



 **DNEPROSPETSSTAL**



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COMPANY PRESENTATION

MISSION STATEMENT

Using the state-of-the-art technologies Dneprospetsstal manufactures and sells high-quality products of special steels and alloys, does its business for the benefit of shareholders, partners and co-workers.

PJSC „Dneprospetsstal“ is a key manufacturer of special stainless steels in the CIS market and an undisputed Ukrainian leader in this market segment.

Dneprospetsstal, as the largest international company, develops, manufactures and sells metal products of stainless, tool, high-speed (including those produced by the PM-method), bearing, structural, alloyed and carbon steel grades.

The technologies applied at DSS enable to produce high-quality materials used in a variety of industries, i.e. engineering, shipbuilding, automotive, aerospace, power generation, oil and gas, heavy equipment manufacturing.

Our metal is used to produce parts for vehicles and machinery, seamless tubes and bearings, tools for further processing of metals and alloys.

The geographical location of the company provides a significant advantage in entering the markets of the CIS and the EU. The products of Dneprospetsstal are in demand in more than 60 countries. Maintaining its leading position in the national market, DSS expands its presence in the CIS, Europe, America and Asia, working with partners and distributors in 15 countries.



OUR HISTORY

Each year, since the date of DSS foundation, has been marked with the events significant not only for PJSC „Dneprospetsstal“, but for the whole metallurgical industry as well.

- 1932 the first heat - DSS Foundation Day
- 1933 bearing steel production was set up
- 1934 production of stainless acid-resisting chromium-nickel steel was mastered
- 1941 the works evacuation to Siberia in a period of the World War II
- 1945-1953 the works' performance restoration after the World War II
- 1948 the first post-war heat
- 1955 ladle degassing was practised for the first time ever in the USSR
- 1956 heat-resistant alloys production was set up
- 1957 cold-drawn steel production was mastered
- 1958 electric-slag remelting process was set up for the first time ever in the world
- 1959 steel and alloy melting in the vacuum-arc furnaces was mastered for the first time ever in the USSR
- 1966 the biggest in Europe, at that time, specialized shop for ESR and VAR ingots melting was built
- 1972 manufacture of large capacity forgings in the forge-press shop was mastered
- 1980 manufacture of tool and high-speed steel using PM-method was mastered for the first time in the USSR
- 1987 gas-oxygen refining process was implemented for the first time in the USSR

1996 Daniell ladle-furnace was put into operation, and a modern technology of structural and bearing steel manufacture was set up using this Italian unit

1996 quality system according to ISO 9002:1994 was implemented and certified

1998 Mannesmann-Demag vacuum degasser was put into operation, and a Secondary metallurgy technology was set up using this German equipment

2002 metal surface finishing shop was put into operation

2002 quality system according to ISO 9001:2000 was implemented and certified

2003 ladle-furnace was put into operation in the Steel melting shop No.2, and resource saving technology of corrosion-resistant steel production was implemented using this unit

2006 drop-hammer plant was equipped with a scrap shear press unit

2007 slag processing shop was built

2008 quality system according to ISO 9001:2008 was implemented and certified

2009 Loeser RPS 377 line for 120-280 rolled stock finishing was put into operation at the finishing roll line area of the rolling mill

2012 CVS Makina's 1200 thousand cubic meters/hour Gas Treatment Station was put into operation in the Steel melting shop No.3

2012 ferromolybdenum manufacture area was put into operation in the Steel melting shop No.2



QUALITY POLICY

QUALITY MANAGEMENT SYSTEM

The contemporary market features the customer, first of all, who wishes to buy high-quality and cost-efficient products. An ability of meeting these requirements - is an assurance of the company's high competitiveness. So, the top targets of the company are the manufacture of high-quality products and the maximum satisfaction of the customers' needs.

The company has developed, implemented and certified the Quality Management System (QMS) according to ISO 9001:2008 in order to meet these objectives.

The System is aimed at improving the company's activities with quality as its priority in all departments at every production stage, distinct allocation of duties, and control of quality and efficiency of personnel training. The successful performance of QMS at Dnepropetsstal is confirmed by annual compliance audits, conducted by „TUV“ Technical Supervisory Society.

