Fatal and non-fatal accidents in quarrying in Japan in 1999-2022

quarrying industry Code No.0202

Type of accidents in quarrying in 1999-2022

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	2022	total
fall from height	115	99	107	77	88	75	87	76	78	71	74	55	60	49	61	78	62	48	56	61	59	65	80	47	1,728
falling to same level	50	44	39	29	31	17	29	29	23	28	26	18	31	29	26	32	18	21	21	24	24	20	24	38	671
crash	38	29	19	31	18	17	20	23	23	6	11	17	10	6	13	7	11	10	7	17	9	5	9	9	365
struck by flying or falling object	51	52	52	47	38	23	28	39	27	28	21	24	19	16	22	23	16	15	12	13	11	18	6	12	613
collapse	20	18	16	18	12	10	14	9	14	6	4	6	6	6	2	5	6	2	8	4	5	4	1	4	200
crashed by	30	20	20	23	27	18	25	28	18	15	11	22	7	9	11	8	11	8	12	12	12	11	11	8	377
caught in/between	95	107	98	85	90	87	86	68	76	54	46	41	47	52	58	59	43	45	46	38	38	38	44	39	1,480
cut	6	9	13	16	2	7	3	5	7	5	4	1	1	4	2	5	3	3	8	5	5	6	1	4	125
injury to the sole of the foot	2		1		1		1		2							1			1	1	1				11
drown		1			1	1		1					1		1	1		1							8
contact to high/low-	16	5	6	3	5	5	7		3		1	2	2		2		1	3	3	1	4	6	2		77

temperature																									
contact to harmful substance	2		1		1							1				2			1	1	1	1		1	12
electric shock		2	2			2	1		1																8
explosion	2		4										1	2					1	2					12
burst		2		1	2			1							2							1	2		11
fire		1					1									1	1							1	5
traffic accident (public road)	8	12	13	7	4	1	4	5	7	3	6		5	2	4	2	5	5	7	3	3	2	5	4	117
traffic accident (others)	1		1	2		1		1				1		1	1	1	2								12
reaction to motion/improper motion	29	22	19	14	15	23	17	10	10	12	11	11	12	7	9	9	13	5	9	9	14	12	15	13	320
others	2	5		1	2	1	2	1	3	1	2	2	2		1		4	1	2	1			1	2	36
unclassifiable			1													1									2
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Causal agents (large) of fatal and non-fatal accidents in quarrying in 1999-2022

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	2022	total
machine	106	95	128	80	66	67	84	68	76	46	45	48	35	40	52	44	41	34	44	47	32	51	39	36	1,404

crane, conveying machine	112	125	104	104	107	86	92	95	81	77	82	53	58	65	71	74	69	66	71	58	64	63	71	56	1,904
other equipment	53	40	36	43	38	31	39	31	29	29	22	20	23	16	25	20	19	15	19	17	27	14	22	17	645
temporary buildings, establishments	81	58	56	40	45	37	43	41	42	30	30	31	36	21	34	50	30	24	28	40	36	22	36	35	926
substance, material	55	46	43	47	36	33	38	32	34	28	13	21	18	19	13	17	9	17	12	16	9	9	11	18	594
load	4	7	5	1	5	2	3	1	6	2	3	5	2		1	1	1		1	1	3	3	3	2	62
environment	42	45	32	30	28	28	20	23	16	13	15	16	26	16	16	23	20	7	15	8	10	20	11	13	493
others	14	12	8	9	12	4	6	5	8	4	7	7	6	6	3	6	7	4	4	5	5	7	8	5	162
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Causal agents (middle) of fatal and non-fatal accidents in quarrying in 1999-2022

