



INTERPIPE STEEL – NEW PHILOSOPHY OF METALLURGIC PRODUCTION

NEW PHILOSOPHY OF METALLURGICAL PRODUCTION:

Innovative technologies

New production culture

Young and educated staff

Contemporary art

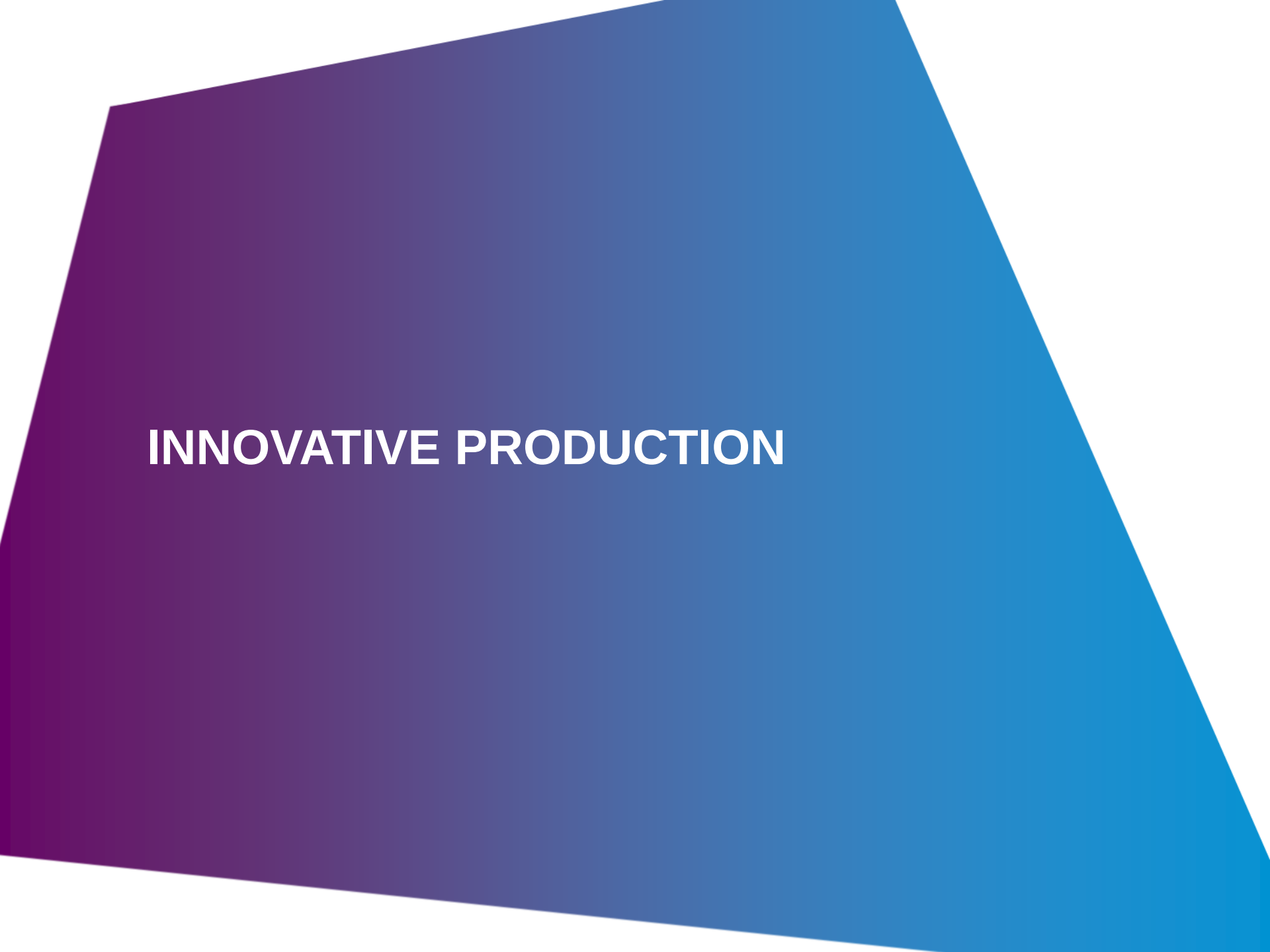


The best product quality

The world's best labor productivity

The world's best performance indicators



The background features a smooth gradient from deep purple on the left to bright blue on the right. A large, white, irregular geometric shape, resembling a stylized 'A' or a triangle with a missing top vertex, is positioned on the left side, partially overlapping the gradient.

