

Fatal and non-fatal accidents in metal products in Japan in 1999-2021

metal products industry Code No.0112

Type of accidents in metal products in 1999-2021

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Type of accidents
fall from height	685	768	748	666	615	593	586	603	556	527	501	424	427	437	373	413	379	361	400	427	392	374	357	11,612	fall from height
falling to same level	630	587	638	588	601	544	559	552	549	509	444	408	428	434	422	416	412	448	397	477	420	417	474	11,354	falling to same level
crash	335	368	303	279	253	240	254	250	290	251	189	177	186	152	168	180	190	137	177	179	178	154	210	5,100	crash
struck by flying or falling object	1,303	1,285	1,170	1,011	1,035	997	969	962	933	910	701	627	661	667	628	635	643	654	627	627	524	459	539	18,567	struck by flying or falling object
collapse	347	377	343	324	305	301	296	312	309	280	223	219	209	198	176	206	208	192	177	172	180	169	131	5,654	collapse
crashed by	462	408	436	409	366	365	362	337	370	358	240	277	240	226	210	240	246	212	252	261	242	204	217	6,940	crashed by
caught in/between	3,201	3,192	2,946	2,632	2,686	2,609	2,375	2,377	2,311	2,073	1,596	1,616	1,629	1,636	1,504	1,649	1,490	1,436	1,452	1,464	1,410	1,237	1,268	45,789	caught in/between
cut	706	695	640	529	534	563	463	482	529	466	339	354	334	322	386	333	319	310	302	325	330	285	284	9,830	cut
injury to the sole of the foot	10	10	13	19	8	9	15	13	8	16	6	10	9	6	10	10	12	11	10	6	8	9	4	232	injury to the sole of the foot
drown		1		1									14					1	1					18	drown
contact to high/low-temperature	108	140	105	93	82	100	71	86	88	93	72	86	93	90	98	88	72	88	85	94	103	104	63	2,102	contact to high/low-temperature
contact to harmful	33	32	44	42	56	46	28	46	48	30	26	35	30	24	36	27	37	26	25	40	41	37	26	815	contact to harmful

substance																									substance
electric shock	9	7	8	4	7	6	8	2	4	7	9	7	7	6	8	5	5	6	4	8	3	1	2	133	electric shock
explosion	10	10	6	7	16	1	11	8	11	8	7	5	4	4	6	11	2	3		4	3	3	3	143	explosion
burst	9	2	9	2	4	4	2	8	7	6	1	4	2	2		3	7	3	3	3	1	4	3	89	burst
fire	9	4	6	9	9	13	6	12	9	13	13	8	2	8	18	7	7	5	5	7	2	3	3	178	fire
traffic accident (public road)	69	53	53	40	42	42	37	51	40	36	28	38	33	39	28	31	19	34	36	34	27	26	26	862	traffic accident (public road)
traffic accident (others)	5		1			1	2	3	5					1	1	1			1					21	traffic accident (others)
reaction to motion/improper motion	413	422	417	388	390	365	392	411	407	400	275	291	293	251	285	301	276	264	289	280	307	250	314	7,681	reaction to motion/improper motion
others	30	25	22	11	19	21	15	21	19	18	12	5	14	16	14	13	12	14	8	22	15	17	254	617	others
unclassifiable	4	8	4	3	3	4	3	6	8	4	2	1	2	4	5	3	4	6	8	2		2	5	91	unclassifiable
total	8,378	8,394	7,912	7,057	7,031	6,824	6,454	6,542	6,501	6,005	4,684	4,592	4,617	4,523	4,376	4,572	4,340	4,211	4,259	4,432	4,186	3,755	4,183	127,828	total

Causal agents (large) of fatal and non-fatal accidents in metal products in 1999-2021

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (L) agents
machine	2,829	2,888	2,617	2,279	2,368	2,345	2,088	2,103	2,093	1,828	1,355	1,467	1,444	1,440	1,396	1,412	1,344	1,241	1,225	1,260	1,254	1,060	1,088	40,424	machine
crane, conveying machine	993	1,011	971	906	888	839	853	836	826	779	639	626	602	603	565	637	556	564	629	596	580	538	604	16,641	crane, conveying machine
other equipment	1,134	1,178	1,137	985	1,005	979	972	972	1,044	962	781	709	702	672	663	697	694	709	676	697	710	600	654	19,332	other

