

Remarks on Special Issue on Bar & Wire Rod



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Bar and wire rods are steel materials which undergo a variety of manufacturing processes, such as drawing, heat treatment, forging and machining, before they are made into final products. They are also “high-strength members” that have the inherent properties of the steel materials developed by heat treatment, etc. In respect to automotive parts alone, for example, many different products are made from bar and wire rods, including the engine crankshaft, transmission gear, valve spring, suspension spring, bearings, bolts and tire cord. Thus, bar and wire rod make “important safety parts” of automobiles.

Special bar and wire rods are available in a wide variety of steel grades, sizes and heat treatment levels according to the type of processing applied and the level of strength required. Steel grades comprise of plain carbon steels and alloy steels containing such hardening elements as nickel, chromium and molybdenum. Carbon contents range from 0.01% or less (extra-low carbon steel) to more than 1.0% (hypereutectoid steel). In addition, there are various types of secondary processes that are applied to the steel materials. For example, the transmis-

sion gear that is forged from a bar is subjected to an applicable heat treatment, such as carbon-hardening or carbo-nitriding, to impart the required strength to its surface, and the tire cord and rope that are made from wire rods are subjected to drawing and stranding. In terms of strength, there are even products which exceed 4,000MPa.

In recent years, an ever-increasing number of Japanese companies, including automakers, are making inroads into overseas markets with hopes of expanding their shares in the world market. In this respect, Nippon Steel Corporation is proud that it has been able to aid them in pressing ahead with their activities by proposing various new high-strength steels, process-saving steels, environmentally friendly steels, etc. and offering high-quality, high-function special bars and wire rods with a good support system for customers. In view of the accelerating globalization of local economies, the company is committing itself to the continued stepping up of its integrated manufacturing operation, from steel materials, production processes and designs, remaining in close partnership with the customers.

This Special Issue on Bar & Wire Rods introduces part of the above activities. It describes some of the company’s latest achievements in the fields of automotive parts, steel wires and cords, construction, etc. It also touches on the company’s solution technology (analytical techniques, etc.) that has made their production possible. The reader will find that the very latest of advanced technologies are incorporated into the production of Nippon Steel’s bar and wire rods.

I wish to express my heartfelt thanks to all the persons concerned for their precious advice and guidance endowed upon us so far. I look forward to their continued cooperation in the future.