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Development process of the EAF produciton route with new slag management for high silicon steel grade (54SiCr6) for automobile spring steel and low carbon grades (SG2-SG3) for welding wire, from scrap yard to wire rod coil. Lesson learned and future improvements.

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It is known that the steel industry is evolving towards production methods aiming at efficiency improvement and reduction of the environmental impact. It follows that a transition from blast furnace production towards the electric furnace route has been underway for some time now, and it is therefore possible that users of this kind of steel will have to rely on new suppliers with EAF route.
The paper describes the positive experience made by ABS (Acciaierie Bertoli Safau), EAF based steel producer, during the development of the whole manufacturing process of steel grades historically produced through blast furnace route, such as high silicon grade 54SiCr6 for automobile suspensions springs and low carbon grades SG2 and SG3 for welding wire application.
The evolution of this learning path is presented, with focus on the implemented aspects either in the primary and secondary metallurgy and in the downstream processes (i.e. scrap and raw materials, process parameters, slag modification and control, equipment availability, production scheduling) that proved to be fundamental for the achievement of the final product requirements (i.e. steel chemical composition, microinclusion morphology and quantity, blooms and wire rod internal and surface quality, mechanical properties of the wire).
The satisfactory feedback from product performances confirms the effectiveness of this development path and opens to future improvements that can be extended also to other steel grades.

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