

Fatal and non-fatal accidents in bridge construction work in Japan in 1999-2022

bridge construction work industry Code No.030105

Type of accidents in bridge construction work 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	93	90	103	87	74	56	46	57	64	59	43	55	44	42	49	46	55	33	45	32	36	34	21	40	1,304
falling to same level	26	22	18	17	11	13	11	10	10	11	10	8	14	14	12	11	6	12	16	6	3	11	10	12	294
crash	6	16	10	18	13	12	3	5	4	6	9	7	3	7	6	3	8	3	8	5	2	7	5	2	168
struck by flying or falling object	28	33	37	31	25	25	23	28	28	28	25	23	24	9	10	18	14	7	10	13	12	22	15	13	501
collapse	23	18	7	15	5	3	11	14	12	14	5	6	6	7	16	9	8	17	5	8	6	4	3	7	229
crashed by	15	25	24	21	15	14	17	12	9	5	16	10	10	12	16	14	9	10	7	14	7	13	2	6	303
caught in/between	40	34	28	46	38	29	32	23	25	29	18	13	22	15	13	17	19	21	21	20	14	10	18	9	554
cut	6	12	8	5	17	3	10	1	6	5	3	8	3	4	4	7	3	5	6	5	4	3	3	6	137
injury to the sole of the foot								1						1				1				1			4
drown	2	1	2	4				2					2			1			2	1			2		19
contact to high/low-	2	2		7	2	2	1		1	5	2	7	1	1	2	2	2	1	3	3	2	1	2	5	56

temperature																									
contact to harmful substance	3	4	2	6	1	2	3	4	2				2	2	2	2	2	2	5	3		9	2	1	59
electric shock		3	2	1	2				1	1		1		1				2							14
explosion																					1				1
burst						1			2									1					1		5
fire					2	1															11			1	15
traffic accident (public road)	16	22	10	11	9	19	9	10	15	10	7	8	11	3	19		8	8	9	21	11	9	5	5	255
traffic accident (others)						1																			1
reaction to motion/improper motion	4	6	3	4		1	3	4	5	2	5	5	2	1	2	3	5	5	6	1	7	4	5	6	89
others		1	1		1		3		5	1		1	6	1		1		3		1		2	25	1	53
unclassifiable		1			1						1								1						4
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	114	4,065

Causal agents (large) of fatal and non-fatal accidents in bridge construction work 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	35	42	25	32	51	21	28	23	24	28	20	20	16	23	18	25	22	17	26	18	12	18	16	21	581

crane, conveying machine	54	57	47	52	33	40	34	37	39	28	36	28	32	17	44	21	27	25	24	40	26	28	13	18	800
other equipment	26	32	31	21	22	19	12	22	14	25	22	16	17	14	9	11	14	13	8	14	9	12	15	14	412
temporary buildings, establishments	103	97	105	97	70	62	52	59	69	65	37	58	50	40	56	51	53	46	47	35	33	35	25	38	1,383
substance, material	29	43	31	43	25	31	33	21	32	19	20	15	19	17	7	14	10	16	26	14	26	24	12	10	537
load	6	1	4	5	2	4	3	2	3	3		2	5		2	4	5	1	7	2	1	3	3		68
environment	10	15	12	21	9	4	5	5	7	6	6	10	8	9	13	4	7	6	6	9	3	6	9	12	202
others	1	3		2	4	1	5	2	1	2	3	3	3		2	4	1	4	3	1	6	4	26	1	82
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	114	4,065

Causal agents (middle) of fatal and non-fatal accidents in bridge construction work 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							2						1													3
power transmission mechanism				1								1					1									3
woodworking machine	3	6	4	7	7	1	6		3	3	1	6	1	3		5		2	1	4	1	1	1	3	69	

circular sawing machine			3	7	6	2	2	1	5	1	3		5		1		3	1	1	1	2	44	
band sawing machine																							
wood planer machine			1								1											2	
hollow chisel mortiser, wood borer																							
chamfering machine, router, woodworking milling machine																							
chain saw																1	1	1				1	4
other woodworking machines								1	1														2
leveling, transporting or loading machine			2	2		1	3	1	3	1	1	1	3	1	4	1	3			1		1	29
excavating machine			6	11	4	5	3	7	3	4	4	7	1	4	2	6	7	5	4	3	4	2	92
foundation work machine			1	4	1	2	2	2	1		1	2	1	2	4	1	5	1		3	3	3	39
hardening machine				1	2	1										1	1	1				1	8