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	2022	total
engine				1			1	1	2					2						1					8
power transmission mechanism	9	8	9	7	6	5	8	6	7	6	1	1	3	3	4	4	7	7	3	4	3	6	3	4	124
woodworking machine		5	3	5	1	2	2		2		1	1	1	1		3	1	1		1	1	1			32

construction machine	62	46	77	34	39	33	50	35	31	24	29	31	22	24	29	27	23	16	23	28	21	28	28	24	784
metal manufacturing machine	1	2	2	5	2	4		2	2	3	1		1	2	3	1	1	1	1	1				1	36
general machine	34	34	37	28	18	23	23	24	32	13	13	15	8	8	16	9	9	9	16	12	7	16	8	7	419
mobile silviculture machine																			1						1
crane	6	6	9	11	3	2	2	6	8	5	2	3	6	3	2	8	4	5	5	1	6	8	4	3	118
conveying machine	101	111	89	92	98	84	84	84	69	68	80	48	49	59	67	63	62	57	63	54	54	53	60	51	1,700
vehicle	5	8	6	1	6		6	5	4	4		2	3	3	2	3	3	4	3	3	4	2	7	2	86
pressure vessel							1					1					1			1					4
chemical facilities							1																		1
welding equipment	6	1	1	1	1		2	1			1		1		1	1						2	1	2	22
kiln, caldron	1								1								1								3
electric equipment		3	1			3	1		1			1		1		1			1				1		14
human power machine, tools	19	13	13	14	8	7	7	11	7	6	4	5	6	3	6	8	6	6	5	4	7	2	3	2	172
tools	19	10	15	21	16	13	21	13	13	16	11	6	8	9	10	6	8	7	11	11	12	8	14	10	288
other equipments,																									

facilities	8	13	6	7	13	8	6	6	7	7	6	7	8	3	8	4	3	2	2	1	8	2	3	3	141
temporary buildings, establishments	81	58	56	40	45	37	43	41	42	30	30	31	36	21	34	50	30	24	28	40	36	22	36	35	926
hazards, harmful substances	4	3	3		2	5	2					1	1	3		1		3	3	2	2	1			36
materials	51	43	40	47	34	28	36	32	34	28	13	20	17	16	13	16	9	14	9	14	7	8	11	18	558
load	4	7	5	1	5	2	3	1	6	2	3	5	2		1	1	1		1	1	3	3	3	2	62
natural environment	42	45	32	30	28	28	20	23	16	13	15	16	26	16	16	23	20	7	15	8	10	20	11	13	493
other causal agent	5	2	1	2		1	3	1	3				2	1	1		2		1			2	1		28
no causal agent	8	10	6	6	12	3	3	4	5	4	7	6	4	5	2	5	5	4	3	5	5	5	7	5	129
unclassifiable	1		1	1								1				1									5
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Causal agents (small) of fatal and non-fatal accidents in quarrying in 1999-2022

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	2022	total
engine							1	1	2					2						1					7
power transmission mechanism			9		6		8	6	7	6	1	1	3	3	4	4	7	7	3	4	3	6	3	4	95

circular sawing machine			1		1		1				1					1	1	1		1	1				9
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw			2				1		1					1		1						1			7
other woodworking machines									1			1	1			1									4
leveling, transporting or loading machine			34		15		23	17	13	9	11	11	12	8	9	9	8	4	12	11	8	15	14	10	253
excavating machine			34		18		20	15	16	13	15	17	9	15	15	15	14	8	8	11	12	10	11	13	289
foundation work machine					1		2								1								1		5
hardening machine					1																				1

demolition machine			1		1		2	1			1	1			2	1			1	4	1	2			18
vehicle for high lift work																									
other construction machines			8		3		3	2	2	2	2	2	1	1	2	2	1	4	2	2		1	2	1	43
lathe					1														1						2
drill press, milling machine									1	1							1	1							4
grinding machine, buffing machine			2		1			1	1	1			1	2	2					1				1	13
power press																									
forging pressure hammer								1																	1
shearing machine																									
other metal manufacturing machines										1	1				1	1									4
centrifugal machine															1										1
mixer, grinder			17		10		9	10	12	4	9	4	3	4	8	2	5	4	7	2	4	5	2	3	124
roll machine (except printingroll machine)							1																		1

