



Poster 3

Steps towards sustainability & decarbonisation: The impact of high recycled content on high formability products



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ABSTRACT:

There is an increasing desire to shift towards low energy, low carbon steel manufacturing via various methods including carbon capture, near net shape casting utilising thin slab casting technology and electric arc furnaces (EAFs) moving away from the more traditional basic oxygen furnaces-blast furnaces (BOF-BF). There are many benefits for a steel industry to advance towards EAF technology including reduced energy usage, lower carbon emissions and a higher proportion of recycled steel as the iron bearing charge resulting in a reduction in costs. The more recent steel manufacturing, rolling and further processing technology has created obstacles in generating steels with high formability. The challenges posed in this study comprise of undesirable residual elements, Cr as the primary culprit from stainless steels in scrap, with the adverse effects on downstream processes and high formability coated applications leading to split and cracked products, which is highly unattractive to any customer base. A range of annealing temperatures ranging from 800-900°C were explored with increasing Cr to determine whether this negated the negative impact had on the formability properties of IF steel through determining the r-value through tensile testing.



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