pressure vessel																								
other pressure vessels																								
chemical facilities																								
gas welding equipment									1	1													2	
arc welding equipment																		1					1	
other welding equipment																								
kiln, caldron																								
industrial dryer																								
other kiln, caldron																								
transmission			1					1	1				1										4	
electric power facilities																								
other electrical equipment					2								1			1							4	
human power cranes			1		1			2	1		2							1		1	3	2	14	
human power hauling equipment			1				1					1	2	1		1				1			8	

human power machine			1								1													2	
hand tool			5		3		1	3		1	4	1	1	5		3	2	3		2	2	3	2	1	42
ladder			6		7		2	4	5	5	6	6	2	4	2	3	6	3	4	4		5	5	6	85
slinging tool			9		6		1	7	1	7	4	1	7	3	1	2	4	3	1	4	2		2	2	67
other tools			4		3		5	5	5	6	5	3	2		3			3	1	2	1		3	1	52
other equipment, facilities			3				2	1	1	4		3	3		2	2	2		1	1	2	1	1	4	33
scaffolding			36		28		16	28	32	25	14	32	25	15	22	23	20	17	13	13	16	11	5	13	404
timbering			8		3		8	8	6	2	1	6		4	2	1	3	4	5	3	2		3	3	72
stairs, landing stage			4		4		2	3	4	3	3	2	1	1	3	1	4		3			2	4	4	48
opening			4				2	3	3	1				1	3	1	2		1	2				1	24
roof, beam, haze, crossbeam, principal rafter			2		1			2		2	1		1			2		2		1			1	1	16
working platform, boot board			20		5		6	2	5	4	4	2	4	4	4	4	3	2	8	2		5	3	3	90
passage			6		1		5	3	3	5	5	2	5	3	4	5	4	3	4	3	3	6	6	4	80
building, establishment			22		24		10	6	12	13	4	11	9	11	16	10	9	13	12	9	9	7	2	7	216
other temporary buildings,			3		4		3	4	4	10	5	3	5	1	2	4	8	5	1	2	3	4	1	2	74

environment			2				1			1					1			1	1			1		8	
high/cold temperature environment			1		2				2	2	2	6	1	2	2	2	2		2	2	1	1	1	5	36
other environments			1		1				2	1			4	5	1		1	1	1	3		3	1	4	29
other causal agent					1		2	1		1	2	1	3			2					1	2	24		40
no causal agent					2		3	1	1	1		2			2	2	1	4	2	1	5	2	2	1	32
unclassifiable					1						1								1						3
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	114	4,065

Workers age of fatal and non-fatal accidents in bridge construction work 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	10	7	8	13	8	5	1	4	6	5	6	7	3	4	6	6	3	5	3	4	1	2		1	118
20-29	67	60	62	66	57	29	28	32	37	31	20	29	23	12	23	17	19	18	29	24	18	28	36	21	786
30-39	46	48	51	55	36	39	33	40	41	34	27	38	36	25	31	20	24	29	21	18	27	25	15	16	775
40-49	38	46	39	46	44	35	33	20	26	26	37	22	24	29	32	31	43	32	40	39	21	22	28	23	776
50-59	55	93	71	63	45	43	47	53	51	46	36	31	37	27	30	29	24	24	24	20	24	30	20	26	949
60 years old or more	48	36	24	30	26	31	30	22	28	34	18	25	27	23	29	31	26	20	30	28	25	23	20	27	661
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	114	4,065

Workers' number of workplace of fatal and non-fatal accidents in bridge construction work 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	111	107	111	107	98	65	55	79	88	64	55	65	66	54	54	53	61	64	45	58	39	41	58	58	1,656
10-29	105	123	86	98	84	73	86	72	71	78	63	59	56	52	53	54	55	48	68	51	48	53	38	30	1,604
30-49	35	29	28	40	21	31	16	14	20	25	14	13	17	8	19	20	15	9	16	14	18	24	16	10	472
50-99	9	22	17	19	11	9	14	5	6	8	5	12	10	4	15	4	8	5	15	7	8	8	4	13	238
100-299	4	8	13	8	2	4	1		4	1	6	3	1	2	10	3		2	2	2	3	4	3	2	88
300 workers or more		1		1				1			1								1	1				1	7
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	114	4,065

