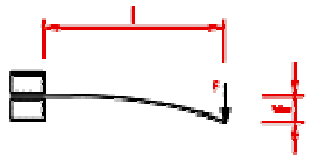
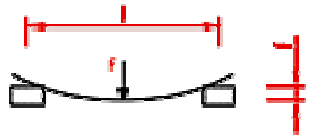
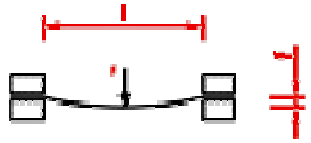
LOAD INFLECTION DIAGRAM



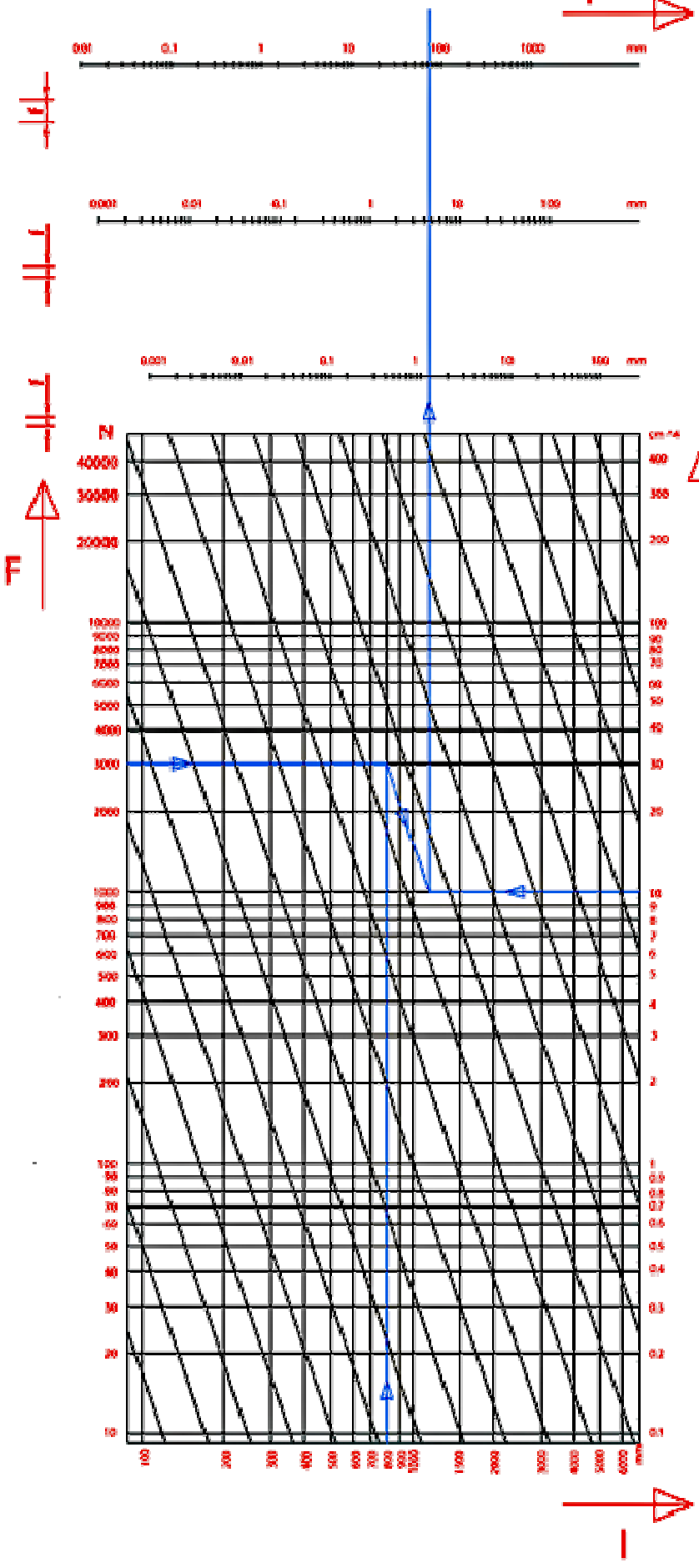
JOINT



DOUBLE SUPPORT



DOUBLE JOINT



This diagram allows you to assess the Load Inflection on an Aluminium profile "beam. To assess the load inflection, please use the *concentrated applied load*, the *moment of inertia* of the aluminium profile and from the *distance between the supports*. By using these variables and this diagram, you can assess the maximum inflection of the beam.

Please note this diagram provides only a general guide. The Customer is advised to investigate each specific application in more detail. The dimensions and loading of the finished structure must be calculated each time by the Customer.

In the example recorded in Blue we have:

Load: 3,000N

Moment of Inertia: 10cm^4

Support Distance: 800mm

We see the intersection of the 3 values and following the blue line upwards we find one of the 3 solutions of bond (joint, double support or double joint) and therefore deducing the value of the inflection of the beam.

COMPOSITION & TECHNICAL SPECIFICATIONS

Every standard Alusic extruded aluminium profile is made of primary aluminium alloy EN-AW6060/6063 (Al, Mg, Si 0.5). By special request, the profile can be extruded solely with the primary alloy being EN-AW6063. The metallurgical state of supply is T5/T6 (solution heat treatment, tempered and artificially aged) to ensure long lasting, absolute stability of the material over many years. As standard, the extruded bars of profile are supplied with a natural anodised coating with a depth treatment of 12µm. By special request, the extruded bars of profile can be supplied without anodising (i.e with a raw surface) to help reduce costs.

(Please note, all special requests require a minimum order quantity and may be subject to additional freight costs that are chargeable to the customer).

Composition of Alloys

Alloy	Cu	Fe	Mn	Mg	Si	Zn	Cr	Ti	Al
6060	0.1	0.1 - 0.3	0.1	0.35 - 0.6	0.3 - 0.6	0.15	0.05	0.1	Rest
6063	0.1	0.35	0.10	0.45 - 0.9	0.2 - 0.6	0.1	0.1	0.1	Rest

Mechanical characteristics

Alloy	Maximum Stress [N/mm^2]	Yield Stress [N/ mm^2]	Extension [A%]	Hardness [HB]
6060	190	150	8	70
6063	215	170	8	75

Physical characteristics

Elasticity Modulus	69000	N/mm^2
Electrical Resistivity	0.033	Ωmm^2/m
Thermal Conductivity	210	W/mK
Melting Temperature	615 - 655	°C
Coefficient of Thermal Expansion	25x10^{-6}	K^{-1}

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