

Industrial furnace (1) which can be used for example for treating semi-finished and siderurgical products, metal and inorganic materials, comprising a) a hot chamber (3) in which a combustion takes place and the hot gases generated by the combustion come in direct contact with the materials to be treated (p) in the furnace itself; B) a combustion stabilising system in turn comprising b1) an injection system in turn comprising at least a mixer (11) arranged to mix a fuel and a diluent before injecting them into the hot chamber (3). The diluent has the effect of reducing the amount of nitrogen oxides in the combustion products. It considerably reduces the consumption of required diluent and the Nox emissions in the fumes.