Our products quality conform to the requirements of the national and international standards among which are GOST (CIS), ASTM, AISI (USA), EN (EU), DIN (Germany), BS (Great Britain), AFNOR (France), JIS (Japan). Besides, the company has developed its own technical delivery terms, which are harmonized with the above mentioned standards for manufacturing stainless, bearing, tool and structural steels.

Quality of the delivered products is monitored by SGS Society, which is a world leader in the area of providing the independent examinations, tests and certification.

CERTIFICATES BY PRODUCT TYPES

- **Pressure Vessels:**
 - AD 2000 Merkblatt W0/TRD100
 - DGRL 97/23/EG
- **Construction Industry:**
 - CPR 305/2011 EU
- **Shipbuilding Industry:**
 - Lloyd's Register
 - Germanischer Lloyd
 - Det Norske Veritas
 - Russian Maritime Register of Shipping
- **Aircraft Industry:**
 - Aviation Register of Interstate Aviation Committee (Russian Federation)
- **Railway Machinery:**
 - Register Certification of Railways Federation Agency (Russian Federation)
- **Nuclear Industry:**
 - National Nuclear Energy Company „Energoatom“ (Ukraine)

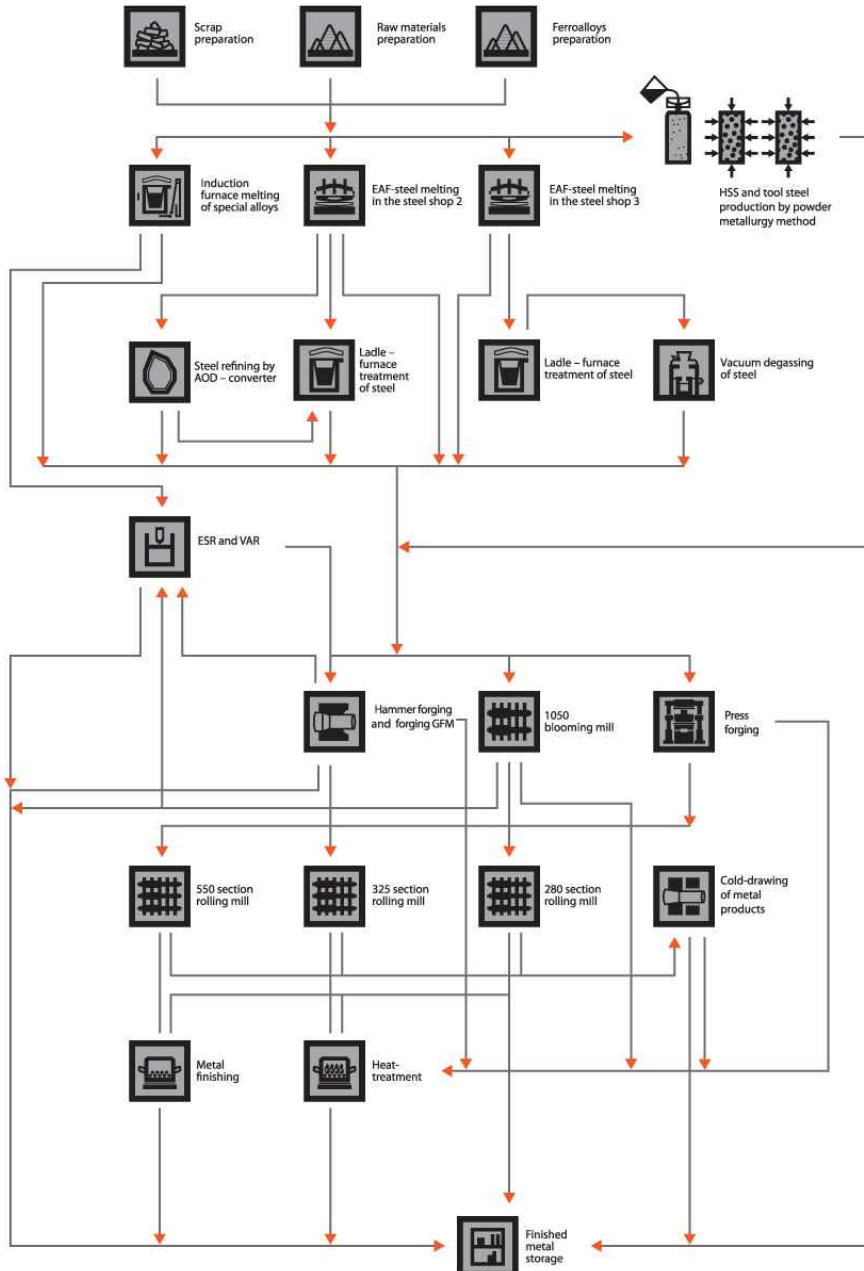


MANUFACTURING PROCESS AND MANUFACTURING FACILITIES

Dneprospetsstal manufactures over 800 steel grades of 1200 section sizes. The company is constantly developing the industrial facilities and new technologies, installing advanced equipment, which enables to produce high-quality products.

PRODUCTION CHART

Production chart comprises the best combination of various processes, which allows obtaining quality products with properties according to the individual orders of our customers.



STEELMAKING

Steel making process at DSS is represented with four steel melting shops.

The powder metallurgy shop is equipped with a 4-ton induction furnace. ASEA-STORA process is used for producing more than 30 high-speed and tool steel grades conforming to the requirements of GOST, DIN, ASTM standards; ASEA-STORA process is represented with cold and hot-isostatic pressing at 1100-1150°C and 1000 atm.

Melting in the Steel melting shop No.2 is performed in an open electric-arc furnace followed by converting and processing in a ladle furnace, which allows obtaining of low-carbon corrosion resistant stainless steel. The shop is equipped with an 8-ton induction furnace for producing heat-resistant steels and special alloys.

Steel melting shop No.3 produces high-quality steel by means of semi-product processing in Danieli ladle furnace with further vacuum degassing of melt in Mannesmann Demag vacuum degasser.