injection molding machine																									
food manufacturing machine																						1			1
printing machine																									
industrial robot												1													1
other general power machines			20		8		13	14	20	9	4	10	5	4	7	7	4	5	9	10	3	10	6	4	172
felling machine																			1						1
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane			2		3		1	4	2	3		1	2	2	1	2	1	2	3	1	3	4		1	38
mobile crane			1					2	5	1	1	1	4	1		6	3	2			3	2	1	1	34
derrick crane																									
elevator, lift																									
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																							1		1
simple skyline yarding equipment																									
other powered crane			6				1		1	1	1	1			1			1	2			2	2	1	20
truck			40		37		27	37	23	40	40	21	24	23	35	26	37	27	28	22	26	31	43	28	615
forklift			1		3		1	1	2		2		1	1	1		2		1		1	1	1		19
railway equipment					1																				1
conveyor			43		53		51	42	39	28	33	25	21	33	30	35	21	24	30	25	22	20	15	22	612
loader			3		2		4	3	2		3		2	2		1	1	3	3	5	3	1	1	1	40
straddle carrier																									
rough terrain hauler																			1	1					2
other powered conveying machines			2		2		1	1	3		2	2	1		1	1	1	3		1	2				23
cars, bus, motorcycle			4		6		5	5	4	2		1	3	2	1	3	1	4	3	2	4	1	6	2	59
railway vehicle																									
other vehicles			2				1			2		1		1	1		2			1		1	1		13
boiler																									

pressure vessel							1										1			1					3
other pressure vessels												1													1
chemical facilities							1																		1
gas welding equipment					1		1				1		1		1	1						2		1	9
arc welding equipment			1					1															1	1	4
other welding equipment							1																		1
kiln, caldron									1								1								2
industrial dryer																									
other kiln, caldron																									
transmission														1									1		2
electric power facilities			1				1		1			1							1						5
other electrical equipment																1									1
human power cranes					3			1	2						3	2		3		1					15
human power hauling equipment							1														2				3

human power machine			1								1				1						1				4
hand tool			12		5		6	10	5	6	3	5	6	3	2	6	6	3	5	3	4	2	3	2	97
ladder			8		6		10	6	3	8	4	4	6	7	8	1	5	4	6	4	9	4	8	4	115
slinging tool			5		3		4	2	4	3	4		1	1	1	1	1	2	2	4	2	2	1	1	44
other tools			2		7		7	5	6	5	3	2	1	1	1	4	2	1	3	3	1	2	5	5	66
other equipment, facilities			6		13		6	6	7	7	6	7	8	3	8	4	3	2	2	1	8	2	3	3	105
scaffolding			4		2		2	3	4	2		3	3	2		3	2	2		1	2	2	2		39
timbering																							1		1
stairs, landing stage			4		9		9	7	8	5	9	2	3	5	6	5	4	3	4	5	6	5	6	2	107
opening			2		2			3	3	1	1	1	2			1	1		1		1		1		20
roof, beam, haze, crossbeam, principal rafter			4		1		3	1	1	1	2	1	2	1		1				1			1	1	21
working platform, boot board			10		7		6	4	2	4	4	5	2	1	5	8	6	7	4	7	6	4	7	6	105
passage			15		10		13	10	8	9	7	12	12	8	14	16	12	8	15	15	7	5	15	17	228
building, establishment			10		9		6	10	13	7	2	5	9	3	5	7	2	3	3	6	7	6	3	5	121
other temporary buildings,			7		5		4	3	3	1	5	2	3	1	4	9	3	1	1	5	7			4	68

establishments																									
explosive substance					1		2						1	1					2	1					8
inflammable substance			1																		1	1			3
inflammable gas														2											2
harmful substance			1		1							1													3
radiation																									
other hazards, harmful substances			1													1		3	1	1	1				8
metal material			8		12		14	16	9	11	2	8	6	6	4	7	5	5	6	9	3	3	8	5	147
lumber, bamboo			4		2			1	1	1	1	2	1				1	1			1			1	17
stone, sand, substance			26		18		19	14	22	16	9	10	8	10	7	9	3	7	2	4	3	4	3	11	205
other materials			2		2		3	1	2		1		2		2			1	1	1		1		1	20
load			3		4		3	1	5	2	3	4	2			1			1	1	3	3	2	1	39
machine/equipment as load			2		1				1			1			1		1						1	1	9
natural ground, rock			20		19		14	18	12	10	11	10	13	10	9	13	14	3	10	3	8	13	5	8	223
standing tree			2		5		1	1	3		2	2	2	2		1	2	1	2	1		1	1		29
water								1					2		1			1		1			1		7
abnormal																									

environment										1					1										2
high/cold temperature environment			2		3		1					1	1		1		1			1		3	1		15
other environments			8		1		4	3	1	2	2	3	8	4	4	9	3	2	3	2	2	3	3	5	72
other causal agent			1				3	1	3				2	1	1		2		1			2	1		18
no causal agent			6		12		3	4	5	4	7	6	4	5	2	5	5	4	3	5	5	5	7	5	102
unclassifiable			1									1				1									3
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Workers age of fatal and non-fatal accidents in quarrying in 1999-2022