																										equipment
temporary buildings, establishments	667	662	710	626	624	603	598	630	575	585	474	440	487	463	424	455	448	434	442	495	439	445	462	12,188	temporary buildings, establishments	
substance, material	2,146	1,984	1,923	1,756	1,616	1,623	1,473	1,511	1,464	1,380	1,083	1,000	967	1,001	970	999	946	916	947	978	856	792	779	29,110	substance, material	
load	351	422	330	297	318	261	269	279	308	279	190	177	210	172	165	189	191	167	157	168	172	132	172	5,376	load	
environment	36	28	36	29	23	29	24	30	29	27	18	47	72	41	46	41	27	45	45	79	32	65	30	879	environment	
others	222	221	188	179	189	145	177	181	162	165	144	126	133	131	147	142	134	135	138	159	143	123	394	3,878	others	
total	8,378	8,394	7,912	7,057	7,031	6,824	6,454	6,542	6,501	6,005	4,684	4,592	4,617	4,523	4,376	4,572	4,340	4,211	4,259	4,432	4,186	3,755	4,183	127,828	total	

Causal agents (middle) of fatal and non-fatal accidents in metal products in 1999-2021

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (M) agents
engine	4	5	4	1	2	2	2		1	4		1	1	1			1			2	1	1	2	35	engine
power transmission mechanism	39	35	23	33	32	30	32	37	36	33	25	35	18	30	24	22	25	20	16	17	13	18	13	606	power transmission mechanism
woodworking machine	54	46	43	34	35	48	38	33	37	28	23	28	25	18	25	24	21	21	21	17	29	19	20	687	woodworking machine
construction machine	11	13	14	17	11	10	17	9	12	11	6	10	4	8	9	10	5	5	16	6	8	11	9	232	construction machine
metal manufacturing machine	2,438	2,515	2,208	1,897	1,984	1,962	1,757	1,788	1,749	1,534	1,109	1,171	1,213	1,229	1,163	1,185	1,108	1,038	1,000	1,028	1,012	884	898	33,870	metal manufacturing machine

general machine	283	274	325	297	304	293	242	236	258	218	192	222	183	154	175	171	184	157	172	190	191	127	146	4,994	general machine	
mobile silviculture machine																										mobile silviculture machine
crane	491	511	513	474	474	419	464	429	431	427	336	326	329	304	293	316	292	304	325	323	317	282	304	8,684	crane	
conveying machine	441	452	397	391	369	378	357	358	356	308	267	259	246	270	242	295	242	226	276	240	241	231	273	7,115	conveying machine	
vehicle	61	48	61	41	45	42	32	49	39	44	36	41	27	29	30	26	22	34	28	33	22	25	27	842	vehicle	
pressure vessel	9	14	11	5	6	8	6	2	7	9	5	7	3	6	6	6	3	3	4	10	1	3	4	138	pressure vessel	
chemical facilities		4	1	7	2	8	4	1	2	4	4	2	2	1	1	3	5	3	1	2	4	1	2	64	chemical facilities	
welding equipment	135	137	119	118	105	101	90	105	114	109	76	51	64	71	76	85	62	86	70	71	71	74	57	2,047	welding equipment	
kiln, caldron	18	19	19	11	18	15	7	2	12	12	12	14	8	9	9	12	9	6	14	7	9	8	7	257	kiln, caldron	
electric equipment	11	9	11	6	9	14	6	9	11	11	8	5	10	7	6	4	11	6	8	10	5	7	4	188	electric equipment	
human power machine, tools	268	256	249	223	227	203	201	218	221	191	149	160	133	141	131	144	132	141	145	163	146	138	162	4,142	human power machine, tools	
tools	586	623	619	514	539	514	555	525	580	526	443	389	410	359	357	351	395	357	369	351	380	302	332	10,376	tools	
other equipments, facilities	107	116	108	101	99	116	103	110	97	100	84	81	72	78	77	92	77	107	65	83	94	67	86	2,120	other equipments, facilities	
temporary buildings, establishments	667	662	710	626	624	603	598	630	575	585	474	440	487	463	424	455	448	434	442	495	439	445	462	12,188	temporary buildings, establishments	

hazards, harmful substances	74	70	80	68	93	75	55	72	70	62	41	52	50	55	74	59	58	47	35	48	60	51	45	1,394	hazards, harmful substances
materials	2,072	1,914	1,843	1,688	1,523	1,548	1,418	1,439	1,394	1,318	1,042	948	917	946	896	940	888	869	912	930	796	741	734	27,716	materials
load	351	422	330	297	318	261	269	279	308	279	190	177	210	172	165	189	191	167	157	168	172	132	172	5,376	load
natural environment	36	28	36	29	23	29	24	30	29	27	18	47	72	41	46	41	27	45	45	79	32	65	30	879	natural environment
other causal agent	79	78	57	32	39	25	30	25	33	32	21	19	22	23	22	19	23	19	23	34	31	21	264	971	other causal agent
no causal agent	137	126	123	144	140	112	140	148	114	125	115	104	110	105	122	118	106	111	110	119	112	100	127	2,768	no causal agent
unclassifiable	6	17	8	3	10	8	7	8	15	8	8	3	1	3	3	5	5	5	5	6		2	3	139	unclassifiable
total	8,378	8,394	7,912	7,057	7,031	6,824	6,454	6,542	6,501	6,005	4,684	4,592	4,617	4,523	4,376	4,572	4,340	4,211	4,259	4,432	4,186	3,755	4,183	127,828	total