INNOVATIVE PRODUCTION

INTERPIPE STEEL – THE LARGEST UKRAINIAN INVESTMENT DURING THE YEARS OF INDEPENDENCE

Capacity:

1,32 mln. tons per year

Investments:

700 mln USD

The biggest facility for high quality round billets' production in Eastern Europe



KEY REASONS FOR INTERPIPE STEEL CONSTRUCTION

Reinforcement of vertical integration of Interpipe

Increase of self sufficiency in steel billets for production of:

Year	2011	2014
Seamless pipes	30%	90%
Railway wheels	100%	100%



High quality billets to feed
Interpipe NTRP and Niko Tube:



45%



55%

Electric arc furnace advantages versus open hearth furnace production

4 times

Increase in **labor productivity**

2.2 times

Reduction of **energy consumption** per ton

8 times

Reduction of **natural gas consumption**

2.5 times

Reduction of **atmosphere pollution**

INTERPIPE HAS BUILT INFRASTRUCTURE FOR THE NEW MILL

Scrap supply

Modernization of scrap processing equipment
Expansion of scrap collection network

Power supply

Construction of high voltage cable line 330 KV
Construction of new substation
Reconstruction of city substation

Lime supply

Construction of new lime factory
Main equipment was supplied by Cimprogetti

Technological gas supply

New industrial gases plant was built by Messer on Site basis

Other supplies: by contract

Steel making

Interpipe has signed turnkey contract with **Danieli** to built electric steel making complex



INTERPIPE STEEL - TURNKEY PROJECT OF DANIELI

Production capacity – 1,32 mln. tons of round billets



Electric arc furnace, 160 tons



Twin position ladle furnace



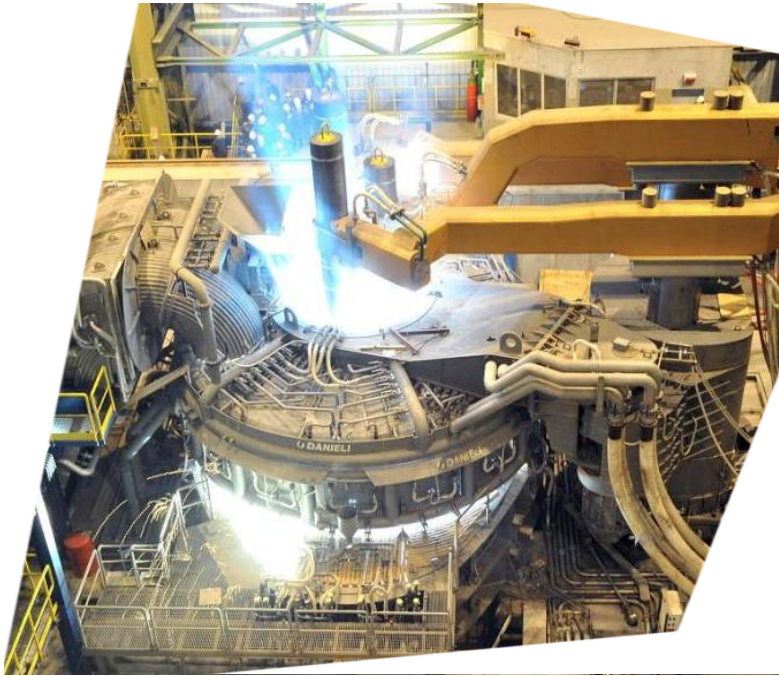
Twin tank vacuum degasser



Two continuous casting machines: 5strand and 4 strand

ELECTRIC ARC FURNACE (EAF)

