

ABSTRACT

Explanory note is presented on 89 pages, it cantains 26 figures, 16 tables and 4 by source.

The aim of this work is to develop methodologies to study the kinetics of the transition from spherical graphite particles to form a plate with repeated remelting of cast iron with nodular and kinetics of transition from spherical graphite particles to form lamellar when re-melted cast iron with nodular graphite. It is necessary to determine the effect of exposure time in the liquid state in the form of graphite in cast iron melting and re-define the characteristic shape of graphite inclusions in the melting zone.

As a result, studies have found that all samples have the characteristic zones: the output of pig iron, transition zone, which was on the verge of melting temperature and the solid phase and the area with lamellar graphite (part of the sample melting force within a certain time). At constant temperature transition zone width with increasing exposure time of 30 s to 120 increases from 0.96 mm to 2.25 mm, respectively. Considering the processes occurring at different durations of exposure as parts of the same process, we can assume the following mechanism kinetics of changes in the shape of graphite, in an area that was between that part of the sample melted and the one that forcibly cooled, there was a collapse to form spherical plate count by evaporation of residual magnesium iron at a temperature of 1150 ° C.

ZONE MELTING, NODULAR, EXPLOSURE TIME, TRANSITION ZONE, METALLOGRAPHIC ANALYSIS, MODIFIED IRON