POST OF 07/09/2026

Mechanical wear: The three points of attack

Not all damage to a furnace lining comes from heat. At the charging opening, the tool path and the joints, the wear is mechanical — and needs different answers than temperature and chemistry.

The telltale sign is angular spalling instead of even wear. There, it is not the classification temperature of the material that decides, but toughness, density and surface.

Location, finding, response	
☐ **Charging opening**	charge material strikes, angular spalling — tough, dense refractory castable instead of insulating brick
☐ **Tool path**	the skimming tool runs along the same path every shift — the surface decides there
☐ **Joint across the path**	catches the tool edge and tears open — execute the zone monolithically
☐ **Finding**	record the spalling shape: angular points to mechanical, even to thermal or chemical
☐ **Operation**	compare the charging and skimming routine with the damage pattern: where does the tool strike?

Charging opening: new hearth over formwork, angular spalling on the surround

Monolithic wall and hearth in the area of the tool path

Common mistakes

- Insulating brick at the charging opening because it is thermally sufficient — mechanically it does not hold.
- Material chosen by classification temperature instead of by the actual load.
- Leaving a bricked zone with joints running across the tool path.

PRACTICAL NOTE

Photograph spalling at the same spot during every shutdown. The shape of the damage reveals the cause more reliably than its size.