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
19 years old or less	3	3	2	5	4	3	5	5	3						5	3	1	2			2		1		47
20-29	54	56	42	26	22	22	18	18	21	15	12	10	9	8	19	10	9	12	8	11	11	11	9	9	442
30-39	60	48	51	54	43	45	51	59	32	37	31	31	39	26	22	37	28	23	18	18	17	16	22	16	824
40-49	96	88	95	72	72	60	61	56	65	43	45	42	40	54	42	49	45	35	49	44	46	40	26	41	1,306
50-59	165	146	146	121	125	104	127	107	106	79	73	54	60	56	58	66	49	38	54	49	50	50	66	60	2,009
60 years old or more	89	87	76	76	71	54	63	51	65	55	56	64	56	39	69	70	64	57	65	70	60	72	77	56	1,562
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Workers' number of workplace of fatal and non-fatal accidents in quarrying in 1999-2022

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	2022	total
9 workers or less	186	152	133	141	139	125	133	114	117	88	87	86	90	74	81	87	80	55	68	54	42	64	65	64	2,325
10-29	215	202	214	154	159	130	148	151	138	119	113	92	90	85	100	119	92	87	102	108	103	97	100	85	3,003
30-49	55	57	50	47	30	25	31	26	32	19	12	19	22	19	27	23	21	20	15	24	32	22	22	27	677
50-99	7	17	13	12	9	7	10	4	2	2	4	3	2	4	6	4	3	3	7	6	3	3	12	4	147
100-299	4		2			1	2	1	3	1	1	1		1	1	2		2	2		6	3	2	2	37
300 workers or more							1																		1
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Month of fatal and non-fatal accidents in quarrying in 1999-2022

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
January	34	29	38	23	26	29	21	20	26	17	23	15	17	14	16	15	13	14	12	16	19	14	18	13	482
February	34	40	36	28	38	32	30	26	26	17	8	7	24	20	15	23	23	14	14	11	15	16	16	16	529
March	28	38	48	32	26	22	24	24	26	23	19	23	18	22	15	19	17	19	16	21	14	14	16	18	542
April	38	35	31	28	27	22	29	23	30	25	14	15	17	14	17	26	10	14	19	11	11	21	18	12	507
May	42	34	30	24	35	20	23	26	23	21	15	19	8	13	23	14	19	11	19	15	11	11	15	14	485
June	45	35	29	34	24	26	30	29	18	21	24	13	32	14	17	24	18	17	18	21	16	14	24	12	555

July	48	36	33	19	26	24	31	23	26	22	23	20	13	14	15	15	15	21	18	14	18	14	19	13	520
August	36	36	25	31	34	25	32	37	26	17	18	19	10	14	17	16	19	12	15	13	10	14	16	11	503
September	49	28	37	36	26	27	20	26	28	17	23	22	17	10	15	17	17	5	16	15	19	18	9	23	520
October	32	41	39	27	21	26	36	21	21	23	24	17	13	17	19	22	12	15	18	21	21	18	22	15	541
November	38	42	41	37	28	16	29	25	21	14	12	16	20	20	21	26	14	13	18	16	16	15	11	19	528
December	43	34	25	35	26	19	20	16	21	12	14	15	15	11	25	18	19	12	11	18	16	20	17	16	478
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Prefecture of fatal and non-fatal accidents in quarrying in 1999-2022

