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

quarrying industry Code No.020201

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	74	57	63	44	55	41	48	47	48	36	53	33	33	31	41	54	34	25	36	37	33	38	43	28	1,032
falling to same level	34	20	21	18	19	10	16	19	12	17	13	10	17	14	16	15	9	15	11	14	14	14	13	17	378
crash	29	9	13	20	13	11	14	15	20	5	7	10	5	5	8	6	8	7	4	9	5	3	6	7	239
struck by flying or falling object	34	32	32	29	23	15	18	27	15	16	9	16	11	11	16	18	9	6	11	6	7	10	3	6	380
collapse	11	15	9	11	11	7	12	4	9	4	3	4	4	4	2	5	3	1	6		3	4	1	3	136
crashed by	18	13	20	15	17	13	17	17	9	9	6	13	5	7	7	4	9	5	9	9	9	6	5	5	247
caught in/between	65	66	55	40	51	44	43	34	45	31	27	20	26	28	38	29	23	34	32	23	19	25	26	22	846
cut	6	5	7	8	1	2	3	1	4	4	4	1	1	1	2	2	2	2	4	2	3	2	1	2	70
injury to the sole of the foot	1		1		1				1							1			1	1	1				8
drown													1												1
contact to high/low-	12	5		1	4	4	6		1		1	1	2		2			3	1	1	3	4	2		53

temperature																									
contact to harmful substance			1		1							1							1	1		1		1	7
electric shock		1	2			1	1		1																6
explosion	2		2										1						1	2					8
burst		2		1	2										1							1	2		9
fire		1					1									1	1							1	5
traffic accident (public road)	5	4	6		1		1	2	1	2	2		2		3	2	1		3		1	1	2	2	41
traffic accident (others)			1	2		1		1				1		1	1	1									9
reaction to motion/improper motion	15	13	15	10	8	12	12	7	7	10	8	8	6	3	4	4	12	4	5	8	9	9	8	6	203
others	1	2		1	1	1	1		2	1	2	2	2		1		2		1				1	1	22
unclassifiable																									
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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	75	56	77	41	39	35	49	44	47	32	30	26	16	28	38	24	26	22	33	24	17	30	24	19	852

crane, conveying machine	67	75	64	51	62	43	57	47	41	38	50	32	27	39	43	42	30	38	47	31	39	41	32	35	1,071
other equipment	37	20	24	28	25	25	25	19	16	20	14	11	16	8	18	11	10	9	10	10	18	7	15	12	408
temporary buildings, establishments	52	26	28	19	26	17	19	24	30	18	17	20	17	9	20	31	20	14	15	30	18	12	24	15	521
substance, material	40	27	23	34	24	22	23	22	24	13	7	13	14	9	10	12	6	13	8	8	4	5	7	11	379
load	1	4	3		3	1	1		3	2	2	4	2		1	1				1	2	3	3	1	38
environment	30	30	24	21	23	18	15	16	8	9	11	10	21	10	11	19	15	3	12	6	5	16	5	7	345
others	5	7	5	6	6	1	4	2	6	3	4	4	3	2	1	2	6	3	1	3	4	4	3	1	86
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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	2					1						1					6
power transmission mechanism	6	4	4	4	3	2	3	4	5	4	1	1	3	3	3	3	5	5	1	4		4	2	2	76
woodworking machine		3		3	1		2				1	1				1		1							13

