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# Development of optimized continuous casting process for zero-defect round blooms production in high silicon 54SiCr6 automotive spring steel. Production trials in Acciaierie Bertoli Safau S.p.a

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Surface quality is a well-known critical factor affecting the fatigue life of components. Therefore, the quality of the initial feedstock is mandatory for producing wire rod suitable for high stress applications, such as automotive suspension springs. This paper describes the successful experience of ABS (Acciaierie Bertoli Safau, Italy) during the development of a dedicated casting process of high silicon grade 54SiCr6 specifically intended for automotive applications. The development path is presented, highlighting the key improvements implemented. Crucial factors that allowed quality change are commented on (i.e. materials, process parameters, automated mould flux feeder, Non-Destructive controls). The step-by-step evolution of the learning process is fully described, showing the effects of each modification and the resulting improvements obtained to achieve a zero-defect cast product. Particular attention is paid to surface defects and to surface Carbon pickup phenomena. The satisfactory quality of the product achieved confirms the effectiveness of the optimization process.
**KEYWORDS:** SPRING STEEL, CONTINUOUS CASTING, MOULD POWDER, SURFACE QUALITY

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