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Bottom blowing is normally used to stir the bath in order to have a good metallurgical effect in the combined top and bottom blown converter. However, the bottom purging tuyeres can sometimes be blocked at the latter stage of a campaign. Thus, it is of interest to study other ways to enhance the stirring effect in the combined top and bottom blown converter. Furthermore, to study how it is possible to lower the mixing time and to avoid problems of the stirring reduction due to the application of slag splashing process. One possible is to use a side tuyere in the side wall of the converter to enhance the stirring ability of the bath. Therefore, the flow field in the bath of the combined top-bottom-side (TBS) converter was simulated in this research to study the effects of the side-blowing gas on the bath stirring. The results indicate that the mixing time with side blowing is decreased compared with the combined top and bottom blown case. In addition, these mathematical results were verified by physical modeling. The results showed that the agreement with respect to mixing time was good. Furthermore, the shear stress at the wall in the TBS converter was considered, since the furnace lining is important when the side blowing is used in the converter. Higher shear stress regions were found at the region near the surface in three different operations. The shear stress on the wall in the side flow rate of $1.5 \text{ Nm}^3/\text{h}$ is higher and the high-shear-stress region is larger than that of the flow rate of $0.5 \text{ Nm}^3/\text{h}$.

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