



Fédération Française de l'Acier

## Steel Institute VDEh Technical information department

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In today's world, information is of vital and growing importance to industry and business. Success may hinge on the completeness and relevance of information and ready access to it.

The Steel Institute VDEh gathers and processes information for the entire sector of steel production and processing. This information is compiled as printed reference material, data collections and databases.

The Steel Institute VDEh created a central reference facility, covering iron and steel production plants existing in the world, known as the

### **PLANTFACTS** database

For more than 35 years now this database - unparalleled worldwide - has proved a readily accessible and extensive source of information to plant manufacturers and operators, suppliers to the industry and marketing departments, business consultants and banks, as well as research and development establishments.

### What is **PLANTFACTS**

**PLANTFACTS** is a computer aided database comprising details of iron and steel production facilities worldwide. At present, the database contains over 350,000 single entries covering more than 12,500 facilities.

**PLANTFACTS** is continuously updated.

**PLANTFACTS** supplies precise factual information quickly.

**PLANTFACTS** is available in English, German and French.

**PLANTFACTS** information are available as a printout or stored on electronic data carriers.

## What does **PLANTFACTS** store

**PLANTFACTS** contains information on 36 types of production facilities, from ore processing through to steel rolling, with around 20 to 30 descriptive characteristics for each type. A new data record is created for each clearly identifiable facility as early as the planning stage.

**PLANTFACTS** contains the following information and data for each facility:

- Identification codes for type of facility, country, company and works or location
- General information such as year of construction/ modernization, manufacturer and operating status
- Specific details such as design, process and dimensions, etc.
- Details on materials processed, products and plant capacity.
- Bibliography of more detailed plant descriptions.
- Additional information as text

**sample data records from the 36 types of facilities are included**

Number of facilities per type - worldwide, status 2010

- <b>Direct or Smelting Reduction Plants</b>	<b>185</b>
- Pelletizing Plants	130
- <b>Sintering Plants</b>	<b>340</b>
- Integrated Coking Plants	430
- <b>Blast Furnaces</b>	<b>870</b>
- BOS Shops	355
- <b>Open Hearth Meltshops</b>	<b>20</b>
- AC-Electric Arc Furnaces	1060
- <b>DC-Electric Arc Furnaces</b>	<b>105</b>
- Vacuum Degassing Plants	550
- <b>Ladle Furnaces</b>	<b>945</b>
- Special Converter Processes	105
- <b>Induction Melt Furnaces</b>	<b>90</b>
- Steel Remelting Furnaces	220
- <b>Continuous Slab Casters</b>	<b>630</b>
- Continuous Bloom Casters	325
- <b>Continuous Billet Casters</b>	<b>780</b>
- Blooming and Slabbing Mills	80
- <b>Billet Mills</b>	<b>90</b>
- Heavy Section Mills	100
- <b>Medium Section Mills</b>	<b>135</b>
- Light Section and Bar Mills	780
- <b>Wire Rod Mills in Bar Mills</b>	<b>180</b>
- Wire Rod Mills	220
- <b>Hot Strip Mills</b>	<b>300</b>
- Temper Mills (HR)	60
- <b>Plate Mills</b>	<b>200</b>
- Continuous Pickling Lines	580
- <b>Reversing Cold Rolling Mills</b>	<b>565</b>
- Tandem Mills	260
- <b>Batch Annealing Plants</b>	<b>295</b>
- Continuous Annealing Lines	230
- <b>Temper Mills (CR)</b>	<b>320</b>
- Hot Dip Metal Coating Lines	540
- <b>Electrolytic Metal Coating Lines</b>	<b>210</b>
- Organic Coating Lines	260

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## How does **PLANTFACTS** work

**PLANTFACTS** can supply either all data stored or selected facilities according to a pre-defined search profile.

**PLANTFACTS** can use any descriptive characteristic within a data record as a search criterion. In each case, the selection will be made within the entries for one type of facility.

Listings could, for example, include:

- all blast furnaces with a hearth diameter of 9.00 m to 15.60 m existing in specific countries, or
- all tandem cold rolling mills built after 1995, having 5 or more rolling stands as well as hydraulic roll adjustment, etc., etc.

**PLANTFACTS** can output its evaluation results in a number of ways, i. e.:

- one data sheet per facility (all data per facility)
- tables (selected data)
- works overviews (key data)

**sample printouts see - ANNEX 2 - page 14**

The data is output (PDF-file or XLS- file) in **German** or **English** or **French**.

**PLANTFACTS** information on one or all types of facilities can be supplied as selected or unselected data in EXCEL files for further processing on a PC.

Registered users can thus update their information as required by ordering the latest **PLANTFACTS** databases at a substantially reduced price.

**PLANTFACTS** is supported by extensive documentation and the services provided by the Technical information department . Experts can be called on at any time to answer your queries and provide competent advice on all aspects of iron and steel.

Our ambition is to supply you with the most comprehensive and accurate information possible.

## What does **PLANTFACTS** information cost

**PLANTFACTS** supplies information that you yourself do not generally have access to or can only obtain by time-consuming research.

**PLANTFACTS** therefore costs less than your time.

The cost of a **PLANTFACTS** evaluation depends on the number of facilities selected.

Search operations are charged per type of facility.

Once your information needs have been discussed and precisely formulated (as is often necessary due to the large number of search profile permutations) we will send you a corresponding offer.

**Please contact us for further information**



## ANNEX 1

### record structure per type of facility

Direct and Smelting Reduction Plant	Pelletizing Plant	Sintering Plant	Coking Plant
Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating
Year of start up	Year of start up	Year of start up	Year of start up
Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)
Process Reduction vessels: number Reduction vessel: type Reduction vessel: useful volume m <sup>3</sup> Reduction vessel: inner diameter m Reduction vessel: length or width m Reduction beds: number Reduction bed: type Reduction bed: useful area m <sup>2</sup>  Reduction bed: width m Reduction bed: length m Charge: type of ore a) Charge: type of ore b)  Charge: average screen size mm Charge: average Fe-content %  Reduction medium: type Reduction medium: derivation a) Reduction medium: derivation b) Reduction temperature: °C Product: type Product: passivation Briquetting plants: number Product: grade of metallization % Energy consumption for reduction GJ/t	Process Charged materials Additions Pelletizing equipment: type Pelletizing equipment: number Roasting equipment: type Roasting equipment: number Roasting equipment: length or height m Roasting equipment: width or diameter m Fuel for roasting equipment Pellet cooling: type Pellet screen size: maximum mm Crushing strength kg/pellet  Fe-content of pellets %	Number of strands Suction area/strand (not cooling) m <sup>2</sup> Suction area, total (not cooling) m <sup>2</sup> Strand width m Strand length, total m Strand length for cooling m Ignition furnace, length m Heat treatment hood, maximal length m Grate bogies: number  Sinter strand speed maximum m/min. Hearth layer mm Total bed depth maximum mm Number of mixing and pelletizing drums Type of mixture feeding Suction fan: nominal output 10 <sup>3</sup> m <sup>3</sup> /h  At a temperature of °C At an average depression of bar Dust removal system Secondary dust removal Hot screening Type of sinter cooling Open cold screening area m <sup>2</sup> Cold sinter: grain size minimum mm Cold sinter: grain size maximum mm	Number of batteries Number of coke ovens, total Coking process Coke ovens: height m Coke ovens: length m Coke ovens: width m Capacity of coal per oven t Pretreatment of coal Type of coal charging  Coke cooling Heat recovery Normal coking time h Coke grades  By-products
Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y

