

Steelmaking capacity still Growing

More and larger basic oxygen converters and larger, higher-power electric furnaces helped increase Japanese steelmaking capacity and efficiency during 1972. At the end of the year there were a total of ninety basic oxygen converters in use, up from 24 in 1962. The increase in number is as follows:

Year	Number
1962	24
1966	50
1970	83
1971	88
1972	90

Of these ninety converters, 18 had per-charge capacities of between 200 and 300 metric tons. Through advances

Japan watching

in refining equipment and technology, it has become possible to produce alloy steel and stainless steel by the BOF process. Killed steel accounted for nearly 37% of all steel produced in the BOFs, an increase from 34% in 1971.

In the latter half of 1972 the hot metal ratio dropped from the 87% in 1971 to 83 percent.

Basic oxygen furnaces worldwide

Country	less than 100 MT/ Charge	101-200 MT/ Charge	More than 201 MT/ Charge	Total
Japan	40	32	18	90
U.S.A.	18	33	25	76
W. Germany	10	16	9	35
U.K.	5	11	4	20
Soviet Union	31	3	3	37
Others	111	30	11	152
Total	215	125	70	410

During 1972 there were 747 electric furnaces in operation, two less than

in 1971. However, the total quantity produced in these furnaces was 15.3% more than in 1971. The productivity was increased by twelve tons per hour of operation.

Pollution control costs Steelmakers \$350 million

Japan's iron and steel producers spent almost \$350 million in plant and equipment investment for pollution control in the fiscal year ended March 31, 1973, an increase of 32% over the \$265 million allotted in Fiscal 1971. The Fiscal 1972 expenditure represented 13.9% of the steel industry's total outlay for capital investment.

According to the statistics developed by the Ministry of International Trade and Industry, the steel industry spent more for environmental control than any other single industrial sector in Japan and had one of the highest ratios of pollution control spending to overall investment. The only industries with higher ratios were thermal power, mining, paper and pulp, chemicals and ceramics.

The MITI report, based on a survey of 1,204 firms, of which 75 were steel companies, showed an average industry ratio for pollution spending in Fiscal 1972 of 11.7 percent.

Popularity of continuous Casting is up

Simplification of production processes, higher yields, better working environment, and other advantages have led to ever increasing use of continuous casting in the Japanese steel industry. The Oita Works of Nippon Steel became the first large-scale steel mill to rely completely on continuous casting for its entire production, thus eliminating the traditional slabbing and blooming mills.

At the end of 1972 there were 75 continuous casting facilities installed in Japan, their uses as follows:

Type of Product	Number
Blooms	16
Slabs	23
Billets	36
Total	75

The No. 4 continuous caster at the Mizushima Works of Kawasaki Steel started operations in August with a rated capacity of 1,500,000 metric tons per year, most likely the largest installed in the world to date.

Mitsubishi to build sinter plant Desulfurization equipment

Kawasaki Steel Corp. recently announced that it had selected Mitsubishi Heavy Industries, Ltd. to build the largest exhaust desulfurizing unit ever to be put into an iron ore sintering plant.

The unit, capable of treating 750,000 cu m of exhaust gas per hr, will be in-

stalled on the new Mizushima Works sinter plant. Manufacture and installation is expected to be complete by about October 1974. In the meantime the new sinter plant will be operated without the desulfurizing equipment.

The MHI equipment uses quicklime, calcium carbonate, and slaked lime as absorbents of the sulfur oxides, thereby producing gypsum that can be recovered as a salable product. MHI claims the equipment will be able to reduce the sulfur dioxide content of the exhaust gas to below 40 ppm.

High purity magnesium brick Developed for BOF converter

Nippon Steel Corp., the largest steelmaker in the world, recently introduced a new fire brick for use in BOF converters that is said to be twice as durable as that used formerly.

Jointly developed by Nippon Steel and Kurosaki Yogyo KK, the UHM brick is made from a composite material containing electrocast super high purity magnesium as its principal ingredient. Special care is taken in selecting the materials as well as the size of particles. A special firing furnace has been developed to provide the necessary firing conditions. The materials used in the brick contain very small amounts of silica, alumina, and iron. The fired brick exhibits very little deformation under high temperature usage. Softening due to slag absorption is as low as 29% as compared to 50% for normal bricks used in the past.

The UHM bricks have been tested in full-scale operation at the Tobata Works and Murooran Works in 70-ton and 60-ton converters, respectively, since March of this year.

Giant spirally welded pipe Planned by Nippon Kokan

The decision to make spirally welded pipe with a diameter of 2.5 m and in lengths of 36 m has been announced by Nippon Kokan KK. To produce the pipe, hot rolled coil 25 mm in thickness will be produced. It is believed that this will be the largest spirally welded pipe manufactured in the world.

Construction of the plant begins this fall and will be completed by the end of 1974. Initial capacity is expected to be about 7,000 tons per month.

Much of the pipe produced is expected to be used in caissons for bridge construction in addition to its use in pipelines. ■

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