Steel melting shop No.5 is equipped with ESR and VAR furnaces of different capacities, which enable to produce 0,9-6,0 ton ingots and 9,3-20,0 ton plate ingots. ESR technology allows to produce steel and special alloys for the major industries, such as: aeronautical, defence, as well as thermal and nuclear power.



STEEL PROCESSING

DSS steel processing is represented with rolling, sizing, forging, forge-pressing, heat-treatment and metal surface finishing shops.

1050/950 blooming mill of the rolling shop is designed to manufacture billets for further rolling by section mills, as well as 130-280 mm bars. 550, 325 and 280 section rolling mills produce metal products from 8 up to 130 mm in diameter with as-rolled or as-machined surface. Surface is machined by centreless peelers; the process is completely automated. At the section of the rolling mill finishing line round 120-280 mm, up to 2,6 ton bars of the full grade range are machined by Loeser RPS 377 lathe. The technology of wet grinding „on a contact circle“ or „with a free belt“ is applied in the equipment. All the metal products from 20 mm and over in diameter have to be US-tested in accordance with EN 10308, ASTM A388 or SEP 1921 standards.

Round cold-drawn 2-45 mm bars, round 1,9-50 mm bars with special surface finishing and sized hexagons with incircle 12-46 mm diameter (for the CIS market) are produced in the sizing mill.

Large round, square and rectangular forgings of different steel grades are products of the forge-pressing shop. The shop is equipped with 60 MH and 32 MH hydraulic presses fitted with 5 and 10 ton handlers. The shop comprises special areas for forging heat-treatment, straightening and finishing, as well as US-testing.

The forging shop manufactures stainless, tool, high-speed steel products as well specializes in the production of bars of difficult-to-form alloy steel grades. Two radial-forging 10 MH and 3,4 MH machines are installed in the shop.

Heat treatment of metal products is performed in the heat-treatment shop and in the relevant areas of processing shops.

Metal surface finishing shop performs machining of 20-200 mm round bar surface; final machining of bars with special surface finishing into 160 mm rounds is made by RPS 327 unit. The shop comprises two lines designed for grinding and special surface finishing. The final processing of bars, supplied from 1050, 550, 325 and 280 rolling mills, as well as forging and forge-pressing shops, is performed here.



BRIEF PRODUCT CATALOGUE

Dneprospetsstal has in possession multifold possibilities to produce various special steel products by virtue of its powerful industrial base.

