Invention relates to the refractory materials industry and can be used in the production of highly refractory concretes used in the petrochemical industry, for example, to form working layer of reactor linings in the production of technical carbon. Charge for producing high-refractory concrete contains granular corundum with a maximum grain size of 5 mm in the fractions 5-3, 3-1, 1-0.5, and less than 0.5 mm, in a ratio ranging from 0.5:0.9:0.2:0.4 to 0.7:1:0.4:0.6-63.5 – 76.5 wt.%, finely dispersed alumina-containing component – corundum with an α-Al_2O_3 content of at least 97 vol.% and a particle size of less than 10 μm in at least 80 vol.% – 3.5-18.0 wt.%, chromium oxide with a mass fraction of Cr_2O_3 of at least 98% and a particle size of 4-10 μm in at least 90 vol.%, with an addition of zirconium concentrate with a particle size of less than 4 μm in at least 75 vol.% at a ratio of 3:1– 3.-12.0 wt.%, addition of active alumina with a mass fraction of Al_2O_3 of at least 99% and a content of α-Al_2O_3 of at least 98 vol. % and a specific surface area of 4.8-5.2 m^2/g – 3.0-8.0 wt.%, high-alumina cement – 5.0-7.5 wt.%, and dispersing additive (more than 100% relative to base composition of components) – 0.2-0.3 wt.%.

Invention provides an increase in bulk density and thermal stability while maintaining high compressive strength values, which, in turn, leads to improved erosion and corrosion resistance of high-refractory concrete lining and prevents its cracking during service.