construction machine	42	28	48	22	23	16	31	23	21	17	21	20	9	17	19	16	16	8	17	14	13	17	18	12	488
metal manufacturing machine	1	2	2	2	1	1		1	2	2				2	3			1	1						21
general machine	26	19	23	10	11	16	12	15	17	9	7	4	4	5	13	4	5	7	13	5	4	9	4	5	247
mobile silviculture machine																			1						1
crane	2	5	6	6	2	1	2	3	3	3		3	2	3	2	4	2	2	4	1	5	4	2	1	68
conveying machine	63	67	56	45	55	42	54	41	37	32	50	29	24	36	41	36	27	35	41	29	31	35	30	33	969
vehicle	2	3	2		5		1	3	1	3			1			2	1	1	2	1	3	2		1	34
pressure vessel							1										1								2
chemical facilities							1																		1
welding equipment	5	1	1	1	1		2	1			1		1		1	1						1	1	2	20
kiln, caldron	1								1								1								3
electric equipment		2	1			3	1							1											8
human power machine, tools	15	7	10	9	4	6	5	8	6	4	2	3	5	2	5	4	3	3	4	3	4	1	3	1	117
tools	10	4	9	12	11	11	13	7	6	10	7	4	5	3	5	4	4	5	4	7	7	3	10	7	168
other equipments,																									

facilities	6	6	3	6	9	5	2	3	3	6	4	4	5	2	7	2	1	1	2		7	2	1	2	89
temporary buildings, establishments	52	26	28	19	26	17	19	24	30	18	17	20	17	9	20	31	20	14	15	30	18	12	24	15	521
hazards, harmful substances	4	3	2		2	3	2					1	1	1				3	3	2					27
materials	36	24	21	34	22	19	21	22	24	13	7	12	13	8	10	12	6	10	5	6	4	5	7	11	352
load	1	4	3		3	1	1		3	2	2	4	2		1	1				1	2	3	3	1	38
natural environment	30	30	24	21	23	18	15	16	8	9	11	10	21	10	11	19	15	3	12	6	5	16	5	7	345
other causal agent	2	1	1	2		1	2	1	2				1	1	1		1					1	1		18
no causal agent	3	6	4	4	6		2	1	4	3	4	3	2	1		2	5	3	1	3	4	3	2	1	67
unclassifiable												1													1
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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					1						1					6
power transmission mechanism			4		3		3	4	5	4	1	1	3	3	3	3	5	5	1	4		4	2	2	60

circular sawing machine					1		1				1					1		1							5
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw							1																		1
other woodworking machines												1													1
leveling, transporting or loading machine			16		9		13	11	10	6	6	5	7	5	5	5	5	1	9	3	4	7	10	5	142
excavating machine			24		9		13	10	9	9	12	13	1	12	10	10	10	4	6	8	8	8	6	7	189
foundation work machine					1		1								1								1		4
hardening machine					1																				1

demolition machine			1				2	1			1				1				1	2	1	1			11
vehicle for high lift work																									
other construction machines			7		3		2	1	2	2	2	2	1		2	1	1	3	1	1		1	1		33
lathe					1														1						2
drill press, milling machine									1	1								1							3
grinding machine, buffing machine			2						1	1				2	2										8
power press																									
forging pressure hammer								1																	1
shearing machine																									
other metal manufacturing machines															1										1
centrifugal machine															1										1
mixer, grinder			12		6		6	5	6	3	5	2	2	3	7	1	3	4	7	1	1	4	1	3	82
roll machine (except printingroll machine)																									

injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines			11		5		6	10	11	6	2	2	2	2	5	3	2	3	6	4	3	5	3	2	93
felling machine																			1						1
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane			2		2		1	3	2	1		1	1	2	1				2	1	3	4			26
mobile crane			1						1	1		1	1	1		4	2	2			2				16
derrick crane																									
elevator, lift																									
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																							1		1
simple skyline yarding equipment																									
other powered crane			3				1			1		1			1				2				1	1	11
truck			26		25		18	21	10	19	25	12	13	15	20	16	14	11	17	14	14	18	21	21	350
forklift					1		1	1	1		2		1	1	1		1		1			1			12
railway equipment					1																				1
conveyor			25		26		32	16	24	13	21	15	9	19	19	18	11	18	22	13	14	15	9	11	350
loader			3		2		3	2	1		1			1		1		3	1	2	1	1		1	23
straddle carrier																									
rough terrain hauler																									
other powered conveying machines			2					1	1		1	2	1		1	1	1	3			2				16
cars, bus, motorcycle			1		5		1	3	1	2			1			2		1	2	1	3	1		1	25
railway vehicle																									
other vehicles			1							1							1					1			4
boiler																									

