



POST OF 06/07/2026

Expansion joints: the most inconspicuous cause of damage

Refractory material expands as it heats up — a wall ten metres long by several centimetres. If it is given no room for this, it presses against itself and gives way somewhere: usually where it is most expensive.

Expansion joints are not a leftover item of the design, but components with a design of their own.

The five rules of the expansion joint

- ☐ **Continuously vertical** from bottom to top in one line — offset joints still transmit the force through the bricks
- ☐ **Packed with fibre** ceramic fibre yields and still seals against flue gas — mortar makes the joint useless
- ☐ **Width calculated** from the expansion of the selected material at operating temperature — not taken over as a rule of thumb
- ☐ **Correctly placed** at structurally quiet points — not in corners, not next to penetrations
- ☐ **Maintained** check at every turnaround: compacted or slagged joints no longer work



The least conspicuous cause of refractory damage



Expansion joint properly packed with fibre blanket

Common mistakes

- Letting the joint "run along" while bricking instead of setting it as planned — it then sits where it happens to fit, not where it is needed.
- Joints full of slag after years: the wall is under pressure as if it had no joint — only less visibly.
- Overlooking the joint when surveying the damage: cracks in the middle of a wall often have their cause two metres away.

PRACTICAL NOTE

Record the joint pattern in every turnaround report: position, width, condition, photo. It is the cheapest early indicator of stresses in the entire lining.

Questions about your furnace?

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

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