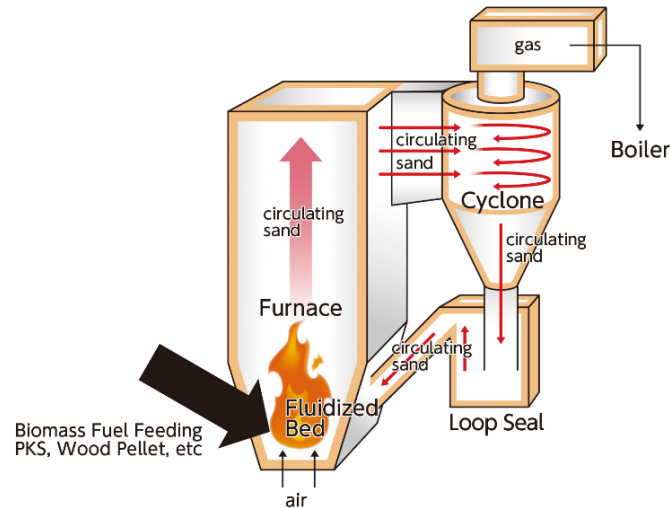


Refractories total solution for biomass CFB boilers



CFB (Circulating Fluidized Bed) boilers are facilities that efficiently combusts a wide range of fuels, such as woody biomass, lignite, and RDF (Refuse Derived Fuel) , while stirring and mixing them with fluidized sand, and recovers heat. It consists of a furnace that burns fuel, a cyclone that separates flue gas from flowing sand, and a boiler that recovers heat from the separated flue gas. Fuel and fluidized sand are uniformly agitated and mixed in the furnace, enabling combustion with high combustion efficiency. The fluidized fuel, fluidized sand, and combustion ash kept at appropriate temperature are sent to the cyclone placed at the furnace outlet, and classified into exhaust gas and fluidized sand. Then the exhaust gas is sent to the boiler. The flowing sand is circulated through the loop seal to the furnace. By circulating fluidized sand, a wide range of fuels such as woody biomass, brown coal and RDF can be efficiently burned and generated heat is recovered in the boiler. It is attracting worldwide attention as a method of power generation with low environmental impact.

Protective refractory concrete has been installed on the furnace inner water pipe and steel casing.

The performance requirements for refractory materials mainly emphasize wear resistance.

The level of abrasion resistance required for each part varies from boilermaker to boilermaker, but the part that requires the highest abrasion resistance is the upper part of the cyclone, into which flowing sand and combustion gas flow at high flow rates. Each boilermaker may also provide a required value for the thermal conductivity of the refractory.

Our Furnace Division cooperates with the monolithic refractories division to develop and construct materials.

The material arrangement has been optimized, and further improvements will be made in material and construction methods, contributing to stable operation and service life extension.

Krosaki Harima has received a total of 57 units to date. We have also received orders for 5 units in 2020fy and beyond. These contribute for reduction of 870,000t of CO₂ emissions.

Krosaki Harima also has experience with 152 municipal solid waste incinerators, 43 industrial waste incinerators, and 54 petrochemical waste incinerators.

We contributes to incineration and power generation projects by providing total refractory solutions through integrated development, design, manufacturing, supply, installation, inspection, and repair.