SIDERVAL
SPECIAL PROFILES IN STEEL

Building & Construction

Hot Extruded Profiles for Roof Lifeline Systems

Profile:
Special Profiles
Material grade:
Stainless steel AISI 316L
Execution:
Hot Extruded
Destination:
Worldwide

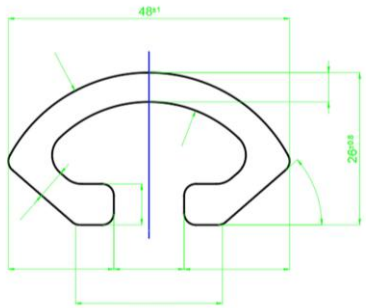
BACKGROUND

Working at **height** is one of the most safety-critical activities in construction, building maintenance, and industrial facility management. Roof-mounted lifeline systems are a key element of fall protection, allowing operators to move along a fixed line while remaining continuously anchored.

Rigid rail systems rely on a precision profile that acts as the guide track: a trolley runs inside the section, and the operator stays connected to it throughout the task.

The reliability of the entire system depends on the **dimensional accuracy**, mechanical performance, and corrosion resistance of this profile, properties that are essential when the component has a direct life-safety function and is permanently exposed to outdoor conditions.

CHALLENGE



The customer required an **AISI 316L stainless steel** rail profile for a roof lifeline system. An internal channel houses a trolley to which the operator stays attached while working at height.

Given its geometry, the profile can only be extruded:

- Complex internal channel on **6 m bars**
- Small batch for testing and prototyping
- Single continuous section for **mechanical integrity**
- Drawing refined through close technical discussion

SOLUTION

Siderval worked closely with the customer to refine the drawing, resolving the geometric peculiarities of the profile through detailed technical dialogue.

Hot extrusion was the only viable process to achieve the **complex internal channel** over the required bar length, while ensuring the structural continuity essential to a safety-critical component.

Using **hot extrusion**, Siderval produced near-net-shape profiles in the small batch needed for testing and prototyping, minimizing machining and material waste. This allowed the customer to fully validate the section under real working conditions.