Month of fatal and non-fatal accidents in bridge construction work 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	25	25	26	19	25	41	9	15	8	12	18	17	14	21	9	12	8	5	17	8	6	9	11	11	371
February	24	34	24	27	16	10	21	10	13	21	14	9	14	9	7	13	10	14	14	11	5	10	17	6	353
March	34	27	24	31	24	25	12	16	23	10	13	19	8	5	17	17	6	13	12	12	7	14	10	10	389
April	21	19	17	17	17	10	8	12	15	9	10	10	13	9	7	9	10	20	9	5	11	11	4	5	278
May	10	19	21	15	12	6	15	8	9	14	15	12	11	9	6	8	13	11	6	15	8	12	10	3	268
June	14	17	18	11	15	16	17	7	16	11	9	8	9	7	13	9	11	7	8	23	6	9	5	7	273

July	16	28	19	23	13	6	12	18	12	19	14	9	6	9	16	10	13	5	14	7	13	9	8	15	314
August	18	14	21	20	19	9	13	12	13	26	11	8	11	11	10	6	6	9	8	11	14	7	18	10	305
September	32	19	12	24	23	16	15	15	21	19	11	10	8	9	23	5	10	12	13	7	7	18	7	12	348
October	17	33	28	30	21	16	14	27	19	10	9	9	16	8	18	17	12	17	15	14	11	11	10	12	394
November	30	22	21	33	15	10	18	14	15	14	5	20	24	9	15	14	20	4	21	7	20	13	9	10	383
December	23	33	24	23	16	17	18	17	25	11	15	21	16	14	10	14	20	11	10	13	8	7	10	13	389
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	114	4,065

Prefecture of fatal and non-fatal accidents in bridge construction work 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	25	18	11		14		8	10	14	7	3	11	17	12	25	7	11	12	12	8	4	7	9	8	253
Aomori	3	3	6		2		4	3	5	1	3	2	8	4	4	2	2		4	1	6	4		3	70
Iwate	4	7	3		4		4	4	2	1	2	5	1	1	9	1	3	5	9	9	1	6	4	1	86
Miyagi	2	7	3		2		4	4	1	8	2	2	4	1	5	6	6	5	6	4	2	1	6	1	82
Akita	1	2	1		2		3	1	1	2	1	2	2	2	7	3		2	1	7	2	1	2		45
Yamagata	9	10	1		6		3	4	4		1	2	1	3				3	1	1		3	3	2	57
Fukushima	3	2	3		3		2		2	4	2	2	6	1	4	5	6	4		5		1	1	2	58
Ibaraki		6	3		6		4	2		1		3		4	3	5	4	3	2		1	3	1		51
Tochigi	4	2	6		1		2	1	2	1	1	1				1	3	1	2			1	4	2	35
Gunma	3	8	1					1	2	4	3	5	6	1	1	1	3	3	3	1		1	3	2	52

