

Global Partnership Success

Profile quality is key in cold roll forming, and achieving consistency on a single production line requires skill and expertise in tool making and setting. Where Hadley excel in service delivery is in achieving the same high-quality production across all three continents.

Our in-house technology team, who design and manufacture our tooling as well as provide automotive standard quality assurance process, ensure a consistent capability value across all production facilities.

In 2021 the Hadley Group began manufacturing precision custom roll-formed profiles, made of tin-coated copper, across three continents for a global client. The purpose of these profiles was to be the conductive material at the core of a high-capacity power distribution system, supplying the mission critical digital infrastructure relied on by many. Therefore, it was vital to our customer that the profile's material, dimensions, and processing were tightly controlled.



To support our customer's international operations, the group utilised its global presence to supply from three out of five of our production facilities; Thailand, UK and the USA.

Several variants of this profile were required, from an envelope of 15x7mm to 60x10mm, all well within the size limitations of our manufacturing equipment globally. The inward returning M shaped profile required inspection on the outer 'envelope' dimensions and between the inner facing radius centres.

Material sourcing, mechanical and electrical property analysis, compliance and due diligence requirements were completed by our in-house procurement, engineering, and operations teams. As a result, we can control material specification and procure from different international mills supplying to different technical standards, whilst remaining with our customers' stringent material requirements.



Secondary operations such as saw cutting to length were introduced within our plants to (a) remove this step in our customer process and (b) streamline their assembly.

Control of critical features such as overall dimensions and mating surfaces were demonstrated via our production part approval process (PPAP). Typical overall capability indices are Cpk=2 for a \pm 0.4mm tolerance for a dimension in the 2D shape – this is achieved at each of the three production sites. Production capability for pierced features can be much greater depending on the cutting technology and method.



The group can provide solutions to customer specific problems beyond the design and supply of profiles. In one case a very specialised minimum quantity lubricant (MQL) was required to form copper profiles. The residue of other mineral oil-based lubricants degraded the plastics used within our customers' assemblies. Our in-house technical teams tested the suitability of the MQL, compared it to multiple lesser-performing mineral oil-based lubricants, and then sourced it globally to use in our forming operations.

Product design engineers unfamiliar with roll forming technology are hesitant to make engineering changes based on (a) our process window and (b) limitations of working with sheet metal. Our in-house technical team within HGT are experienced in both design, manufacturing, and engineering change processes. We can help customer design teams assess changes, manage risks to fit and functionality, and expedite product realisation. This is of greatest value during the early product design stages of a roll formed part.

Find out more about custom cold roll forming and the engineering possibilities by speaking to our team today.