

## **Advantage cold forming technology**

The advantage roll forming technology has a history of more than 100 years and is roughly divided into three stages.

The first stage (1838-1909) was a stage of exploration and trial production. At this stage, the roll forming theory and the research work on cold-formed steel were slow. With the rapid development of the industrial transportation industry, the cold-formed steel produced by the roll forming process has not been able to meet the requirements of users.

The second stage (1910 - 1959) is the stage of creating and gradually promoting the roll cold forming process.

The third stage (1960 to the present) is the stage of rapid development of roll forming production. The development trend of foreign cold-formed steel production, summarized, there are several aspects:

### 1). Production continues to increase

Since the 1960s, the output of cold-formed steel has increased rapidly. This is the general trend. According to the statistics of cold-formed steel in various countries over the years, the output of cold-formed steel is relatively stable with a certain proportion of steel output. It is from 1.5:100 to 4:100. For

example, in the development plan formulated by the former Soviet Union in 1975, the proportion of cold-formed steel production in steel production in 1990 will reach 4%. With the improvement of the production process of cold-formed steel, the product specifications and varieties are increasing, and the product quality is continuously improved. The scope of application is expanding. The former Soviet Union was re-establishing the original development plan in 1979, which stipulated that it will reach 5% in 1990. Other countries also plan to increase the production of cold-formed steel. Now the output of cold-formed steel is about 10 million tons per year. It accounts for 3% of the world's total steel.

## 2). Research work is going deep

Foreign research on roller cold forming theory, forming process and molding equipment is in progress, and a series of progress has been made in the practical application of cold-formed steel. For example, the former Soviet Union and the United States have used electronic computers to study the force energy parameters in cold forming, and to explore the deformation methods with the lowest energy consumption.

## 3). New processes continue to appear

Since the successful roll-to-roll forming process in the United

States in 1910, after decades of improvement and improvement, the molding process has become increasingly mature. With the increasing technical and economic effects of cold-formed steel in practical applications, cold-formed steel is widely used in various fields of the national economy. The quality requirements of cold-formed steel are becoming more and more strict, and the variety and specifications are required. This has led to continuous improvement of the roll forming process to meet the requirements of users. In foreign countries, the corresponding equipment for developing the roll forming process and the development has been adopted. The vertical roll forming machine with plug-in type, the forming unit for centralized adjustment of forming rolls is referred to as CTA unit (Central Tool Adjustment), and the straight edge forming unit.

4) The variety of products is constantly increasing, and the product structure is constantly updated.

With the development of cold-formed steel production and the expansion of its application range, the variety of cold-formed steel is increasing, the product structure is constantly updated, and product standards are gradually improved. With the continuous emergence of new processes, the material range and specification range of blanks are expanding day by day. At

present, there are more than 10,000 specifications for cold-formed steel produced abroad. The specifications of cold-formed steel are: blank expansion width 10mm-2500mm, thickness 0.1 Mm~32mm. From the perspective of the material of cold-formed steel, before the 1970s, it was mainly carbon steel, accounting for 90%. Since the 1970s, the use of high-strength low-alloy steel, alloy steel and Stainless steel has reduced the proportion of ordinary carbon steel products year by year, and the proportion of alloy steel, high-strength low-alloy steel and stainless steel roll former design has increased year by year.