Furnace type: 3 phase electric arc furnace of alternating current with eccentric bottom tapping

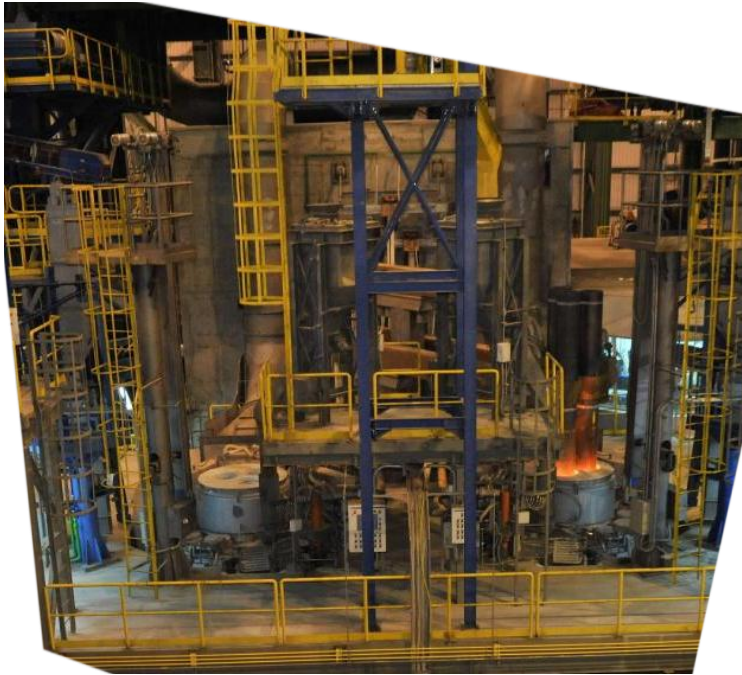


Capacity	186 t
Heat size	160 t
Liquid heel	26 t
Duration of melting	50 min
Heat per day	29
Capacity of furnace transformator	140 MBA
Graphitized electrode	3 . Ø 650 mm

The furnace is equipped with automatic system of slag-forming and ferroalloy supply through crown to ladle.

TWIN POSITION LADLE FURNACE

Type of unit: Stationery with 2 scrap cars



Ladle capacity	160 t
Speed of heat	4°C /min
Duration of melting	30 – 50 min (depends on steel grade)
Capacity of furnace transformator	28 MBA
Connecting voltage	35 kv, 50 hz, 3 phases
Graphitized electrode	3 . Ø 450 mm

Ladle furnace equipped by with system of slag-forming and ferroalloy supply through crown.

VACUUM DEGASSING UNIT

Type of unit: Batch type, 2 chambers, 1 door



Number of units	1
Number of vacuum pumps	1
Vacuum system	4-stages vapour ejectors vacuum pump with parallel ejectors for 3 and 4 stages
Pumping capacity	400 kg/h temperature 20oC with 0,67 mbar
Vacuuming melting duration	40-50 min

