

## عنوان مقاله:

A New Technology to Manufacture Alumina-Graphite Composite by Cold Isostatic Pressing

## محل انتشار:

اولین کنفرانس بین المللی و هفتمین کنفرانس ملی مهندسی ساخت و تولید (سال: 1384)

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## خلاصه مقاله:

The most controlling parts of melt flow in continuous casting are Ladle Shroud (LS), Stopper (S) and Submerged Nozzle (SN). The common manufacturing method for the production of these parts is mixing of raw materials including alumina, graphite and suitable additives with a phenolic resin or pitch and shaping with Cold Isostatic Pressing (CIP), followed by firing at above 1000°C in the reducing atmosphere under the coke beds to develop carbon bond strengths. The aim of this project was studying the possibility of manufacturing these composites by using CIP of castables and employing hydraulic bonds of castables without a need to firing. This new technology gives economical advantages and feasibility of producing these parts in Iran. First the composition studies were performed for suitable physical and mechanical properties. The best composition at 400 bars pressure was found to be 55% alumina, 20% alumina cement, 15% graphite, 5% micro silica, 5% silicon carbide and 6-8 weight percent water above 100 w/o raw materials. Then the new manufacturing method was applied and the experimental results showed that this novel technique has developed samples which has similar properties to those produced by the conventional method outside Iran.

## کلمات کلیدی:

New manufacturing process; Cold isostatic pressing; Alumina-graphite composite

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