POST OF 13/07/2026

The arch above the furnace door: why it fails first

The door arch combines everything refractory material dislikes: thermal cycling with every door opening, mechanical impact during charging, and a geometry that only carries its load if every brick bears.

An arch rarely fails spectacularly — it creeps: one brick drops, the compression chain shifts, the neighbours follow. This only becomes visible when the door jams or embers sit in the lintel.

Inspection and workmanship points at the door arch

☐ **Shaped bricks**	matching arch bricks instead of cut standard bricks — the pressure runs across the full bearing face
☐ **Abutments**	an arch is only as good as its bearings; look for cracks there first
☐ **Joint pattern**	evenly narrow; a wedge-shaped, opened joint pattern indicates creep
☐ **Door frame connection**	designed to move — frame and brickwork expand differently
☐ **Impact protection**	check the charging edges: mechanical spalling is an early warning, not a cosmetic flaw
☐ **Inspection rhythm**	5 minutes on the arch at every door service: photograph the joint pattern and compare with the previous month

The arch only carries if every brick carries

Door and lid refurbishment

Common mistakes

- Individual loose bricks "glued back in" instead of checking the compression chain — the arch keeps creeping.
- Rigidly mortaring the frame-to-brickwork connection: the first campaign tears it open.
- Arch repair without shoring: whatever holds during removal is luck, not statics.

PRACTICAL NOTE

The door arch is the best early warning point in the whole furnace: small, accessible, heavily loaded. Anyone who keeps an eye on it usually knows the condition of the rest of the lining as well.

Questions about your furnace?

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

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