

## **Sheet metal welding**

Sheet metal welding is an important part of the fabrication process. But is welding always required? What are the main considerations?

*Is it essential to your design?*

Good design considers how to use manufacturing processes to achieve success and avoid structural failure. On one project, we had to manufacture and install a metal sculpture of a corporate logo.

The design included expensive and labour-intensive options. We proposed a combination of processes allowing us to achieve the design vision.

*What stresses are involved?*

What kind of stress is involved and where? Welds can crack and fail, aluminium especially. To avoid stress cracks while ensuring tensile strength, metal should be welded in a softer temper before age hardening at the end.

*How to avoid heat distortion*

One of our projects required 'modesty panels' welded to the bottom of first floor handrails. To avoid distortion, we clamped and packed the plate, temporarily bending it in the opposite direction. When welded, the heat pulled the plate into the correct position with no distortion.

## **Three key considerations when welding**

*What's the purpose?*

Dissect the brief to understand what your client has in mind and when welding must be involved.

*Safety first*

Structural welding must be certified according to EN1090-2, the legislation underpinning structural manufacturing and production. It guarantees all materials are certified and traceable, and that all welders on the project are qualified.

*Does it look the part?*

Sometimes, aesthetics must also be considered. Maintaining textures such as brushed stainless steel is essential.

We created a stainless steel enclosure for an electrical cabinet. The brief stated it should appear to have been made from a single piece of material. This requires specific skills: the welds must be gently ground, often by hand, and burn marks carefully removed. For more information visit: <https://alloys.com/sheet-metal-welding-major-part-fabrication-process/>