Fatal and non-fatal accidents in bridge construction work in Japan in 1999-2021

bridge construction work industry Code No.030105

Type of accidents in bridge construction work 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	93	90	103	87	74	56	46	57	64	59	43	55	44	42	49	46	55	33	45	32	36	34	21	1,264	fall from height
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	282	falling to same level
crash	6	16	10	18	13	12	3	5	4	6	9	7	3	7	6	3	8	3	8	5	2	7	5	166	crash
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	488	struck by flying or falling object
collapse	23	18	7	15	5	3	11	14	12	14	5	6	6	7	16	9	8	17	5	8	6	4	3	222	collapse
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	297	crashed by
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	545	caught in/between
cut	6	12	8	5	17	3	10	1	6	5	3	8	3	4	4	7	3	5	6	5	4	3	3	131	cut
injury to the sole of the foot								1						1				1				1		4	injury to the sole of the foot
drown	2	1	2	4				2					2			1			2	1			2	19	drown
contact to high/low- temperature	2	2		7	2	2	1		1	5	2	7	1	1	2	2	2	1	3	3	2	1	2	51	contact to high/low- temperature

contact to harmful																									contact to
substance	3	4	2	6	1	2	3	4	2				2	2	2	2	2	2	5	3		9	2	58	harmful
substance																									substance
electric shock		3	2	1	2				1	1		1		1					2					14	electric shock
explosion																					1			1	explosion
burst						1			2										1				1	5	burst
fire					2	1															11			14	fire
traffic accident (public	16	22	10	11	9	19	9	10	15	10	7	8	11	3	19		8	8	9	21	11	9	5	250	traffic accident
road)	10	22	10	11	9	19	9	10	15	10	,	0	11	3	19		0	°	9	21	11	9	3	250	(public road)
traffic accident						1																		1	traffic accident
(others)																								1	(others)
reaction to																									reaction to
motion/improper	4	6	3	4		1	3	4	5	2	5	5	2	1	2	3	5	5	6	1	7	4	5	83	motion/improper
motion																									motion
others		1	1		1		3		5	1		1	6	1		1		3		1		2	25	52	others
unclassifiable		1			1						1								1					4	unclassifiable
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	3,951	total

Causal agents (large) of fatal and non-fatal accidents in bridge construction work in 1999-2021

Causal (L) agents	1000	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)
Causar (L) agents		2000	2001	2002	2003	2004	2003	2000	2007	2000	2003	2010	2011	2012	2013	2014	2013	2010	2017	2010	2013	2020	2021	II I	agents
machine	35	42	25	32	51	21	28	23	24	28	20	20	16	23	18	25	22	17	26	18	12	18	16	560	machine
crane, conveying																									crane,

machine	54	57	47	52	33	40	34	37	39	28	36	28	32	17	44	21	27	25	24	40	26	28	13	782	conveying
machine																									machine
athor aguinment	26	32	31	21	22	19	12	22	14	25	22	16	17	14	9	11	14	13	8	14	9	12	15	398	other
other equipment	20	32	31	21	22	19	12	22	14	23	22	10	17	14			14	13	0	14	9	12	13	390	equipment
tompovom buildings																									temporary
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	1,345	buildings,
establistifferits																									establishments
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	527	substance,
substance, material	29	43	31	43	23	31	33	21	32	19	20	را	19	17					20	14	20	24	12	327	material
load	6	1	4	5	2	4	3	2	3	3		2	5		2	4	5	1	7	2	1	3	3	68	load
environment	10	15	12	21	9	4	5	5	7	6	6	10	8	9	13	4	7	6	6	9	3	6	9	190	environment
others	1	3		2	4	1	5	2	1	2	3	3	3		2	4	1	4	3	1	6	4	26	81	others
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	3,951	total