<b>Blast Furnace</b>	<b>BOS Shop</b>	<b>Open Hearth Meltshop</b>	<b>AC-Electric Arc Furnace</b>
Type of plant	Type of plant	Type of plant	Type of plant
Country	Country	Country	Country
Company	Company	Company	Company
Location/works	Location/works	Location/works	Location/works
Plant number	Plant number	Plant number	Plant number
Last updating	Last updating	Last updating	Last updating
Year of start up	Year of start up of 1. converter Year of start up of 2. converter Year of start up of 3. converter	Year of start up of 1. furnace	Year of start up
Year of last relining	Last modernizing	Last modernizing	Last modernizing
Status of the plant	Status of the plant	Status of the plant	Status of the plant
Manufacturer A)	Manufacturer A)	Manufacturer A)	Manufacturer A)
Manufacturer B)	Manufacturer B)	Manufacturer B)	Manufacturer B)
Working volume	Blowing process	Total number of furnaces in the plant	Number of additional furnaces in plant
Inner volume	Number of converters in the plant	1. Group: number of furnaces	Heat size
Total volume	Heat size	1. Group: type of furnace	Nom. apparent transf. power max.
Hearth diameter	Inner volume after relining	1. Group: heat size	Specific nominal apparent Power
Useful heigth	Specific volume of converter	1. Group: capacity	Electrode diameter
Heigth of bosh	Total height of shell	2. Group: number of furnaces	Pitch circle diameter
Heigth of belly	Diameter of shell at bath level	2. Group: type of furnace	Minimal secondary voltage
Heigth underhearth - tuyere level	Removable bottom	2. Group: heat size	Maximal secondary voltage
Cooling for bosh	Interchangeable converter	2. Group: capacity	Shell diameter
Cooling for belly and lower stack	Maximal oxygen flow rate	Fuels for heating	Furnace cooling
Number of tuyeres	Hot metal treatment	Secondary metallurgical equipment	Type of charge
Number of cowpers	Torpedo ladles: maximal capacity	Continuous casting: number of machines	Method of charging
Type of cowpers	Hot metal mixer 1: capacity	Continuous casting: type of sections	Additional burners
Hot blast temperature in bustle pipe max.	Hot metal mixer 2: capacity	Ingot casting	Oxygen blowing
Blast output maximum	Converter gas utilisation		Installations for bath stirring
Injection of reducing agents	Dust removal system		Form of shell/method of tapping
Top design	Secondary dust removal		Dust removal system
Top gas pressure, absolute	Maximal fan capacity		Secondary dust removal
Top gas expansion turbine	Secondary metallurgical equipment		Maximal fan capacity
Type of burdening	Continuous casting: number of machines		Environmental protection measures
Movable throat armour	Continuous casting: type of sections		Secondary metallurgical equipment
Number of iron tap holes	Ingot casting		Continuous casting: number of machines
Hot metal grades			Continuous casting: type of sections
Slag granulation			Ingot casting
Hot metal production daily			
Nominal capacity	Nominal capacity	Nominal capacity	Nominal capacity

<b>DC-Electric Arc Furnace</b>	<b>Vacuum Degassing Plant</b>	<b>Ladle Furnace</b>	<b>Special Converter Processes</b>
Type of plant Country Company Location/works Plant number Last updating  Year of start up  Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Type of plant Country Company Location/works Plant number Last updating  Year of start up  Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Type of plant Country Company Location/works Plant number Last updating  Year of start up  Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Type of plant Country Company Location/works Plant number Last updating  Year of start up of 1. converter  Last modernizing Status of the plant Manufacturer A) Manufacturer B)
Type of furnace Average heat size t Furnace contents t Nominal apparent transf. power MVA Furnace active power MW Secondary voltage maximum V Top electrode diameter mm Number of top electrodes Type of bottom electrode	Process Heat size t Supporting steel plant Degassing hydrogen Decarburisation Improvement of cleanliness Homogenisation (light treatment) Oxygen refining Analytic adjustment	Type Heat size t Supporting steel plant Nom. apparent transf. power max. MVA Vacuum degassing Oxygen blowing Dephosphorization Inert-gas stirring Analytical adjustment	Process Number of blowing stands Number of converter vessels Heat size t Converter volume after relining m <sup>3</sup> Total height of shell mm Diameter of shell at bath level mm Dust removal system Maximal fan capacity 10 <sup>3</sup> m <sup>3</sup> /h
Shell diameter mm Form of shell/method of tapping Furnace cooling  Type of charge Method of charging Additional burners Additional fuel Oxygen blowing Installations for bath stirring Dust removal system Secondary dust removal Secondary metallurgical equipment Continuous casting: number of machines Continuous casting: type of sections Ingot casting	Temperature holding equipment Electromagnetic stirring Steel grades A)  Steel grades B) Steel grades C)	Temperature adjustment Electromagnetic stirring Steel grades A)  Steel grades B) Steel grades C)	Supporting melting facility Heat size of melting facility t Continuous casting: number of machines Continuous casting: type of sections Ingot casting
Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y

<b>Induction Melt Furnace</b>	<b>Steel Remelting Furnace</b>	<b>Continuous Slab Caster</b>	<b>Continuous Bloom Caster</b>
Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating
Year of start up	Year of start up	Year of start up	Year of start up
Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)
Heat size t	Process	Machine type	Machine type
Frequency range	Ingot thickness/diameter minimum mm	Casting radius minimum m	Casting radius minimum m
Frequency Hz	Ingot width/diameter maximum mm	Number of strands	Number of strands
Furnace active power KW	Maximal ingot weight t	Normally casted sections	Normally casted sections
Inner diameter of furnace: top mm	Nom. apparent transf. power max. MVA	Slab size: minimal thickness mm	Bloom size: minimal thickness mm
Inner diameter of furnace: bottom mm	Current intensity maximum KA	Slab size: maximal thickness mm	Bloom size: maximal thickness mm
Inner height of furnace mm	Number of electrodes	Slab size: minimal width mm	Bloom size: minimal width mm
Melting with vacuum	Frequency range	Slab size: maximal width mm	Bloom size: maximal width mm
Refining	Frequency Hz	Additionally casted sections	Additionally casted sections
Alloying	Type of circuitry	Casting speed maximum m/min	Casting speed maximum m/min
Temperature holding	Current flow	Mould length mm	Mould length mm
Steel grades A)	Steel grades A)	Electromagnetic stirring	Electromagnetic stirring
Steel grades B)	Steel grades B)	Change of section	Change of section
Steel grades C)	Produced Ingots	Insertion of dummy bar	Insertion of dummy bar
		Type of ladle stand	Type of ladle stand
		Type of tundish stand	Type of tundish stand
		Tundish capacity t	Tundish capacity t
		Cut-to-length: maximum m	Cut-to-length: maximum m
		Slab slitting	Type of bloom cutting
		Supporting steel plant	Supporting steel plant
		Ladle capacity t	Ladle capacity t
		Steel grades A)	Steel grades A)
		Steel grades B)	Steel grades B)
		Steel grades C)	Steel grades C)
Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y