Causal agents (small) of fatal and non-fatal accidents in metal products in 1999-2021

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (S) agents
engine			4		2		2		1	4		1	1	1			1			2	1	1	2	23	engine
power transmission mechanism			23		32		32	37	36	33	25	35	18	30	24	22	25	20	16	17	13	18	13	469	power transmission mechanism
circular sawing machine			25		19		23	20	29	20	14	19	14	13	15	16	12	14	15	9	17	8	14	316	circular sawing machine
band sawing machine			1		5		4	1	1	1	3	2	2	1	2	1	1	2	1	2	1	1	1	33	band sawing machine
wood planer machine					2		1	1	1	1	1	1	1							1		1		11	wood planer machine

machine																										machine
other mobile silviculture machine																										other mobile silviculture machine
crane			462		427		426	376	391	399	302	296	301	280	262	279	280	277	297	291	290	255	278	6,169	crane	
mobile crane			30		25		16	30	21	18	15	16	15	15	17	18	8	18	14	15	15	8	17	331	mobile crane	
derrick crane												1												1	derrick crane	
elevator, lift			5		11		7	10	10	6	5	3	7	3	3	6		4	4	6	5	1	4	100	elevator, lift	
cargo lifting appliance			1																	1				2	cargo lifting appliance	
gondola					1				1			1												3	gondola	
lumberyard equipment, logging cableway							1													1				2	lumberyard equipment, logging cableway	
simple skyline yarding equipment																									simple skyline yarding equipment	
other powered crane			15		10		14	13	8	4	14	9	6	6	11	13	4	5	9	10	7	18	5	181	other powered crane	
truck			200		183		161	178	178	143	133	130	116	130	111	143	109	112	132	107	113	114	119	2,612	truck	
forklift			117		107		125	91	120	103	76	83	76	88	85	93	87	62	86	87	81	79	76	1,722	forklift	
railway equipment			1				2	1	2	5	3	1	1	4	1	3	1	1	1		3	2	2	34	railway equipment	
conveyor			56		56		49	68	46	34	40	31	36	34	37	41	32	37	45	35	31	31	57	796	conveyor	
loader			1		1			1	1	1											2		1	8	loader	
straddle carrier																									straddle carrier	
rough terrain hauler												1												1	rough terrain hauler	
other powered			22		22		20	19	9	22	14	14	17	14	8	15	13	14	12	11	11	5	18	280	other powered	

conveying machines																										conveying machines
cars, bus, motorcycle			58		42		32	44	35	44	33	37	27	28	28	26	21	33	27	32	22	25	23	617	cars, bus, motorcycle	
railway vehicle																							1	1	railway vehicle	
other vehicles			3		3			5	4		3	4		1	2		1	1	1	1			3	32	other vehicles	
boiler			1						2	1	1				2									7	boiler	
pressure vessel			3				2	1	1			2	1	1	1	2	2		1	3	1		2	23	pressure vessel	
other pressure vessels			7		6		4	1	4	8	4	5	2	5	3	4	1	3	3	7		3	2	72	other pressure vessels	
chemical facilities			1		2		4	1	2	4	4	2	2	1	1	3	5	3	1	2	4	1	2	45	chemical facilities	
gas welding equipment			26		15		17	15	21	15	16	8	17	8	13	13	9	17	12	15	14	12	4	267	gas welding equipment	
arc welding equipment			32		33		30	39	47	50	38	17	26	29	34	27	24	36	30	21	24	30	25	592	arc welding equipment	
other welding equipment			61		57		43	51	46	44	22	26	21	34	29	45	29	33	28	35	33	32	28	697	other welding equipment	
kiln, caldron			14		14		7	2	6	9	9	11	6	7	6	9	7	6	12	6	6	7	7	151	kiln, caldron	
industrial dryer			2		2				6	3	2	3	1	1	3	2			2		3	1		31	industrial dryer	
other kiln, caldron			3		2						1		1	1		1	2			1				12	other kiln, caldron	
transmission			5		2		3	4	6	5	3	1	3	5	1	2	9	5	2	7	4	5	2	74	transmission	
electric power facilities			3		3		1	1	3	1	3	1	3	2	2		1	1	1	2	1	1		30	electric power facilities	
other electrical equipment			3		4		2	4	2	5	2	3	4		3	2	1		5	1		1	2	44	other electrical equipment	
human power			11		7		8	9	12	4	2	6	4	7	5	3	5	1	5	3	13	12	21	138	human power	

