IPPC-checklist for

Cold rolling mill

Cold rolling mill

Subsector/Activity: **Decoiling**

Technique	water curtains followed by waste water treatment in which the solids (iron oxides) are separated and collected for reuse of iron content.
Remarks	This can either be a stand-alone system or it be integrated in the global water treatment system of the plant.
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **Decoiling**

Technique	Exhaust systems with treatment of extracted air by fabric filters and recycling of collected dust
Remarks	BAT-associated emission level: NOx: 250-400 mg/Nm³ (3% O2) - CO: 100-200 mg/Nm³
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **Pickling**

Technique	General techniques to reduce acid consumption and waste acid generation, like prevention of steel corrosion by appropriate storage and handling, cooling etc.
Remarks	Practical applicability: case by case
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **Pickling**

Technique	Mechanical pre-descaling in a closed unit, equipped with an extraction system and fabric filters
Remarks	
Where applicable?	case by case
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **Pickling**

Technique	Optimised Rinsing Procedure/ Cascade Rinsing
Remarks	
Where applicable?	case by case
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **Pickling**

Technique	Modern, optimised pickling facilities: spray or turbulence pickling instead of dip pickling
Remarks	
Where applicable?	For new installations and existing plants: renovation
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **Pickling**

Technique	Electrolytic Pre-pickling for High Alloy Steel
Remarks	Additional: cleaning and reuse of electrolytic pickle liquor
Where applicable?	High alloy steel. New installations and existing installation: renovation
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **HCl pickling**

Technique	The reuse of spent HCl; or the regeneration of the acid by spray roasting or fluidised bed (or equivalent process) with recirculation of the regenerated material to the pickling process + possibly a regeneration installation with an air scrubbing system as described in A.4
Remarks	BAT-associated emission level: dust: 20-50 mg/Nm³ - HCl: 2-30 mg/Nm³ - SO2: 50-100 mg/Nm³ - CO: 150 mg/Nm³ - - CO2: 180 mg/Nm³ - NO2: 300-370 mg/Nm³ - Fe2O3 is a sellable by-product and can be reused externally
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **HCl pickling**

Technique	Effluent-free HCl Strip Pickling Plant
Remarks	
Where applicable?	For new plants. Existing plants: depending on size
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **HCl pickling**

Technique	Totally enclosed equipment or equipment fitted with hoods. The acid fumes generated are extracted and passed through gas scrubbers (absorption towers) for cleaning.
Remarks	BAT-associated emission level: dust: 10-20 mg/Nm³ - HCl: 2-30 mg/Nm³
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **H2SO4 pickling**

Technique	Recovery of free acid by crystallisation; recovery plant needs to be equipped with air scrubbing devices
Remarks	BAT-associated emission level: H2SO4: 5-10 mg/Nm³ - SO2: 8-20 mg/Nm³
Where applicable?	For new plants. Existing plants: depending on size
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **H2SO4 pickling**

Technique	Totally enclosed equipment or equipment fitted with hoods. The acid fumes generated are extracted and passed through gas scrubbers (absorption towers) for cleaning.
Remarks	BAT-associated emission level: H2SO4: 1-2 mg/Nm³ - SO2: 8-20 mg/Nm³
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **mixed acid pickling**

Technique	Free acid reclamation (eg by side-stream ion exchange or dialysis)
Remarks	BAT-associated emission level: air: non - waste water: 0,05-0,02 m³/t
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **mixed acid pickling**

Technique	Acid regeneration (eg by spray roasting)
Remarks	BAT-associated emission level: dust: < 10 mg/Nm³ - HF: < 2 mg/Nm³ - NO2: < 200 mg/Nm³ - waste water: 0,003-0,01 m³/t
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **mixed acid pickling**

Technique	Acid regeneration (eg by evaporation process)
Remarks	- HF: < 2mg/Nm³ - NO2: < 100 mg/Nm³
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **mixed acid pickling**

