

SILICON AS AN ALLOYING ELEMENT IN STEELS

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ABSTRACT

Silicon is one of the most common in nature and ranks second after oxygen (26% Si in the earth's crust). Due to its high chemical affinity for oxygen and high availability, silicon is primarily used as a deoxidizer in steel production. In addition, silicon is introduced into the metal for its alloying. The article analyses the effect of the Silicon element on iron carbon alloys as an alloying element.

KEYWORDS: *Silicon, Carbon, Iron, Slag, Alloy, Temperature, Feo, Deoxidation.*

REFERENCES

1. Turakhodjaev, N., Odilov, F., Tursunbaev, S., & Kuchkorova, M. (2021). Development of technology for increasing endurance when crushing the working parts of shredders (crushers) in conditions of increased friction. In *Техника и технологии машиностроения* (pp. 71-76).
2. Тураходжаев, Н. Д., Турсунбаев, С. А., Одилов, Ф. У., Зокиров, Р. С., & Кучкорова, М. Х. (2020). Влияние условий легирования на свойства белых чугунов. In *Техника и технологии машиностроения: материалы IX Междунар. науч.-техн. конф.(Омск, 8-10 июня 2020 г.)* (p. 63).
3. Traint, S., Pichler, A., Hauzenberger, K., Stiaszny, P., & Werner, E. (2002). Influence of silicon, aluminium, phosphorus and copper on the phase transformations of low alloyed TRIP-steels. *Steelresearch*, 73(6-7), 259-266.
4. Турсунбаев, С. А. (2019). Особенности обработки деталей из магнитотвердых материалов. *ТЕХНИКА И ТЕХНОЛОГИИ МАШИНОСТРОЕНИЯ*, 23-27.
5. Osozawa, K., Okato, N., Fukase, Y., & Yokota, K. (1975). Effects of Alloying Elements on the Pitting Corrosion of Stainless Steels. *CORROSION ENGINEERING*, 24(1), 1-7.

6. Турсунбаев, С. А. (2019). Особенности обработки деталей из магнитотвердых материалов. *ТЕХНИКА И ТЕХНОЛОГИИ МАШИНОСТРОЕНИЯ*, 23-27.
7. Alhajji, J. N., & Reda, M. R. (1993). The effect of alloying elements on the electrochemical corrosion of low residual carbon steels in stagnant CO₂-saturated brine. *Corrosion Science*, 34(11), 1899-1911.
8. Basso, A., Toda-Caraballo, I., San-Martín, D., & Caballero, F. G. (2020). Influence of cast part size on macro-and micro segregation patterns in a high carbon high silicon steel. *Journal of Materials Research and Technology*, 9(3), 3013-3025.