MARKET DEVELOPMENT OF HRB400 GRADE III REBAR

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1 Forewords

Structural building industry is the pillar for national economy development where the basic material for this industry is hot-rolled ribbed bars that play a decisive role in the development of the industry. In 2002 the total consumption of bars in reinforced concrete structure has exceeded 30 million tons. Due to the rapid development of structural building and higher requirements for the performances of structural bars, grade II rebar of 20MnSi can hardly adapt to the demands that are required by high buildings for new type bars of high strength, fine performance figures. In developed countries, grade II rebar is basically eliminated. The often-used in high buildings and important construction projects are grade III rebar of 400 MPa, in some cases, grade IV rebars are coming into uses. The new developed grade III rebar of 400 MPa is the right substitute. Comparing to 20MnSi rebar, grade III has many advantages, for instance, higher strength and fine ductility, material saving, lower invests, higher aseismatic capacity. China is a country of rich vanadium resources, and the application of vanadium in low alloy steel has become widely accepted. It is adaptive to the practical situations of China to promote the application of microalloy rebars of 400 MPa grade III, and can realize to be internationalized in rebar applications. Vanadium and titanium resources are rich in Chengde where the reserves amount to 500 million tons, exploitable for 100 years. Techniques for comprehensive utilization of these resources are advanced around the world. Vanadium product has been awarded "Diamond Prize" in Mexico International Market Research; hot rolled rebars from Chengde is a famous brand all over China. It has fine social and economic benefits. Therefore, in 1998, chairman of the board of Chengde Steel Group Co. Mr Liu Kezhong put forward in the annual meeting: Chengde shall put great efforts in disseminating the application of grade III rebar of 400 MPa 20MnSiV, and will be the pioneer supplier of the upgraded hot rolled rebars.

2 Dissemination

From 1998, Chengde started to popularize the grade III rebar of 400MPa 20MnSiV. And in this year, the outputs of rebar amounted to 5000 tons. Thereafter rebar sales grew year by year: 20 000 tons in 1999, 70 000 tons in 2000, 160 000 tons in 2001, and 250 000 tons in 2002 which took 32% of Chengde’s total outputs of hot rolled rebars of the year. According to statistics of China Association of Iron and Steel, total productions of 400 MPa grade III rebar amount to 1.048 million tons in 2001, including export. There are 15 producers whose outputs are over 10 thousand tons, Chengde Steel is numbering the second, sharing
15.3% of national total outputs, or the first if excluding exports. Chengde grade III rebars of 400 MPa 20MnSiV have been well sold nationwide to 29 provinces, cities or autonomous regions.

3 Policies for promoting grade III rebar of 400MPa

When a new product is put into market, according to product life cycle theory, it will go through different market periods: pilot, grow, mature and recession. In 1998, Chengde rebar was piloting the market. Main characteristics are: dissemination was not sufficient generally, design and construction companies were unwilling to give up using grade II rebars due to unawareness of grade III rebars of 400 MPa 20MnSiV.

Hence, we made efforts to find the point during market piloting of grade III rebar is not to achieve large profits, but to closely cooperate with governmental administrations, design institutes to let all relative parties to know this new products. And the other thing to do is to make detailed market investigation and predication, and adopt practical sale policies for rapid accessing into markets and stable market shares.

3.1 Sale policy during piloting period

(1) Emphasis from the top managing level

From the beginning, all levels of Chengde Steel Corp have paid great attentions to promote grade III rebars. Specialized leading group headed by a vice chief engineer who is mainly in charge of techniques is set up to consist of different departments of technique, quality assurance, sale etc. to solve in time relative problems arising internally.

(2) Fine image buildup

Following up the integrated concept of "demands = products", the company is trying to build up an integrated product image, i.e. core product, form product, expanded product. Core contents of Chengde grade III rebar of 400 MPa 20MnSiV are including the internal quality requirements by the national standards, for instance, stable performance, fine out dimensions, to meet basic needs of customers, and making great efforts in improving competitiveness of the new product by shaping external features of hundred percent fixed length, fixed piece in bundle and steel wrapping tape.

(3) Replenish sale personnel

With regard to the spread of a new product, one of the foregoing works is to disseminate and explain the new product to the engineering and construction companies. Therefore, the company decided to assign technical personnel from different departments like quality control and production to market department for training of market operations to enable them not only know technique and production, but accomplish smoothly the promotions of new products.

