Supplementary Material for Integrated Report

Emissions Data for the KOBELCO Group's Business Locations in Fiscal 2019

Air and water quality data from all of Kobe Steel's business locations as well as its major group companies are reported below.
For exhaust gases, NOx, dust and dioxins from representative facilities are included, along with regulation values.
For wastewater, COD (or BOD in some cases), SS, oil and dioxins are included, along with regulation values.

Air Quality Data

Regulation values are based on the Air Pollution Control Act, prefectural ordinances, conventions, and the Act on Special Measures against Dioxins.

Water Quality Data

Regulation values are based on the Water Pollution Prevention Act, the Sewerage Act, prefectural ordinances, conventions,
and the Act on Special Measures against Dioxins.

■ Iron & Steel

Kakogawa Works

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	250	40
	Boiler	60	13
	Heating furnace	100	38
Dust (mg/Nm^3)	Boiler	100	8
	Boiler	50	3
	Heating furnace	100	1
Dioxins (ng-TEQ/Nm^3)	Industrial waste incinerator	5	0.011
	Sintering plant	1	0.0016

*The latest environmental data from Kakogawa Works can be viewed from our website (updated monthly).
(https://www.kobelco.co.jp/about_kobelco/csr/information)

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	10	4.3
SS (mg/L)	25	7
Oil (Mineral oil) (mg/L)	1	<1
Dioxins (pg-TEQ/L)	10	0.0067

Kobe Wire Rod & Bar Plant

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	250	114
	Heating furnace	130	80
	Heating furnace	100	91
Dust (mg/Nm3)	Boiler	200	6
	Heating furnace	100	5
	Heating furnace	100	3
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

*The latest environmental data from Kobe Wire Rod & Bar Plant can be viewed from our website (updated monthly).
(https://www.kobelco.co.jp/about_kobelco/csr/information)

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	15	4.7
SS (mg/L)	30	3
Oil (Mineral oil) (mg/L)	1	<1
Dioxins (pg-TEQ/L)	–	–

Kobelco Engineered Construction Materials Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	150	23
	Boiler	150	19
	Drying furnace	230	45
Dust (mg/Nm^3)	Boiler	50	6
	Boiler	50	6
	Drying furnace	100	12
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	200	12
SS (mg/L)	200	8.7
Oil (mg/L)	5	1
Dioxins (pg-TEQ/L)	–	–

Shinko Wire Company, Ltd. (Amagasaki Works)

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	150	32
	Heating furnace	130	23
	Heating furnace	180	26
Dust (mg/Nm^3)	Boiler	50	<2
	Heating furnace	100	2
	Heating furnace	100	<4
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	20	4.8
SS (mg/L)	30	7
Oil (mg/L)	5	<1
Dioxins (pg-TEQ/L)	–	–

Shinko Wire Company, Ltd. (Onoe Works)

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Heating furnace	170	16
	Boiler	150	25
Dust (mg/Nm^3)	Heating furnace	250	17
	Boiler	100	1
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	15	7.1
SS (mg/L)	25	8
Oil (mg/L)	2	<0.5
Dioxins (pg-TEQ/L)	–	–

Shinko Wire Company, Ltd. (Nishikinohama Works)

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	N/A	–	–
Dust (mg/Nm^3)	N/A	–	–
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	300	2
SS (mg/L)	300 mg/L or less	<1
Oil (mg/L)	5 mg/L or less	2
Dioxins (pg-TEQ/L)	–	–

Shinko Bolt, Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	N/A	–	–
Dust (mg/Nm^3)	N/A	–	–
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	25	6
SS (mg/L)	70	1
Oil (mg/L)	3	1
Dioxins (pg-TEQ/L)	–	–

Nippon Koshuha Steel Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	150	81
	Melting furnace	–	–
	Heating furnace	170	130
Dust (mg/Nm^3)	Boiler	200	40
	Melting furnace	100	2.5
	Heating furnace	200	8
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	20	4
SS (mg/L)	50	9
Oil (mg/L)	3	0.5
Dioxins (pg-TEQ/L)	-	-

Welding

Fujisawa Plant

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	N/A	–	–
Dust (mg/Nm^3)	N/A	–	–
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	60	4.8
SS (mg/L)	90	7
Oil (mg/L)	10	<1
Dioxins (pg-TEQ/L)	–	–

Ibaraki Plant

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Drying furnace	230	19
	Boiler	150	29
	Calcining furnace (Firing furnace)	200	41
Dust (mg/Nm^3)	Drying furnace	200	1
	Boiler	100	2
	Calcining furnace (Firing furnace)	300	2
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	300	125
SS (mg/L)	300	34
Oil (Mineral oil) (mg/L)	5	0.8
Dioxins (pg-TEQ/L)	–	-

