

Rolling-mill equipment and rolls. Wide-strip hot rolling mills

Over 80% of hot-rolled sheet products in CIS countries are produced on wide-strip mills manufactured by NKMZ.

In NKMZ program constant particular attention is given to the improvement of these mills design. It is due to high share of hot-rolled flat materials in the world production and also because of growing of user's requirements as to their quality.

Searches for the most optimal design of wide-strip mills are carried out during hot rolling process development providing fulfillment of requirements for power saving, capital investments reduction, expanding technological capabilities and increasing the level of automation.

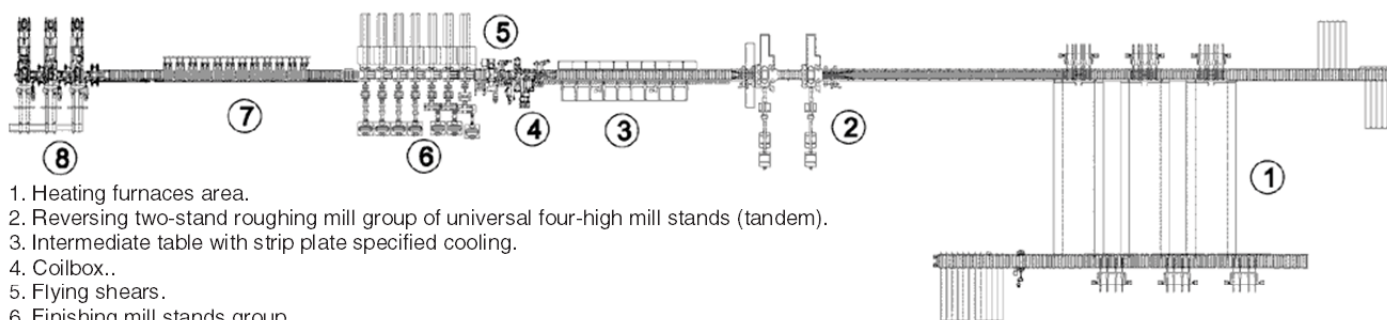
Advanced technologies are also implemented as a result of existing mills updating. While performing rehabilitation NKMZ pays special attention to:

- solutions permitting to minimize mill downtime while modernization performing;
- maximum possible using of existing equipment;
- maximum possible saving of existing foundations in order to reduce building and assembling works.

Below you can find, as an example, the layout of 2500 mm universal high-duty semi continuous wide-strip mill, fitted with modern technical facilities and control systems, designated for production of strips of various steel grades including high-strength steels.

Besides conventional procedure for wide-strip mills, a rolling technology for pipe steel grades as per controlled modes can be realized here.

LAYOUT OF 2500 MM SEMICONTINUOUS WIDE-STRIP MILL



1. Heating furnaces area.
2. Reversing two-stand roughing mill group of universal four-high mill stands (tandem).
3. Intermediate table with strip plate specified cooling.
4. Coilbox..
5. Flying shears.
6. Finishing mill stands group.
7. Run-out table with strip cooling system.
8. Universal strip coilers.

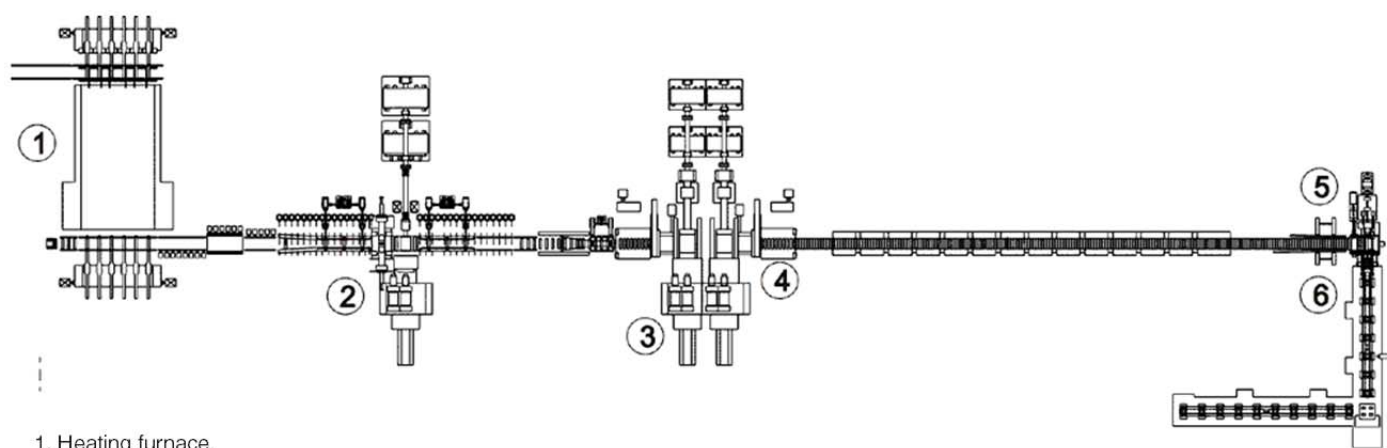
Initial billet:	
- thickness, mm	250
- width, mm	1000...2350
- weight, t	up to 45
Dimensions of hot-rolled strips in coils:	
- thickness, mm	1,2...25
- width, mm	1000...2350
Rolling mill yield, mln. t/year	5,5