Causal agents (middle) of fatal and non-fatal accidents in bridge construction work 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							2						1											3	engine
power transmission mechanism				1								1					1							3	power transmission mechanism
woodworking machine	3	6	4	7	7	1	6		3	3	1	6	1	3		5		2	1	4	1	1	1	66	woodworking machine

construction machine	28	25	13	20	29	11	13	16	14	21	16	7	9	16	12	15	15	9	17	10	7	10	11	344	construction machine
metal manufacturing machine	3	2	4	1	7	6	2	2	4	4	2	3	4	2	5	3	3	2	3	3	1	2	1	69	metal manufacturing machine
general machine	1	9	4	3	8	3	5	5	3		1	3	1	2	1	2	3	4	5	1	3	5	3	75	general machine
mobile silviculture machine																									mobile silviculture machine
crane	25	26	18	29	13	15	16	17	18	13	19	13	15	10	15	12	8	9	7	13	7	13	4	335	crane
conveying machine	15	10	14	15	12	5	8	11	7	10	10	8	9	3	13	7	10	9	10	13	11	6	5	221	conveying machine
vehicle	14	21	15	8	8	20	10	9	14	5	7	7	8	4	16	2	9	7	7	14	8	9	4	226	vehicle
pressure vessel																									pressure vessel
chemical facilities																									chemical facilities
welding equipment	1					1				1	1									1				5	welding equipment
kiln, caldron																									kiln, caldron
electric equipment	1		1		2	1			1	1				1	1			1						10	electric equipment
human power machine,	2	6	8	4	4	2	2	5	1	1	6	3	3	6		4	2	3	1	2	4	6	4	79	human power

tools	20	24	19	16	16	13	8	16	11	18	15	10	11	7	6	5	10	9	6	10	3	5	10	268	tools
other equipments,	2	2	3	1		2	2	1	1	4		3	3		2	2	2		1	1	2	1	1	36	other equipments, facilities
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	1,345	temporary buildings, establishments
hazards, harmful substances	3	4	1	8		3	1	1	4	1	1	1	2	2	1	2		2	5	2	12	9	1	66	hazards, harmful substances
materials	26	39	30	35	25	28	32	20	28	18	19	14	17	15	6	12	10	14	21	12	14	15	11	461	materials
load	6	1	4	5	2	4	3	2	3	3		2	5		2	4	5	1	7	2	1	3	3	68	load
natural environment	10	15	12	21	9	4	5	5	7	6	6	10	8	9	13	4	7	6	6	9	3	6	9	190	natural environment
other causal agent		1		1	1		2	1		1	2	1	3			2					1	2	24	42	other causal agent
no causal agent		1		1	2	1	3	1	1	1		2			2	2	1	4	2	1	5	2	2	34	no causal agent
unclassifiable	1	1			1						1								1					5	unclassifiable
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	3,951	total

Causal agents (small) of fatal and non-fatal accidents in bridge construction work 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				2						1											3	engine
power transmission mechanism									1					1							2	power transmission mechanism
circular sawing machine		3	7	6		2	2	1	5	1	3		5		1		3	1	1	1	42	circular sawing machine
band sawing machine																						band sawing machine
wood planer machine		1							1												2	wood planer machine
hollow chisel mortiser, wood borer																						hollow chisel mortiser, wood borer
chamfering machine, router, woodworking milling machine																						chamfering machine, router, woodworking milling machine
chain saw															1	1	1				3	chain saw
other woodworking machines						1	1														2	other woodworking machines
leveling, transporting or loading machine		2	2		1	3	1	3	1	1	1	3	1	4	1	3			1		28	leveling, transporting or loading machine
excavating machine		6	11	4	5	3	7	3	4	4	7	1	4	2	6	7	5	4	3	4	90	excavating machine
foundation work		1	4	1	2	2	2	1		1	2	1	2	4	1	5	1		3	3	36	foundation work

	 		 =	 	1	-		1					1		1			1	1	1		
hardening machine			1	2	1										1	1	1				7	hardening machine
demolition machine			1	2	1	3	3	4	1	1	2	3	2	2						2	27	demolition machine
vehicle for high lift work		1	6	1	1		6	1	1	1	1	1	1	2			2	2	1		28	vehicle for high lift work
other construction machines		3	4	3	5	3	2	4		1	3	3	5	1		1	1	1	2	2	44	other construction machines
lathe							1						1	1							3	lathe
drill press, milling machine									1	1											2	drill press, milling machine
grinding machine, buffing machine		2	5			2	2	1	1	1	2	4	1	2	1	2	2	1	2	1	32	grinding machine, buffing machine
power press		1																			1	power press
forging pressure hammer																						forging pressure hammer
shearing machine																						shearing machine
other metal manufacturing machines		1	2	2	2	2	1	1	1	2		1	1		1	1	1				19	other metal manufacturing machines
centrifugal machine																						centrifugal machine
mixer, grinder						1									2					1	4	mixer, grinder
roll machine (except printingroll machine)																						roll machine (except printingroll machine)
injection molding																						injection molding

