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Improved Internal Quality of High-Grade Steel Plate Using PosHARP Technology

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The demand for high-quality steel production has increased due to changes in the plate product market, particularly in the wind power and shipbuilding sectors. This study focuses on improving the internal quality of high-grade steel plates using PosHARP technology.
In the wind power sector, the size of wind power generator blades is being increased to enhance power generation. This has led to a growing demand for substructures made of extremely thick plates exceeding 100mmt. To meet this demand, the study developed technology to secure the internal quality of wind structural steel.
The technology involved two main steps. Firstly, Strand EMS was used to apply electromagnetism, homogenizing the liquid and reducing the formation and segregation of 1/2mmt central equiaxed crystals. Secondly, after soft reduction, the reduction force was increased using PosHARP Segment to minimize segregation and porosity inside the slab.
The results of the study demonstrated that by using Gwangyang work's 300mmt slab and applying PosHARP and Strand EMS technology, the internal quality of extremely thick plates could be effectively secured. These results successfully met the customer's demand for internal quality.
In conclusion, the application of PosHARP technology has significantly contributed to improving the internal quality of high-grade steel plates. As the production rate of ultra-thick, high-grade steel increases, this technology will continue to play a crucial role in ensuring the competitiveness of continuous casting.

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