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
Hokkaido	43	41	27		25		28	23	21	15	23	22	25	18	23	24	24	14	21	18	24	23	24	19	525
Aomori	8	5	10		10		5	3	3	4	5	5	4	3	2	3	1	3	2	1	4	2	4	1	88
Iwate	12	4	11		7		7	7	6	7	5	6	2	3	5	6	5	7	5	2	2	4	8	5	126
Miyagi	6	6	7		4		10	12	3	3	7	2	6	7	7	13	15	7	8	9	4	3	6	8	153
Akita	9	11	6		7		6	8	4		2	3	3	3	5	6	3	2	2	5	6	2	3		96
Yamagata	13	18	14		9		8	6	6	4	1	5	5	4	5	5	3	6	4		6	5	5	10	142
Fukushima	10	15	4		14		12	8	5	5	2	4	3	4	9	7	6	8	9	11	4	5	5	8	158
Ibaraki	13	13	9		11		11	6	9	9	5	7	6	8	3	4	6	5	5	7	6	10	6	8	167
Tochigi	9	10	10		10		12	10	13	13	7	7	11	8	10	6	3	6	4	8	7	6	8	9	187
Gunma	9	8	10		7		3	3	4	6	4	2	3	2	4	1		2	3	2	1	1	1		76

Saitama	6	9	1		2		3	1	5	1	1	4	2	1	1	1		1	3	3	1		1	2	49
Chiba	6	8	3		3		1	3	6	2	2	4	4	3	4	1	2	3	4	5	4	3	2	5	78
Tokyo	8	8	4		2		3	4	5	1	3	1	3	4	2	2	2	1	2	3		2	2		62
Kanagawa	6	4	8		5		1	4	3	4	1	2	1	1	2	5	2	1	2	1	1	4	2	4	64
Niigata	13	15	13		13		10	11	9	8	3	4	5	10	7	5	6	5	4	6	5	3	17	7	179
Toyama	7	4	9		2		8	1		4	5	4	4	1	4	4	3	1	2	3	1	1	2	4	74
Ishikawa	5	2	6		7		6	1	1	1	3	1	4	1	4	2	3	1	3		1	2	2		56
Fukui	7	10	1		2		2		2			1	2	2	2	1	4	3	4	2		3		3	51
Yamanashi	9	3	6		7		7	3	6	4	2	4	4	3	2	4	1	1	2	3	2	3	4	2	82
Nagano	18	8	15		11		7	4	10	8	10	6	4	2	5	4	4	2	3	6	10	8	7	8	160
Gifu	14	15	13		13		13	12	10	11	5	3	5	4	2	7	5	8	4	11	6	5	4	5	175
Shizuoka	16	6	8		15		8	12	13	14	16	4	6	11	5	9	4	3	9	7	6	3	7	6	188
Aichi	12	13	17		10		6	6	6	9	6	6	6	12	7	9	2	5	2	7	6	8	5	3	163
Mie	11	29	26		17		10	5	4	8	5	5	3	4	10	10	9	6	4	7	6	5	10	3	197
Shiga	2	3	5		5		2	3	2	1	2	2	3		2		2	1	1		1	2		2	41
Kyoto	7	4	8		11		6	3	5	3	1	1	3	3	6	6	5	2	8	2	1	6	3	2	96
Osaka	5	3	7		2		3		4	4	1	3	3	3	1		5	3	6	2	2	3	1	1	62
Hyogo	21	15	20		6		13	9	12	7	10	13	8	10	6	11	6	3	5	2	7	11	9	9	213
Nara	1	1			2		2	4	3	1	1		2	2	2	1	4	3			4	1		2	36
Wakayama	4	4	4		2		2	2	2	1	1		2	1	2	1	2	3	1	1	1	2	2	2	42
Tottori	3	4	2		5		4	1	2	1	1	2	1		1	1		2	1	2		1		1	35