machine																						machine
food manufacturing																						food manufacturing machine
printing machine																						printing machine
industrial robot																						industrial robot
other general power machines		4	8	5	5	2		1	3	1	2	1	2	3	2	5	1	3	5	2	55	other general power machines
felling machine																						felling machine
mobile logging machine																						mobile logging machine
skyline yarding machine																						skyline yarding machine
other mobile																						other mobile
silviculture machine																						silviculture machine
crane		2	5	4	1	6		3	1	1	1	5	1		2		4		5		41	crane
mobile crane		13	8	11	16	12	10	14	12	14	7	10	10	7	7	7	9	7	8	4	186	mobile crane
derrick crane																						derrick crane
elevator, lift																						elevator, lift
cargo lifting																						cargo lifting appliance
gondola								1													1	gondola
lumberyard																						lumberyard
equipment, logging								1													1	equipment, logging
cableway																						cableway

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simple skyline																									simple skyline
yarding equipment																									yarding equipment
other powered			3				1									1	1							11	other powered
crane			3				1			3				2		I	ľ							11	crane
truck			11		10		7	10	6	10	8	6	8	3	11	5	8	9	10	13	9	4	2	150	truck
forklift							1	1	1			1			1	1	1					1	1	9	forklift
railway equipment																									railway equipment
conveyor															1									1	conveyor
loader																									loader
straddle carrier																									straddle carrier
rough terrain hauler			1													1					1		1	4	rough terrain hauler
other powered			2		2						2	1	1				1				1	1	1	12	other powered
conveying machines												<u> </u>	Ľ				<u> </u>					<u> </u>	<u> </u>	12	conveying machines
cars, bus,			14		8		9	8	14	4	7	7	8	3	16	1	8	6	7	13	8	8	4	153	cars, bus,
motorcycle																<u> </u>									motorcycle
railway vehicle							1																	1	railway vehicle
other vehicles			1					1		1				1		1	1	1		1		1		9	other vehicles
boiler																									boiler
pressure vessel																									pressure vessel
other pressure																									other pressure
vessels																									vessels
chemical facilities																									chemical facilities
gas welding										1	1													2	gas welding

equipment																						equipment
arc welding equipment																	1				1	arc welding equipment
other welding equipment																						other welding equipment
kiln, caldron																						kiln, caldron
industrial dryer																						industrial dryer
other kiln, caldron																						other kiln, caldron
transmission		1				1	1				1										4	transmission
electric power facilities																						electric power
other electrical equipment			2									1			1						4	other electrical equipment
human power cranes		1	1		2	1		2								1		1	3	2	14	human power cranes
human power		1		1					1	2	1		1					1			8	human power hauling equipment
human power		1							1												2	human power machine
hand tool		5	3	1	3		1	4	1	1	5		3	2	3		2	2	3	2	41	hand tool
ladder		6	7	2	4	5	5	6	6	2	4	2	3	6	3	4	4		5	5	79	ladder
slinging tool		9	6	1	7	1	7	4	1	7	3	1	2	4	3	1	4	2		2	65	slinging tool
other tools		4	3	5	5	5	6	5	3	2		3			3	1	2	1		3	51	other tools
other equipment,																						other equipment,

facilities		3		2	1	1	4		3	3		2	2	2		1	1	2	1	1	29	facilities
scaffolding		36	28	16	28	32	25	14	32	25	15	22	23	20	17	13	13	16	11	5	391	scaffolding
timbering		8	3	8	8	6	2	1	6		4	2	1	3	4	5	3	2		3	69	timbering
stairs, landing stage		4	4	2	3	4	3	3	2	1	1	3	1	4		3			2	4	44	stairs, landing stage
opening		4		2	3	3	1				1	3	1	2		1	2				23	opening
roof, beam, haze, crossbeam, principal rafter		2	1		2		2	1		1			2		2		1			1	15	roof, beam, haze, crossbeam, principal rafter
working platform, boot board		20	5	6	2	5	4	4	2	4	4	4	4	3	2	8	2		5	3	87	working platform, boot board
passage		6	1	5	3	3	5	5	2	5	3	4	5	4	3	4	3	3	6	6	76	passage
building, establishment		22	24	10	6	12	13	4	11	9	11	16	10	9	13	12	9	9	7	2	209	building, establishment
other temporary buildings, establishments		3	4	3	4	4	10	5	3	5	1	2	4	8	5	1	2	3	4	1	72	other temporary buildings, establishments
explosive substance															1						1	explosive substance
inflammable substance							1									1		1			3	inflammable substance
inflammable gas																						inflammable gas
harmful substance					1	1				2	2	1	2			2	1		7		19	harmful substance
radiation																						radiation
other hazards,		1		1		3		1	1						1	2	1	11	2	1	25	other hazards, harmful substances