cranes																									cranes
human power hauling equipment			80		75		79	95	94	73	54	71	59	61	55	63	54	61	72	68	66	60	66	1,306	human power hauling equipment
human power machine			22		16		7	13	6	14	6	9	3	6	3	6	9	6	8	7	4	3	5	153	human power machine
hand tool			136		129		107	101	109	100	87	74	67	67	68	72	64	73	60	85	63	63	70	1,595	hand tool
ladder			248		216		199	181	207	176	196	144	151	148	131	123	126	115	133	135	147	122	134	3,032	ladder
slinging tool			207		189		194	173	203	173	136	136	137	116	125	119	136	126	114	108	118	73	86	2,669	slinging tool
other tools			164		134		162	171	170	177	111	109	122	95	101	109	133	116	122	108	115	107	112	2,438	other tools
other equipment, facilities			108		99		103	110	97	100	84	81	72	78	77	92	77	107	65	83	94	67	86	1,680	other equipment, facilities
scaffolding			26		26		15	25	33	18	14	16	23	22	14	15	13	12	10	12	19	14	14	341	scaffolding
timbering			1					1	1			1						1						5	timbering
stairs, landing stage			109		97		79	99	82	88	69	61	65	62	77	65	57	50	78	74	74	59	70	1,415	stairs, landing stage
opening			5		12		12	8	11	10	10	4	11	12	6	4	5	10	7	7	9	10	6	159	opening
roof, beam, haze, crossbeam, principal rafter			24		20		15	15	10	20	8	14	14	9	9	10	10	15	11	16	8	10	4	242	roof, beam, haze, crossbeam, principal rafter
working platform, boot board			124		125		107	107	114	134	101	98	91	72	80	75	96	91	67	73	71	67	59	1,752	working platform, boot board
passage			232		198		227	226	185	197	165	135	171	175	154	180	171	163	163	209	172	190	224	3,537	passage
building, establishment			104		78		86	85	78	76	56	56	67	59	48	56	42	42	61	51	42	40	39	1,166	building, establishment
other temporary buildings, establishments			85		68		57	65	61	41	51	55	45	52	36	50	54	50	45	53	44	55	46	1,013	other temporary buildings, establishments

explosive substance			4		1		8	4	2	2	1	2			2	4		1			2	1	34	explosive substance	
inflammable substance			11		15		10	12	12	14	10	5	10	18	16	10	10	9	5	3	6	10	9	195	inflammable substance
inflammable gas			4		8		1	6	7	7	1	3	3	4	5	7	3		3	5	5	2	1	75	inflammable gas
harmful substance			33		43		20	33	28	20	22	26	23	17	28	24	29	22	11	29	27	22	19	476	harmful substance
radiation					1																			1	radiation
other hazards, harmful substances			28		25		16	17	21	19	7	16	14	16	23	14	16	15	16	11	22	15	15	326	other hazards, harmful substances
metal material			1,756		1,432		1,346	1,358	1,313	1,259	975	889	870	899	841	883	832	827	864	874	741	700	681	19,340	metal material
lumber, bamboo			38		50		35	42	52	22	37	25	20	19	30	36	22	22	27	30	28	19	32	586	lumber, bamboo
stone, sand, substance			5		3		3	5	3	3		1	2	1	3	3	6	2	1	3	2		1	47	stone, sand, substance
other materials			44		38		34	34	26	34	30	33	25	27	22	18	28	18	20	23	25	22	20	521	other materials
load			264		260		232	235	260	246	155	150	186	149	141	174	168	147	139	149	145	122	152	3,474	load
machine/equipment as load			66		58		37	44	48	33	35	27	24	23	24	15	23	20	18	19	27	10	20	571	machine/equipment as load
natural ground, rock			1		2		1	2	4	2	1	2	3	3	1	3	1	1	2	4		4	2	39	natural ground, rock
standing tree			1		1		1	2	1	2		1		1			1	1	1	1		1		15	standing tree
water			1		1			2		3		3	20			3	2	1	1			2		39	water
abnormal environment			1						3			1		1	1		1	1	1	4	1	2	1	18	abnormal environment
high/cold temperature environment			13		6		7	11	6	8	9	34	27	21	26	14	12	15	16	37	21	36	10	329	high/cold temperature environment

other environments			19		13		15	13	15	12	8	6	22	15	18	21	10	26	24	33	10	20	17	317	other environments
other causal agent			57		39		30	25	33	32	21	19	22	23	22	19	23	19	23	34	31	21	264	757	other causal agent
no causal agent			123		140		140	148	114	125	115	104	110	105	122	118	106	111	110	119	112	100	127	2,249	no causal agent
unclassifiable			8		10		7	8	15	8	8	3	1	3	3	5	5	5	5	6		2	3	105	unclassifiable
total			7,912		7,031		6,454	6,542	6,501	6,005	4,684	4,592	4,617	4,523	4,376	4,572	4,340	4,211	4,259	4,432	4,186	3,755	4,183	97,175	total

