



POST OF 15/07/2026

The combustion chamber from the inside: zones and their lining

The hottest zone of the plant forgives no blanket solution: flame proximity, temperature cycling and ash chemistry attack different points in different ways.

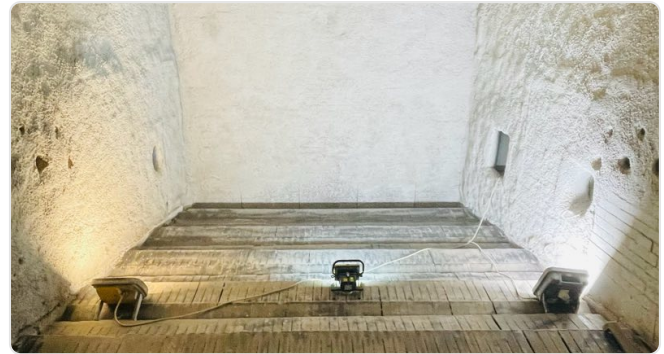
Anyone who treats the combustion chamber as one space with one material quality either pays premium everywhere — or repairs the same spots every year.

The critical points at a glance

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| ☐ Burner area/flame pattern | highest temperature peaks and cycles — dense, thermal-shock-resistant quality |
| ☐ Walls near the embers/fuel bed | mechanical attack — fired brick in a close bond |
| ☐ Arch/crown | dead load at full temperature — check anchoring and structural design before selecting the material |
| ☐ Openings and corners | every disruption of the surface is a crack initiator — radii instead of sharp edges, interlocked transitions |
| ☐ Boiler inlet | alkali condensation — alumina-rich material, depending on the fuel |
| ☐ Expansion joints | continuous, vertical, packed with fibre — at a structurally quiet point |



The hottest zone of the plant



Lining at the grate firing

Common mistakes

- Repairing the same spot again and again without eliminating the cause (zone fitted with the wrong quality).
- Connections to cooled components executed rigidly — the differential movement tears the lining open.
- Full output from hour one after the repair: partial repairs need their heat-up curve too.

PRACTICAL NOTE

Keep a zone map of your combustion chamber: which quality is where, since when, and with what findings at each turnaround. After two campaigns you will know which zone determines your service life.

Questions about your furnace?

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

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