

THE EFFECT OF SILICON ON THE CRACK GROWTH CHARACTERISTICS OF HIGH PHOSPHORUS CAST IRON BRAKE BLOCKS

High phosphorus cast iron brakeblocks are known to crack more rapidly than standard iron brake blocks. Locomotive service trials suggested that crack resistance might be associated with large volume fractions of ferrite in the metallurgical microstructure of the brakeblock. An attempt was made to reduce the cracking of high phosphorus blocks by varying the silicon levels and cooling rates in three experimental casts. No positive trend was identified but as a result of this work, silicon levels have been more closely specified in the current version of the Cast Iron Brakeblock Specification, BR 142.