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## The interplay of SEN design and flow dynamics in thin and mid slab casting

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Thin slab casting is a well established technology in modern steel making, offering significant advantages in terms of efficiency, cost-effectiveness, and environmental sustainability compared to standard slab casting. As the industry trends towards even higher productivity, a new type of casting machine operating at medium thick moulds seem to be the emerging trend. One key factor contributing to a stable process and quality of the cast product in both types of units is related to the fluid flow pattern in the mould. In this context, the design of the Submerged Entry Nozzle (SEN) warrants special attention. The study employs both numerical simulation methods (CFD) as well as water modelling techniques to analyse the interdependency of molten steel flow patterns, nozzle geometry, and casting parameters, such as casting speed or slab dimensions, based on several examples.

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