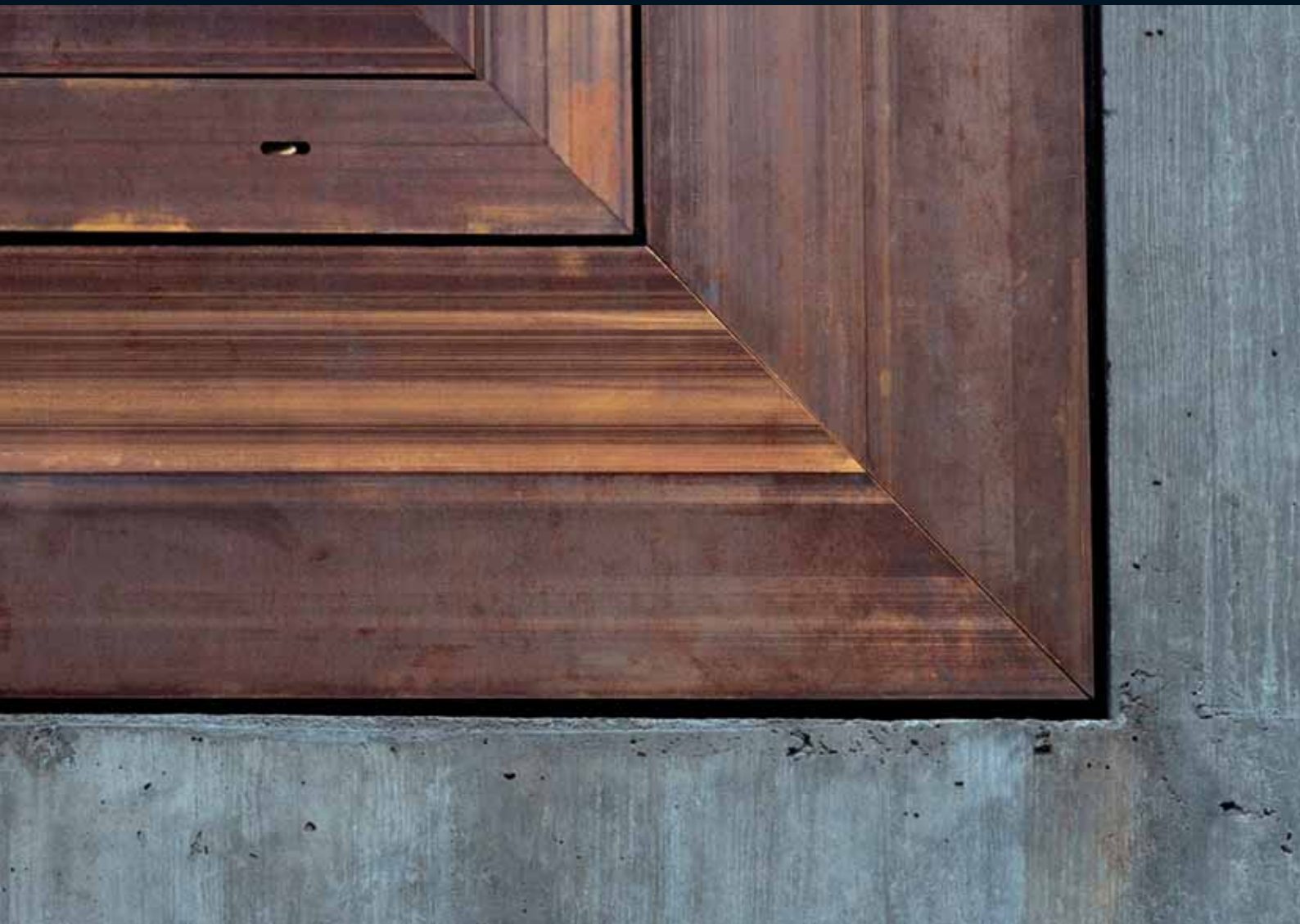


**SWISSMETAL**

Precision in Copper

Architectural bronze – a high-profile material







Architectural bronze, the epitome of noble elegance, adds a note of lasting value to contemporary architecture. Technical properties, simple processing and resistance to weathering make this metal an interesting material for your building projects. Not only that, it makes good economic sense too. You can design your very own customized solution with the help of our experts, or choose from a wide range of standard sections.

*Architectural bronze is a competitive material. The advantages:*

noble – load-bearing – resistant to weathering – low maintenance – easily formed – simple to process – cost-effective – recyclable







## Colour shades

4

Bronze gives your building a warm, refined aura. The colour scale of alloys ranges from gold-yellow, through yellowy brown to reddish brown. Outdoors, bronze develops a natural patina that varies from pale brown to deep brown and anthracite grey shades. The surface finish can be glossy or matt to intensify or mute the colour effect to your exact preferences.

