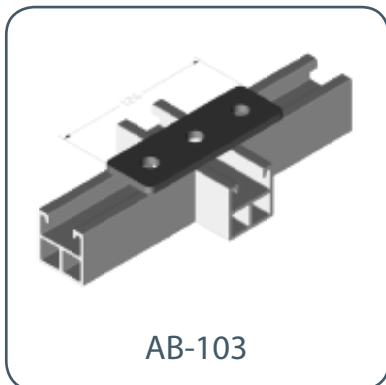
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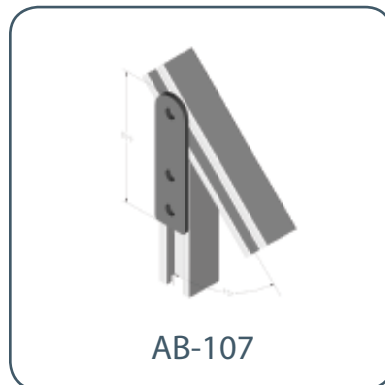
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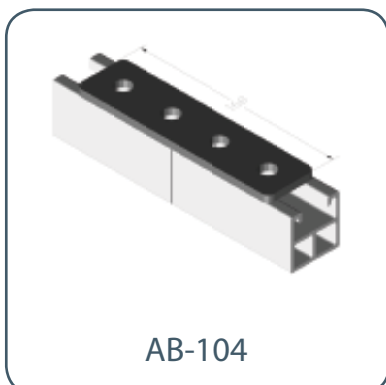
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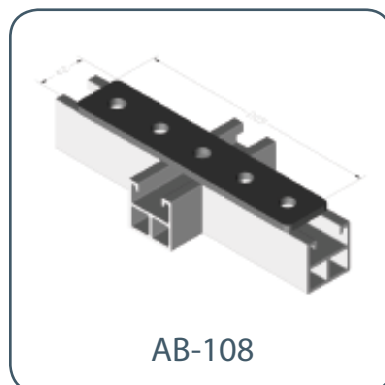
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AB-107



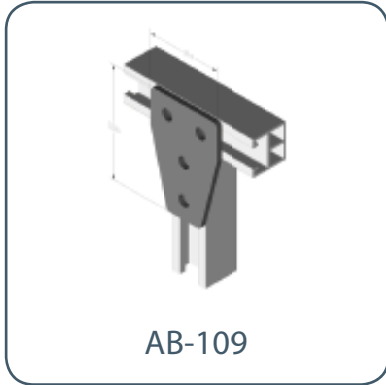
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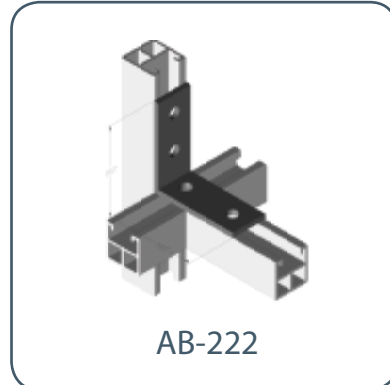
AB-108

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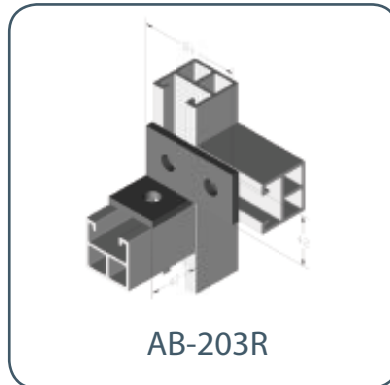
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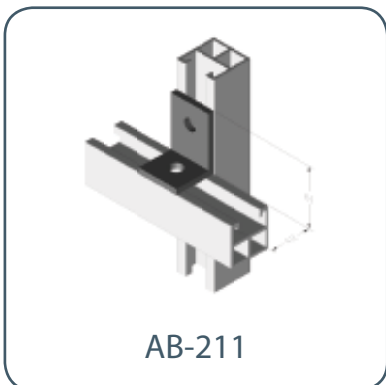
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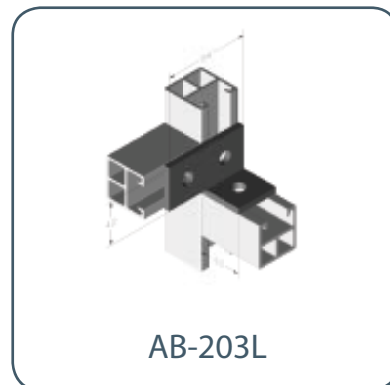
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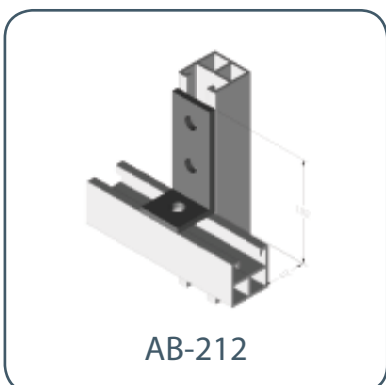
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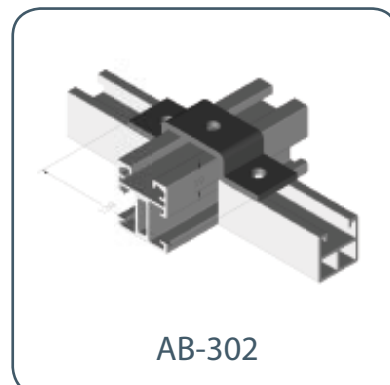
AB-211



AB-203L



AB-212



AB-302



Support Solutions & Fabrication Ltd is the Parent company of Alphastrut™ Limited. Through SS&F we can offer a full design supply and Installation service of not only Alphastrut™ products but any modular support system. We can also fabricate bespoke brackets to help solve most requirements.



Waterjet Scotland Ltd is a sister company to Alphastrut™ Limited. Through WJS we can offer a complete cutting service for all types of materials from 1mm thick to 150mm thick. Materials from Stone, Glass and Aluminium, to Steel and Titanium. All CNC cut to high precision tolerances.



Alphastrut™ Limited was formed to promote this new and innovative aluminium service support system. The Alphastrut™ system has been designed to be 100% compatible with most other propriety service support systems. Alphastrut™ provides a cost effective support solution to areas where weight, cleanliness and durability are key issues.



WEB Building Services is a division of WEB (M&E) Products Ltd and specialises in the design and fabrication of mechanical and electrical support modules for the pre-fabrication sector of the building services industry.

In addition to the above WEB supplies:-

Cush-A-Clamp:- A modern pipe / tube cushion clamping system for tube and Pipe diameters ranging from ¼ inch OD to 6" OD

Unistrut:- A complete Galvanised / Stainless Steel cable management and service support system.

Pipe Supports and fabricated bracketry

Fabrication - MIG and TIG welding; carbon steel, stainless and aluminium



Alphastrut Channel was supplied to SLP Engineering Limited who were the Main Contractor for the Valhall PH Living Quarters for BP Norge AS.

Alphastrut was designed with the key principle of saving weight.



Alphastrut is proud to be part of the prestigious Valhall Redevelopment project. Through Alphastrut's innovative design in excess of 80 tonnes of weight was saved with the use of Alphastrut over conventional Steel / Stainless Steel service support systems.

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