Arvedi ESP: Reaching Maturity in Endless Casting and Rolling Technology

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INTRODUCTION

Arvedi ESP is the first hot rolling process ever to produce cold rolled substitutes in industrial scale and big varieties of final products are now produced directly from ESP hot band without implementing a cold rolling process. Energy consumption and related CO2 emissions are drastically reduced on the one hand by the compact layout of ESP lines as well as by omitting subsequent cold rolling steps. Details of successful endless strip production as well as new features under development for currently running projects will be discussed in this paper.

DISCUSSION

Arvedi ESP - Endless Strip Production is a unique hot rolling technology already widely established in the market \cite{1, 2, 3}. This endless rolling technology enables the production of ultra-thin hot rolled strips on an industrial scale. Production shares of up to 50\% of strips with thicknesses below 1.0 mm can be realized. This brings big advantages compared to standard hot rolling routes and allows subsidizing of formerly cold rolled material.

World’s first 0.6 mm Hot Strip

Since the introduction of the Arvedi ESP process in 2009, the process and plant design has been constantly improved to follow new customer and market demands. This development peaked in the world’s thinnest hot rolled strip ever produced. On October 2nd, 2018 an ultra-thin hot strip with a thickness of just 0.6 mm was rolled at an Arvedi ESP plant belonging to the Chinese steel producer Rizhao Steel Group Co., Ltd (Rizhao). A picture of the 0.6 mm thick coil can be seen in figure 1.

Figure 1 Arvedi ESP mill produced ultra-thin hot strip with a thickness of 0.6 millimeter

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