GRADE RANGE

STAINLESS STEEL

Austenitic Stainless Steel

DIN EN		ASTM/AISI	GOST
1.4301	X5CrNi18-10	304	07X18H10
1.4303	X4CrNi18-12	305	06X18H12
1.4305	X8CrNiS18-9	303	10X18H9-Y
1.4306	X2CrNi19-11	304L	03X19H11
1.4307	X2CrNi18-9	304L	03X18H9
1.4401	X5CrNiMo17-12-2	316	07X17H12M2
1.4404	X2CrNiMo17-12-2	316L	03X17H12M2
1.4435	X2CrNiMo18-14-3	316L	03X18H14M3
1.4436	X3CrNiMo17-13-3	316L	05X17H13M3
1.4541	X6CrNiTi18-10	321	08X18H10T
1.4571	X6CrNiMoTi17-12-2	316Ti	08X17H12M2T
		304H	10X19H10
		304N	08X19AH10
		304LN	03X19AH10
		309	20X23H14
		309S	08X23H14
		309H	10X23H14
		310S	08X25H20
		310H	10X25H20
		316H	10X17H13M2
		316N	08X17AH13M3
		316LN	03X17AH13M3
		317	08X19H13M4
		321H	10X18H10T
		347	08X18H105
		347H	10X18H105
1.4841	X15CrNiSi25-20	314	20X25H20C2

Martensitic Stainless Steel

DIN EN		ASTM/AISI	GOST
1.4006	X12Cr13	410	12X13
		403	15X13
1.4021	X20Cr13	420	20X13
1.4028	X30Cr13		30X13
1.4031	X39Cr13		40X13
1.4034	X46Cr13		46X13
		440A	65X18
		440B	85X17
		440C	110X17
1.4057	X17CrNi16-2	431	17X16H2
1.4122	X39CrMo17-1		39X17M
1.4313	X3CrNiMo13-4		05X13H4M
1.4418	X4CrNiMo16-5-1		06X16H5AM
			40X9C2
1.4718	X45CrSi9-3		45X9C3

Ferritic Stainless Steel

DIN EN		ASTM/AISI	GOST
1.4000	X6Cr13	410S	08X13
1.4016	X6Cr17	430	08X17
1.4113	X6CrMo17-1	434	08X17M

Ferritic-Austenitic Stainless Steel (Duplex Steel)

DIN EN		ASTM/AISI	GOST
1.4462		F51 S31803 S32205	03X22H5AM3

STRUCTURAL STEEL

Structural Carburizing Steel

EN 10084, DIN		ASTM/AISI	GOST
1.1121	C10E	1010	10
1.1207	C10R		10-Y
1.1141	C15E	1015	15
1.1140	C15R		15-Y
1.1148	C16E		15Г
1.1208	C16R		15Г-Y
1.7016	17Cr3		17XГ
1.7014	17CrS3		17XГ-Y
1.7030	28Cr4		28XГ
1.7036	28CrS4		28XГ-Y
1.7131	16MnCr5	5115	16XГ
1.7139	16MnCrS5		16XГ-Y
1.7160	16MnCrB5		16XГP
1.7147	20MnCr5	5120	20XГ
1.7149	20MnCrS5		20XГ-Y
1.7243	18CrMo4		18XГM
1.7244	18CrMoS4		18XГM-Y
1.7333	22CrMoS3-5		22XГM-Y
1.7320	20MoCr3	4118	20XM
1.7319	20MoCrS3		20XM-Y
1.7321	20MoCr4		20XГM
1.7323	20MoCrS4		20XГM-Y
1.5714	16NiCr4		16XГH
1.5715	16NiCrS4		16XГH-Y
1.5805	10NiCr5-4		10XГH1
1.5810	18NiCr5-4	3120	18XГH1
1.5918	17CrNi6-6		17X2ГH2
1.5752	15NiCr13		17XH3
1.6523	20NiCrMo2-2	8620	20XГHM
1.6526	20NiCrMoS2-2		20XГHM-Y
1.6566	17NiCrMo6-4		17XГH1M
1.6569	17NiCrMoS6-4		17XГH1M-Y
1.6571	20NiCrMoS6-4		20XГH2M-Y
1.6587	18CrNiMo7-6		18X2ГH2M
1.6657	14NiCrMo13-4	9310	14XH3M
1.5732	14NiCr10	655M13	14XH3