Workers age of fatal and non-fatal accidents in metal products in 1999-2021

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Age
19 years old or less	321	300	318	268	275	248	228	197	202	165	115	118	131	137	144	152	142	109	95	110	98	73	83	4,029	19 years old or less
20-29	1,563	1,597	1,522	1,327	1,311	1,236	1,169	1,181	1,134	1,051	826	851	810	805	792	837	786	742	781	749	737	644	717	23,168	20-29
30-39	1,305	1,350	1,292	1,313	1,296	1,360	1,288	1,382	1,353	1,294	974	1,034	957	945	895	922	893	808	795	828	754	664	739	24,441	30-39
40-49	1,584	1,515	1,312	1,101	1,146	1,071	1,017	1,032	1,036	991	848	864	929	950	954	1,006	921	978	946	1,007	955	866	938	23,967	40-49
50-59	2,523	2,573	2,383	2,053	1,946	1,889	1,724	1,658	1,610	1,368	1,016	886	859	805	731	764	707	760	803	845	821	749	924	30,397	50-59
60 years old or more	1,082	1,059	1,085	995	1,057	1,020	1,028	1,092	1,166	1,136	905	839	931	881	860	891	891	814	839	893	821	759	782	21,826	60 years old or more
total	8,378	8,394	7,912	7,057	7,031	6,824	6,454	6,542	6,501	6,005	4,684	4,592	4,617	4,523	4,376	4,572	4,340	4,211	4,259	4,432	4,186	3,755	4,183	127,828	total

Workers' number of workplace of fatal and non-fatal accidents in metal products in 1999-2021

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Workers scale
9 workers or less	3,309	3,369	3,142	2,808	2,771	2,708	2,485	2,395	2,252	2,045	1,634	1,528	1,597	1,395	1,398	1,363	1,302	1,225	1,184	1,247	1,075	1,003	909	44,144	9 workers or less
10-29	2,959	2,825	2,718	2,432	2,380	2,354	2,243	2,276	2,252	2,082	1,622	1,606	1,588	1,663	1,553	1,626	1,567	1,464	1,486	1,487	1,394	1,303	1,402	44,282	10-29

30-49	1,019	1,062	972	884	917	870	866	898	904	860	660	661	632	654	665	744	710	721	725	746	739	669	754	18,332	30-49
50-99	690	702	671	590	577	567	526	577	640	597	448	483	461	465	441	494	458	457	519	499	567	438	560	12,427	50-99
100-299	324	361	324	287	314	280	280	324	376	356	281	253	291	285	262	302	269	302	307	395	338	295	453	7,259	100-299
300 workers or more	77	75	85	56	72	45	54	72	77	65	39	61	48	61	57	43	34	42	38	58	73	47	105	1,384	300 workers or more
total	8,378	8,394	7,912	7,057	7,031	6,824	6,454	6,542	6,501	6,005	4,684	4,592	4,617	4,523	4,376	4,572	4,340	4,211	4,259	4,432	4,186	3,755	4,183	127,828	total

Month of fatal and non-fatal accidents in metal products in 1999-2021

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Month
January	665	623	649	508	608	530	490	505	547	485	446	380	404	367	324	357	360	348	337	345	318	303	356	10,255	January
February	716	678	701	545	584	535	571	571	565	548	388	359	381	411	328	376	329	369	350	367	352	329	330	10,683	February
March	765	696	732	589	635	627	588	566	533	552	429	370	442	436	378	367	371	363	369	379	337	303	359	11,186	March
April	633	696	599	619	558	567	503	521	536	469	392	337	345	392	401	412	346	343	329	327	344	326	289	10,284	April
May	653	658	641	624	602	460	502	493	536	489	337	342	334	347	332	380	342	315	315	350	350	284	321	10,007	May
June	714	687	691	591	611	611	613	564	558	533	382	432	387	373	318	408	380	367	368	394	340	291	388	11,001	June
July	775	797	725	664	627	649	604	544	591	549	432	441	381	413	449	405	447	385	397	432	458	326	411	11,902	July
August	716	745	663	561	588	521	589	593	567	493	365	416	415	404	352	377	354	375	361	395	338	321	379	10,888	August
September	768	743	635	607	599	610	532	576	523	491	411	422	393	373	376	379	348	373	371	351	343	328	352	10,904	September
October	675	737	693	681	622	622	527	589	560	527	374	354	365	347	419	426	413	338	400	416	366	335	352	11,138	October
November	643	681	613	569	499	576	505	556	496	464	400	390	403	345	384	349	350	336	329	356	334	297	339	10,214	November
December	655	653	570	499	498	516	430	464	489	405	328	349	367	315	315	336	300	299	333	320	306	312	307	9,366	December
total	8,378	8,394	7,912	7,057	7,031	6,824	6,454	6,542	6,501	6,005	4,684	4,592	4,617	4,523	4,376	4,572	4,340	4,211	4,259	4,432	4,186	3,755	4,183	127,828	total