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More cost efficient and less capital-intensive rolling mills of small capacity are coming into ever increasing use; among them there are in particular rolling mills with coilers in furnaces (Steckel mills). NKMZ has made three of such mills, configuration of which traditionally includes one roughing and one finishing reversing stands.

Among last developments by NKMZ there is a diagram of reversing mill with coilers in the furnaces with one roughing and two finishing stands. This mill possesses advanced process possibilities both as for increase in productivity and thin strips rolling with quality indicators meeting world market requirements.

DIAGRAM OF 1700 MM REVERSING MILL WITH FURNACE COILERS



1. Heating furnace.
2. Reversing universal four-high roughing mill stand.
3. Two reversing four-high finishing mill stands (tandem).
4. Coilers in reheating furnaces situated upstream and downstream of finishing stands.
5. Crop shears.
6. Hot strip coiler with coils handling device.

Initial billet:: - thickness, mm - width, mm - weight, t	250 900...1570 up to 30
Dimensions of hot-rolled strips in coils: - thickness, mm - width, mm	1,2...16 900...1570
Rolling mill yield, mln. t/year	1,5

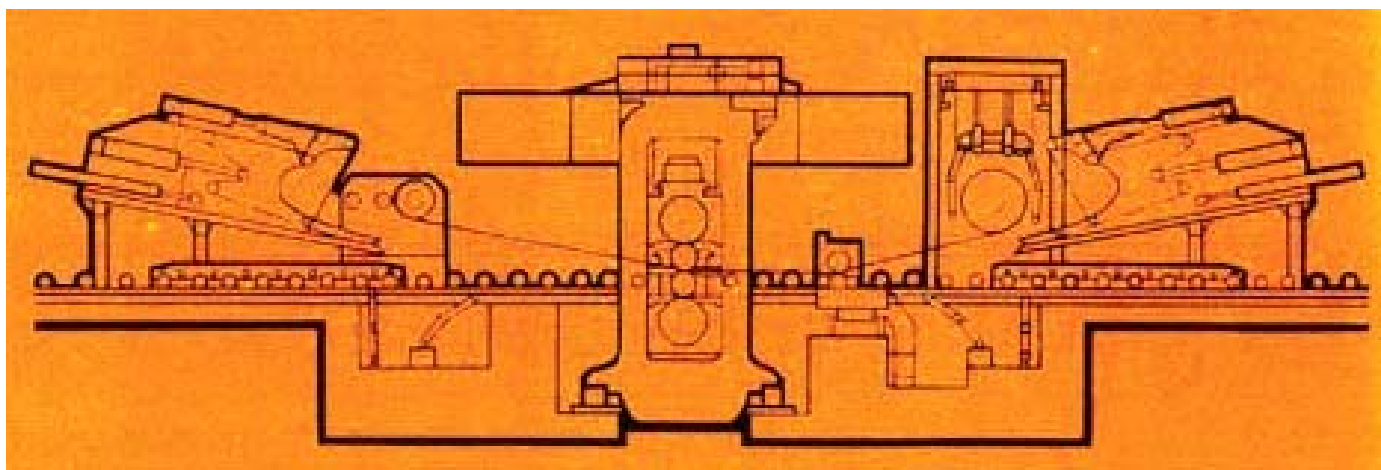
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NKMZ has designed and supplied more than ten hot rolling strip mills for enterprises of aluminum industry. The product range includes both the most efficient mills (semi continuous, with productivity up to 1 mln. t/year), and reversing mills.

Heavy reduction ability, high degree of automation, modern technology and equipment make it possible to produce a wide range of products with required level of surface quality, mechanical properties and allowances for geometrical dimensions.

The reversing mills with coilers upstream and downstream of finishing stand, implementing advanced rolling method in "coiler to coiler" mode in last passes is offered for small rolled metal production volumes of aluminum alloys. This technology provides thinner and better strip due to temperature and rolling modes stabilization in the last passes with tension.

EQUIPMENT OF REVERSING FINISHING STAND AREA



Initial billet: - thickness, mm - width, mm - weight, t	300...600 up to 2000 8...20
Dimensions of hot-rolled strips in coils: - thickness, mm - width, mm	2,5...12 900...2000
- Rolling mill yield, mln. t/year - one stand - double-stand	1,5 до 150