pressure vessel							1										1								2
other pressure vessels																									
chemical facilities							1																		1
gas welding equipment					1		1				1		1		1	1						1		1	8
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
electric power facilities			1				1																		2
other electrical equipment																									
human power cranes									1						2	1		1							5
human power hauling equipment							1														1				2

human power machine											1				1						1				3
hand tool			10		4		4	8	5	4	1	3	5	2	2	3	3	2	4	3	2	1	3	1	70
ladder			6		1		6	4	2	4	3	3	4	3	4		2	3	3	3	5	3	6	3	68
slinging tool			2		3		2	2	1	3	2				1	1	1	1		3	1		1	1	25
other tools			1		7		5	1	3	3	2	1	1			3	1	1	1	1	1		3	3	38
other equipment, facilities			3		9		2	3	3	6	4	4	5	2	7	2	1	1	2		7	2	1	2	66
scaffolding			1		1		2	2	3			2	2	1		3		1		1		2	2		23
timbering																									
stairs, landing stage			3		7		1	4	4	4	4	1	2	3	3	3	2		1	4	4	3	4	1	58
opening			1		2			1	3		1	1	1			1			1				1		13
roof, beam, haze, crossbeam, principal rafter			2		1		2		1	1	2	1											1	1	12
working platform, boot board			6		3		4	4	1	3	1	2		1	4	5	6	5	3	7	4	1	5	2	67
passage			9		6		8	6	6	5	4	9	7	3	8	8	9	5	9	10	3	3	9	5	132
building, establishment			4		5		2	5	11	4	1	3	4	1	4	5	2	2		4	1	3	2	3	66
other temporary buildings,			2		1			2	1	1	4	1	1		1	6	1	1	1	4	6			3	36

establishments																									
explosive substance					1		2						1	1					2	1					8
inflammable substance																									
inflammable gas																									
harmful substance			1		1							1													3
radiation																									
other hazards, harmful substances			1															3	1	1					6
metal material			5		3		7	11	6	5		5	5	5	2	5	4	3	3	2	2	2	4	5	84
lumber, bamboo			1		1			1				1	1											1	6
stone, sand, substance			14		17		13	10	17	8	7	6	6	3	7	7	2	6	1	3	2	3	3	5	140
other materials			1		1		1		1				1		1			1	1	1					9
load			2		2		1		2	2	2	3	2			1				1	2	3	2		25
machine/equipment as load			1		1				1			1			1								1	1	7
natural ground, rock			17		16		13	15	7	8	9	8	12	8	8	12	12	2	9	3	5	12	2	6	184
standing tree			2		4		1		1				2	1		1	1		1			1			15
water													2							1			1		4
abnormal																									

