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Molybdenum – A sustainable Partner for the Special Steel Industry

Thursday, 14 November 2024 14:00 (30 minutes)

Molybdenum is an essential alloying element in special and stainless steels as it for instance improves the corrosion resistance of stainless steels and increases the wear resistance of tool steels. Yet, molybdenum has also been established as the preferred alloying element in engineering steels, since it generally increases the hardenability as well as the toughness and tempering resistance. Great potential for optimizing processing by molybdenum alloying is seen for this group of steels in particular. A higher alloy addition of molybdenum can shorten heat treatment processes and thus reduce the CO₂ footprint of special steel products. Accordingly, the intake of CO₂ to the steel via the molybdenum alloying is being offset by reduced emissions due to more efficient processing. This overview lecture describes in a holistic contemplation the requirements and benefits of molybdenum in special and stainless steel production from melting over hot deformation to final heat treatment. The addition of molybdenum by various ferroalloy types as well as via recycled scrap will be particularly addressed. Examples of how molybdenum can be effectively used in modern alloy concepts for stainless steels and engineering steels for machinery will be provided.

Speaker Country

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