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metal material		27	18	25	16	21	15	15	12	13	11	5	10	9	9	17	11	9	12	7	262	metal material
lumber, bamboo				2	2	5	1	2		1	3				2	1	1		2	2	24	lumber, bamboo
stone, sand, substance		2	2	3		1		1	1	3			2		2			4		2	23	stone, sand, substance
other materials		1	5	2	2	1	2	1	1		1	1		1	1	3		1	1		24	other materials
load		3	2	1	2	2	3		2	3		2	3	4		6	2		2	3	40	load
machine/equipment as load		1		2		1				2			1	1	1	1		1	1		12	machine/equipment as load
natural ground,		6	6	3	4	2	1	4	2	1	2	9	2	4	2	2	2	2		4	58	natural ground,
standing tree						1	1		2						2				2		8	standing tree
water		2		1	1					2							2			2	10	water
abnormal environment		2		1			1					1			1	1				1	8	abnormal environment
high/cold temperature environment		1	2			2	2	2	6	1	2	2	2	2		2	2	1	1	1	31	high/cold temperature environment
other environments		1	1			2	1			4	5	1		1	1	1	3		3	1	25	other environments
other causal agent			1	2	1		1	2	1	3			2					1	2	24	40	other causal agent
no causal agent			2	3	1	1	1		2			2	2	1	4	2	1	5	2	2	31	no causal agent
unclassifiable			1					1								1					3	unclassifiable
total		255	216	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	2,942	total

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	10	7	8	13	8	5	1	4	6	5	6	7	3	4	6	6	3	5	3	4	1	2		117	19 years old or less
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	765	20-29
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	759	30-39
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	753	40-49
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	923	50-59
60 years old or	48	36	24	30	26	31	30	22	28	34	18	25	27	23	29	31	26	20	30	28	25	23	20	634	60 years old or
more										J-T				23			20	20	50		23		20	054	more
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	3,951	total

Workers' number of workplace of fatal and non-fatal accidents in bridge construction work 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	111	107	111	107	98	65	55	79	88	64	55	65	66	54	54	53	61	64	45	58	39	41	58	1,598	9 workers or less
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	1,574	10-29
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	462	30-49
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	225	50-99
100-299	4	8	13	8	2	4	1		4	1	6	3	1	2	10	3		2	2	2	3	4	3	86	100-299
300 workers or		1		1				1			1								1	1				6	300 workers or
more		•		•							•													-	more
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	3,951	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	25	25	26	19	25	41	9	15	8	12	18	17	14	21	9	12	8	5	17	8	6	9	11	360	January
February	24	34	24	27	16	10	21	10	13	21	14	9	14	9	7	13	10	14	14	11	5	10	17	347	February
March	34	27	24	31	24	25	12	16	23	10	13	19	8	5	17	17	6	13	12	12	7	14	10	379	March
April	21	19	17	17	17	10	8	12	15	9	10	10	13	9	7	9	10	20	9	5	11	11	4	273	April
May	10	19	21	15	12	6	15	8	9	14	15	12	11	9	6	8	13	11	6	15	8	12	10	265	May
June	14	17	18	11	15	16	17	7	16	11	9	8	9	7	13	9	11	7	8	23	6	9	5	266	June
July	16	28	19	23	13	6	12	18	12	19	14	9	6	9	16	10	13	5	14	7	13	9	8	299	July
August	18	14	21	20	19	9	13	12	13	26	11	8	11	11	10	6	6	9	8	11	14	7	18	295	August
September	32	19	12	24	23	16	15	15	21	19	11	10	8	9	23	5	10	12	13	7	7	18	7	336	September
October	17	33	28	30	21	16	14	27	19	10	9	9	16	8	18	17	12	17	15	14	11	11	10	382	October
November	30	22	21	33	15	10	18	14	15	14	5	20	24	9	15	14	20	4	21	7	20	13	9	373	November
December	23	33	24	23	16	17	18	17	25	11	15	21	16	14	10	14	20	11	10	13	8	7	10	376	December
total	264	290	255	273	216	182	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	3,951	total

