

## Effect of Creep on Refractory Masonry Wall Subjected to High Temperature

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**Abstract:** Refractory masonry in its application is usually exposed to chemical, thermal and mechanical loads in service. Mechanical loads develop from the thermal expansion of the refractories which is confined either by the regions of different temperature within the structure or by the boundary conditions. The aim of this work is to investigate, using numerical simulation, the influence of creep on the thermomechanical behaviour of the refractory masonry and the identification of failure mechanisms arising from the cyclic high temperature loadings. Different modelling approaches are used and coupled with the most advanced constitutive models available in commercial software in order to produce thorough parametric and sensitivity studies. Investigation is specially focused on the adverse effect of creep on stability of the masonry wall. The comparison is carried for different loading cycles by taking consideration of creep effect and without creep effect. This work is developed within the scope of Marie Skłodowska-Curie Actions Innovative Training Networks in the framework of the project ATHOR - Advanced THERmomechanical multiscale modelling of Refractory linings.

*Keywords:* *Masonry, refractories, numerical modelling, thermomechanical behaviour, parametric analyses*

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