Waterloo Information Pack

ZAC Door Canopies

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Introduction

The Zinc and Copper Canopy Company Limited (ZAC) is part of a group of companies with over 30 years' experience in construction and working with materials such as zinc and copper. Formed in 2017 by Peter Young and Arthur Biden, ZAC design and manufacture solutions for door and window canopies. All of our canopies are built on lightweight metal frames, which are powder coated[1], and clad[2] with either copper or natural, anthra (black) or quartz zinc. This combination means that our canopies are easy to install, require barely any maintenance and are long lasting. Importantly, using zinc and copper mean that our canopies are environmentally sustainable, which is a core part of the ethos of our company.

Although each of our canopies are made in standard sizes (see website for further details), because they are handmade, we are able to build your canopy to your own dimensions and requirements.

Green Living Tips!

Apart from their natural beauty, we use zinc and copper to clad our canopies because they are both environmentally friendly and sustainable. Below are a few interesting facts you may be interested in:

- Consumption of energy required to manufacture zinc metal from mineral is lower than that required for any other metal used in building envelope applications
- Zinc and copper will last in the region of 100 years and will not degrade or discolour due to ultra-violet sunlight
- Over 95 % of old rolled zinc is recovered and re-used in various fields of application

[1] See the 'Powder Coating' section for further information about this process and its benefits

[2] See the 'Cladding options' section for further information about the types of cladding we offer

The Waterloo

The Waterloo door canopy was first designed for a housing project in a conservation area in Waterloo, within the London Borough of Lambeth. The project included both single and double width canopies to fit over single and double doorways. The customer asked for barrel-shaped canopies to be made to replace existing canopies on rows of houses.

Although all Waterloo door canopies are rounded, their actual shape can range from a barrel shape to a semi-circle. Later you will see an example of a canopy made to a specific height and radius to fit in with an ornate semi-circular window above a door. As with all of our canopies, we are always happy to make the canopy to fit in with a customer's own specific requirements. Customers can also select whether their door canopy is clad with natural, anthra or quartz grey 0.7 gauge VM Zinc, or 0.6 gauge natural copper.

As is standard, the Waterloo canopy is built on a lightweight, mild steel frame, which is powder-coated to ensure it is both smooth and durable. Depending on the depth of the canopy, one or more panels are then separately formed before being secured to the frame and then traditionally finished with standing seams.

It is manufactured with a continental flashing system which means that it does not need to be chased into the wall.

As you can see from the photographs below, the Waterloo can be made with or without the front façade. Its shape means it lends itself to work well with rounded architectural features, such as the rounded sunburst window shown below.

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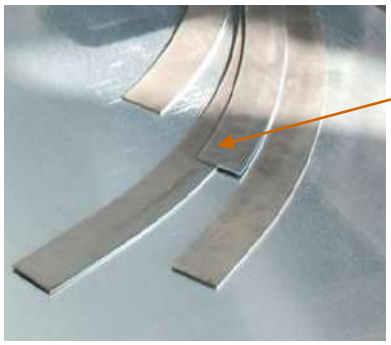
How our canopies are made

All made by us in our factory in Croydon, we use state of the art machinery to cut and curve each element of our canopies before finishing them all by hand. Our canopies are all made with a lightweight steel frame, which is cut and welded to form a strong construction. The frames are then ground to ensure the perfect finish before being powder coated. Once the frame is finished, it is clad with the prepared zinc or copper.



Mild steel is cut and then formed and bent to construct the frames

The components are ground to ensure a perfect finish.

The frame is then welded.

Powder Coating

Before coating, the steel is prepared by shot blasting and degreasing to make sure the finished product is smooth and free from blemishes. Once your frame has been made, it will be powder coated. Powder-coating is a modern technological invention that provides a high-quality, durable finish to our steel frames. It gives the surface a tough exterior and protects it against unfavourable conditions. The frame of your door canopy will be powder coated standardly with a black BS.D1036, which normally lasts in excess of 10 years, however in coastal regions this may need to be sanded and repainted after 5 years. Alternatively, your frame can be finished with a galvanised hot dipping process, however this is slightly more expensive. The metal work is dipped into hot zinc, this has a slightly mottled grey finish which complements the zinc cladding and is very durable.