CONTINUOUS CASTING MACHINE №1

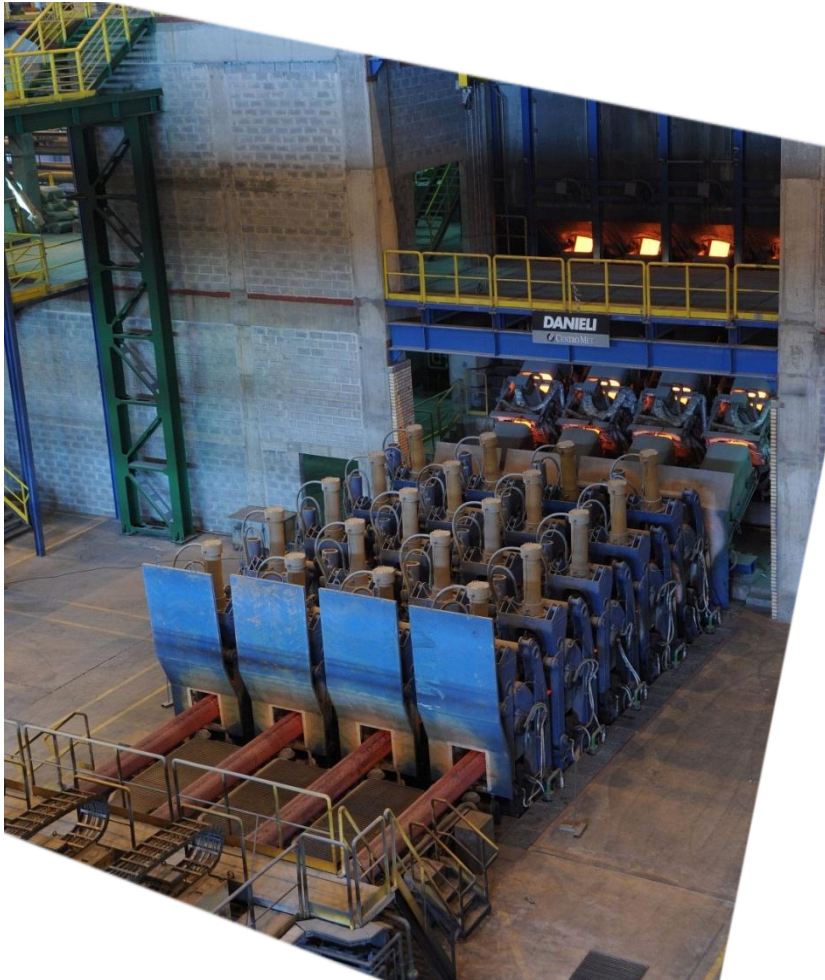
Type CCM: Curved-radial

Basic radius	12 m
Number of strands	5
Distance between strands	1500 mm
Casting size ranges	round Ø 150 – 170 - 210-250-290 mm
Number of casts in size range	4 - 12
Maximum casting speed	3,4 m/min
The length of cast billets	6 -11,7 m
Billets cutting	Gas and oxy cutting
Production capacity	770 000.t/year



CONTINUOUS CASTING MACHINE №1

Type of CCM: Curved-radial

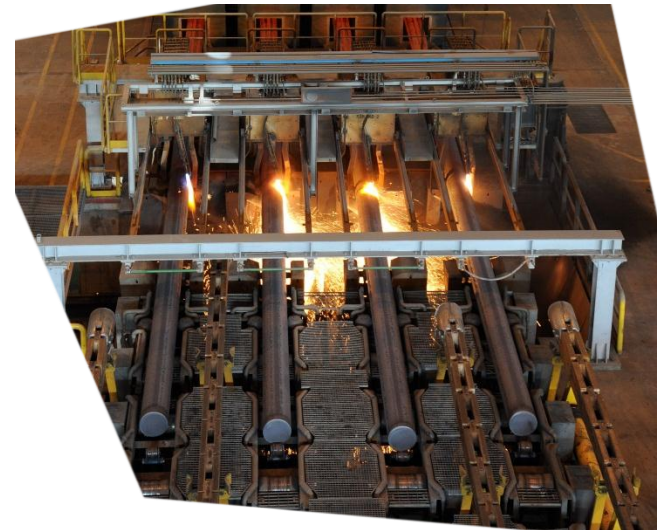


Basic radius	12 m
Number of strands	4
Distance between strands	1800 mm
Casting size ranges	Round Ø 385 –410-450- 470 mm
Number of casts in size range	6 - 9
Maximum casting speed	0,6 m/min
The length of cast billets	6,2 – 9,85 m
Billets cutting	Gas and oxy cutting
Production capacity	550 000 t/year

TRANSPORT STEEL GUIDE

STEEL	STANDARD
Steel grades ER6, ER7, ER8, ER9 And analogues	EN 13262
	BS 5892 (part 2) IRS R 19/93
Steel grades 2, T	GOST 10791

