The author describes the new trends in the application of heat-resisting concretes in metallurgical and chemical industries mainly used for lining of furnaces. Portland cement with ground fire clay added is used for up to 1200°C, fire-resistant cement based on waterglass, or alumina cement suitable up to 1400°C, and special fire-resistant cements exist, which may be used at temperatures reaching up to 1700°C. Some examples from USSR practice are quoted, stating that by using refractory concrete in preference to the conventional brickwork construction the erection time can be reduced to 1/3 or 1/4 and a saving of material and labour of up to 50% can be achieved.