You can optionally choose the colour of your frame by specifying the RAL code.

Cladding

Once the frame has received the powder coating it is ready to be clad in your choice of zinc or copper.

Cladding options

Below are details of the four different cladding options offered for all of our canopies. Images have been added to give you a basic idea of how these look, however samples are available on request.

Natural Zinc by VMZINC

This is the original zinc and has a very shiny surface when leaving the rolling mill. When installed on the exterior of a building, Natural Zinc will weather and form a beautifully textured grey patina. The development of the patina can take several years depending on the location of the panels.

The aesthetically pleasing patina also provides environmental protection to the material, making zinc a durable solution that requires minimal maintenance.
While marks can occasionally appear on zinc surfaces that are unexposed to rain or are not regularly rinsed, such superficial marks do not reduce the material's lifespan. This transformation of the zinc surface allows for dynamic and striking results. When more uniform aspects are desired, a different VMZINC option should be selected.

Anthra-Zinc by VMZINC

With its dark velvety characteristics, ANTHRA-ZINC® offers a unique VMZINC® stone-like finish that is capable of blending with various materials, such as black slate.

This pre-weathering process involves a surface treatment of Natural Zinc. ANTHRA-ZINC is not a painted product, so the colour variations between batches achieve the intended appearance of stone rather than metal.

As with Natural Zinc, based on the type of installation, surface exposure to weather and geographical conditions, ANTHRA-ZINC may slowly and gradually lighten over time to dark grey. Superficial surface scratches and marks will be covered by the natural grey patina.

While white marks can occasionally appear on zinc surfaces that are unexposed to rain or are not regularly rinsed, such superficial marks do not reduce the material's lifespan. All ANTHRA-ZINC materials are delivered with a removable protective film to minimize fingerprints, scratches, and contamination.

Quartz-Zinc by VMZINC

QUARTZ-ZINC offers a similar appearance as the natural patina developed over time by the Natural Zinc.

QUARTZ-ZINC® is Natural Zinc that is treated to visually mimic the beauty of naturally-aged patina. Recommended in situations where natural patina may not form consistently or evenly, QUARTZ-ZINC is pre-weathered and

when new, offers a colour similar to that of Natural Zinc's naturally achieved matt-grey patina.

This pre-weathering process involves a surface treatment of Natural Zinc. This process is closely controlled to ensure a minimal range of colour variances. The zinc's natural beauty is maintained without disrupting the zinc surface's aesthetic and functional integrity.

The resulting subtle, yet intricately textured matt-grey colour allows QUARTZ-ZINC to either stand out on its own, or to blend in with other natural materials such as stone, wood, terracotta, or slates.

As with Natural Zinc, based on the type of installation, surface exposure to weather, and geographical conditions, QUARTZ-ZINC can naturally develop a patina that may gradually and slightly darken the zinc's surface over time. This patina enforces zinc's long-lasting reputation by ensuring low-maintenance durability while protecting the material's surface from environmental forces.

While white marks can occasionally appear on zinc surfaces that are unexposed to rain or are not regularly rinsed, such superficial marks do not reduce the material's lifespan.
All QUARTZ-ZINC materials are delivered with a removable protective film to minimize fingerprints, scratches, and contamination.

Copper

Copper canopies will have a bright finish when leaving our factory. Once the canopy is installed the appearance will change with weathering. Copper is not a painted product, so the colour variations between batches achieve the intended appearance of stone rather than metal.

As with Natural Zinc, based on the type of installation, surface exposure to weather and geographical conditions, the copper colouring will react with water and air and the copper will gradually form a beautiful brown patina, which creates an additional protection against corrosion. Superficial surface scratches and marks will be covered by the natural brown patina.

Installing our canopies

The lightweight nature of our canopies means that they can be fitted directly onto your walls. Using your choice of appropriate fixings suitable for your substrate. Our standard canopies will not require additional supports and will not need to be chased.

