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## FORECAST: China's vanadium consumption to surge 30% on revised rebar standards

A revision to the standard tensile strength of rebar products in China may see vanadium metal consumption in the country grow by 30% or 10,000 tonnes per year, according to an official at the China Iron & Steel Research Institute (CISRI).

"The [revision] has been forwarded to the Standardization Administration of China and is very likely to be formally released in September," the CISRI official, who was involved in the drafting of the document, told Metal Bulletin.

The new standard is an improved edition of the GB 1499.2-2007 and proposes to eliminate the 335MPa strength rebar, replacing it with a 600MPa strength rebar, to increase rebar grades with earthquake resistance.

The CISRI official also noted that China produces approximately 160 million tonnes of hot-rolled high strength steel rebar, including HRB400 (65%), HRB500 (20%) and other products (15%).

"The [required] amount of vanadium to be added is 0.03-0.05% for HRB400 and 0.05-0.08% for HRB500, so the demand growth of vanadium metal will be around 10,000 tonnes per year," the official added.

Vanadium prices will likely gain support from the significant growth in consumption from rebar production, as well as tightening supply following stringent environmental checks in China.

Metal Bulletin's assessment of fob China ferro-vanadium prices have doubled over the past month due to production stoppages in the major production hub of Sichuan province after the environmental inspections there, but have held firm at \$55-60 per kg V since early August.

### Background

Currently, about 90% of vanadium is used in steel to increase its strength, reduce its weight, or to resist corrosion and abrasion. In rebar, it is used not only to increase strength but also to provide resistance to seismic events.

China set out to amend its construction regulations in 2010 and 2011 after the substantial structural damage and deaths witnessed during several earthquakes in 2008 – including the devastating Sichuan earthquake, which saw a number of buildings collapse as they did not comply with building codes – and called for more vanadium to be added to rebar products. However as the regulations were not strongly enforced, few rebar producers added the required amount of vanadium to their products, particularly as the steel market has experienced a downturn over the past few years.

"It is difficult to test the vanadium content [of rebar] in the field, and producers suspended adding the element to cut costs," a source said.

Data from CISRI showed that Chinese vanadium consumption for the production of rebar fell to 22,940 tonnes in 2015, down by 10,060 tonnes compared with the prior year. Meanwhile the country's total vanadium consumption also fell by 10,060 on an annual basis, reaching 33,940 in 2015, suggesting that the decline in consumption was solely due to a reduction in the usage of the material in the rebar industry.

"The rebar price had been low over the past few years and producers were in a deficit, while vanadium was one element which could be removed to cut [production] costs. This year, producers have had very good profits, benefitting from the rally in rebar prices, and they can pay additional costs to add vanadium," a second market source said.

Metal Bulletin's assessed Northern China domestic rebar ex-warehouse price reached an all-time high of 3,920-3,970 yuan (\$587-595) per tonne on August 18. This compares with the year-to-date low of 2,880-2,900 yuan per tonne recorded on January 6 and the all-time low of 1,560-1,590 yuan per tonne seen in December 2015.

"Additionally, an increasing number of end-users, especially those involved in important construction projects, have asked for higher-quality materials, so the demand for rebar with higher alloy content will increase gradually," the second market source added.

CISRI is a Chinese state-owned enterprise which serves as an important research and development base and is a leading provider of advanced materials and products in China. It owns a broad spectrum of technical know-how and advanced products in various industrial fields such as functional materials, powder metallurgy materials, refractory metals, high temperature alloys and structural materials, according to the institute's website.

*Charlotte Radford in London also contributed to this article.*

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