Hot Top Mould for Casting Aluminium T-Bar

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Abstract

There has been increasing interest in the potential productivity improvements available through the use of Hot Top technology for Vertical Direct Chill (VDC) casting of aluminium T-Bar. Hot Top technology greatly simplifies molten metal distribution and level control when multiple strands are being cast simultaneously. Aluminium T-bar is sold as high quality remelt ingot and often attracts a price premium because of its freedom from dross and dangerous shrinkage porosity. Hot Top T-bar technology can improve productivity without the complexity of additional metal control sensors and actuators. Modern VDC stations are large enough to accommodate as many as a dozen T-bar moulds at which point the simplicity of Hot Top becomes a significant operational advantage over conventional tooling which requires a dedicated level control system for each mould. Hatch has developed this technology for casting magnesium T-bar and believes that it can be easily adapted to casting aluminium. This paper discusses why Hot Top may offer advantages in aluminium T-bar production and also describes the Hatch technology, results obtained in magnesium casting, and the changes required in order to be used with aluminium.

Keywords: VDC Casting; semi-continuous casting; Hot Top T-bar; multi-strand casting