Prefecture of fatal and non-fatal accidents in bridge construction work 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	25	18	11		14		8	10	14	7	3	11	17	12	25	7	11	12	12	8	4	7	9	245	Hokkaido
Aomori	3	3	6		2		4	3	5	1	3	2	8	4	4	2	2		4	1	6	4		67	Aomori
lwate	4	7	3		4		4	4	2	1	2	5	1	1	9	1	3	5	9	9	1	6	4	85	lwate

Miyagi	2	7	3	2	4	4	1	8	2	2	4	1	5	6	6	5	6	4	2	1	6	81	Miyagi
Akita	1	2	1	2	3	1	1	2	1	2	2	2	7	3		2	1	7	2	1	2	45	Akita
Yamagata	9	10	1	6	3	4	4		1	2	1	3				3	1	1		3	3	55	Yamagata
Fukushima	3	2	3	3	2		2	4	2	2	6	1	4	5	6	4		5		1	1	56	Fukushima
Ibaraki		6	3	6	4	2		1		3		4	3	5	4	3	2		1	3	1	51	Ibaraki
Tochigi	4	2	6	1	2	1	2	1	1	1				1	3	1	2			1	4	33	Tochigi
Gunma	3	8	1			1	2	4	3	5	6	1	1	1	3	3	3	1		1	3	50	Gunma
Saitama	6	3	5	2	2	3	3	8	6	2		2	2	6	3	2	4	3	2		2	66	Saitama
Chiba	7	3	9	9	5	1	5	10	10	7	2	4	2	5	2	2	3		2	2	2	92	Chiba
Tokyo	15	18	10	8	12	9	10	12	5	10	9	6	2	6	6	7	6	1	6	4	7	169	Tokyo
Kanagawa	15	7	9	7	11	10	24	6	5	2	10	6	8	4	6	7	8	8	8	6	4	171	Kanagawa
Niigata	6	5	5	5	3	4	4	6	7	7	4	4	1	1	5	1		2	2	4		76	Niigata
Toyama	3		4	5	2	1	1	1	4	9	9	1	3	3	4	1	1	1	2	8	3	66	Toyama
Ishikawa	5	4	3	3		1		1			2	1		1	1	2	3	7	12	5	1	52	Ishikawa
Fukui	2	1	3	5	4	1	1	2	1	3	1	2	1	1	1	1		3	5	6	3	47	Fukui
Yamanashi	1	2	5	1		3			1	1	1	1	1	2	4	1	2	1				27	Yamanashi
Nagano	5	5	4	2	2	5	2	3	6	2		2	3	3	8	2	5	2		2	1	64	Nagano
Gifu	6	10	8	12	4	3	3	1		4	6	6	3	5	4	2	8	3	3	6	5	102	Gifu
Shizuoka	7	16	23	14	10	14	8	10	12	5	4	4	5	6	7	6	6	5	13	10	8	193	Shizuoka
Aichi	19	20	30	24	9	7	6	6	8	13	7	4	9	5	5	6	7	6	10	6	4	211	Aichi
Mie	6	8	7	6	1	1	4	2	1	1	5	1	4	3	7	2	4	8	4	1	3	79	Mie
Shiga	4	2	1	3	4	4	3	3	3		1	3		3		1		4		2	1	42	Shiga
Kyoto	3	5	3	3	3	7	2	4	5	1		2	3	1	4		2	3		2	3	56	Kyoto