Continuous Billet Caster	Blooming and Slabbing Mill	Billet Mill	Heavy Section Mill
Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating
Year of start up	Year of start up	Year of start up	Year of start up
Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)
Machine type	Type of mill	Type of mill	Type of mill
Casting radius minimum m	Reheating furnaces: number	Number of stands	Number of stands
Number of strands	Reheating furnaces: type	Reheating furnaces: number	Reheating furnaces: number
Normally casted sections	Horizontal stand: type	Reheating furnaces: type	Reheating furnaces: type
Billet size: minimum mm	Horizontal stand: work roll diameter mm	Roughing stands: number of stands	Roughing furnaces: total capacity t/h
Billet size: maximum mm	Horizontal stand: barrel length mm	Roughing stands: type	Roughing train: number of stands
Number of billet sections	Horizontal stand: type of mill drive	Roughing stands: lay-out	Roughing train: type of stands
Additionally casted sections A)	Horizontal stand: rated mill power KW	Roughing stands: roll diameter max. mm	Roughing train: roll diameter max. mm
Additionally casted sections B)	Horizontal stand: cut out torque MNm	Roughing stands: total rated mill power KW	Roughing train: barrel length mm
Casting speed maximum m/min	Edger: type	Finishing stands: number of stands	Finishing train: lay-out
Mould length mm	Edger: roll diameter mm	Finishing stands: type	Finishing train: number of h-stands
Electromagnetic stirring	Edger: roll barrel length mm	Finishing stands: lay-out	Finishing train: h-roll diameter max. mm
Change of section	Edger: rated mill power KW	Finishing stands: roll diameter min. mm	Finishing train: h-barrel length mm
Insertion of dummy bar	Type of turnover	Finishing stands: total rated mill power	Universal group: number of stands
Type of ladle stand	Shears: cutting force MN	Rolling speed maximum m/s	Universal group: h-roll diameter max. mm
Type of tundish stand	Rolled product cooling: type	Charge: width maximum mm	Universal group: v-roll diameter mm
Tundish capacity t	Maximal ingot weight blooms t	Charge: thickness maximum mm	Universal group: v-roll body length mm
Cut-to-length: maximum m	Maximal ingot weight slabs t	Charge: supplied from	Universal group: number of flange edgers
Type of billet cutting	Bloom size minimum mm	Finished size: minimal width mm	Rolling speed maximum m/s
Supporting steel plant	Bloom size maximum mm	Finished size: maximal width mm	Type of cooling bed
Ladle capacity t	Slab width maximum mm	Finished size: minimal thickness mm	Rolled sections A)
Steel grades A)	Slab thickness maximum mm	Finished size: maximal thickness mm	Rolled sections B)
Steel grades B)	Rolled steel grades A)	Rolled steel grades A)	Section size: depth of web minimum mm
Steel grades C)	Rolled steel grades B)	Rolled steel grades B)	Section size: depth of web maximum mm
Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y

Medium Section Mill	Light Section and Bar Mill	Wire Rod Mill in Bar Mill	Wire Rod Mill
Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating
Year of start up	Year of start up	Year of start up	Year of start up
Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)
Type of mill Number of stands Reheating furnaces: number Reheating furnaces: type Reheating furnaces: total capacity t/h Roughing train: number of stands Roughing train: type of stands Roughing train: roll diameter max. mm Roughing train: barrell length mm Finishing train: lay-out Finishing train: number of stands Finishing train: h-roll dia. max. mm Finishing train: h-roll barrell length mm Universal group: number of stands Universal group: h-roll diameter mm max. Universal group: v-roll diameter mm Universal group: v-roll body length mm Universal group: number of flange edgers Rolling speed maximum m/s Type of cooling bed Rolled sections A) Rolled sections B) Sections size: height minimum mm Sections size: height maximum mm	Type of mill Number of stands Linked with wire mill ADBNR. Reheating furnaces: number Reheating furnaces: type Reheating furnaces: total capacity t/h Roughing train: number of stands Roughing train: type of stands Roughing train: roll diameter max. mm Intermediate train: number of stands Intermediate train: type of stands Intermediate train: roll diameter max. mm Finishing train: number of stands Finishing train: type of stands Finishing train: roll diameter maximum Rolling speed maximum m/s Billet size: edge length maximum mm Billet size: length maximum m Total cooling area m <sup>2</sup> Rolled bar diameter minimum mm Rolled bar diameter maximum mm Sections: height maximum mm Rolled steel grades A) Rolled steel grades B)	Type of mill Number of strands for wire rolling Linked with bar mill ADBNR. Wire rolling: number of stands Wire rolling: type of stands Wire rolling: roll diameter maximum mm Rolling speed maximum m/s Type of wire cooling Type of coilers Maximal coil weight kg Rolled wire diameters minimum mm Rolled wire diameters maximum mm Rolled steel grades A) Rolled steel grades B)	Type of mill Number of strands Number of stands Reheating furnaces: number Reheating furnaces: type Reheating furnaces: total capacity t/h Roughing train: number of stands Roughing train: type of stands Roughing train: roll diameter max. mm Intermediate train: number of stands Intermediate train: type of stands Intermediate train: roll diameter max. mm Finishing train: number of stands Finishing train: type of stands Rolling speed maximum m/s Billet size: edge length maximum mm Billet size: length maximum m Type of wire cooling Type of coilers Maximal coil weight kg Rolled wire diameters minimum mm Rolled wire diameters maximum mm Rolled steel grades A) Rolled steel grades B)
Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity wire 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y

Hot Strip Mill	Temper Mill (HR)	Plate Mill	Continuous Pickling Line
Type of plant Country Company Location/works Plant number Last updating  Year of start up  Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Type of plant Country Company Location/works Plant number Last updating  Year of start up  Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Type of plant Country Company Location/works Plant number Last updating  Year of start up  Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Type of plant Country Company Location/works Plant number Last updating  Year of start up  Last modernizing Status of the plant Manufacturer A) Manufacturer B)
Type of mill Reheating furnaces: number Reheating furnaces: type Reheating furnaces: total capacity t/h Roughing train: number of 2-hi-stands 2-hi-stands: roll diameter mm  2-hi-stands: barrel length mm Roughing train: number of 4-hi-stands 4-hi-stands: work-roll dia. max. mm 4-hi-stands: work-roll body length mm  Total number of edgers Coilbox  Finishing train: number of stands  Finishing train: type of stands Finishing train: total mill power KW Finishing train: type of roll adjustment Finishing train: work-roll dia. max. mm Finishing train: work-roll body length Rolling speed maximum m/s Number of downcoilers Coil weight maximum t Strip width maximum mm Strip thickness minimum mm Strip thickness maximum mm  Nominal capacity 10 <sup>3</sup> t/y	Number of stands Type of stands Type of rolling Work roll diameter maximum mm Backup roll diameter mm  Work roll barrel length mm  Type of roll adjustment Total mill power KW  Type of mill drive Rolling speed maximum m/min  Number of pay-off reels Rated power per pay-off reel KW  Number of tension reels  Rated power per tension reel KW Maximal coil weight t Coil outer diameter maximum mm  Strip width minimum mm Strip width maximum mm  Strip thickness minimum mm Strip thickness maximum mm Rolled steel grades A) Rolled steel grades B) Rolled steel grades C) Additional inline equipment  Nominal capacity 10 <sup>3</sup> t/y	Number of stands Type of stands Reheating furnaces: number Reheating furnaces: type Reheating furnaces: total capacity t/h  Roughing stand: work roll diameter mm max. Roughing stand: backup roll diameter mm Roughing stand: work roll body length Roughing stand: rated mill power KW Finishing stand: work roll diameter mm Finishing stand: backup roll diameter mm Finishing stand: work roll body length Finishing stand: rolling force MN maximum Finishing stand: rated mill power KW Edger: roll diameter mm Edger: rated mill power KW  Thermomechanical rolling Type of cooling beds  Total cooling area m <sup>2</sup> Rolled plate size: thickness minimum mm Rolled plate size: thickness maximum mm Rolled plate size: length maximum m Rolled plate size: width maximum mm Heat treatment equipment  Nominal capacity 10 <sup>3</sup> t/y	Type of plant Strip width minimum mm Strip width maximum mm Strip thickness minimum mm Strip thickness maximum mm  Entry: number of pay-off reels  Entry: coil weight t Entry: strip welder  Entry: type of mechanical descaling Entry: pay-off speed maximum m/min  Entry: type of strip accumulator Entry: capacity of accumulator m  Pickling: type of agent  Pickling: number of tanks Pickling: total length of tanks m Pickling: maximal temperature °C  Pickling: process speed maximum m/min Exit: number of tension reels  Exit: coil weight maximum t Exit: coiling speed maximum m/min Exit: type of strip accumulator Exit: capacity of accumulator m Processed strip grades A) Processed strip grades B)  Nominal capacity 10 <sup>3</sup> t/y