Prefecture of fatal and non-fatal accidents in metal products in 1999-2021

cut				1		1						1									1		4	cut		
injury to the sole of the foot						1											1						2	injury to the sole of the foot		
drown												14					1						15	drown		
contact to high/low-temperature	5	2	3	1	1		1	2	3	1	1	3		2	2	2		1	3	2		1	36	contact to high/low-temperature		
contact to harmful substance	3			3	2	2			3		3	1	2	1	1		2	1	1	3			2	30	contact to harmful substance	
electric shock	3	1	1	2	1					1	2	1		1				1		1				15	electric shock	
explosion	1	2		1	3		2		1							1								11	explosion	
burst			1					2																3	burst	
fire		1			3					1	1			1	2						1			10	fire	
traffic accident (public road)	9	5	6	3	3	3		1	3		1	2	2	1	2	1			1	1		1	5	50	traffic accident (public road)	
traffic accident (others)																										traffic accident (others)
reaction to motion/improper motion																										reaction to motion/improper motion
others	1					1	1	1					3	1		1	1			2			2	14	others	
unclassifiable							1																	1	unclassifiable	
total	59	52	47	52	49	49	42	38	44	35	31	30	47	31	32	24	30	33	23	24	20	17	26	835	total	

Causal agents (large) of fatal accidents in metal products in 1999-2021

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (L) agents
machine	9	11	8	9	7	9	3	13	7	5	4	7	4	8	7	5	9	7	2	3	1	6	7	151	machine
crane, conveying machine	18	14	16	17	17	16	15	7	8	8	12	10	12	6	9	8	4	10	7	5	10	5	9	243	crane, conveying machine
other equipment	13	7	9	10	11	10	9	6	11	11	6	2	6	4	3	5	5	8	3	2	2	1	3	147	other equipment
temporary buildings, establishments	5	7	5	1		6	2	5	3	2	2	2	2	3	1	1	3	3	2	4	1	1	1	62	temporary buildings, establishments
substance, material	7	12	7	11	9	5	8	5	14	6	5	6	4	7	10	2	8	3	8	3	4	3	2	149	substance, material
load	2	1		1	3	2	1		1	2		1	2	1		1		1	1	1	1		1	23	load
environment	3		2	2	2		2	1		1		2	16	1	2	1		1		4		1	1	42	environment
others	2			1		1	2	1			2		1	1		1	1			2	1		2	18	others
total	59	52	47	52	49	49	42	38	44	35	31	30	47	31	32	24	30	33	23	24	20	17	26	835	total

Causal agents (middle) of fatal accidents in metal products in 1999-2021

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (M) agents	
engine																										engine
power transmission mechanism										1	1					1	1	1							5	power transmission mechanism
woodworking machine																										woodworking machine
construction machine			1					1		1	1						1	1	1						7	construction machine

metal manufacturing machine	8	9	6	8	5	9	2	9	5	3	1	5	2	7	7	4	3	4		2	1	4	6	110	metal manufacturing machine	
general machine	1	2	1	1	2		1	3	2		1	2	2	1			4	1	1	1		2	1	29	general machine	
mobile silviculture machine																										mobile silviculture machine
crane	5	7	6	9	8	8	12	4	5	7	8	5	4	2	4	3	3	8	4	4	6	2	2	126	crane	
conveying machine	9	6	5	6	7	6	3	3	2	1	3	5	7	4	5	5	1	1	2		4	3	5	93	conveying machine	
vehicle	4	1	5	2	2	2			1		1		1					1	1	1			2	24	vehicle	
pressure vessel			1																					1	pressure vessel	
chemical facilities													1											1	chemical facilities	
welding equipment	2		1	1	2					1			1	1			2	2						13	welding equipment	
kiln, caldron	3		1		2	2			1		1					1			1					12	kiln, caldron	
electric equipment	1										1													2	electric equipment	
human power machine, tools	1					1	2							1							1		1	7	human power machine, tools	
tools	5	4	6	9	7	6	6	6	7	9	4	1	4	2	3	2	3	4	2		1	1	2	94	tools	
other equipments, facilities	1	3				1	1		3	1		1				2		2		2				17	other equipments, facilities	
temporary buildings, establishments	5	7	5	1		6	2	5	3	2	2	2	2	3	1	1	3	3	2	4	1	1	1	62	temporary buildings, establishments	
hazards, harmful substances	2	4		3	5	2	2	1	5		2		1	3	3		2		2				1	38	hazards, harmful substances	
materials	5	8	7	8	4	3	6	4	9	6	3	6	3	4	7	2	6	3	6	3	4	3	1	111	materials	

load	2	1		1	3	2	1		1	2		1	2	1		1	1	1	1		1	23	load		
natural environment	3		2	2	2		2	1		1		2	16	1	2	1		1		4		1	1	42	natural environment
other causal agent	1			1		1			1										1			2	7	other causal agent	
no causal agent							1	1					1	1		1	1			1	1			8	no causal agent
unclassifiable	1						1				1													3	unclassifiable
total	59	52	47	52	49	49	42	38	44	35	31	30	47	31	32	24	30	33	23	24	20	17	26	835	total