Classes A, B, C	AAR M 107/208
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QUALITY MANAGEMENT SYSTEM IS CERTIFIED ACCORDING TO ISO 9001

March 2012 – Ukrsepro



July 2012 – ISO 9001



RAILWAY WHEELS FROM THE NEW METAL WERE CERTIFIED IN ACCORDANCE WITH UKRAINIAN AND INTERNATIONAL STANDARDS



The background features a large, abstract geometric shape that transitions from a dark green on the left to a light blue on the right. The shape is composed of several flat, triangular and quadrilateral facets, creating a faceted, crystalline appearance. The text is positioned on the left side, within the green portion of the shape.

INTERPIPE STEEL – ECOLOGICALLY SAFE TECHNOLOGIES

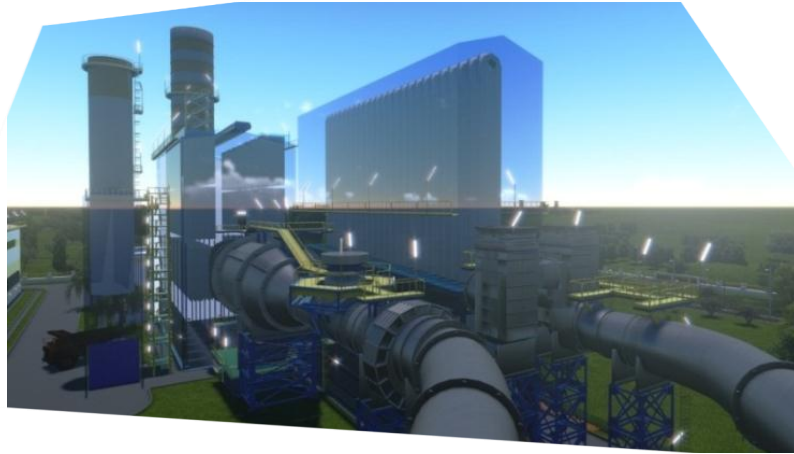
SHUTDOWN OF OUTDATED OPEN HEARTH PRODUCTION



Reducing of
atmosphere pollution in
2,5 times

14th November 2012 - the last melting of the
Interpipe NTRP open hearth production