Temper Mill (CR)	Hot Dip Metal Coating Line	Electrolytic Metal Coating Line	Organic Coating Line
Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating	Type of plant Country Company Location/works Plant number Last updating
Year of start up	Year of start up	Year of start up	Year of start up
Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)	Last modernizing Status of the plant Manufacturer A) Manufacturer B)
Number of stands Type of stands Type of roll gap set-up Work roll diameter maximum mm Backup roll diameter mm Work roll barrel length mm Type of roll adjustment Rated mill power KW Type of mill drive Rolling speed maximum m/min Number of pay-off reels Rated power per pay-off reel KW Number of tension reels Rated power per tension reel KW Coil weight maximum t Outer diameter of coils maximum mm Rolled strip width minimum mm Rolled strip width maximum mm Rolled strip thickness minimum mm Rolled strip thickness maximum mm Type of temper rolling Rolled steel grades A) Rolled steel grades B) Additional inline equipment	Process/type of plant Strip width minimum mm Strip width maximum mm Strip thickness minimum mm Strip thickness maximum mm Entry: number of pay-off reels Entry: coil weight t Entry: pay-off speed maximum m/min Entry: type of strip accumulator Entry: capacity of accumulator Processing: pretreatment Processing: coating material Processing: method of coating Processing: type of coating Processing: posttreatment Processing: processing speed max. m/min Exit: number of tension reels Exit: coil weight maximum t Exit: coiling speed maximum m/min Exit: type of strip accumulator Exit: capacity of accumulator max. m Processed strip grades A) Processed strip grades B) Additional inline equipment	Process/type of plant Strip width minimum mm Strip width maximum mm Strip thickness minimum mm Strip thickness maximum mm Entry: number of pay-off reels Entry: coil weight t Entry: pay-off speed maximum m/min Entry: type of strip accumulator Entry: capacity of accumulator Processing: pretreatment Processing: electrolyte Processing: method of coating Processing: type of coating Processing: posttreatment Processing: processing speed max. m/min Exit: number of tension reels Exit: coil weight maximum t Exit: coiling speed maximum m/min Exit: type of strip accumulator Exit: capacity of accumulator max. m Processed strip grades A) Processed strip grades B) Additional inline equipment	Process Strip width minimum mm Strip width maximum mm Strip thickness minimum mm Strip thickness maximum mm Entry: number of pay-off reels Entry: coil weight t Entry: pay-off speed maximum m/min Entry: type of strip accumulator Entry: capacity of accumulator Coating: type of strip cleaning Coating: material A) Coating: material B) Coating: painting of stripes Coating: posttreatment Coating: process speed maximum m/min Exit: number of tension reels Exit: coil weight maximum t Exit: coiling speed maximum m/min Exit: type of strip accumulator Exit: capacity of accumulator max. m Processed strip grades A) Processed strip grades B) Additional inline equipment
Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y	Nominal capacity 10 <sup>3</sup> t/y

## Annex 2



<b>DB-PLANT-No.</b>		<b>17365</b>	
<b>TYPE OF PLANT</b>		<b>CONTINUOUS SLAB CASTER</b>	<b>42</b>
<b>COUNTRY</b>		<b>JAPAN</b>	<b>700</b>
<b>COMPANY</b>		<b>TOKYO STEEL MFG. CO</b>	<b>7000700</b>
<b>LOCATION/WORKS</b>		<b>TAHARA, AICHI</b>	<b>7000703</b>
PLANT No.		1	
LAST UPDATE		08.09.10 11:30:01	
STATUS OF THE PLANT		OPERATING	4
MANUFACTURER A)		SMS SIEMAG, DE	3006
MANUFACTURER B)			
YEAR OF START UP		2010	
LAST MODERNIZING			
MACHINE TYPE		VERT/LIQ-PROG-BEND	4
CASTING RADIUS MIN.	M	8	
NUMBER OF STRANDS		2	
NORMALLY CASTED SECTIONS		SLABS	1
SLAB SIZE: MINIMAL THICKNESS	MM	210	
SLAB SIZE: MAXIMAL THICKNESS	MM	210	
SLAB SIZE: MINIMAL WIDTH	MM	800	
SLAB SIZE: MAXIMAL WIDTH	MM	1625	
ADDITIONALLY CASTED SECTIONS		NON	50
CASTING SPEED MAX.	M/MIN	2,2	
MOULD LENGTH	MM	900	
ELECTROMAGNETIC EQUIPMENT		EMS	5
CHANGE OF SECTION		CONT. MOULD WIDTH ADJUSTMENT	5
INSERTION OF DUMMY BAR		TOP FEEDING SYSTEM	4
TYPE OF LADLE STAND		LADLE TURRET	3
TYPE OF TUNDISH STAND		TUNDISH CAR	2
TUNDISH CAPACITY	T	60	
CUT-TO-LENGHT: MAX.	M	12	
TYPE OF CUTTING		TORCH CUTTING	3
SUPPORTING STEEL PLANT		EAF	5
LADLE CAPACITY	T	300	
STEEL GRADES A)		LOW CARBON STEELS	1
STEEL GRADES B)		ULC STEELS	12
STELL GRADES C)		IF STEELS	10
NOMINAL CAPACITY	1000 T/YEAR	2500	

LITERATURE 1: JOURNAL

LITERATURE 1: VOLUME

LITERATURE 1: YEAR

LITERATURE 1: NUMBER

LITERATURE 1: PAGE

LITERATURE 2: JOURNAL

LITERATURE 2: VOLUME

LITERATURE 2: YEAR

LITERATURE 2: NUMBER

LITERATURE 2: PAGE

ADDITIONAL INFORMATION:

Metallurgische Länge/metallurgical length: 34,9 m

Inbetriebnahme/start-up: 2010, June 5th

DB-ANLAGEN-NR.		17365	
ANLAGENART		BRAMMENSTRANGGIESSANLAGE	42
LAND		JAPAN	700
GESELLSCHAFT		TOKYO STEEL MFG. CO	7000700
WERK/ORT		TAHARA, AICHI	7000703
NR. DER ANLAGE		1	
LETZTE AKTUALISIERUNG		08.09.10 11:30:01	
ZUSTAND DER ANLAGE		IN BETRIEB	4
HERSTELLER A)		SMS SIEMAG, DE	3006
HERSTELLER B)			
JAHR DER INBETRIEBNAHME		2010	
LETZTE WESENTLICHE MODERNISIERUNG			
BAUART		VERT/LIQ-PROG-BEND	4
BOGENRADIUS MIN.	M	8	
ANZAHL STRÄNGE		2	
GIESSFORMAT VORWIEGEND		BRAMMEN	1
STRANGABMESSUNGEN DICKE MIN.	MM	210	
STRANGABMESSUNGEN DICKE MAX.	MM	210	
STRANGABMESSUNGEN BREITE MIN.	MM	800	
STRANGABMESSUNGEN BREITE MAX.	MM	1625	
GIESSFORMATE ZUSÄTZLICH		KEINE	50
GIESSGESCHWINDIGKEIT MAX.	M/MIN	2,2	
KOKILLENLÄNGE	MM	900	
ELEKTROMAGNETISCHE EINRICHTUNG		EMS	5
FORMATWECHSEL		KONTIN. BREITENVERSTELLUNG	5
KALTSTRANGEINFÜHRUNG		VON OBEN	4
PFANNENAUFNAHME		DREHTURM	3
VERTEILERAUFNAHME		WAGEN	2
VERTEILERINHALT	T	60	
TRENNEINRICHTUNG: LÄNGE MAX.	M	12	
TRENNEINRICHTUNG: BAUART		BRENNSCHNEIDANLAGE	3
VORGESCHALTETES STAHLWERK		LICHTBOGEN	5
GIESSPFANNENINHALT	T	300	
STAHLSORTEN A)		NIEDRIG GEKOHLTE STÄHLE	1
STAHLSORTEN B)		ULC STÄHLE	12
STAHLSORTEN C)		IF STÄHLE	10
AUSLEGEKAPAZITÄT	1000 T/JAHR	2500	

LITERATURSTELLE 1: ZEITSCHRIFT

LITERATURSTELLE 1: BAND/VOL.

LITERATURSTELLE 1: JAHR

LITERATURSTELLE 1: HEFT NR.

LITERATURSTELLE 1: SEITE

LITERATURSTELLE 2: ZEITSCHRIFT

LITERATURSTELLE 2: BAND/VOL.

LITERATURSTELLE 2: JAHR

LITERATURSTELLE 2: HEFT NR.

LITERATURSTELLE 2: SEITE

ZUSATZINFORMATIONEN:

Metallurgische Länge/metallurgical length: 34,9 m

Inbetriebnahme/start-up: 2010, June 5th

NUMERO D'INSTALLATION		17365	
TYPE D'INSTALLATION		COULEE CONTINUE DE BRAMES	42
PAYS		JAPON	700
SOCIETE		TOKYO STEEL MFG. CO	7000700
LOCALISATION		TAHARA, AICHI	7000703
INSTALLATION N°		1	
DERNIERE MISE A JOUR		08.09.10 11:30:01	
ETAT DE L' INSTALLATION		EN EXPLOITATION	4
CONSTRUCTEUR A)		SMS SIEMAG, DE	3006
CONSTRUCTEUR B)			
ANNEE DE DEMARRAGE		2010	
DERNIERE MODERNISATION			
TYPE DE MACHINE		VERTIC./CINTRAGE PROGRESS. SUR LIQ.	4
RAYON DE COURBURE: MIN.	M	8	
NOMBRE DE LIGNES		2	
SECTIONS USUELLES COULEES		BRAMES	1
DIM. DES BRAMES: EPAIS. MIN.	MM	210	
DIM. DES BRAMES: EPAIS. MAX.	MM	210	
DIM. DES BRAMES: LARG. MIN.	MM	800	
DIM. DES BRAMES: LARG. MAX.	MM	1625	
AUTRES SECTIONS COULEES		NON	50
VITESSE COULEE MAX.	M/MIN	2,2	
LONGUEUR LINGOTIERE	MM	900	
EQUIP. ELECTROMAGNETIQUE		EMS	5
CHANGEMENT DE SECTION		CHANGE. CONT. DE LARGEUR EN MARCHE	5
INSERTION DU MANNEQUIN		PAR LE HAUT	4
TYPE DE SUPPORT DE POCHE		TOURNIQUET	3
TYPE DE SUPPORT DE REPARTITEUR		CHARIOT PORTE - REPARTITEUR	2
CAPACITE REPARTITEUR	T	60	
LONGUEUR DE COUPE: MAX.	M	12	
TYPE DE COUPE		COUPE AU CHALUMEAU	3
ACIERIE AMONT		ACIERIE ELECTRIQUE	5
POIDS NOMINAL EN POCHE	T	300	
NUANCES D'ACIERS A)		ACIERS BAS CARBONE	1
NUANCES D'ACIERS B)		ACIERS ULC	12
NUANCES D'ACIERS C)		ACIERS IF	10
CAPACITE NOMINALE	1000 T/AN	2500	

REFERENCE 1: PERIODIQUE

REFERENCE 1: VOLUME

REFERENCE 1: ANNEE

REFERENCE 1: NUMERO

REFERENCE 1: PAGE

REFERENCE 2: PERIODIQUE

REFERENCE 2: VOLUME

REFERENCE 2: ANNEE

REFERENCE 2: NUMERO

REFERENCE 2: PAGE

INFORMATIONS ADDITIONNELLES:

Metallurgische Länge/metallurgical length: 34,9 m

Inbetriebnahme/start-up: 2010, June 5th

Country: JAPAN  
 Company: TOKYO STEEL MFG. CO  
 Works/Location: TAHARA, AICHI

<b>DC-ELECTRIC ARC FURNACE</b>	1
START UP (LAST MODERNIZING)	2010 ()
MANUFACTURER	DANIELI, IT
HEAT SIZE	300 T
SHELL DIA. / NOM. APP. TRANSF. POWER	9700 MM / 260 MVA
NOMINAL CAPACITY	2500 000 T/A

<b>VACUUM DEGASSING PLANT</b>	1
START UP (LAST MODERNIZING)	2010 ()
MANUFACTURER	DANIELI, IT
PROCESS	VD-OB-TWIN TANK
HEAT SIZE	300 T
NOMINAL CAPACITY	2500 000 T/A

<b>LADLE FURNACE</b>	1
START UP (LAST MODERNIZING)	2010 ()
MANUFACTURER	DANIELI, IT
TYPE	LADLE FURNACE LF/LRF
HEAT SIZE	300 T
NOMINAL CAPACITY	2500 000 T/A

<b>CONTINUOUS SLAB CASTER</b>	1
START UP (LAST MODERNIZING)	2010 ()
MANUFACTURER	SMS SIEMAG, DE
NB. OF STRANDS / MACHINE TYPE	2 / VERT/LIQ-PROG-BEND
SLAB SIZE IN MM THICKNESS * WIDTH	210-210 / 800-1625
NOMINAL CAPACITY	2500 000 T/A

<b>HOT STRIP MILL</b>	1
START UP (LAST MODERNIZING)	2010 ()
MANUFACTURER	IHI, JP
TYPE OF MILL / NB. OF F-STANDS	SEMI-CONTI. / 6
STRIP SIZE THICKNESS * WIDTH IN MM	1,5-6 * MAX 1630
NOMINAL CAPACITY	2500 000 T/A

