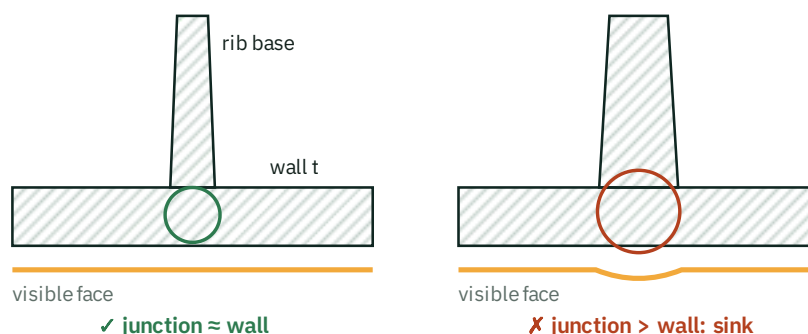


Ribs and sink marks

How thick a rib can get without marking the visible face, and what to do when the customer asks for more.

Why sink marks appear

Where a rib meets the wall, more plastic gathers than anywhere else. That zone is the last to cool: as it shrinks, it pulls the opposite surface and leaves a mark. The thicker the rib base and the larger the root radius, the more mass at the junction.



Typical starting values

Parameter	Typical value
Rib base · amorphous (ABS, PC, PC/ABS)	50–60 % of t
Rib base · semi-crystalline (PP, TPO, PA, POM)	40–50 % of t
Demanding or glossy visible face	stay at the low end
Rib height	$\leq 3 \times t$
Rib spacing	$\geq 2 \times t$
Root radius	$0.25\text{--}0.5 \times t$
Draft per side	$0.5\text{--}1.5^\circ$

How to check it

- Measure every rib from both sides: height above the B side and total height above the visible face.
- Compare the circle inscribed at the junction with the wall's: if it is clearly larger, that is where the sink mark appears first.
- Flag ribs that sit over radii or curved areas of the visible face: they usually start with more mass.

If they want a stronger rib

- Make it longer or taller before thickening the base.
- Two thin ribs instead of one thick rib.
- Reduce the draft to gain thickness at the top without touching the base.
- Texture on the visible face, if the customer accepts it, to hide marks.
- Process settings (packing, temperature) help, but the margin is small: do not rely on them alone.

Before you accept the change

Ask for the finish requirement of the visible face, measure the current state rib by rib and record which ribs are critical. Then you negotiate with data, not assumptions.