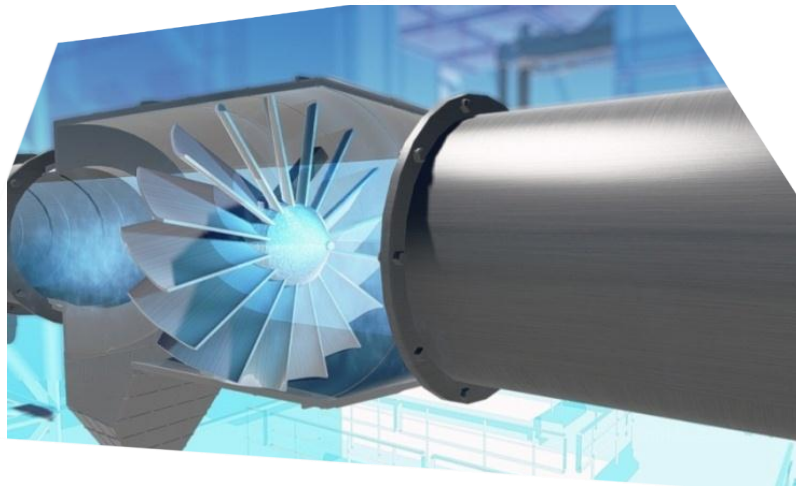
INTERPIPE STEEL IS EQUIPPED WITH UP-TO-DATE GAS TREATMENT SYSTEM



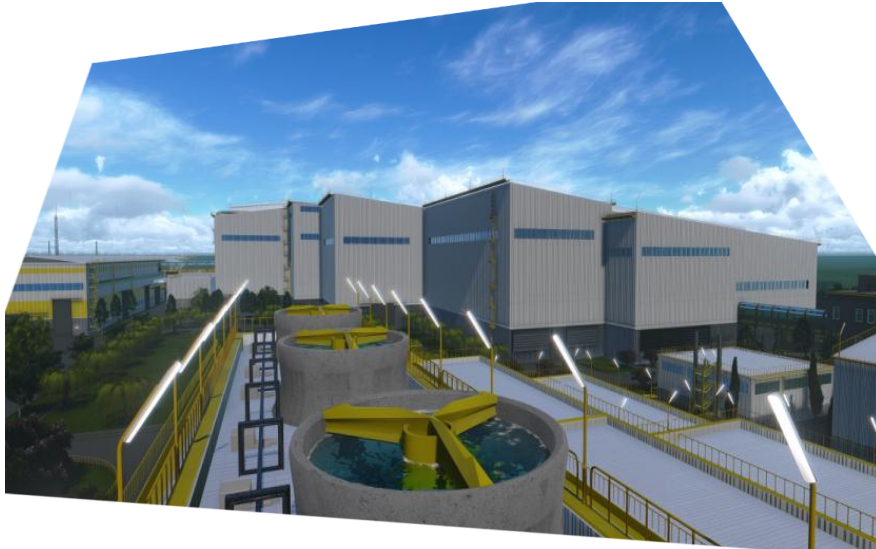
Effective gas and dust recovery

Using of up-to-date cleaning filters

Final dust concentration –
 20mg/m^3



WATER TREATMENT FACILITY AT INTERPIPE STEEL



Closed water circulation
type completely

excludes outflows

into the Dnepr river

TWO CYCLES:

«**clean**» circulation reversible loops to cool the equipment

«**dirty**» circulation reversible loops for direct metal and slag cooling

ECOLOGICALLY SAFE CABLE LINE HAS BUILT

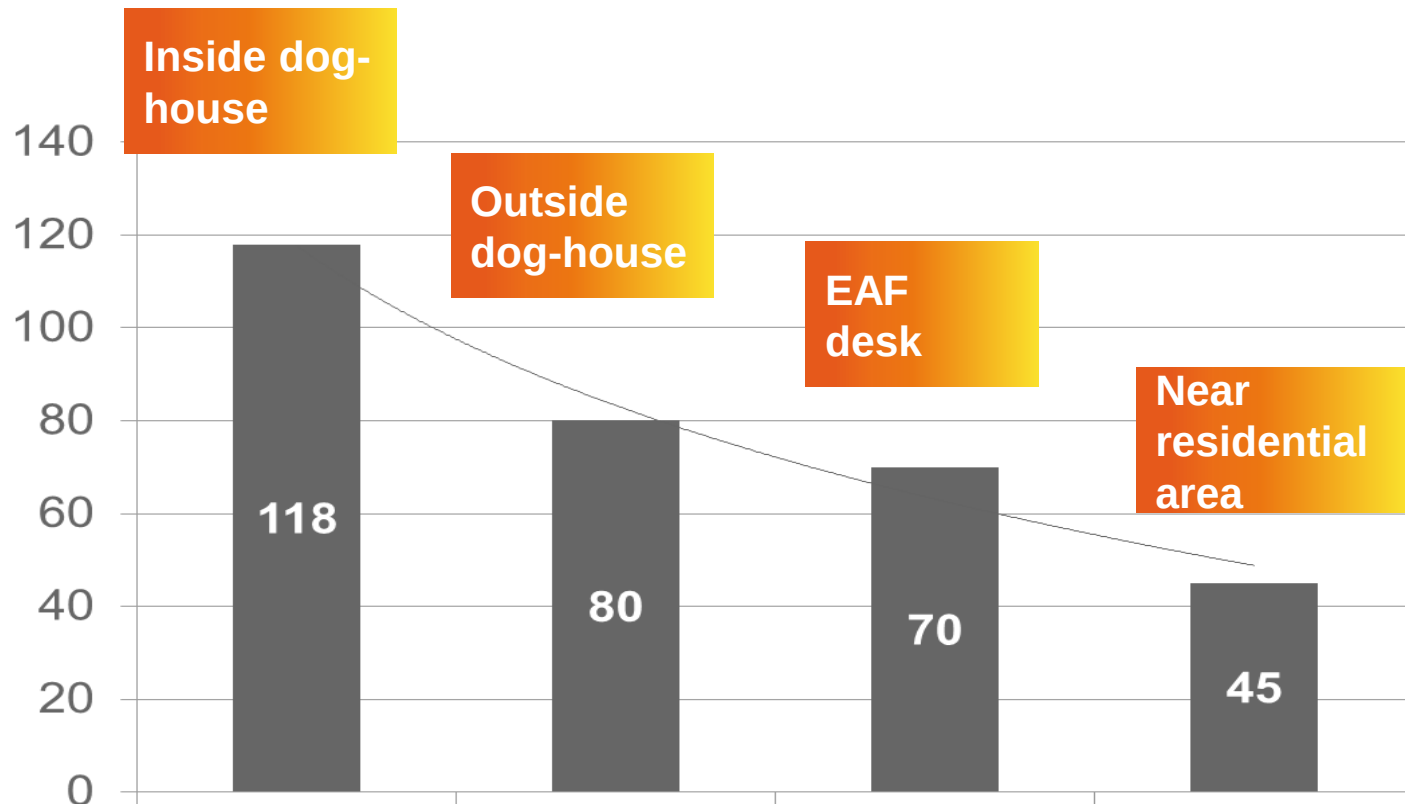
Control zone = 1 m



Up-to-date protection technology and isolation technique allow to exclude negative influence on environment and citizens.

INTERPIPE STEEL HAS DOG-HOUSE FOR ELECTRIC ARC FURNACE

Level of noise corresponds to the admissible norm





**INTERPIPE STEEL – THE PLANT FOR
YOUNG AND EDUCATED PEOPLE**

INTERPIPE STEEL – YOUNG AND EDUCATED TEAM



4200

candidates have
visited the mill

10 persons per job
– competition for
some professions

500 employees
–the mini mill staff

76% of the
staff have university
degree

327 employees
have undergone
additional training

31 years –
employees' average
age

EMPLOYEES HAVE UNDERGONE TRAINING

Advanced training on the basis of National metallurgical academy and national Mining University

Training in similar machines – on the basis of Belarus metallurgical plant

Training according to educational center of DANIELI

Mandatory training according to legislative requirements, training in Ukranian enterprises – Magnitogorsk Iron and Steel Company named after Ilich, DMKD, Dneprospecsteel, Interpipe NTRP

The background features a smooth gradient from deep purple on the left to bright blue on the right. A large, white, irregular geometric shape, resembling a stylized 'A' or a folded piece of paper, is positioned on the left side, partially overlapping the purple area. The text 'NEW PRODUCTION CULTURE' is centered within the white shape.

NEW PRODUCTION CULTURE

CONTEMPORARY MILL – ATTRACTIVE FOR YOUNG PEOPLE



ABANDONING OF OBSESSIVE HABITS AND ONLY WORK CONCENTRATION



Smoking is forbidden



Alcohol-screening device at entrance. If alcohol is found out in blood— an employee will be fired