Causal agents (small) of fatal accidents in metal products in 1999-2021

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (S) agents		
engine																										engine	
power transmission mechanism										1	1					1	1	1							5	power transmission mechanism	
circular sawing machine																											circular sawing machine
band sawing machine																											band sawing machine
wood planer machine																											wood planer machine
hollow chisel mortiser, wood borer																											hollow chisel mortiser, wood borer
chamfering machine, router,																											chamfering machine, router,

woodworking milling machine																								woodworking milling machine
chain saw																								chain saw
other woodworking machines																								other woodworking machines
leveling, transporting or loading machine																		1					1	leveling, transporting or loading machine
excavating machine																		1					1	excavating machine
foundation work machine																1							1	foundation work machine
hardening machine																								hardening machine
demolition machine										1													1	demolition machine
vehicle for high lift work			1					1		1													3	vehicle for high lift work
other construction machines																								other construction machines
lathe	3		3		1			2	2	1	1	1	2	1	1	3	1	2				1	25	lathe
drill press, milling machine		2	1	1	1		1	1							1			1		1			1	drill press, milling machine
grinding machine, buffing machine				2	1	1						2		1	1							1	1	grinding machine, buffing machine
power press	2	1	1			3		1						1	1							1	11	power press
forging pressure hammer			1																				1	forging pressure hammer
shearing machine		1			1									1									3	shearing machine

ladder	2		2	3	2			1	2	2			1	1					2				1	19	ladder	
slinging tool	3	4	4	5	5	3	6	5	5	6	3		3	1	3	2	3	4			1	1	1	68	slinging tool	
other tools				1		3				1	1	1												7	other tools	
other equipment, facilities	1	3				1	1		3	1		1				2		2		2				17	other equipment, facilities	
scaffolding		1				1																		2	scaffolding	
timbering																										timbering
stairs, landing stage		1				1		3					1						2					8	stairs, landing stage	
opening																	1							1	opening	
roof, beam, haze, crossbeam, principal rafter	2	1	1			4	1				1	1	1		1		1	2	1	1	1			19	roof, beam, haze, crossbeam, principal rafter	
working platform, boot board		1	1						1		1				1	2			1				1	9	working platform, boot board	
passage									1			1	1									1		4	passage	
building, establishment	3	1	2	1				2	1	2				1										13	building, establishment	
other temporary buildings, establishments		2	1				1							1					1					6	other temporary buildings, establishments	
explosive substance		2					2																	4	explosive substance	
inflammable substance		2			1			1						2	2				1					9	inflammable substance	
inflammable gas				1	1				1															3	inflammable gas	
harmful substance	2			2	2	2			3		2		1	1	1		2		1				1	20	harmful substance	

radiation																										radiation
other hazards, harmful substances					1					1															2	other hazards, harmful substances
metal material	5	8	7	8	4	3	6	4	9	6	3	6	3	4	7	2	6	3	6	3	4	3	1	111	metal material	
lumber, bamboo																										lumber, bamboo
stone, sand, substance																										stone, sand, substance
other materials																										other materials
load	2	1		1	3	2			1	2		1	2	1		1		1	1	1			1	21	load	
machine/equipment as load								1														1		2	machine/equipment as load	
natural ground, rock	1																							1	natural ground, rock	
standing tree																										standing tree
water									1					16											17	water
abnormal environment																			1		3			1	5	abnormal environment
high/cold temperature environment	1		2	1	1					1		2			1	2	1					1		1	15	high/cold temperature environment
other environments	1			1	1			1																	4	other environments
other causal agent	1			1		1					1										1			2	7	other causal agent
no causal agent							1	1					1	1		1	1				1	1			8	no causal agent
unclassifiable	1							1				1													3	unclassifiable
total	59	52	47	52	49	49	42	38	44	35	31	30	47	31	32	24	30	33	23	24	20	17	26	835	total	

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Month
January	4	6	1	4	3	3	5	2	6	2	5	3		3		2	4		2	2	2		1	60	January
February	3	3	6	5	2	3	6	6	7	1	3	2	2	2	1	3	3	5	5			3	3	74	February
March	4	5	3	4	5	7	4	5	6	5	2	3	21	3	7	2	1	5	1		4			97	March
April	5	8	6	4	6	6	5	1		4	1	1	3	1			1	1	3	1	2		2	61	April
May	3	2	2	3	3	3	3	3	5	1	3	2	2	1	3	5	2	2	2	2	1	2	5	60	May
June	7	3	4	8	6	1	6	2		4	3	2	4	2	3		2	5	1		2	1	3	69	June
July	5	5	8	7	3	4	2	2	4	5	2	2	2	4	7	1	2	4	1	2	1	4	2	79	July
August	6	4	2		9	6	2	2	2	3		3	4	4		1	2	3	2	5		1	1	62	August
September	6	3	3	5	4	7	2	6	4	2	5	3	2	5	2	2	4	3	2	5	3	1	1	80	September
October	4	6	7	4	4	5	2	3	6	2	2	2	2		3	3	6		3	4	1	3	2	74	October
November	5	5	3	6	1	2	2	5	1	3	2	2	3	3	3	1	3	2	1		3	2	2	60	November
December	7	2	2	2	3	2	3	1	3	3	3	5	2	3	3	4		3		3	1		4	59	December
total	59	52	47	52	49	49	42	38	44	35	31	30	47	31	32	24	30	33	23	24	20	17	26	835	total

