SIDERVAL
SPECIAL PROFILES IN STEEL

Food & Beverage

Hygienic Stainless Steel Hot Extruded Profile for Food Applications

Profile:
Special Profile
Material grade:
Stainless Steel 304L
Execution:
Hot Extruded
Destination:
Italy

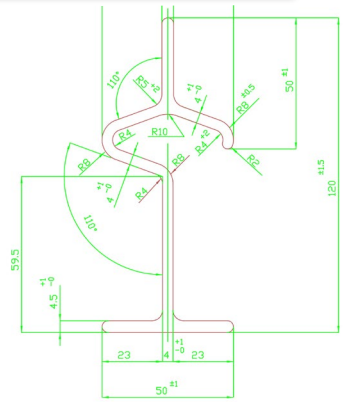
BACKGROUND

In highly regulated environments such as **food processing**, pharmaceutical production, or clean manufacturing, components must meet strict requirements for hygiene, mechanical reliability, and design efficiency.

Stainless steel is often the preferred material due to its excellent **corrosion resistance**, inert surface properties, and ease of cleaning.

However, in applications where moving parts or guiding systems are involved, achieving the right balance between structural performance and weight becomes a critical **engineering challenge**. Furthermore, complex geometries must be handled with minimal assembly and high dimensional accuracy to ensure long-term durability and ease of integration.

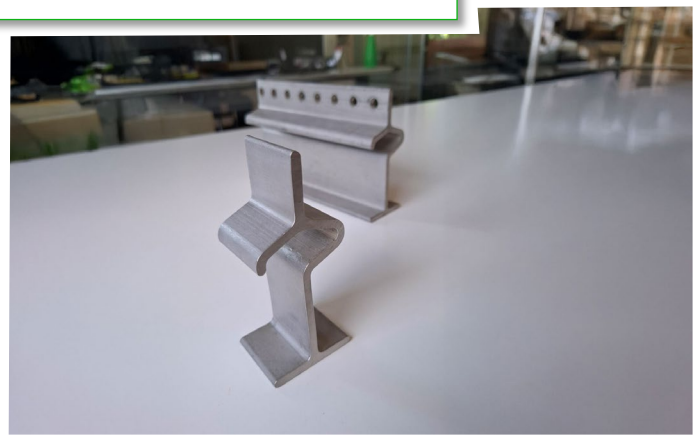
CHALLENGE



This project required a structural solution that combined hygienic properties, low weight, and complex form—all while reducing fabrication complexity:

- Stainless steel was essential for **corrosion resistance and hygienic neutrality**
- The profile had to be **lightweight yet structurally strong**
- The **geometry of the guide** was particularly complex, and using standard profiles would have required **multiple welded sections**
- Even with welding, the customer would still have needed **additional machining** on the upper portion of the profile, adding cost and complexity

SOLUTION



Siderval proposed a fully custom hot-extruded **stainless steel profile in AISI 304L**, offering a seamless solution to all design and performance challenges.

The hot extrusion allowed for optimized wall thicknesses, significantly reducing the overall weight while maintaining the necessary stiffness and load capacity. Thanks to the **hot extrusion process**, the complex guide geometry was achieved in a single-piece profile, eliminating the need for welding or post-processing operations.

This resulted in a structurally superior, **hygienically neutral** component with improved production efficiency. The customer received a solution that was both technically sound and cost-effective, perfectly tailored to their application.