Technique	Enclosed equipment/hoods and scrubbing; scrubbing with H2O2 urea etc.; NOx suppression by adding H2O2 or urea to the pickling bath; or SCR
Remarks	- NOx: 200-650 mg/Nm³ - HF: 2-7 mg/Nm³ - SNCR: not applied yet
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **mixed acid pickling**

Technique	use of nitric acid-free pickling with enclosed equipment or equipment fitted with hoods and scrubbing.
Remarks	not applicable to all applications.
Where applicable?	New plants. Existing plants: renovation
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **Acid heating**

Technique	Indirect heating by heat exchangers or, if steam for heat exchangers has to be produced first, by submerged combustion
Remarks	Direct injection of steam is not considered BAT
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **acidic waste water**

Technique	Minimisation: Cascade rinsing systems with internal re-use of overflow (e.g. in pickling baths or scrubbing); careful tuning and managing of the 'pickling-acid regeneration-rinsing system.
Remarks	Water free operation if possible
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **acidic waste water**

Technique	Treatment: neutralisation, flocculation, etc. in any case where acidic water blow-down from the system cannot be avoided.
Remarks	ZS: < 20 mg/l Oil: < 5 mg/l Fe: < 0,2 mg/l Ni: < 2mg/l
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **emulsion systems**

Technique	Prevention of contamination by regular checking of seals, pipework etc. and leakage control.
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **emulsion systems**

Technique	Continuous monitoring of emulsion quality.
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **emulsion systems**

Technique	Operation of emulsion circuits with cleaning and reuse of emulsion to extend lifetime.
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **emulsion systems**

Technique	Treatment of spent emulsion to reduce oil content, e.g. by ultrafiltration or electrolytic splitting.
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **rolling and tempering**

Technique	Exhaust system with treatment of extracted air by mist eliminators
Remarks	BAT-associated emission level: hydrocarbons: 5 - 15 mg/Nm³
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **degreasing**

Technique	Implementation of a degreasing circuit with cleaning (mechanical methods and membrame filtration) and reuse of the degreaser solution.
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **degreasing**

Technique	Treatment of spent degreasing solution by electrolytic emulsion splitting or ultrafiltration to reduce the oil content. The separated oil fraction should be reused, e.g. thermally; the separated water fraction requires treatment (neutralisation etc.) prior to discharge.
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **degreasing**

Technique	Extraction system to capture degreaser fume and scrubbing of extracted air.
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **annealing furnaces**

Technique	Typical emission levels for bath and continious furnaces
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **annealing furnaces**

Technique	Low NOx-burners
Remarks	NOx: 250-400 mg/Nm³ (without air preheating by 3% O2)
Where applicable?	For continious furnaces
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **annealing furnaces**

Technique	Combustion air preheating by regenerative or recuperative burners. Preheating of stock by waste gas.
Remarks	Reduction: 60% for NOx and 87% for CO
Where applicable?	case by case
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **annealing furnaces**

Technique	Continuous Instead of Batch Annealing
Remarks	Consider cross-media effects
Where applicable?	For new and existing plants: renovation
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **finishing**

Technique	Extraction hoods, followed by mist eliminator (baffle-type) and electrostatic precipitator or electrostatic oiling
Remarks	
Where applicable?	no info
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **levelling and welding**

Technique	Extraction hoods with dust abatement by fabric filters.
Remarks	BAT-associated emission level: < 5 mg/Nm³ or < 20 mg/Nm³ (split view)
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **cooling**

Technique	Separate cooling water systems operating in closed loops
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **roll shops**

Technique	Cf. hot rolling mills
Remarks	
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	

Cold rolling mill

Subsector/Activity: **metallic by-products**

Technique	Scrap from cutting, heads and tails are collected at different stages in the rolling mill.
Remarks	Waste
Where applicable?	always
Ref BREF	
Ref BBT	
Applicable in this installation	☐ Yes
	☐ No, because …
If yes, applied yet?	☐ yes
	☐ No, planned in 20..
	☐ No, and not planned yet, because …
Data on achieved environmental benefits available?	☐ No
	☐ Yes, see annex
Remarks	