Cell phones are forbidden

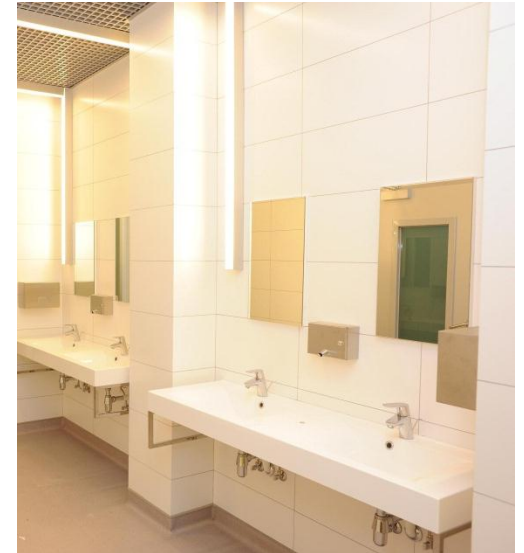


There are metals detectors inside personal service room

COMFORT AND CLEAN WORKING PLACES AND PERSONAL SERVICE ROOMS



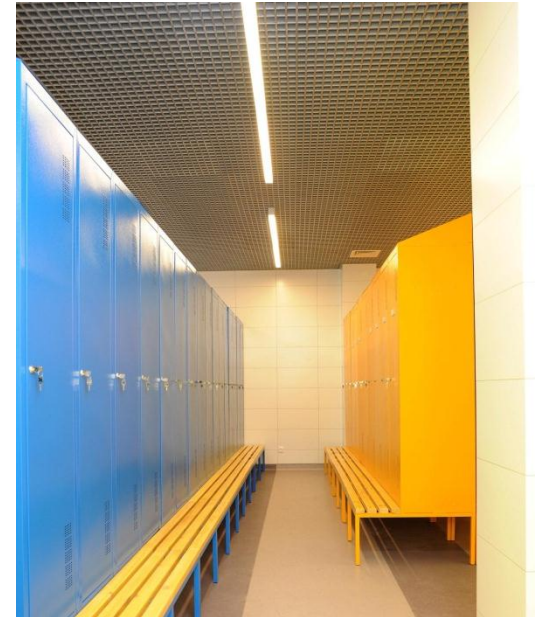
- Clean working places
- Daily cleaning of working area and personal service rooms
- Comfortable working conditions



SEPARATE ZONES FOR DIRTY AND CLEAN CLOTHES

System of zoning of personal service rooms:

- Zone for clean clothes;
- Shower and metals detectors;
- Zone for work clothes.



ADMINISTRATIVE BUILDING AND WORKSHOP ARE CONNECTED WITH AERIAL CROSSING

Warm corridor between administrative building and workshop



OWN NUTRITION SYSTEM



DAILY WORKING CLOTHES CLEANING (AT COMPANY'S COSTS)

Working clothes are designed specially per each profession and employees comfort. Daily cleaning



- Working clothes include: Jacket, pants, T-shirt, shoes, thermal underwear.
- Additional: shower towel
- There are summer and winter working clothes

CONTEMPORARY ART IS A PART OF WORKING SPACE



Art objects form special attitude of employees to their work, make the employees to revise their attitude to the working places



The background of the slide is a large, abstract geometric shape. It is primarily orange, with a yellow section on the right side. The shape is irregular, with several sharp angles and a jagged edge on the right. The text is white and positioned on the orange part of the background.

INTERPIPE STEEL. DATES AND FIGURES

JANUARY 17TH, 2012 - THE MINI MILL HOT TESTING STARTED



100 tons of first billets have been rolled

SET OF TESTS CONFIRMED THE HIGH QUALITY OF THE BILLET'S STEEL



7 February - first pipes produced from the first heat

20 March - first railway wheels produced on Interpipe NTRP

INTERPIPE STEEL IS REACHING DESIGNED CAPACITY

17 January 2013 –
produced 500 thousands tons
December:
80 thousand tons per month

In May 2013 Interpipe Steel
reached the project capacity
(monthly rate)
– 115 thousand tons per month

6 June 2013 year –
produced 1 mln. Tons

In June Interpipe Steel will
come close to the quarterly
designed capacity level.





WHY WE NEED ALL OF THESE?

OBJECTIVE – EXCEED DESIGNED CAPACITY



We **DEVELOP** staff and
CREATE the best
working conditions

AIMING

to produce **125**
THOUSANDS TONS
PER MONTH in
December 2013



AND TO EXCEED
designed parameters on
10% and enter into a
three **WORLD**
LEADERS of production
efficiency



THANK YOU!