Saitama	6	3	5		2		2	3	3	8	6	2		2	2	6	3	2	4	3	2		2	1	67
Chiba	7	3	9		9		5	1	5	10	10	7	2	4	2	5	2	2	3		2	2	2	2	94
Tokyo	15	18	10		8		12	9	10	12	5	10	9	6	2	6	6	7	6	1	6	4	7	4	173
Kanagawa	15	7	9		7		11	10	24	6	5	2	10	6	8	4	6	7	8	8	8	6	4	3	174
Niigata	6	5	5		5		3	4	4	6	7	7	4	4	1	1	5	1		2	2	4		5	81
Toyama	3		4		5		2	1	1	1	4	9	9	1	3	3	4	1	1	1	2	8	3	1	67
Ishikawa	5	4	3		3			1		1			2	1		1	1	2	3	7	12	5	1	1	53
Fukui	2	1	3		5		4	1	1	2	1	3	1	2	1	1	1	1		3	5	6	3	1	48
Yamanashi	1	2	5		1			3			1	1	1	1	1	2	4	1	2	1				3	30
Nagano	5	5	4		2		2	5	2	3	6	2		2	3	3	8	2	5	2		2	1	3	67
Gifu	6	10	8		12		4	3	3	1		4	6	6	3	5	4	2	8	3	3	6	5	3	105
Shizuoka	7	16	23		14		10	14	8	10	12	5	4	4	5	6	7	6	6	5	13	10	8	8	201
Aichi	19	20	30		24		9	7	6	6	8	13	7	4	9	5	5	6	7	6	10	6	4	6	217
Mie	6	8	7		6		1	1	4	2	1	1	5	1	4	3	7	2	4	8	4	1	3	8	87
Shiga	4	2	1		3		4	4	3	3	3		1	3		3		1		4		2	1	2	44
Kyoto	3	5	3		3		3	7	2	4	5	1		2	3	1	4		2	3		2	3		56
Osaka	8	8	2		8			3	4	13	5	4	8	2	2	5	3	4	3	3	1	4		2	92
Hyogo	12	14	10		3		3	3	9	3	4	8	6	4	8	4	2	13	3	1		2	5	3	120
Nara	2	3	2		1		5	4	1	3	1	1	1	5	1	2			2			1	2	3	40
Wakayama	2	5	5		5		5	10	3		6	3	7	1	1	7	5	1	2	1	1	3	8	2	83
Tottori	7	2	2		3		5	1	1	2	1			1	1	1	1	1	4		1				34

Shimane	3	6	6		1			1	3	3	2				1		1	1		1		2	1	2	34
Okayama	3	3	4					1	2	1	1	2		4	2	2			1	2	1	2	4	2	37
Hiroshima	3	7	7		8		5	7	5	2	6	3	2	1	2	3	1	2	2	3	3	2	3	2	79
Yamaguchi	10	1	3		1		4	3	6	10	1	4	1	1		2	2	1	4	1	2	3	1	2	63
Tokushima	4	4	2		1			1	1	3		5	2		2	4	3	2	1	2		4	2	6	49
Kagawa	2	4	1				2	4	2	1				3	1	1		2				1			24
Ehime	6	8	5		3			1	2	1	2	1	1	4	1				1	2	1		1	2	42
Kochi	3	3	3		1		6	5	5	2	1	1	1	1	1	1	3		1			1		1	40
Fukuoka	10	9	9		10		13	9	15	10	8	3	3	4	7	5	4	4	4	6	3	4	5	4	149
Saga	1	4	1		2			1	3	2	1	1			2	1		3	1	1	2	1	1	3	31
Nagasaki	3	5	2		5		2	2	3	3	2	1	1		1	1	2	2	1	4	4	3		1	48
Kumamoto	1	6	2		3		6	3	5	2	1	3			2	3	2	3	1	2	2	5	4	3	59
Oita	8	6	4		4		2	3	4	3	3	1	3	3	4	1	1		6	9	6		1		72
Miyazaki	2	5	7		2		3	1	1	5	2	4	3	2	2	1		2	4		2			1	49
Kagoshima	8	12	10		3		1	3	4	1	3	2	3	4	5	3		4	2	2			1	1	72
Okinawa	2	1	1		3		4	1	1	2	2	3	2	2		1	4	2	5		2			2	40
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	114	4,065

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.

drown	2	1	1	2	1								1			1			1	1			2		13	
contact to high/low-temperature				3									1											1		5
contact to harmful substance							1	2					1									1				5
electric shock																										
explosion																										
burst																										
fire																										
traffic accident (public road)		2	4		2	4		1					2	1	2		1	1	2	2	1					25
traffic accident (others)																										
reaction to motion/improper motion																										
others													5					1		1						7
unclassifiable											1		1													2
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	3	274	