Saijo Plant

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Drying furnace	250	56
	Drying furnace	230	35
Dust (mg/Nm^3)	Drying furnace	350	8.1
	Drying furnace	200	4.7
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	-	–
SS (mg/L)	-	–
Oil (mg/L)	5	0.8
Dioxins (pg-TEQ/L)	–	–

Fukuchiyama Plant

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Heating furnace	160	63
	Heating furnace	160	71
	Boiler	135	33
Dust (mg/Nm^3)	Heating furnace	20	<1
	Heating furnace	20	<1
	Boiler	10	<1
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	300	7.9
SS (mg/L)	300	5.5
Oil (mg/L)	3	0.5
Dioxins (pg-TEQ/L)	-	-

Hanshin Yosetsu Kizai Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Melting furnace	180	40
	Drying furnace	150	30
	Firing furnace	175	36
Dust (mg/Nm^3)	Melting furnace	100	<60
	Drying furnace	100	<20
	Firing furnace	100	<20
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	30	4
SS (mg/L)	30	5
Oil (mg/L)	–	–
Dioxins (pg-TEQ/L)	–	–

Aluminum & Copper

Moka Works

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Melting furnace	180	100
	Waste oil fired boiler	250	32
	Waste incinerator	300	38
Dust (mg/Nm^3)	Melting furnace	300	<5
	Waste oil fired boiler	150	<1
	Waste incinerator	250	<2
Dioxins (ng-TEQ/Nm^3)	Melting furnace	5	0.059
	Waste oil fired boiler	10	0
	Waste incinerator	10	0

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	25	13.7
SS (mg/L)	50	16
Oil (mg/L)	10	3.3
Dioxins (pg-TEQ/L)	–	–

Chofu Works

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	150	25
	Melting furnace	180	100
	Melting furnace	180	25
Dust (mg/Nm^3)	Boiler	100	5
	Melting furnace	300	26
	Melting furnace	200	27
Dioxins (ng-TEQ/Nm^3)	50m smoke stack	5	0.94

Company included in air quality data: Shinko Fab Tech, Ltd.

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	30	4.4
SS (mg/L)	50	2
Oil (mg/L)	2.5	<1
Dioxins (pg-TEQ/L)	10	0.00022

Company included in water quality data: Shinko Fab Tech, Ltd.

Daian Works

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Melting furnace	120	82
	Boiler	110	38
	Heating furnace	120	43
Dust (mg/Nm^3)	Melting furnace	100	51
	Boiler	100	<0.002
	Heating furnace	100	<0.002
Dioxins (ng-TEQ/Nm^3)	Melting furnace	5	0.41
	Melting furnace	1	0.04

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	10	2
SS (mg/L)	10	3
Oil (mg/L)	2 (Mineral oil 1)	<0.5
Dioxins (pg-TEQ/L)	–	–

Kobelco & Materials Copper Tube, Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Melting furnace	200	35
	Melting furnace	200	27
	Heating furnace	180	24
Dust (mg/Nm^3)	Melting furnace	200	2.2
	Melting furnace	200	1.2
	Heating furnace	200	1
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	25	5.7
SS (mg/L)	70	5.2
Oil (mg/L)	5	1
Dioxins (pg-TEQ/L)	–	–

Shinko Aluminum Wire Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Heating furnace	180	57
	Heating furnace	180	36
	Heating furnace	180	40
Dust (mg/Nm^3)	Heating furnace	100	32
	Heating furnace	100	5
	Heating furnace	100	2
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	25	8.1
SS (mg/L)	90	22
Oil (mg/L)	5	1
Dioxins (pg-TEQ/L)	–	–

Shinko Metal Products Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Preheating furnace	170	<28
	Heating furnace	200	36
	Preheating furnace	180	25
Dust (mg/Nm^3)	Preheating furnace	200	<5
	Heating furnace	250	<5
	Preheating furnace	100	<5
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	30	2.9
SS (mg/L)	100	16
Oil (mg/L)	5	<1
Dioxins (pg-TEQ/L)	–	–

Company included in water quality data:
Japan Superconductor Technology, Inc. Wire Rod Plant

Shinko Leadmikk Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	N/A	–	–
Dust (mg/Nm^3)	N/A	–	–
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	1500	23.9
SS (mg/L)	1500	5
Oil (mg/L)	5 (150 species)	2 (<1 species)
Dioxins (pg-TEQ/L)	10	0.00017

Machinery

Harima Plant

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	N/A	–	–
Dust (mg/Nm^3)	N/A	–	–
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	50	33
SS (mg/L)	60	26
Oil (mg/L)	5	4.1
Dioxins (pg-TEQ/L)	–	–