environment										1															1
high/cold temperature environment			1		2		1					1	1		1					1		2	1		11
other environments			4		1			1			2	1	4	1	2	6	2	1	2	1		1	1	1	31
other causal agent			1				2	1	2				1	1	1		1					1	1		12
no causal agent			4		6		2	1	4	3	4	3	2	1		2	5	3	1	3	4	3	2	1	54
unclassifiable												1													1
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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	2	1		4	4	2	5	2	1						4	1		2			1		1		30
20-29	36	29	25	14	15	12	10	13	12	10	6	7	7	4	16	8	6	4	6	6	7	7	4	4	268
30-39	43	30	27	28	30	28	27	37	18	23	22	20	23	16	18	28	18	15	12	14	7	9	12	11	516
40-49	57	50	61	48	43	36	39	36	44	25	30	27	20	33	27	33	27	26	35	25	32	28	13	28	823
50-59	114	90	92	64	75	60	83	64	67	44	41	33	39	31	34	35	33	21	39	26	32	34	46	34	1,231
60 years old or more	55	45	43	42	41	24	29	22	33	33	36	33	27	21	43	37	29	34	34	42	28	40	37	24	832
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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	120	78	70	74	79	62	82	61	67	44	50	51	44	36	53	48	42	29	41	30	17	39	36	34	1,287
10-29	144	123	139	98	109	82	87	96	90	77	76	55	54	56	68	73	54	61	66	63	62	56	55	43	1,887
30-49	37	38	32	23	16	15	18	17	17	12	7	12	17	11	18	17	15	10	13	17	22	18	15	20	437
50-99	3	6	7	5	4	3	3		1	1	2	2	1	2	3	3	2	1	6	3	3	3	5	2	71
100-299	3						2			1						1		1			3	2	2	2	17
300 workers or more							1																		1
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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	21	16	18	15	11	16	16	11	18	11	10	11	9	8	12	8	5	10	8	11	9	9	10	5	278
February	24	20	24	16	22	15	18	12	11	9	6	3	17	8	9	18	14	8	11	5	8	7	9	6	300
March	19	25	29	17	11	15	17	13	13	16	10	14	10	13	9	11	7	14	9	15	8	6	8	9	318
April	29	19	17	17	19	7	13	15	19	12	8	7	6	6	13	15	7	8	11	6	9	15	13	5	296
May	30	20	21	13	24	13	13	15	15	12	9	11	5	7	15	9	9	5	13	12	8	5	10	9	303
June	23	20	17	17	17	16	19	13	6	13	15	7	18	10	10	16	12	13	12	13	11	11	12	6	327

July	30	19	19	11	16	14	19	14	9	14	14	12	6	9	11	7	9	13	14	7	7	9	6	10	299
August	27	18	15	17	21	18	19	23	17	10	13	13	6	10	11	8	11	8	11	7	5	6	11	7	312
September	29	18	19	16	18	12	10	14	21	11	17	14	11	8	7	7	11	2	9	10	12	13	4	14	307
October	20	24	30	20	13	16	24	15	14	11	16	8	9	12	11	16	8	8	16	8	14	10	15	8	346
November	25	23	23	22	18	9	17	15	16	9	8	11	14	10	16	15	8	6	8	10	7	12	4	13	319
December	30	23	16	19	18	11	8	14	16	7	9	9	5	4	18	12	12	7	4	9	9	15	11	9	295
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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	18	14	14		10		14	7	7	4	5	9	10	5	8	11	5	4	15	6	10	8	9	10	203
Aomori	6	3	7		9		3	1		3	4	3	1	2	2	2		2	2		2	2	4		58
Iwate	8	2	6		4		5	4	2	4	3	3	1	2	4	3	2	6	5	1	1	2	6	1	75
Miyagi	5	5	3		2		6	8		2	5	1	4	6	6	8	6	3	6	4	3	2	4	5	94
Akita	5	7	2		4		3	2	4		2	1	2	3	4	4	1	2	1	3	4	1	2		57
Yamagata	6	6	9		6		5	5	2	3	1	3	1	1	3	5	3	3	2		4	2	2	2	74
Fukushima	7	12	2		11		11	4	5	5	1	4	2	3	6	3	6	5	3	7	2	2	3	7	111
Ibaraki	6	4	5		8		5	3	6	4	3	2	4	5	2	1	4	3	3	7	4	6	5	7	97
Tochigi	4	3	1		5		5	5	7	6	4	2	9	4	5	2	3	4	3	6	1	4	4	4	91
Gunma	4	1	5		4			2	2	2	3	1	1	1	3	1			1	1	1	1			34