Causal agents (large) of fatal accidents in bridge construction work in 1999-2022

human power																								
machine																								
hand tool																								
ladder	1	1																					2	
slinging tool			1			1		1		1			1					1					6	
other tools																								
other equipment, facilities	1						1																2	
scaffolding	7	3		3	5	4	1	3	2		1	11	3	4	1	2		2	3	4	1	1		61
timbering	1			1								1	1						1				5	
stairs, landing stage																								
opening	1	1												1					1				4	
roof, beam, haze, crossbeam, principal rafter					1						1												2	
working platform, boot board	2	1	1			1					2	1		1		1						2	12	
passage	1		1																				2	
building, establishment	5	4	1	1	4	1		1		2			1		1	2	2	3	1			1	1	31
other temporary buildings,	1				1		1	1									1	1			1		1	8

environment																									
high/cold temperature environment				3						1													1	5	
other environments												1									1			2	
other causal agent																									
no causal agent																	1		1					2	
unclassifiable													1											1	
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	3	274

Workers age of fatal accidents in bridge construction work 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			1		2		2		1	1	1			1					1	13	
20-29	2	3	1	2		3		2	1	2	1	4	1	1			1		1	3	1	2	2		33	
30-39	4	5	3	4	4	3	2	4		2	4	3	4	1	1	3	2	4	2	1	1	1	1		59	
40-49	2	6	3	4	1	2		1	1	1		3	3			2	3	2	3	4		2	1	1	45	
50-59	15	2	5	5	3	3	4	4	3	2	1	1	6	3	2	1	1	2	5	3	1	1	1		74	
60 years old or more	4	7	3	2	5	3				1	2	1		3	4	1	2			3	2	2	3	1	1	50
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	3	274	

Workers' number of workplace of fatal accidents in bridge construction work 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	11	10	7	9	6	5	2	7	3	3	2	6	5	2	1	2	2	5	8	3	2	4	1	2	108
10-29	10	12	5	4	5	7	1	4		5	3	4	8	3	1	3	3	3	6	6	2	2	2		99
30-49	2	2		2	1		1		2	2	1	1	3	2	1	2	1			2	1	3	1	1	31
50-99	3			1	2		1	1				1		2	2	2	1		1	2					19
100-299	1	1	3	1		2	1		1	1	1	1	1	1									1		16
300 workers or more																							1		1
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	3	274

Month of fatal accidents in bridge construction work 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		2	2			2		1			1	2	1			1			1			1	2		16
February	2	2		5	5		2	1		1	1	1	2	1		2	2		1			1	2		31
March	3	2	1	1	1	3		2				1	4			1		1	3	1	1				25
April	4	1	2	1		1	1	1	1	1			1	2			1	2		1		1			21
May	1	1	1	1	1					2		1	2				1		1	2	1				15
June	4	3	2			2			2		1		1	2			1			3					21

July	1	2		3	1	2		2	1		2				1		1		2		1	1		3	23	
August	2		2	4				1		2		1	2	1						1	1					17
September	3	2	1	1	3				1	2		1		1	1			1	2	1		2				22
October		4	1	1	1	3	1	3	1	1	1		1	2	1	3		3	1	1		2				31
November	4	2			1					1		3	1		2	2	1		1	1			1			20
December	3	4	3		1	1	2	1		1	1	3	2	1				1	3	2	1	1	1			32
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	3		274

Prefecture of fatal accidents in bridge construction work 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		3	1		3				1	1		3	2	2		1	2	1							22
Aomori								1					1	1					1	1	1					6
Iwate				1									4	1				1	1	1			1			10
Miyagi										1													1			2
Akita							1						1		1			1								4
Yamagata																										
Fukushima	2	1		1																			1			5
Ibaraki					3																					3
Tochigi	1			1		2																		2		6
Gunma	1		1																1							3

Shimane			1		1					1	1													4	
Okayama			1															1						2	
Hiroshima			1						1	1	1	1	1											6	
Yamaguchi	1					1			2									1						5	
Tokushima	1	1																			1		1	4	
Kagawa	1									1														2	
Ehime			1																					1	
Kochi							2																	2	
Fukuoka		1	1		1			1											1					5	
Saga																									
Nagasaki		1				2				1						1				1				6	
Kumamoto		1										3						1			1			6	
Oita	1	1																1	1					4	
Miyazaki													1	1				1	1					4	
Kagoshima	1	4																						5	
Okinawa								2									1							3	
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	3	274

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

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