Detailed installation guides are available on our website. This includes important health and safety information that must be referenced before installing. Do not attempt to install the canopy until you have read the installation guide and carried out all relevant health and safety checks.

All our door canopies are standardly fitted with a continental drip flashing.
So, no need to cut and chase into the wall.
Just seal with a proprietary sealer.

About Zinc and Copper

All of our door canopies are built with **environmentally sustainable** materials**.** Part of the beauty of natural zinc and copper is that neither needs any maintenance once installed. Zinc and copper will last in the region of 100 years and will not degrade or discolour due to ultra-violet sunlight, unlike other metal or GRP door canopies.

- Recyclable (over 95 % of old rolled zinc is recovered and re-used in various fields of application).

- Low energy consumption (consumption of energy required to manufacture zinc metal from mineral is lower than that required for any other metal used in building envelope applications)

Zinc and living organisms

Zinc is an essential element for all living organisms. Zinc is necessary and indispensable for human, animal and plant life.

There is an optimal zinc concentration range for each living organism. Within this concentration range, living organisms can regulate their internal concentration in order to meet the requirements of their metabolism.

If these optimal conditions are not met and there is a deficit, zinc deficiency can result, likewise, in the event of excess, ecotoxicological problems arise.

Human beings are not usually exposed to an excess of zinc but they can experience zinc deficiencies.

Zinc and human beings

Zinc is an important metal element for humankind as it ranks 3rd, after magnesium and iron.

Zinc plays an essential role in health. It is essential for growth, brain development, protecting the skin, the proper functioning of the immune system, digestion, reproduction, taste, smell and many other natural processes.

The human body is unable to synthesise the zinc it needs. It therefore draws zinc from its food. The World Health Organisation (WHO) recommends a daily zinc intake of 10 mg/day for children, 12 mg/day for women and 15 mg/day for men. Certain population groups have a higher zinc requirement and are therefore more at risk of zinc deficiency: children and adolescents, pregnant women, elderly people, etc.

The main symptoms related to the risk of deficiency are a reduction in the senses of taste and smell, skin problems, mental lethargy and a reduction in fertility.

Variety in a person's diet depends primarily on their culture and standard of living. Since the amount of zinc varies according to the type of food, on a global scale many adults and children have a diet that is too low in zinc. In developing countries, zinc deficiency ranks 5th among the leading 10 risk factors for human health; the World Health Organisation (WHO) attributes 800,000 deaths worldwide each year to zinc deficiency and over 28 million healthy life years lost.

Zinc and ecotoxicology

Zinc is naturally present in the environment: rocks, soil, water and air have always naturally contained variable concentrations of it. During the course of their evolution, all living organisms have used the zinc available in their environment for specific functions of their metabolism. So, zinc is an essential element, which is necessary and indispensable for all living organisms in all ecosystems.

Living organisms are adapted to the natural concentration of zinc in their ecosystem. Furthermore, they have developed mechanisms to maintain optimum living conditions when this concentration level varies from the natural norm. But if the zinc concentration radically changes, living conditions are no longer optimum and the functioning of the ecosystem can be affected.

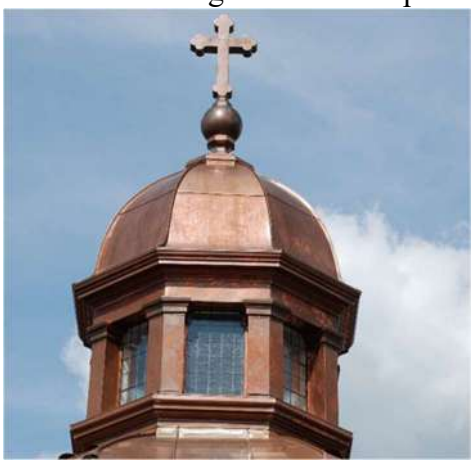
Fortunately, zinc concentrations in European ecosystems, originating either from human activities (such as atmospheric corrosion of rolled zinc and galvanised steel, wear and tear of vehicle tyres, fertilisers and animal feed, etc) or natural emissions (mainly from the earth's volcanic activity), remain within the limits of optimal living conditions. A good example of this is the current levels of zinc in the Rhine (extreme values from 3 to 25 µg/L) which are within the optimal range for zinc.