Saitama	4	3	1				1	1	1	1	1	1			1				2	1	1			2	21
Chiba	2									1	1		1	1			1	1							8
Tokyo	8	7	3		1		3	4	4	1	3	1	3	4	2	2	2	1	1	2		2	2		56
Kanagawa	3	2	6		2			2	2	3	1	1		1	2	4	2		2		1	2	1	2	39
Niigata	3	4	2					2	1	1					1					1			1	1	17
Toyama	1	1	2				1									2				1					8
Ishikawa	4	2	5		5		5		1	1	2	1			4	2	2		1			1	2		38
Fukui	5	4	1		1		2		2			1	1	1	1		2	1	3	2		1		3	31
Yamanashi	2	1			2		1			1	1	1	2	1				1	1	1	2	2			19
Nagano	7	4	2		3		2	3	5	3	6	3	1		3	1	4	1	1	3	4	5	1	3	65
Gifu	10	6	6		7		5	6	5	3	1	1	2	1	2	1	3	4	1	2	2	3		3	74
Shizuoka	4	4	1		8		4	3	4	8	6	2	1	7	1	5	3	1	5	1	2	1	2	1	74
Aichi	9	10	14		10		5	5	5	9	4	5	5	11	6	6	2	4	1	7	6	7	3	3	137
Mie	11	17	17		9		4	3		4	4	4	1	1	7	5	5	4	4	3	5	2	8	3	121
Shiga		3	1				2	2	2		1	1	1		2		1	1	1		1	1		1	21
Kyoto	3	3	4		8		4	2	4	2	1	1	1	2	6	5	3	2	6	1		5	2	2	67
Osaka	3	3	7		2		3		1	3	1	3	3	1	1		4	2	5	1	2	3	1		49
Hyogo	16	11	16		6		11	8	10	7	7	12	8	8	3	8	4	2	3	1	2	8	8	5	164
Nara	1				2		2	1	2	1	1			2	1	1	2	2			4	1		2	25
Wakayama	4	1	2		1		2	2		1							1						1		15
Tottori	3	3	2		4		2	1	2	1	1	1	1		1	1		2	1	1		1		1	29

Shimane	8	5	3		3		6	1	6	3	4	2	3	2	1		1	3		4	1		2	1	59
Okayama	7	9	9		8		7	9	10	7	6	4	6	5	9	7	5	7	9	5	4	5	8	6	152
Hiroshima	15	14	11		6		6	5	11	1	5	3	4	3	8	6	4	1	5	7	5	3	4	2	129
Yamaguchi	5	5	5		5		2	8	4	1	4	5	1	2	3	4	4	3	1	2		3	3	2	72
Tokushima	1	2	1		1			2		1	4	1		1		2	1	1	4	1	1	2		1	27
Kagawa	18	7	9		8		11	5	7	7	5	3			2	4	2	5	2	3	4	3	1		106
Ehime	14	10	14		15		11	12	12	4	9	9	12	5	11	12	9	4	4	6	2	3	4	3	185
Kochi	5		4		1		2		3	2	1	2	1					1	1		2	2		2	29
Fukuoka	16	9	7		5		3	12	6	7	6	5	8	3	4	4	4	4	3	5	4	2	7	1	125
Saga	5	2	7		3		1	5	2	4	2	4	1	2	1	2	4	1	1	4	2	2	4	2	61
Nagasaki	10	6	7		3		7	5	5	4	5	2	4		4	6	2	2	4	2	7	5	2	3	95
Kumamoto	17	19	9		7		11	12	6	3	5	7	4	5	5	3	2	2	5	4	6	6	3	6	147
Oita	5	4	2		3		3	3	4	3	2	2	1	1	2	4	1	3		1	2	2	1		49
Miyazaki	4	1	8							1	3		1		1	1	1		2	1	2	2	1	1	30
Kagoshima	5	6	5		6		6	9	13	3	1	3	4	3	3	4	2	4	5	4	1	3	2	3	95
Okinawa			1				1								1				1	1					5
total	307	245	248	200	208	162	193	174	175	135	135	120	116	105	142	142	113	102	126	113	107	118	113	101	3,700