Osaka	8	8	2	8		3	4	13	5	4	8	2	2	5	3	4	3	3	1	4		90	Osaka
Hyogo	12	14	10	3	3	3	9	3	4	8	6	4	8	4	2	13	3	1		2	5	117	Hyogo
Nara	2	3	2	1	5	4	1	3	1	1	1	5	1	2			2			1	2	37	Nara
Wakayama	2	5	5	5	5	10	3		6	3	7	1	1	7	5	1	2	1	1	3	8	81	Wakayama
Tottori	7	2	2	3	5	1	1	2	1			1	1	1	1	1	4		1			34	Tottori
Shimane	3	6	6	1		1	3	3	2				1		1	1		1		2	1	32	Shimane
Okayama	3	3	4			1	2	1	1	2		4	2	2			1	2	1	2	4	35	Okayama
Hiroshima	3	7	7	8	5	7	5	2	6	3	2	1	2	3	1	2	2	3	3	2	3	77	Hiroshima
Yamaguchi	10	1	3	1	4	3	6	10	1	4	1	1		2	2	1	4	1	2	3	1	61	Yamaguchi
Tokushima	4	4	2	1		1	1	3		5	2		2	4	3	2	1	2		4	2	43	Tokushima
Kagawa	2	4	1		2	4	2	1				3	1	1		2				1		24	Kagawa
Ehime	6	8	5	3		1	2	1	2	1	1	4	1				1	2	1		1	40	Ehime
Kochi	3	3	3	1	6	5	5	2	1	1	1	1	1	1	3		1			1		39	Kochi
Fukuoka	10	9	9	10	13	9	15	10	8	3	3	4	7	5	4	4	4	6	3	4	5	145	Fukuoka
Saga	1	4	1	2		1	3	2	1	1			2	1		3	1	1	2	1	1	28	Saga
Nagasaki	3	5	2	5	2	2	3	3	2	1	1		1	1	2	2	1	4	4	3		47	Nagasaki
Kumamoto	1	6	2	3	6	3	5	2	1	3			2	3	2	3	1	2	2	5	4	56	Kumamoto
Oita	8	6	4	4	2	3	4	3	3	1	3	3	4	1	1		6	9	6		1	72	Oita
Miyazaki	2	5	7	2	3	1	1	5	2	4	3	2	2	1		2	4		2			48	Miyazaki
Kagoshima	8	12	10	3	1	3	4	1	3	2	3	4	5	3		4	2	2			1	71	Kagoshima
Okinawa	2	1	1	3	4	1	1	2	2	3	2	2		1	4	2	5		2			38	Okinawa
total	264	290	255	216	172	171	189	176	144	152	150	120	151	134	139	128	147	133	116	130	119	3,496	total

Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more. 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.htm (MHLW, Japan)

Return to https://www.jisha.or.jp/english/statistics/2021e_industry.html

Fatal accidents in bridge construction work in Japan in 1999-2021

bridge construction work industry Code No.030105

Type of fatal accidents in bridge construction work 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	15	12	5	6	7	8	5	4	2	5	1	12	5	6	2	4	3	3	8	3	2	4	1	123	fall from height
falling to same level									2	1			1	1		2								7	falling to same
crash											1									1	1			3	crash
struck by flying or falling object	1	3	2	1	1	1		1		2	1	1	1				1		1	3		3		23	struck by flying or falling object
collapse	6	3		1	1			2	1		1					1	1	2		1			2	22	collapse
crashed by	2	2	3	2				1		1	1				1			1		1				15	crashed by
caught in/between	1	1		2	2	1		1	1	1	1			1		1	1		3		1	1	1	20	caught in/between
cut		1												1										2	cut

injury to the sole of the foot																									injury to the sole
drown	2	1	1	2	1								1			1			1	1			2	13	drown
contact to high/low- temperature				3						1														4	contact to high/low- temperature
contact to harmful substance							1	2					1									1		5	contact to harmful substance
electric shock																									electric shock
explosion																									explosion
burst																									burst
fire																									fire
traffic accident (public road)		2	4		2	4		1					2	1	2		1	1	2	2	1			25	traffic accident (public road)
traffic accident (others)																									traffic accident (others)
reaction to motion/improper motion																									reaction to motion/improper motion
others													5					1		1				7	others
unclassifiable											1		1											2	unclassifiable
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	3 2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (L) agents
machine	1	3	2	2	2	1		3	1	3	2		1	3		1	1		3		1	1	1	32	machine
crane, conveying machine	4	7	8	2	3	4	1	2	3		2		2	2	2	3	2	1	4	4	2	2		60	crane, conveying machine
other equipment	2	1	1			1	1	2		1	1		1							1				12	other equipment
temporary buildings, establishments	18	9	3	7	9	7	2	4	2	5	2	12	6	5	3	5	3	5	6	4	2	2	2		temporary buildings, establishments
substance, material		1		1		1	1						1						1	2		2		10	substance, material
load	1		1	1								1										1		5	load
environment	1	4		4			1	1		2			5				1	1	1	1		1	3	26	environment
others													1					1		1				3	others
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total

Causal agents (middle) of fatal accidents in bridge construction work in 1999-2021