<b>TEMPER MILL (HR)</b>	1
START UP (LAST MODERNIZING)	2010 ()
MANUFACTURER	DANIELI WEAN UNITED,
NB. OF STANDS / TYPE OF STANDS	1 / 4-HI
STRIP SIZE TH * W (MIN-MAX) MM	1,5-7 / 780-1630
NOMINAL CAPACITY	800 000 T/A

Country: JAPAN  
Company: TOKYO STEEL MFG. CO  
Works/Location: TAHARA, AICHI

PICKLING LINE	1
START UP (LAST MODERNIZING)	2011 ()
MANUFACTURER	SMS SIEMAG, DE
TYPE / PROC.SPEED MAX M/MIN	TURBULENCE PICKL. / 280
STRIP SIZE (MIN-MAX) IN MM TH * W	1,5-6 * 780-1630
NOMINAL CAPACITY	1800 000 T/A

Land: JAPAN  
 Gesellschaft: TOKYO STEEL MFG. CO  
 Werk/Ort: TAHARA, AICHI

<b>GLEICHSTROM-LICHTBOGENOFEN</b>	1
BAUJAHR (LETZTE MODERNISIERUNG)	2010 ()
HERSTELLER	DANIELI, IT
ABSTICHGEWICHT	300 T
GEFÄSSDRM./TRAFONENNSCHEINLEISTUNG	9700 MM / 260 MVA
AUSLEGEKAPAZITÄT	2500 000 T/A

<b>VAKUUMBEHANDLUNGSANLAGE</b>	1
BAUJAHR (LETZTE MODERNISIERUNG)	2010 ()
HERSTELLER	DANIELI, IT
VERFAHREN	VD-OB-TWIN TANK
SCHMELZENGEWICHT	300 T
AUSLEGEKAPAZITÄT	2500 000 T/A

<b>PFANNENOFEN</b>	1
BAUJAHR (LETZTE MODERNISIERUNG)	2010 ()
HERSTELLER	DANIELI, IT
BAUART	PFANNENOFEN LF/LRF
SCHMELZENWICHT	300 T
AUSLEGEKAPAZITÄT	2500 000 T/A

<b>BRAMMENSTRANGGIESSANLAGE</b>	1
BAUJAHR (LETZTE MODERNISIERUNG)	2010 ()
HERSTELLER	SMS SIEMAG, DE
ANZAHL STRÄNGE / BAUART	2 / VERT/LIQ-PROG-BEND
STRANGFORMAT DICKE * BREITE IN MM	210-210 / 800-1625
AUSLEGEKAPAZITÄT	2500 000 T/A

<b>WARMBANDSTRASSE</b>	1
BAUJAHR (LETZTE MODERNISIERUNG)	2010 ()
HERSTELLER	IHI, JP
BAUART / ANZAHL FERTIGGERÜSTE	1/2-KONTI/ 6
BANDFORMAT DICKE * BREITE IN MM	1,5-6 * MAX 1630
AUSLEGEKAPAZITÄT	2500 000 T/A

<b>WARMBAND-NACHWALZWERK</b>	1
BAUJAHR (LETZTE MODERNISIERUNG)	2010 ()
HERSTELLER	DANIELI WEAN UNITED,
ANZAHL GERÜSTE / BAUART	1 / QUARTO
BANDABMESSUNGEN D * B (MIN-MAX) MM	1,5-7 / 780-1630
AUSLEGEKAPAZITÄT	800 000 T/A

Land: JAPAN  
Gesellschaft: TOKYO STEEL MFG. CO  
Werk/Ort: TAHARA, AICHI

BANDBEIZE	1
BAUJAHR (LETZTE MODERNISIERUNG)	2011 ( )
HERSTELLER	SMS SIEMAG, DE
BAUART / PROZESSGESCHW. MAX M/MIN	TURBULENZBEIZE / 280
BANDABMESSUNGEN D * B (MIN-MAX) MM	1,5-6 * 780-1630
AUSLEGKAPAZITÄT	1800 000 T/A

**Pays:** JAPON  
**Société:** TOKYO STEEL MFG. CO  
**Localisation:** TAHARA, AICHI

<b>FOUR A ARC-DC</b>	1
DEMARRAGE (DERNIERE MODERNISATION) CONSTRUCTEUR POIDS COULE DIAMETRE DE CUVE / CAPA. DU TRANSFO. CAPACITE NOMINALE	2010 () DANIELI, IT 300 T 9700 MM / 260 MVA 2500 000 T/A

<b>ATELIER DE DEGAZAGE SOUS VIDE</b>	1
DEMARRAGE (DERNIERE MODERNISATION) CONSTRUCTEUR PROCEDE POIDS COULE CAPACITE NOMINALE	2010 () DANIELI, IT VD-OB-TWIN TANK 300 T 2500 000 T/A

<b>FOUR POCHE</b>	1
DEMARRAGE (DERNIERE MODERNISATION) CONSTRUCTEUR TYPE DE FOUR POIDS COULE CAPACITE NOMINALE	2010 () DANIELI, IT FOUR POCHE LF/LRF 300 T 2500 000 T/A

<b>COULEE CONTINUE DE BRAMES</b>	1
DEMARRAGE (DERNIERE MODERNISATION) CONSTRUCTEUR NBRE. DE LIGNES / TYPE DE MACHINE DIM. DES BANDES MM (EPAIS. * LARGEUR) CAPACITE NOMINALE	2010 () SMS SIEMAG, DE 2 / VERTIC./CINTRAGE 210-210 / 800-1625 2500 000 T/A

<b>TRAIN A BANDES</b>	1
DEMARRAGE (DERNIERE MODERNISATION) CONSTRUCTEUR TYPE DE TRAIN / NBRE. CAGES FINISSEUSE DIM.DES BANDES MM(EPAIS. * LARGEUR) CAPACITE NOMINALE	2010 () IHI, JP SEMI-CONTINU / 6 1,5-6 * MAX 1630 2500 000 T/A

<b>SKIN PASS SUR BANDE A CHAUD</b>	1
DEMARRAGE (DERNIERE MODERNISATION) CONSTRUCTEUR CAGES: NBRE. / TYPE DIM.BANDES EPAIS. * LARG.(MIN-MAX) MM CAPACITE NOMINALE	2010 () DANIELI WEAN UNITED, 1 / QUARTO 1,5-7 / 780-1630 800 000 T/A

**Pays:** JAPON  
**Société:** TOKYO STEEL MFG. CO  
**Localisation:** TAHARA, AICHI

DECAPAGE	1
DEMARRAGE (DERNIERE MODERNISATION) CONSTRUCTEUR TYPE DE LIGNE / VITESS LIGNE MAX M/MIN DIM.BANDES EPAIS. * LARG.(MIN-MAX) MM CAPACITE NOMINALE	2011 () SMS SIEMAG, DE TURBULENT / 280 1,5-6 * 780-1630 1800 000 T/A