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.020201

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	4	1	7	5	2	1	3	1	4	3	6	2	3	2	2	3	2	1	2	1	2	1	1	2	61
falling to same level								1														1			2
crash						1	1																		2
struck by flying or falling object	4	2	1	1			1			1									2						12
collapse	1	2	3	3	2	1	3	2								2	1		1		1	2			24
crashed by	2			1			1	3							1				1						9
caught in/between	3	6	3	3	2	3	2	4	2	1	1		3		2	2	2	2	2		3	2	4		52
cut																									
injury to the sole of the foot																									

drown													1												1
contact to high/low-temperature																									
contact to harmful substance																									
electric shock		1	1			1																			3
explosion	1																			1					2
burst																									
fire																1									1
traffic accident (public road)		1																							1
traffic accident (others)																									
reaction to motion/improper motion																									
others									1				1												2
unclassifiable																									
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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	4	6	6	5	1	2	2	3	1	2	2	1	4		3	2	2	1	3		1	1	3		55
crane, conveying machine	4	2	3	3	3	2	3	6	5	2	5	1	1	1	1	1	2	2	3		3	3	1	1	58
other equipment		1	2			2										1	1								7
temporary buildings, establishments	1		1													2					1		1	1	7
substance, material	2	2					2	1											1	1		1			10
load																									
environment	4	2	3	5	2	1	4	1		1			3	1	1	2			1	1	1	1			34
others									1																1
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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	4	2	4	5	1	2	2	1	1	2	2	1	4		2	2	2	1	3		1	1	3		46
metal manufacturing machine																									
general machine		4	2					2							1										9
mobile silviculture machine																									
crane																									
conveying machine	3	2	3	3	3	2	3	6	5	2	5	1	1	1	1	1	2	2	3		3	3	1	1	57
vehicle	1																								1
pressure vessel																									
chemical facilities																									
welding equipment			1													1									2
kiln, caldron																									
electric equipment						1																			1
human power machine, tools																									
tools		1	1			1											1								4
other equipments,																									

facilities																									
temporary buildings, establishments	1		1													2					1		1	1	7
hazards, harmful substances	1						1												1	1					4
materials	1	2					1	1														1			6
load																									
natural environment	4	2	3	5	2	1	4	1		1			3	1	1	2			1	1	1	1			34
other causal agent																									
no causal agent									1																1
unclassifiable																									
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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	1	1	2	3	1	1		1	1	1			4		1	1		1			1	1	3		24
excavating machine	2	1	2	2			2				2	1			1	1	2		3						19
foundation work machine																									
hardening machine																									

demolition machine	1					1																			2
vehicle for high lift work																									
other construction machines										1															1
lathe																									
drill press, milling machine																									
grinding machine, buffing machine																									
power press																									
forging pressure hammer																									
shearing machine																									
other metal manufacturing machines																									
centrifugal machine																									
mixer, grinder		2	2					1							1										6
roll machine (except printingroll machine)																									

injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines		2						1																	3
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane																									
mobile crane																									
derrick crane																									
elevator, lift																									
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane																									
truck	1	1	2	1	2	1	2	2	3	2	4	1	1	1			1	1	1		2			1	30
forklift								1											1			1			3
railway equipment																									
conveyor	2	1	1	2	1	1	1	3	2		1				1	1	1	1	1		1	2	1		24
loader																									
straddle carrier																									
rough terrain hauler																									
other powered conveying machines																									
cars, bus, motorcycle	1																								1
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	1																						2
other tools						1																			1
other equipment, facilities																									
scaffolding																									
timbering																									
stairs, landing stage																									
opening																									
roof, beam, haze, crossbeam, principal rafter																									
working platform, boot board																1									1
passage	1															1							1		3
building, establishment			1																		1			1	3
other temporary buildings,																									