Shinko Engineering Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	N/A	–	–
Dust (mg/Nm^3)	Melting furnace	200	11
	Melting furnace	200	14
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	1.65 (kg/day)	1.03
SS (mg/L)	40	1
Oil (mg/L)	5	1
Dioxins (pg-TEQ/L)	–	–

Company included in water quality data:
Kobelco Construction Machinery Co., Ltd. Ogaki Factory

Engineering

Kobelco Eco-Solutions Co., Ltd. (Harima Plant)

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Firing furnace	180	102
	Firing furnace	180	84
	Firing furnace	180	54
Dust (mg/Nm^3)	Firing furnace	250	4
	Firing furnace	250	4
	Firing furnace	250	1
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	40	4.1
SS (mg/L)	28	4
Oil (mg/L)	5	<2
Dioxins (pg-TEQ/L)	–	–

Electric Power

Kobelco Power Kobe Inc.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	24	16.8
	Boiler	24	16.4
Dust (mg/Nm^3)	Boiler	10	2
	Boiler	10	2
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	15	3.2
SS (mg/L)	30	14
Oil (mg/L)	1	<1
Dioxins (pg-TEQ/L)	–	–

*The latest environmental data from Kobelco Power Kobe Inc. can be viewed from our website (updated monthly).
(https://www.kobelco.co.jp/about_kobelco/csr/information)

Kobelco Power Moka Inc.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Gas turbine	70	4.3
	Gas turbine	70	4.1
	Boiler	130	60.4
Dust (mg/Nm^3)	Gas turbine	50	<5 (first measurement taken June 2020)
	Gas turbine	50	<5 (first measurement taken June 2020)
	Boiler	100	<1 (first measurement taken June 2020)
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	Daily maximum: 25 mg/L	3.2
SS (mg/L)	Daily maximum: 25 mg/L	4
Oil (mg/L)	Daily maximum: 5 mg/L	<0.5
Dioxins (pg-TEQ/L)	–	–

*The latest environmental data from Kobelco Power Moka Inc. can be viewed from our website (updated monthly).
(https://www.kobelco.co.jp/about_kobelco/csr/information)

Head Office

Takasago Works

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	130	13
	Heating furnace	170	65
	Steel powder reduction furnace	150	39
Dust (mg/Nm^3)	Boiler	100	1.3
	Heating furnace	250	1
	Steel powder reduction furnace	200	8.1
Dioxins (ng-TEQ/Nm^3)	Steel powder electric furnace	5	0.00084

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	15	5.3
SS (mg/L)	26	13
Oil (mg/L)	1.5	<0.5
Dioxins (pg-TEQ/L)	–	–

Company included in water quality data:
Sputtering Target Division of Kobelco Research Institute, Inc.

Kobe Corporate Research Laboratories

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Cold/hot water generator	150	32
	Boiler	150	29
Dust (mg/Nm^3)	Cold/hot water generator	100	<2
	Boiler	100	<1
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	2,000	14.3
SS (mg/L)	2,000	8
Oil (mg/L)	5	<1
Dioxins (pg-TEQ/L)	10	0.0052

Kobelco Construction Machinery Co., Ltd. (Hiroshima Factory)

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Frame undercoating	230	32
	Frame finishing coating	230	46
	ATT coating	230	21
Dust (mg/Nm^3)	Frame undercoating	200	5
	Frame finishing coating	200	5
	ATT coating	200	5
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
COD (mg/L)	–	–
SS (mg/L)	–	–
Oil (mg/L)	35	56
Dioxins (pg-TEQ/L)	–	–

* In February 2020, the oil value exceeded regulatory limit. The cause was investigated and
countermeasures taken, after which it dropped below the regulatory limit.

Kobelco Construction Machinery Co., Ltd. (Ogaki Factory)

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	N/A	–	–
Dust (mg/Nm^3)	N/A	–	–
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Water quality data is included in Shinko Engineering Co., Ltd. Head Office.

Kobelco Construction Machinery Co., Ltd. (Okubo factory)

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Drying furnace	230	25
	Drying furnace	230	24
Dust (mg/Nm^3)	Drying furnace	200	3.8
	Drying furnace	200	<1
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	600	5.3
SS (mg/L)	600	53
Oil (mg/L)	5	1.8
Dioxins (pg-TEQ/L)	–	–

Shinko Industrial Co., Ltd.

Air

Substance	Facility	Regulation Value	Actual Measurement (Max.)
NOx (ppm)	Boiler	260	87
Dust (mg/Nm^3)	Boiler	300	6
Dioxins (ng-TEQ/Nm^3)	N/A	–	–

Water

Substance	Regulation Value	Actual Measurement (Max.)
BOD (mg/L)	160	1.3
SS (mg/L)	200	1.3
Oil (mg/L)	5	<0.5
Dioxins (pg-TEQ/L)	–	–