Architectural bronze has a unique depth of colour. The surface treatment:  
polishing – burnishing – brushing – shot blasting



## Lasting value

5

Architectural bronze is the material of choice when maximum durability is required. It is timeless and blends discretely into sensitive surroundings or into environments under heritage protection. It harmonizes with other building materials without dominating them. The patina forms a natural protective layer which guarantees a long life with minimum maintenance. Investment costs are therefore amortized within a few years.

**Architectural bronze is cost-effective in the long term. The reasons:**

long life – minimum maintenance – simple processing – timeless combinations possible

The ease with which architectural bronze can be formed opens up enormous design possibilities for window frames, façades and door sections. Individualized, detailed solutions are possible throughout building interiors. Through our specialized materials know-how, we are able to complex forming processes.

Architectural bronze can be formed by various techniques. The processes:  
casting – hot extrusion – cold forming





In over a hundred years of activity in the industry, Swissmetal has built up a global network of architects, prime contractors, system providers and metal processors. Our qualified specialists make use of this background to develop projects jointly with you, starting right at the invitation to tender or competition stage. Our production plants are able to deliver both large and small orders both reliably and timely.

Swissmetal is ISO 9001/2000- and ISO 14001/1996-certified. Our services:  
design consulting – conception proposals – assistance with bidding procedures –  
supplying samples – production – fabrication of special products – logistics



Architectural bronze has high tensile and compressive strength. Its specific weight is comparable with that of steel. Low thermal expansion values allow the use of bronze sections in exposed positions and in the design of high-tech façades. Its resistance to corrosion also makes architectural bronze the ideal material in regions with an aggressive climate.

Architectural bronze is well suited for nearly all processing technologies. The joining techniques: press-in (mechanical) joining – rolling – screw connection – adhesive joining – soldering – welding



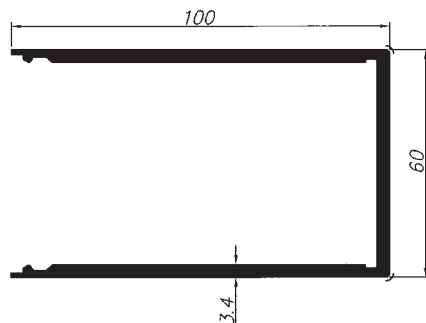
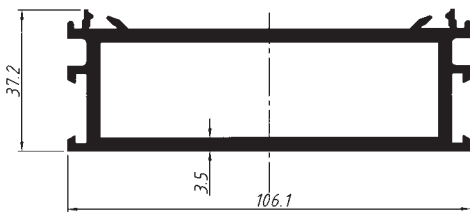
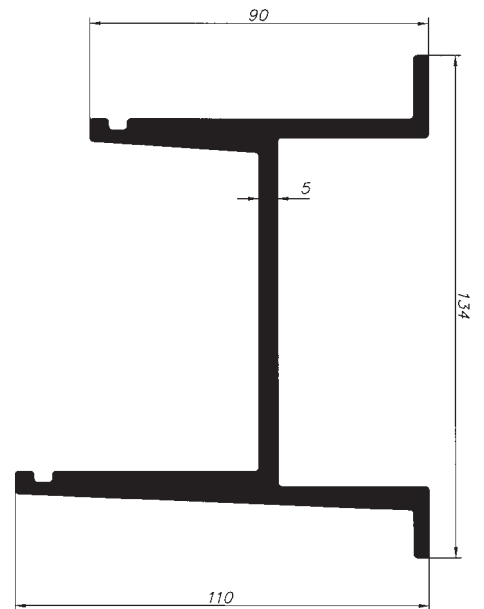
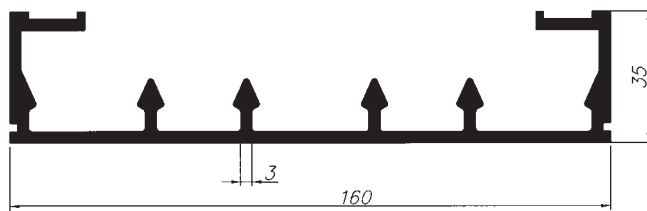
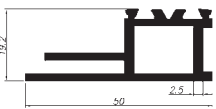
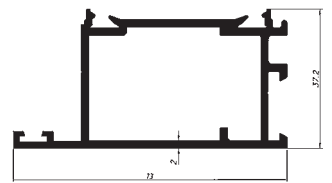
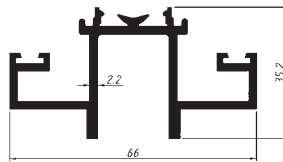
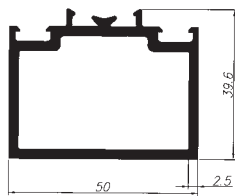
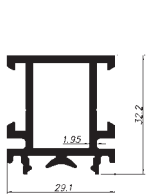
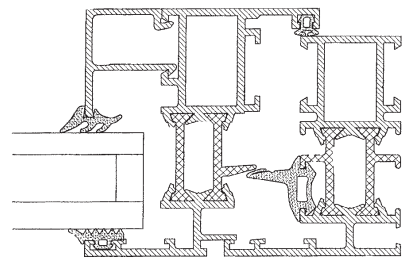
## Comparison of architectural bronze with other materials