(4) Relying on government to make preparatory works

Market investigations show that there is prospect market for new III rebars. However what is lacking is the recognition of new grade III rebar, especially from the engineering departments. In 1998, a promotion group was set up to do dissemination works regarding grade III rebar, the emphasis is in engineering department. On June 19 1998, Chengde Steel company held a conference on research and promotion of 400 MPa 20MnSiV initiated by the Hebei Provincial Construction Committee. Then in February 1999, Hebei Provincial Construction Committee issued a document with regarding construction material, i.e. "Announcement on application of 400 MPa rebar of grade III in building constructions". This
document requires that at least there should be 10 model projects in this year to adopt using new grade III rebars in reinforced concrete structures. Since then, engineering amounts of new rebars have been significantly increased, because they have automatically adopted new grade rebars in their design. After-sales service like tracking the construction projects enable Chengde new rebars being used in lots in high level buildings in several important cities of Hebei province. At the same time, new rebars are delivered to Tianjin, Changsha, Yantai. In 1998 grade III rebar deliveries are 5000 tons, and increased to 20 000 tons in 1999.

3.2 Sale policy in market growing periods

(1) Taking use of the dissemination experiences of Hebei.

Following up the success of promoting new grade III rebar of HRB400 in Hebei Province, soon we began to spread all over the country through the cooperation route composed of construction committee, design institute, construction companies, manufacturer. When coming to one province, relying on the local construction committee, we organized new rebar popularizing meeting, and invited not only metallurgists but experts, for instance, Mr. Bai Shengxiang, from China Academy of Building Construction for drafting regulations on application of rebars to give introductions respectively with regarding to performances of rebar, how to make the design and use in engineering projects, how to solve the relative completion issues, economic efficiency, purchasing route of rebars etc. It was proved to be very effective. In 1999 and 2000, through the "Popularizing Conferences on Chengde new grade III rebars of 400MPa 20MnSiV" held respectively in Beijing, Shanxi, Shanxi, Hunan, Hubei, Ningxia, Shenzhen, Xiamen, Zhejiang, etc. Chengde new rebar of grade III is widely known all the country, paving the way quickly for going into market.

(2) Rapid penetration and occupation of market

When the engineering institutes become willing in using HRB400 grade III rebar, the next step for us to take is to do market pioneering. We adopt a rapid penetration sale policy of low price and high promotion fees to place our products into the market, targeting on rapid improvement of market shares. Due to effective measures, obvious achievements have been made that the sales of new rebar amount to 70 000 tons, and reach to 160 000 ton in 2001.

(3) Famous brand policy

It's aiming to enhance the reputations of HRB400 grade III rebar of Chengde. We have promoted with great endeavors the uses of our new bar in key and large projects of the country. Breakthrough from this point, multi-forms and routes are taken to strengthen the promotion works for fully and quickly expand the sale coverage. Famous brand have brought excellent benefits in projects like "three gorge water power hub", "Lianyungang Nuclear Power Station", "Nuclear Test Pile Project of Beijing Academy of Atomic Energy", "Beijing SOHO Modern City", "Beijing Zhongguangcun Sci-tech Building", "Beijing CBD", "Shenzhen Civilian Plaza (metropolitan government)", "Shenzhen Juvenile Palace", "Zhejiang Runyang Highway Bridge", "Xi'an Xianyang Airport", "Inner Mongolia Tuokoto Power Plant", "Hebei Post and Telecommunication Building" etc.

(4) Excellent after - sale service ensured famed brand effects

①Provide auxiliary documents

For the convenience of engineering and con-
struction companies to understand further, design and use, we’ve published lots of disseminating materials such as “Hot Rolled Ribbed Bars for Reinforce Concrete” GB1499 – 1998, “Design Codes for Concrete Structure” GBJ10 – 89, (partly revised in 1996), and conversion documents of II/III grades.

Provide complementary service

Provide for engineering institutes with design software or purchase information regarding to HRB400 rebars; introduce or explain connection methods to engineering and construction companies; provide information of relative manufacturer for mechanical connection of rebars.

Increase stocks to safeguard supplies

To safeguard sufficient supplies for using in construction projects, we’ve always kept in safe stocks with large quantity of HRB400 rebars in different specifications of 12 ~ 40 and lengths of 9/12 meters. In 2000, a project in Shandong Provinces urgently needed 2 tons of Grade III rebars, however could not find supplies locally. To secure their needs, Chengde sent by trucks the needed rebars in the same night to construction site.

4 Future developments

At present, Chengde Steel Corporation has developed aseismatic rebars of 400MPa G III and is able to supply completely aseismatic rebars according to engineering demands. Rebar of Grade IV is undergoing development and has achieved initial success. In the course of the processes of development, dissemination and promotion of rebars of Grade III, Chengde has gained lots of supports from the Ministry of Construction, China Academy of Building Construction, construction committees of various provinces and cities, China Association of Iron and Steel, project owners, design institutes, and construction companies. We’ll live up to various social expectations and try our best to make greater contributions to the technical improvements of the national construction industry.