establishments																									
explosive substance	1						1												1	1					4
inflammable substance																									
inflammable gas																									
harmful substance																									
radiation																									
other hazards, harmful substances																									
metal material								1																	1
lumber, bamboo																									
stone, sand, substance	1	2					1															1			5
other materials																									
load																									
machine/equipment as load																									
natural ground, rock	4	2	3	5	2	1	4	1		1			1	1		2			1	1	1	1			31
standing tree																									
water													2												2
abnormal																									

environment																									
high/cold temperature environment																									
other environments															1										1
other causal agent																									
no causal agent									1																1
unclassifiable																									
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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		1			2					2		1	2						1			14
30-39	1		1	2		2		2	1	1	1					1				1					13
40-49	1	2	2	5	2		4	1	1		3		2		1			1	2		1	2			30
50-59	7	6	6	4	2	4	5	5	3	2	1	1	2	1	1	2	3		4		2	1	2	2	66
60 years old or more	5	3	4	2	1	1	2		2	2	2	1	2	1	2	3	2	2	2	1	3	2	3		48
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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	2	7	4	4	2	1	3	2	2	1	2		1	1	1	3	2		5	1	2	4	1	1	52
10-29	12	5	9	6	4	6	7	9	5	4	4	2	6	1	4	4	2	2	2	1	4	2	3		104
30-49	1	1	2	3			1				1		1			1	1	1						1	14
50-99																			1				1		2
100-299																									
300 workers or more																									
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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	1	2	3	1		1	2								1			1	1		1				14
February		1	2	1	2		1						1			1	1	1	1			1		1	14
March		1	2	1		1				1	1		2		1						1				11
April	1	1		1		1	1	4	2			1				2		1					1		16
May	2			1		1	1		1	1			1	1		1			1			1			12
June	2		1		1		1	1		1	4		2				1		1			1	1		17

July	1		2	1			2	2		1	1	1		1	1		1		1						15
August	3	1	1		1	3		1	1							1				1					13
September				2			1	1									2		1	1	2	1			11
October	1	1	3	1	1		1	1							1				2		2		1		15
November	2	2	1	3			1		1				2			2						1	1	1	17
December	2	4		1	1			1	2	1	1				1	1						1	1		17
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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		1					1										1								3
Aomori											1					1									2
Iwate		1		1				1	1		1		1		1	1							1		9
Miyagi	1						2	1					1										1		6
Akita		1		1							1				1	1									5
Yamagata			2																			1			3
Fukushima	1								1	1					1				2						6
Ibaraki		1			1	2	2						1			1				1				1	10
Tochigi								1								1		2			1				5
Gunma								1						1											2

Saitama	1																								1
Chiba																									
Tokyo				1																					1
Kanagawa					1					1															2
Niigata						1																			1
Toyama																									
Ishikawa	2																						1		3
Fukui	1	1							1				1												4
Yamanashi							1																		1
Nagano																									
Gifu				1																					1
Shizuoka		2		1		1	1			1									1		1				8
Aichi	1		1							1			1	1								1			6
Mie	1		1										1			1	1								5
Shiga	1	1																							2
Kyoto					2			1	1		1						1					1			7
Osaka													1				1		1						3
Hyogo			2			1			1		1	1													6
Nara							1																		1
Wakayama							1																		1
Tottori					1																				1

Shimane		1			1					1					1										4
Okayama	1		2																3						6
Hiroshima	3			1				2			1					1					1	1		1	11
Yamaguchi		1															1	1				1			4
Tokushima				1																					1
Kagawa						1		1																	2
Ehime			1	1			1								1	1									5
Kochi			1				1				1														3
Fukuoka			3	1				2															1		7
Saga		1	1																				1		3
Nagasaki								1					1						1	1	1				5
Kumamoto	1	1		1																	1				4
Oita	1			1																	1				3
Miyazaki			1																			1			2
Kagoshima		1		2		1			2			1													7
Okinawa																									
total	15	13	15	13	6	7	11	11	7	5	7	2	8	2	5	8	5	3	8	2	6	6	5	2	172

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

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