	Architectural bronze extruded	Aluminium AlMgS 10.5	Stainless steel A4
Specific weight (kg/dm <sup>3</sup> )	8.3	2.7	7.95
Coefficient of thermal expansion (mm/m x 10°C)	0.19	0.23	0.16
Thermal conductivity (W/mK)	79	200	15
Young's modulus (kN/mm <sup>2</sup> )	83	70	210
Ultimate tensile strength (N/mm <sup>2</sup> )	390	> 210	450 – 700
Yield strength (0.2% offset) (N/mm <sup>2</sup> )	ca. 200	> 170	> 200
Elongation A <sub>5</sub> (%)	ca. 20	10 – 15	> 40



The standard range for exterior and interior use satisfies most of our customers' wishes. All aluminium or stainless steel section shapes can be produced in bronze on request. Wall thicknesses range from 1.0 to 4.0 mm. The maximum size for solid sections is defined by a circumscribed circle of 180 mm. Production tolerances are restricted to 2/3 of the specification of DIN standard 17674, sheet 4.

Swissmetal is the global technology leader for hollow cellular sections and thermally isolated systems made of architectural bronze. The range:  
 solid sections – filigree open sections – cellular sections – sections for thermally isolated systems – handrail and railing sections



- 2005 School Weid, Pfäffikon (page 3)
  - 2004 Neuer Wall, Hamburg D (page 6, left hand)
  - 2003 Royal Palace, Amman JORD
  - World Squares, London GB
  - Churchill Place RT4, London GB
  - 2002 Landeszentralbank, Chemnitz D
  - National Museum, Vaduz FL
  - Domplatz, Magdeburg D
  - 2000 Old National Gallery, Berlin D
  - Swiss Embassy, Berlin D
  - Unter den Linden 80, Berlin D
  - Swiss Re, Rüschtikon CH
  - 1999 Foreign Office, Berlin D
  - Bayerische Vereinsbank, Munich D
  - Landeszentralbank, Meiningen D
  - Daimler and Debis A1, Berlin D
  - 1998 Carlton Gardens, London GB
  - Unter den Linden 78, Berlin D
  - Main Tower II, Frankfurt D (page 6, right hand)
  - HSR Hochschule für Technik, Rapperswil CH (page 7)
  - 1997 School, Paspels CH (frontpage)
  - Dresdner Bank, Berlin D
  - New Parliamentary Building, London GB
  - 1996 Allianz Versicherung, Hamburg D
  - 1994 Bewag Shellhaus, Berlin D
  - Education center UBS, Basel CH (page 8, right hand)
  - Stockerhof, Zurich CH
  - 1993 Friedrichstadtpassagen, Berlin D
  - Winterthur Versicherung, Vienna A
  - 1992 Bank Sarasin, Basel CH (page 8, left hand)
  - Picassoplatz, Basel CH (pages 4 and 5)
  - Bawag-Bank, Bregenz A
  - 1991 Iduna Versicherungen, Hamburg D
  - Bracken House, London GB
  - 1990 Landeszentralbank, Kiel D
  - 1989 Banque Hypothécaire du Canton, Geneva CH
  - Nederland'sche Bank, Amsterdam NL
  - 1987 Transport Ministry, Bonn D
- Surface alternatives (pages 2 and 11)





## **Brief portrait**

Swissmetal manufactures and sells high-quality speciality products made from copper and copper alloys in markets around the world. Its products are mainly used in the electronics, telecommunications, aviation, petroleum, automotive, stationery and watch industries and also for architectural purposes. Based in Dornach, Switzerland, Swissmetal is listed on the SWX Swiss Exchange as Swissmetal Holding Ltd.

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