## Hot Strip Mills

Company	Works/Location	Start up	Last mod.	Number of stands			Type of mill	Reheating furnaces			Strip size			Nominal capacity 1000 t/y	
				2hi	4hi	F		Num ber	Ca- pac.	Type	thickness min.	width max.	max.		
											t/h	mm	mm	mm	
<b>TURKEY</b>															
EREGLI DEMIR CELIK	EREGLI	1965	2005	0	1	1	STECKEL	1	220	WALKING BEAM		4	21	1550	1000
EREGLI DEMIR CELIK	EREGLI	1978	2004	1	1	7	SEMI-CONTI	3	640	PUSHER TYPE		1,5	16	1525	3500
COLAKOGLU METALURJI	GEBZE II, KOCAELI	2010		0	1	6	SEMI-CONTI	1	450	WALKING BEAM		1,2	25,4	1650	2500
ISKENDERUN DEMIR CELIK	ISKENDERUN	2008		0	1	6	SEMI-CONTI	2	800	WALKING BEAM		1,2	22	2050	3500
MMK-ATAKAS METALURJI	ISKENDERUN	2011		0	2	4	FTSR-HSM	2	400	ROLLER HEARTH TUNNEL		1	20	1570	2300
<b>POLAND</b>															
ARCELORMITTAL POLAND	KRAKOW	2007		0	1	6	SEMI-CONTI	1	450	WALKING BEAM		1,2	25,4	2100	2400
<b>CZECH REPUBLIC</b>															
ARCELORMITTAL OSTRAVA	OSTRAVA	1999		0	0	2	STECKEL	1	250	WALKING BEAM		1,5	18	1575	1500
<b>SLOVAKIA</b>															
U S. STEEL KOSICE S.R.O.	KOSICE	1965	1997	1	4	7	3/4-CONTI.	4	840	PUSHER TYPE		1,8	12,5	1540	4100
<b>BULGARIA</b>															
KREMIKOV TZI	BOTUNETZ, SOFIA	1969	2000		1	6	SEMI-CONTI	3	630	PUSHER TYPE		1,5	12	1550	1800
<b>ROMANIA</b>															
ARCELORMITTAL GALATI SA	GALATI	1972	2005	3		7	3/4-CONTI.	3	750	PUSHER TYPE		1,5	12	1500	3500
<b>HUNGARIA</b>															
ISD DUNAFERR	DUNAUJVAROS	1960	2009	0	1	6	SEMI-CONTI	2	340	PUSHER TYPE		1,2	18	1540	1800
<b>MACEDONIA</b>															
ARCELORMITTAL SKOPJE	SKOPJE	1969			1	6	SEMI-CONTI	2		PUSHER TYPE		1,8	12	1575	800
<b>SERBIA &amp; MONTENEGRO</b>															
U S. STEEL SERBIA	SMEDEREVO	1979	2000	0	1	6	SEMI-CONTI	2	500	PUSHER TYPE		1,5	15	2050	2100
<b>SLOVENIA</b>															
ACRONI d o o.	JESENICE	1967	2009	0	1	1	STECKEL	1	100	PUSHER TYPE		2	6	1060	500
<b>RUSSIA</b>															
SIBERIAN-AMUR STEEL	KOMSOMOLSK-AMUR	1969			4	6	CONTI.			PUSHER TYPE				1550	1750
MEHEL CHELYABINSK M.Z.	CHELYAB NSK	1963	1993	1	1	7	SEMI-CONTI			PUSHER TYPE				1550	1800
SEVERSTAL	CHEREPOVETS	1960	2009	1	1	6	SEMI-CONTI		500	WALKING BEAM		0,8	8	1500	1700
SEVERSTAL	CHEREPOVETS	1975	2004	1	4	7	CONTI.	4	1600	WALKING BEAM		1,2	16	1850	6000
NOVOLIPETSK STEEL (NLMK)	LIPETZK	1970	2009	1	4	7	CONTI.	5	1600	PUSHER TYPE		1,5	25	1850	5600
MAGNITOGORSK M.K.	MAGNITOGORSK	1994	2007	1	3	7	CONTI.	4	1775	WALKING BEAM		1,2	16	1550	5500
MAGNITOGORSK M.K.	MAGNITOGORSK	1960	2010	1	2	7	SEMI-CONTI	3	1110	WALKING BEAM		1,2	25	2350	4500
OMK VYKSA	VYKSA II	2008		0	2	6	FTSR-HSM	1	200	ROLLER HEARTH TUNNEL		1	12,7	1800	1200
<b>UKRAINE</b>															
ILYICH, MARIUPOL	MARIUPOL, DONETSK	1961	2001	1	5	6	3/4-CONTI.	5	600	PUSHER TYPE		1,5	8	1520	3600
ZAPORIZHSTAL JSC	ZAPOROZHJE	1938	2007	1	4	6	3/4-CONTI.	5	600	PUSHER TYPE		1,5	16	1500	3500
<b>KAZAKHSTAN</b>															
ARCELORMITTAL TEMIRTAU	TEMIRTAU	1967	2005	1	4	7	3/4-CONTI.			PUSHER TYPE		1,8	12	1550	4600

## Warmbandstraßen

Gesellschaft	Werk/Ort	Bau- jahr	Letz- te Mod.	Anzahl Gerüste			Bauart Straße	Wärmeöfen			Bandformat			Auslege- kapazität. 1000 t/a	
				2V	4V	F		An- zahl	Ka- paz.	Bauart	Wärmeöfen	Dicke min.	Breite max.		Auslege- kapazität. 1000 t/a
											mm	mm	mm	1000 t/a	
<b>TÜRKEI</b>															
EREGLI DEMIR CELIK	EREGLI	1965	2005	0	1	1	STECKEL	1	220	HUBBALKEN		4	21	1550	1000
EREGLI DEMIR CELIK	EREGLI	1978	2004	1	1	7	1/2-KONTI	3	640	STOSSOFEN		1,5	16	1525	3500
COLAKOGLU METALURJI	GEBZE II, KOCAELI	2010		0	1	6	1/2-KONTI	1	450	HUBBALKEN		1,2	25,4	1650	2500
ISKENDERUN DEMIR CELIK	ISKENDERUN	2008		0	1	6	1/2-KONTI	2	800	HUBBALKEN		1,2	22	2050	3500
MMK-ATAKAS METALURJI	ISKENDERUN	2011		0	2	4	FTSR-WBS	2	400	TUNNELOFEN		1	20	1570	2300
<b>POLEN</b>															
ARCELORMITTAL POLAND	KRAKOW	2007		0	1	6	1/2-KONTI	1	450	HUBBALKEN		1,2	25,4	2100	2400
<b>TSCHECHISCHE REP.</b>															
ARCELORMITTAL OSTRAVA	OSTRAVA	1999		0	0	2	STECKEL	1	250	HUBBALKEN		1,5	18	1575	1500
<b>SLOWAKEI</b>															
U S. STEEL KOSICE S.R.O.	KOSICE	1965	1997	1	4	7	3/4-KONTI	4	840	STOSSOFEN		1,8	12,5	1540	4100
<b>BULGARIEN</b>															
KREMIKOV TZI	BOTUNETZ, SOFIA	1969	2000		1	6	1/2-KONTI	3	630	STOSSOFEN		1,5	12	1550	1800
<b>RUMÄNIEN</b>															
ARCELORMITTAL GALATI SA	GALATI	1972	2005	3		7	3/4-KONTI	3	750	STOSSOFEN		1,5	12	1500	3500
<b>UNGARN</b>															
ISD DUNAFERR	DUNAUJVAROS	1960	2009	0	1	6	1/2-KONTI	2	340	STOSSOFEN		1,2	18	1540	1800
<b>MAZEDONIEN</b>															
ARCELORMITTAL SKOPJE	SKOPJE	1969			1	6	1/2-KONTI	2		STOSSOFEN		1,8	12	1575	800
<b>SERBIEN UND MONTENEGRO</b>															
U S. STEEL SERBIA	SMEDEREVO	1979	2000	0	1	6	1/2-KONTI	2	500	STOSSOFEN		1,5	15	2050	2100
<b>SLOWENIEN</b>															
ACRONI d o o.	JESENICE	1967	2009	0	1	1	STECKEL	1	100	STOSSOFEN		2	6	1060	500
<b>RUSSLAND</b>															
SIBERIAN-AMUR STEEL	KOMSOMOLSK-AMUR	1969			4	6	KONTI			STOSSOFEN				1550	1750
MECHEL CHELYABINSK M.Z.	CHELYAB NSK	1963	1993	1	1	7	1/2-KONTI			STOSSOFEN				1550	1800
SEVERSTAL	TSCHEREPOWEZ	1960	2009	1	1	6	1/2-KONTI		500	HUBBALKEN		0,8	8	1500	1700
SEVERSTAL	TSCHEREPOWEZ	1975	2004	1	4	7	KONTI	4	1600	HUBBALKEN		1,2	16	1850	6000
NOVOLIPETZKI M.Z. (NLMK)	LIPETZK	1970	2009	1	4	7	KONTI	5	1600	STOSSOFEN		1,5	25	1850	5600
MAGNITOGORSK M.K.	MAGNITOGORSK	1994	2007	1	3	7	KONTI	4	1775	HUBBALKEN		1,2	16	1550	5500
MAGNITOGORSK M.K.	MAGNITOGORSK	1960	2010	1	2	7	1/2-KONTI	3	1110	HUBBALKEN		1,2	25	2350	4500
OMK VYKSA	VYKSA II	2008		0	2	6	FTSR-WBS	1	200	TUNNELOFEN		1	12,7	1800	1200
<b>UKRAINE</b>															
ILYICH, MARIUPOL	MARIUPOL, DONETSK	1961	2001	1	5	6	3/4-KONTI	5	600	STOSSOFEN		1,5	8	1520	3600
ZAPORIZHSTAL JSC	ZAPOROZHJE	1938	2007	1	4	6	3/4-KONTI	5	600	STOSSOFEN		1,5	16	1500	3500
<b>KASACHSTAN</b>															
ARCELORMITTAL TEMIRTAU	TEMIRTAU	1967	2005	1	4	7	3/4-KONTI			STOSSOFEN		1,8	12	1550	4600

