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DEVELOPMENT OF AUSTENITIC STAINLESS STEEL TYPE 316LN – A REVIEW

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ABSTRACT

Iron based materials are widely used because of low cost and provides adequate mechanical properties such as ductility, toughness and high strength. Unfortunately mild steel and low alloy steel have poor resistance to corrosion and wear. There is a group of iron base alloys, iron-chromium-nickel alloys known as 'Stainless steel' which do not rust in most of the corrosive environments and do not scale at elevated temperature up to 1100°C. Since stainless steel has excellent corrosion resistance, small in tonnage and easily recyclable, its demand is increasing in many applications. Therefore, in this paper, development of different grades of stainless steel and its applications are discussed.

Key words: Stainless steel, grade, corrosion resistance, high temperature applications

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1. INTRODUCTION

Stainless steel is one of the most widely used materials today because of its corrosion resistance and strength. Its area of application is increasing continuously [1]. The term "stainless steels" relates to iron based- alloys of high corrosion resistance in environments where both iron and low alloyed steels would rust. It must contain more than 10.5wt% chromium. However, a minimum of 13wt% chromium is desirable for sufficient corrosion protection. The corrosion resistance increases with increasing rich surface film, usually referred as the passive film. The alloying elements improve the properties of the steel. The different grades of stainless steel have different