



POST OF 17/07/2026

The bath line: the most critical zone in an aluminium furnace

At the boundary between the melt and the furnace atmosphere, metal, oxygen and refractory material all meet — nowhere in an aluminium furnace are oxidation and corundum growth more aggressive.

The bath line is not a line but a moving band: the metal level rises and falls with every charge. The loaded band typically extends 20–30 cm above and below the level.

Designing the bath line area

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| ☐ Define the zone | determine the band between the highest and lowest metal level — that is where the special quality belongs, not across the entire wall as a blanket measure |
| ☐ Material | non-wetting, corundum-resistant castables placed specifically in the loaded band |
| ☐ Surface | dense and with few joints — every joint is a starting point for infiltration and corundum |
| ☐ Transitions | interlock the transition to the standard wall quality rather than butting it up |
| ☐ Inspection | document corundum build-up at the bath line at every cleaning — the growth rate shows the condition of the material |
| ☐ Cleaning | mechanically gentle; anyone who knocks corundum off by force takes the surface of the lining with it |



The stressed band around the moving metal level



Dense, low-joint surface in the bath area

Common mistakes

- Building the entire wall in bath line quality: expensive and unnecessary — the load is confined to the band.
- Standard castable at the bath line because "the wall looks the same everywhere" — after the first campaign it no longer does.
- Letting corundum build-up grow: it insulates, distorts the energy balance and levers the lining apart as it grows.

PRACTICAL NOTE

If you want to upgrade just one zone of your melting furnace: this one. The extra cost for the right material in the bath line band is small compared with a lining replacement brought forward.

Questions about your furnace?

We assess lining, zones and condition — with a reply within 24 hours on working days.

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