

## Surface Quality Of Thick Slabs –It's Not All About Temperature

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Casting 355 mm ultra thick slabs at voestalpine's CC7 caster - designed for three casting thicknesses (225, 285, and 355 mm) and widths up to 2,200 mm, with a 10 m bow radius - pushes surface integrity and slab geometry control to their limits. This extreme section size range combined with the 10 m bow radius induces severe thermal gradients and mechanical stresses, which negatively affect slab geometry (e.g., gutter formation) and surface quality (corner and/or transverse surface cracks). Even with CC7's optimized secondary cooling system - featuring margin cooling in the bender and dry casting sections in four segments - engineered to ensure excellent surface properties in very wide slabs, significant effort is required to counteract the stress concentrations generated during bending and unbending at low casting speed. At the same time, maintaining geometric accuracy, unbending the slab at high temperature, and sustaining the optimal casting speed becomes a constant challenge to prevent the formation of surface defects, which ultimately negatively affect the heavy plate quality.

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