Shimane	9	7	4		5		7	3	7	5	5	4	5	2	2	1	3	3	1	4	2	2	3	3	87
Okayama	9	11	11		8		10	9	12	7	6	4	6	6	9	8	5	7	10	5	4	6	8	8	169
Hiroshima	15	17	12		8		8	6	12	2	6	3	5	3	8	7	5	2	7	8	6	5	4	2	151
Yamaguchi	5	7	7		6		3	8	4	1	4	5	1	3	3	5	5	3	1	2	1	3	3	2	82
Tokushima	1	7	3		3		1	4	2	1	4	1	1	2	1	3	1	1	5	2	3	3	2	1	52
Kagawa	18	7	9		8		11	7	7	7	5	3		1	2	4	2	6	4	3	4	3	1		112
Ehime	14	11	15		16		17	15	14	8	11	11	13	6	13	13	9	4	4	6	3	4	4	3	214
Kochi	7	1	6		1		3	2	4	2	2	2	1	1		1		1	1	1	3	2		2	43
Fukuoka	18	12	13		7		3	13	6	8	8	6	8	4	5	6	6	5	4	5	5	3	7	2	154
Saga	6	3	7		3		1	5	2	4	2	4	1	2	1	3	4	1	1	4	2	2	4	3	65
Nagasaki	10	6	7		3		7	6	6	4	5	2	5	1	4	6	2	2	4	2	7	5	2	3	99
Kumamoto	20	23	11		10		12	18	8	8	10	10	5	8	5	5	6	5	7	5	11	7	3	6	203
Oita	9	6	4		5		8	8	5	6	2	3	3	1	3	6	4	5	1	2	2	2	2		87
Miyazaki	6	3	11		1		3	6	4	3	4	6	2	1	3	3	4		4	1	2	2	5	2	76
Kagoshima	7	8	7		7		10	11	15	4	3	4	5	4	5	4	3	4	6	5	2	3	2	6	125
Okinawa			1				2								1	1			1	1			1		8
total	467	428	412	354	337	288	325	296	292	229	217	201	204	183	215	235	196	167	194	192	186	189	201	182	6,190

Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more.

Data of 2022 year do not include Covid-19 cases. Data of 2020 & 2021 year include Covid-19 cases. Fatal and non-fatal data are same situation.

Data of 2011 year include fatal and non-fatal accidents caused by Great East Japan Earthquake in 2011.

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

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Fatal accidents in quarrying in Japan in 1999-2022

quarrying industry Code No.0202

Type of fatal accidents in quarrying in 1999-2022

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	2022	total
fall from height	7	2	12	6	2	5	4	3	5	3	7	2	6	2	2	4	3	1	5	1	2	1	4	2	91
falling to same level				1				1						1	1						1	1		1	7
crash						1	1																		2
struck by flying or falling object	4	2	2	1			2			1									2			1			15
collapse	5	4	4	3	3	2	3	3			1			1		2	2	1	2		2	2			40
crashed by	2			2			2	3	1			1			1				2			1			15
caught in/between	4	9	4	3	3	4	4	4	3	3	1	1	4	1	3	5	2	2	2		4	2	7	1	76
cut																									
injury to the sole of the foot																									

drown		1			1	1		1					1		1	1		1							8
contact to high/low-temperature																	1								1
contact to harmful substance																									
electric shock		1	1			1																			3
explosion	1													1						1					3
burst																									
fire																1									1
traffic accident (public road)	1	1		1	1				1								2				1				8
traffic accident (others)																									
reaction to motion/improper motion																									
others		1							1				1					1							4
unclassifiable																									
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

Causal agents (large) of fatal accidents in quarrying in 1999-2022

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	2022	total
machine	8	6	9	6	2	5	4	4	3	3	3	1	6	1	3	6	2	1	3		2	2	5	2	87
crane, conveying machine	5	6	3	5	4	3	4	6	7	3	5	2	2	2	2	2	4	2	5		5	3	5	1	86
other equipment		2	4		1	2										1	1								11
temporary buildings, establishments	1	1	1	1		1	2						1	1	1	2	1		2		1		1	1	18
substance, material	3	2	1		1		2	2				1		1				1	1	1		2			18
load																									
environment	7	4	5	5	2	3	4	3		1	1		3	1	2	2	2	1	2	1	2	1			52
others									1									1							2
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

