Indefinite Chill Roll Material – History and Development

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Abstract: The most important evolution during the early 1930´s was the invention of Indefinite Chill Doubled Poured (ICDP).
The name indefinite comes from that fact that when doing a chill test the chill depth is not able to be determined and thus it is **indefinite**.
In the early days this roll was produced by static compound casting since centrifugal casting was not yet invented.
This grade was initially developed for the Hot Strip Mill (HSM) roughing stands, finishing stands (all stands) but also for the Plate mills. Today normally this grade (ICDP or enhanced) is used in the F4-F6 (F7) in the HSM rolling mills.
Interestingly enough even today this roll grade is difficult to replace especially for the later stands in the HSM mills. This demonstrates clearly the complexity to introduce and replace **OLD** roll materials in the rolling mills – this industry is very conservative but also precautious. When changing roll grades high financial risks could be involved not only direct cost for broken rolls but also **INDIRECT** costs for loss of production.
In the late 1990´s ICDP rolls **enhanced** with various techniques and carbides were introduced to the market where ESW together with some other roll makers are the leading providers of these grades.
This paper will discuss some developments already done and eventual future possibilities that might exist and what may be the alternatives.