Prefecture of fatal accidents in metal products in 1999-2021

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Prefecture	
Hokkaido	2	1		2	1	3	1	1					1	1		1	2	1	1		1			19	Hokkaido	
Aomori									1	1									1	2			1	6	Aomori	
Iwate						1	2	1					2					1							7	Iwate
Miyagi		1				1	1		1				12				1								17	Miyagi
Akita				1											1										2	Akita
Yamagata			1							1			1											1	4	Yamagata
Fukushima	2		1		3				3				2									3			14	Fukushima

Ibaraki	1	2	2	4	2		3		2	3	3	3		2	1	1		1	1	1		1	1	34	Ibaraki
Tochigi	2	1	3	1	1	1	1	2				1	1	1		2							1	18	Tochigi
Gunma	3	2	1	1	1	1	1	1			1			1	1			1				1		16	Gunma
Saitama	7	4	1	3	3	2	2	2				1	1	3		2	1			3	1	1	2	39	Saitama
Chiba	3	5	3	4	3	2	4	2	3	5	3	2	3	1		1	3	3		1		1	2	54	Chiba
Tokyo	3	1	3	2	1	1	1	1					1	1	1	2	1	2		1			1	23	Tokyo
Kanagawa	2	2	1	2	3			2	2	3	3		1	2	1		1		1				1	27	Kanagawa
Niigata	1	1	1	3		1		2	2		2				4			1		1			2	21	Niigata
Toyama	1	1	1	1	4	1	1		2	2			1	2	1			2	1	1				22	Toyama
Ishikawa				2		1	1					1				2								7	Ishikawa
Fukui	1		1							2	1	1			1	1				1	1			10	Fukui
Yamanashi				1		1			1	1								1	1	1			1	8	Yamanashi
Nagano	4		2			1						1	2					1			1	1		13	Nagano
Gifu	2		1	1	1	1	1		1			1	2		1		3				1	1	3	20	Gifu
Shizuoka		5	4		3	3		1	1			1	1		3	1	2	1	1	1	1	1	1	31	Shizuoka
Aichi	6	3	4	3	2	5	4	2	2	3	2	2		1	1		3	1	2	7	3	2	1	59	Aichi
Mie	1	1				2	1			1	1				2								1	10	Mie
Shiga	1	4				1		1		1	1				1			1	1		1	1		14	Shiga
Kyoto	2	2						3			1		1		1	1								11	Kyoto
Osaka	6	5	8	8	8	9	7	9	9	3	4	5	6	6	3	3	3	3	3	4		1	1	114	Osaka
Hyogo	2	5	4	1	5	2	1	3	5	2		5	1	2	1	3	4	2	2			2	2	54	Hyogo
Nara			1			1			1					1	2	1			1		1	1		10	Nara
Wakayama	2							1	1						1			2	1					8	Wakayama
Tottori																		1	1				1	3	Tottori

Shimane																									Shimane	
Okayama			1		1	1		1	2		2	1	2	2			2	1	1				1	18	Okayama	
Hiroshima		2	1	1		2			1	1	2	1		1				2		3				18	Hiroshima	
Yamaguchi			1	1	1	1	1		1					1	1								1	9	Yamaguchi	
Tokushima										1					1			1							3	Tokushima
Kagawa	2			1	1	1	1			1			1	1	2										11	Kagawa
Ehime				1	1	1	1	1	2	1	1	1						2	1				1		14	Ehime
Kochi				1		1	1				1														4	Kochi
Fukuoka	2	1	1	3	2	1	2			1	1	1	3	1	1	1	1	2			2				26	Fukuoka
Saga									1								1								2	Saga
Nagasaki	1			3			2			2	1	1	1	1											12	Nagasaki
Kumamoto		1		1	1			1				1	1				1	1							8	Kumamoto
Oita		1					2				1			1			1						1		7	Oita
Miyazaki					1													1	1						3	Miyazaki
Kagoshima								1															1		2	Kagoshima
Okinawa		1																				1		1	3	Okinawa
total	59	52	47	52	49	49	42	38	44	35	31	30	47	31	32	24	30	33	23	24	20	17	26	835	total	

Data sources: <https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.htm> (MHLW, Japan)

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