Causal agents (middle) of fatal accidents in quarrying in 1999-2022

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	2022	total
engine																									
power transmission mechanism																									

woodworking machine																									
construction machine	7	2	6	6	1	5	4	2	3	3	3	1	6	1	2	5	2	1	3		2	2	4	2	73
metal manufacturing machine																									
general machine	1	4	3		1			2							1	1							1		14
mobile silviculture machine																									
crane				1																					1
conveying machine	4	6	3	4	3	3	4	6	7	3	5	2	2	2	2	2	4	2	5		5	3	3	1	81
vehicle	1				1																		2		4
pressure vessel																									
chemical facilities																									
welding equipment			1													1									2
kiln, caldron																									
electric equipment						1																			1
human power machine, tools																									
tools		1	2			1											1								5
other equipments,																									

facilities		1	1		1																				3
temporary buildings, establishments	1	1	1	1		1	2						1	1	1	2	1		2		1		1	1	18
hazards, harmful substances	1						1							1					1	1					5
materials	2	2	1		1		1	2				1						1				2			13
load																									
natural environment	7	4	5	5	2	3	4	3		1	1		3	1	2	2	2	1	2	1	2	1			52
other causal agent																									
no causal agent									1									1							2
unclassifiable																									
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

Causal agents (small) of fatal accidents in quarrying in 1999-2022

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	2022	total
engine																									
power transmission mechanism																									

circular sawing machine																									
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw																									
other woodworking machines																									
leveling, transporting or loading machine	2	1	4	4	1	2		2	2	2			5		1	3		1			2	2	3		37
excavating machine	4	1	2	2		2	4		1		3	1	1		1	2	2		3				1	1	31
foundation work machine																									
hardening machine																									

demolition machine	1					1																			2
vehicle for high lift work																									
other construction machines										1				1										1	3
lathe																									
drill press, milling machine																									
grinding machine, buffing machine																									
power press																									
forging pressure hammer																									
shearing machine																									
other metal manufacturing machines																									
centrifugal machine																									
mixer, grinder	1	2	2		1			1							1	1							1		10
roll machine (except printingroll machine)																									

injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines		2	1					1																	4
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane																									
mobile crane				1																					1
derrick crane																									
elevator, lift																									
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane																									
truck	2	2	2	2	2	1	3	2	4	2	4	1	2	1		1	3	1	1		3		2	1	42
forklift								1	1										1			1			4
railway equipment																									
conveyor	2	4	1	2	1	2	1	3	2	1	1	1		1	2	1	1	1	2		2	2	1		34
loader																									
straddle carrier																									
rough terrain hauler																			1						1
other powered conveying machines																									
cars, bus, motorcycle	1				1																		2		4
railway vehicle																									
other vehicles																									
boiler																									

pressure vessel																									
other pressure vessels																									
chemical facilities																									
gas welding equipment																1									1
arc welding equipment			1																						1
other welding equipment																									
kiln, caldron																									
industrial dryer																									
other kiln, caldron																									
transmission						1																			1
electric power facilities																									
other electrical equipment																									
human power cranes																									
human power hauling equipment																									

human power machine																									
hand tool																									
ladder																	1								1
slinging tool		1	2																						3
other tools						1																			1
other equipment, facilities		1	1		1																				3
scaffolding																									
timbering																									
stairs, landing stage																			1						1
opening						1											1								2
roof, beam, haze, crossbeam, principal rafter																									
working platform, boot board							1								1	1									3
passage	1			1												1							1		4
building, establishment		1	1										1	1					1		1			1	7
other temporary buildings,							1																		1

establishments																									
explosive substance	1						1												1	1					4
inflammable substance																									
inflammable gas														1											1
harmful substance																									
radiation																									
other hazards, harmful substances																									
metal material	1							1																	2
lumber, bamboo												1													1
stone, sand, substance	1	2	1		1		1	1										1				2			10
other materials																									
load																									
machine/equipment as load																									
natural ground, rock	7	4	5	5	2	2	4	2		1	1		1	1		2			1	1	2	1			42
standing tree																	1		1						2
water						1		1					2		1			1							6
abnormal																									

environment																									
high/cold temperature environment																	1								1
other environments															1										1
other causal agent																									
no causal agent									1									1							2
unclassifiable																									
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

Workers age of fatal accidents in quarrying in 1999-2022

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
19 years old or less								1																	1
20-29	1	2	2		2			2					2	1	1	2						1			16
30-39	3	1	2	2		4	2	2	1	1	2					1				1	1				23
40-49	2	5	2	8	4		4	1	1	1	3		3	1	1		1	1	2		1	2	2		45
50-59	11	8	9	4	2	6	7	8	7	3	1	2	2	2	1	4	5	3	4		3	1	3	3	99
60 years old or more	7	5	8	3	2	4	3	1	2	2	3	2	5	2	5	6	4	2	7	1	5	4	6	1	90
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