## Trains à bandes

Société	Site/Usine	Ann. de déma.	Der. mod.	Nombre de cages			Type de train	Fours de réchauffage		Type de fours de réchauffage	Dimension bande			Capacité nominale
				duo	qua	fin		Nomb.	Capac.		épaisseur min.	larg. mm	max. mm	
<b>TURQUIE</b>														
EREGLI DEMIR CELIK	EREGLI	1965	2005	0	1	1	TRA N STECKEL	1	220	FOUR A LONGERONS	4	21	1550	1000
EREGLI DEMIR CELIK	EREGLI	1978	2004	1	1	7	SEMI-CONTINU	3	640	FOUR POUSSANT	1,5	16	1525	3500
COLAKOGLU METALURJI	GEBZE II, KOCAELI	2010		0	1	6	SEMI-CONTINU	1	450	FOUR A LONGERONS	1,2	25,4	1650	2500
ISKENDERUN DEMIR CELIK	ISKENDERUN	2008		0	1	6	SEMI-CONTINU	2	800	FOUR A LONGERONS	1,2	22	2050	3500
MMK-ATAKAS METALURJI	ISKENDERUN	2011		0	2	4	TRA N A CHAUD FTSR	2	400	SOLE A ROULEAUX	1	20	1570	2300
<b>POLOGNE</b>														
ARCELORMITTAL POLAND	KRAKOW	2007		0	1	6	SEMI-CONTINU	1	450	FOUR A LONGERONS	1,2	25,4	2100	2400
<b>REPUBLIQUE TCHEQUE</b>														
ARCELORMITTAL OSTRAVA	OSTRAVA	1999		0	0	2	TRA N STECKEL	1	250	FOUR A LONGERONS	1,5	18	1575	1500
<b>SLOVAQUIE</b>														
U S. STEEL KOSICE S.R.O.	KOSICE	1965	1997	1	4	7	3/4 CONT NU	4	840	FOUR POUSSANT	1,8	12,5	1540	4100
<b>BULGARIE</b>														
KREMIKOV TZI	BOTUNETZ, SOFIA	1969	2000		1	6	SEMI-CONTINU	3	630	FOUR POUSSANT	1,5	12	1550	1800
<b>ROUMANIE</b>														
ARCELORMITTAL GALATI SA	GALATI	1972	2005	3		7	3/4 CONT NU	3	750	FOUR POUSSANT	1,5	12	1500	3500
<b>HONGRIE</b>														
ISD DUNAFERR	DUNAUJVAROS	1960	2009	0	1	6	SEMI-CONTINU	2	340	FOUR POUSSANT	1,2	18	1540	1800
<b>MACEDOINE</b>														
ARCELORMITTAL SKOPJE	SKOPJE	1969			1	6	SEMI-CONTINU	2		FOUR POUSSANT	1,8	12	1575	800
<b>SERBIE ET MONTENEGRO</b>														
U S. STEEL SERBIA	SMEDEREVO	1979	2000	0	1	6	SEMI-CONTINU	2	500	FOUR POUSSANT	1,5	15	2050	2100
<b>SLOVENIE</b>														
ACRONI d o o.	JESENICE	1967	2009	0	1	1	TRA N STECKEL	1	100	FOUR POUSSANT	2	6	1060	500
<b>RUSSIE</b>														
SIBERIAN-AMUR STEEL	KOMSOMOLSK-AMUR	1969			4	6	CONTINU			FOUR POUSSANT			1550	1750
MEHEL CHELYABINSK M.Z.	CHELYAB NSK	1963	1993	1	1	7	SEMI-CONTINU			FOUR POUSSANT			1550	1800
SEVERSTAL	CHEREPOVETS	1960	2009	1	1	6	SEMI-CONTINU		500	FOUR A LONGERONS	0,8	8	1500	1700
SEVERSTAL	CHEREPOVETS	1975	2004	1	4	7	CONTINU	4	1600	FOUR A LONGERONS	1,2	16	1850	6000
NOVOLIPETZKI M.Z. (NLMK)	LIPETZK	1970	2009	1	4	7	CONTINU	5	1600	FOUR POUSSANT	1,5	25	1850	5600
MAGNITOGORSK M.K.	MAGNITOGORSK	1994	2007	1	3	7	CONTINU	4	1775	FOUR A LONGERONS	1,2	16	1550	5500
MAGNITOGORSK M.K.	MAGNITOGORSK	1960	2010	1	2	7	SEMI-CONTINU	3	1110	FOUR A LONGERONS	1,2	25	2350	4500
OMK VYKSA	VYKSA II	2008		0	2	6	TRA N A CHAUD FTSR	1	200	SOLE A ROULEAUX	1	12,7	1800	1200
<b>UKRAINE</b>														
ILYICH, MARIUPOL	MARIUPOL, DONETSK	1961	2001	1	5	6	3/4 CONT NU	5	600	FOUR POUSSANT	1,5	8	1520	3600
ZAPORIZHSTAL JSC	ZAPOROZHJE	1938	2007	1	4	6	3/4 CONT NU	5	600	FOUR POUSSANT	1,5	16	1500	3500
<b>KAZAKHSTAN</b>														
ARCELORMITTAL TEMIRTAU	TEMIRTAU	1967	2005	1	4	7	3/4 CONT NU			FOUR POUSSANT	1,8	12	1550	4600