Copper

Copper has been used by man since pre-historic times and its longevity is remarkable with examples of original copper roofs still to be found on medieval buildings around Europe.

Since it was first refined around 5000BC it now has many uses such as wires, coinage, pipes, ornaments, and cylinders. A major architectural use is for roofing and cladding of buildings. Our picture shows a church done clad in copper.

The natural copper colour, when used externally, gradually forms a patina turning to brown and eventually to the green finish seen on many domes in cities all over the world.



An example of ZAC's beautiful copper work

Copper for health and nutrition

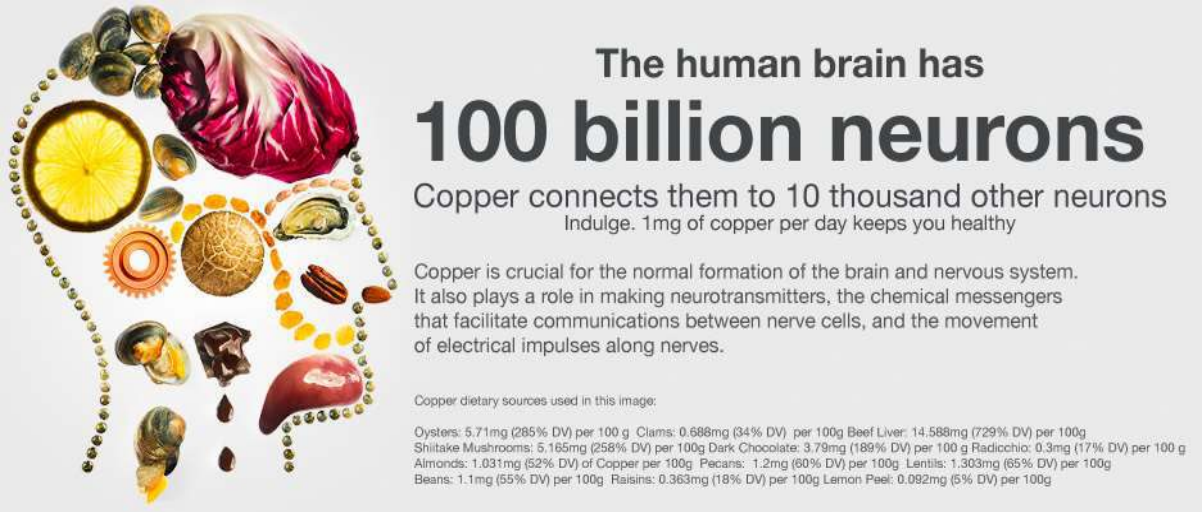
As a naturally occurring element, copper is present everywhere in the world around us. Life has evolved in this natural presence, and humans have developed built-in mechanisms to manage intake levels. Copper is required as part of a balanced diet and is important to doctors and nutritionists.

Copper from a variety of sources. As a natural element, it is present in many of the foods we eat and the water we drink. Our digestive systems assimilate the amount necessary for good health through a system of uptake called homeostasis. Excess copper is excreted.

Copper's role in growth and development

The health benefits of copper are numerous. Copper is essential for infant growth, bone strength, red and white blood cell maturation, iron transport, cholesterol and glucose metabolism, heart muscle contraction and brain development. Copper nutrition is especially important for pregnant women, the developing foetus and new-born babies. The WHO recommended daily requirement for copper is 20 mg/kg body weight for adults and 50 mg/kg body weight for children.

According to the World Health Organisation, there is a greater risk from copper deficiency than from copper toxicity, even in developed areas such as the US and Western Europe. Copper deficiency can lead to health problems such as anaemia, heart and circulation problems, bone abnormalities and complications in the functioning of the nervous and immune systems, the lungs, thyroid, pancreas and kidneys.



Sourced from the European Copper Institute https://copperalliance.eu/benefits-of-copper/health/

For more information on our door canopies and other zinc and copper products.

Please visit our website: www.zac.ltd

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