Workers' number of workplace of fatal accidents in quarrying in 1999-2022

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	2022	total
9 workers or less	5	12	5	5	3	6	5	3	4	1	2	2	4	3	3	6	4	3	9	1	3	5	1	2	97
10-29	17	8	13	9	5	8	10	11	6	6	6	2	7	2	5	6	5	2	3	1	6	3	6	1	148
30-49	2	1	4	3	2		1		1		1		1	1		1	1	1			1		1	1	23
50-99								1											1				3		5
100-299			1																						1
300 workers or more																									
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

Month of fatal accidents in quarrying in 1999-2022

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
January	3	4	3	1		2	2	2			1				2			1	1		1		1		24
February		2	4	2	3		3						1		1	1	2	1	2		1	1		1	25
March		1	3	2		1				1	1		2	1	1	2	1				2				18
April	2	3		1	1	2	2	4	2			1		1		2	1	1	2			1	1		27
May	2			1		2	2		1	2		1	1	1		1			1			1			16
June	5	1	1		1		1	1	1	1	4		3	1			1	1	2			1	2	1	28

July	1		2	1	1		2	3	2	1	1	1	1	1	1	1	2		1		1				23
August	3	2	1	2	1	4		1	1	1			1			1	1	1		1			2		23
September	2		2	2		2	2	1	1				1				2		1	1	2	1			20
October	1	1	4	1	1		1	2				1			2	1			2		3		2	1	23
November	3	3	2	3	1	1	1		1				2			3		1	1			2	2	1	27
December	2	4	1	1	1			1	2	1	2			1	1	1						1	1		20
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

Prefecture of fatal accidents in quarrying in 1999-2022

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
Hokkaido	2	1	3	1	1	1	1	1		1			3		1	1	2	1	2			1	1		24
Aomori											1					1								1	3
Iwate		1		1				1	1		1		1		1	1							1		9
Miyagi	1						2	1			1		1				1						1		8
Akita	3	1		1				1			1				1	1									9
Yamagata		1	3											1								1			6
Fukushima	1	1					1		1	1					1				2						8
Ibaraki		2			1	2	2					1	1			1			1	1				1	13
Tochigi	1							1							1	1		2			2		1		9
Gunma								1						1											2

Saitama	1																								1
Chiba		3				1						1			1	1			1		1				9
Tokyo				1																					1
Kanagawa					2					1								1							4
Niigata			2		2	1		1	2				1										2		11
Toyama				1																					1
Ishikawa	2																		1				1		4
Fukui	1	2				1			1				1												6
Yamanashi			1				1																1		3
Nagano				1												1									2
Gifu				1					1																2
Shizuoka		2		1		1	1			1									1		1	1			9
Aichi	1		1	1			1			1			1	1		1						1			9
Mie	1		1										1	1		1	2								7
Shiga	1	1																							2
Kyoto					2		1	1	1		1						2					1	1		10
Osaka													1	1			1		1						4
Hyogo			2			1			1		1	1						1							7
Nara							1																		1
Wakayama							1																		1
Tottori					1		1																		2

Shimane		1			1					1					1										4
Okayama	1		2																3					1	7
Hiroshima	3			1				2			1					1					1	1		1	11
Yamaguchi		1															1	1				1			4
Tokushima				1			1																		2
Kagawa						1		1						1											3
Ehime			1	1			1								1	1					1				6
Kochi			1			1	1				1										1				5
Fukuoka			4	1		1		2															1		9
Saga		1	1																				1		3
Nagasaki								1					1						1	1	1				5
Kumamoto	1	2		1		1				1	1										1				8
Oita	3			1													1				1				6
Miyazaki	1		1			1			1							1						1			6
Kagoshima		1		2		1		1	2			1													8
Okinawa																									
total	24	21	23	17	10	14	16	15	11	7	9	4	12	6	8	13	10	6	13	2	10	8	11	4	274

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

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