Semi-finished Steel Products

Continuous Cast Billets

Geometric Parameters

Mill	Nom. size	Max. tolerances	Difference between diagonals/Ovality	Length	Length tolerance	Streightness deviation %	Streightcut deviation
1	240 x 240 mm	±7.0 mm	±9.8 mm	4,1 - 8.1 m	±50.0 mm	0.3	8.0
1	300 x 300 mm	±8.0 mm	±11.2 mm				15.0
1	360 x 360 mm	±10.0 mm	±14.0 mm				15.0
R	260 x 340 mm	±5.2 x ±6.8mm	±5.0 mm	4 - 10.5 m	+0/-100 mm*	0.5	7.0
2 4	∅ 150 mm	+3.0/-5.0 mm ±3/-5 mm	є 8.0 mm є 8.0 mm	5.6 - 12 m 4.5 - 12 m	+70/-0 mm +70/-10.0 mm	0.3	7.0 7.0
1 2	∅ 156 mm	+4.0/-5.0 mm +3.0/-5.0 mm	є 9.0mm є 8.0 mm	9 - 11.3 m 5.6 - 12 m	±50.0 or +100.0/-0* +70/-0.0	0.3	7.0 7.0
R	∅ 177 mm	+2.0/-4.0 mm	є 2/3 of the ultimate O.D. deviation	4-10.5 m	+0/-100 mm*	0.4	7.0
1	∅ 196 mm	+4.0/-5.0 mm	є 9.0 mm	8 - 11.3 m	±50.0 or +100.0/-0*	0.3	7.0
4	∅ 210 mm	±3.0 mm	є 3.0 mm	4.5 - 12 m	+55 mm	0.3	6.0
R	∅ 220mm	+3.0/-4.0 mm	є 2/3 of the ultimate O.D. deviation	4-10.5 m	+0/-100 mm*	0.4	7.0
1	∅ 228 mm	+4.0/-5.0 mm	є 9.0mm	6 - 11.5 m	±50.0 or +100.0/-0*	0.3	7.0
1	∅ 260 mm	+4.0/-5.0 mm	**	6 - 11.5 m	±50.0 or ±100.0/-0*	0.3	7.0
R	∅ 280 mm	+3.0/-5.0 mm	є 2/3 of the ultimate O.D. deviation	4-10.5 m	+0/-100 mm*	0.4	7.0
4	∅ 300 mm	±3.0 mm	є 3.0 mm	3.5 - 12 m	+55 mm	0.3	7.0
1 4	∅ 340 mm	±5.0 mm ±4.0 mm	є 3/4 of the ultimate O.D. deviation є 7.0 mm	4 - 11 m 3.5 -12 m	±50.0 or +100.0/-0* +50.0/-10.0 mm	0.3	15.0 7.0
R	∅ 350 mm	+2.0/-7.0 mm	є 2/3 of the ultimate O.D. deviation	6-7 m (4-10.5)***	+0.0/-100.0 mm*	0.4	15.0
1	∅ 360 mm	±5.0 mm	є 3/4 of the ultimate O.D. deviation	4 - 11 m	±50.0 or +100.0/-0*	-	15.0
4	∅ 400 mm	±4.0 mm	є 7.0	3.5 - 12 m	+50.0/-10.0 mm	0.3	7.0
1	∅ 410 mm	+4.0/-6.0 mm	є 3/4 of the ultimate O.D. deviation	4 - 8.5 m	±50.0 or+100.0/-0*	0.3	15.0
K	∅ 5.5"	±0.250"	±0.125"	30 - 40 ft	±4"	0.250" in 5 ft	±0.250"
K	∅ 6.5"	±0.250"	±0.125"	30 - 40 ft	±4"	0.250" in 5 ft	±0.250"

Mill Designation: 1 – Volzhsky/Rus/; 2 – Seversky/Rus/; 4 – TAGMET/Rus/; R – Resita /Rom/

* up to 10 % in random length ** shall not exceed of the ultimate O.D. deviation *** special cases

Steel Grades according to the following standards:

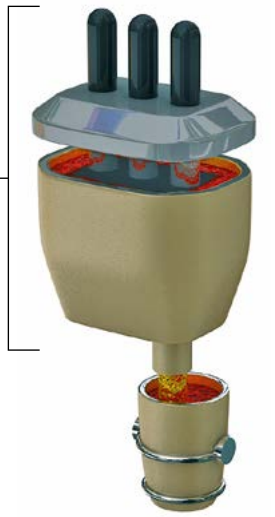
Volzhsky: ASTM A106-13, ASTM A210-02(2012), ASTM A213-14, ASTM A333-13, ASTM A335-11, ASTM A519-06(2012), DIN EN 10083-3, 10208-2-заменен на DIN EN ISO 3183, DIN EN 10210-1, DIN EN 10216-2, DIN EN 10297-1, ISO 3183-3;
Seversky: API Spec 5CT, API Spec 5L, ASTM A53-12, ASTM A106-13;
TAGMET: API 5DP, API Spec 5CT, ASTM A53-12, ASTM A106-13, ASTM A333-13, ASME SA 106, DIN EN 10210-1, DIN EN 10216-1, DIN EN 10255;
Resita: API Spec 5CT, API Spec 5L, ASTM A106-13, A519-06(2012), 10216-1/2/3/4, DIN EN 10216-2, ISO 2938.

Steel Melting and Casting Flowchart

- Preparation of scrap
- Preparation of deoxidizers, materials and ferroalloys.
- Charging of steel making furnace

1. Melting

Electric arc furnace

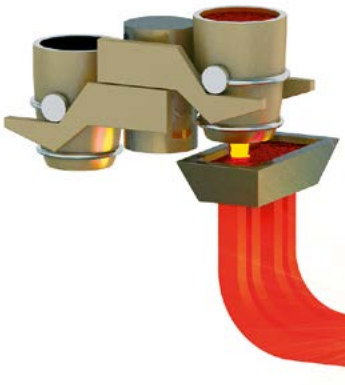


2. Treatment of steel in ladle furnace

Ladle furnace

3. Vacuum degassing
(applicable for high grades of steel)

4. Continuous steel casting.
Production of square and round billets



5. Cutting of billets

6. Cooling and marking of billets*

7. Acceptance of billets, heats.
Delivery to storage or shipment

*Turning of round billets is performed if required.

Controlled parameters: scrap weight, chemical composition and sizes; materials gravimetric and chemical composition, humidity, weight; metal temperature; vacuum degree, cooling regimens, casting rate; cut length and quality; billetwise traceability, outside surface, geometric sizes, billet quality, macrostructure.