Causal (M) agents	1000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2000	2010	2011	2012	2013	2014	2015	2016	2017	2018	2010	2020	2021	total	Causal (M)
ausai (M) ageilts	1999	2000	2001	2002	2003	2004	2003	2000	2007	2008	2009	2010	2011	2012	2013	2014	2013	2010	2017	2010	2019	2020	2021	totai	agents

engine																								engine
power transmission mechanism																								power transmission mechanism
woodworking machine																								woodworking machine
construction machine	1	3	2	2	2	1		1	1	3	2	1	3		1			3		1	1	1	29	construction machine
metal manufacturing machine																								metal manufacturing machine
general machine								2								1							3	general machine
mobile silviculture machine																								mobile silviculture machine
crane	3	4	3	2			1	1	3		1		1		3								22	crane
conveying machine	1		2		2	1					1		1			2	1	3	3	1	1		19	conveying machine
vehicle		3	3		1	3		1				2		2				1	1	1	1		19	vehicle
pressure vessel																								pressure vessel
chemical facilities																								chemical facilities
welding equipment																								welding equipment

																							_		<u> </u>
kiln, caldron																									kiln, caldron
electric equipment																									electric equipment
human power machine, tools								1			1													2	human power machine, tools
tools	1	1	1			1		1		1			1							1				8	tools
other equipments,	1						1																	2	other equipments, facilities
temporary buildings, establishments	18	9	3	7	9	7	2	4	2	5	2	12	6	5	3	5	3	5	6	4	2	2	2	123	temporary buildings, establishments
hazards, harmful substances							1						1									1		3	hazards, harmful substances
materials		1		1		1													1	2		1		7	materials
load	1		1	1								1										1		5	load
natural environment	1	4		4			1	1		2			5				1	1	1	1		1	3	26	natural environment
other causal agent																									other causal agent
no causal agent																		1		1				2	no causal agent
unclassifiable													1											1	unclassifiable

total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total	
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Causal agents (small) of fatal accidents in bridge construction work 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																									power transmission
circular sawing																									circular sawing
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, woodworking milling machine																									chamfering machine, router, woodworking milling machine
chain saw																									chain saw
other woodworking																									other woodworking

leveling,																				leveling,
transporting or			1																1	transporting or
loading machine																				loading machine
excavating machine	1	2	1	1	2			1	2		1	2	1		2	1		1	18	excavating machine
foundation work															1		1			foundation work
machine															I				2	machine
hardening machine																				hardening machine
demolition machine																				demolition machine
vehicle for high lift				1		1	1		1	1									5	vehicle for high lift
work									l l											work
other construction		1								1		1							3	other construction
machines										I		ľ							3	machines
lathe																				lathe
drill press, milling																				drill press, milling
machine																				machine
grinding machine,																				grinding machine,
buffing machine																				buffing machine
power press																				power press
forging pressure																				forging pressure
hammer																				hammer
shearing machine																				shearing machine
other metal																				other metal
manufacturing																				manufacturing
machines																				machines

centrifugal machine																		centrifugal machine
mixer, grinder																		mixer, grinder
roll machine (except printingroll machine)																		roll machine (except printingroll machine)
injection molding																		injection molding
food manufacturing																		food manufacturing machine
printing machine																		printing machine
industrial robot																		industrial robot
other general power machines							2						1				3	other general power machines
felling machine																		felling machine
mobile logging																		mobile logging machine
skyline yarding machine																		skyline yarding machine
other mobile silviculture machine																		other mobile silviculture machine
crane	1	1	1					1									4	crane
mobile crane	2	3	2	2		1	1	2	1		1	3					18	mobile crane
derrick crane																		derrick crane
elevator, lift																		elevator, lift

cargo lifting																			cargo lifting
appliance																			appliance
gondola																			gondola
lumberyard																			lumberyard
equipment, logging																			equipment, logging
cableway																			cableway
simple skyline																			simple skyline
yarding equipment																			yarding equipment
other powered																			other powered
crane																			crane
truck			2	2	1			1		1		1	1	3	3			15	truck
forklift	1											1					1	3	forklift
railway equipment																			railway equipment
conveyor																			conveyor
loader																			loader
straddle carrier																			straddle carrier
rough terrain hauler																1		1	rough terrain hauler
other powered																			other powered
conveying machines																			conveying machines
cars, bus,											_					1		17	cars, bus,
motorcycle		2	3		3				2		2					1		17	motorcycle
railway vehicle		1																1	railway vehicle
other vehicles																	1	1	other vehicles
boiler																			boiler

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

hand tool																									hand tool
ladder	1	1																						2	ladder
slinging tool			1			1		1		1			1							1				6	slinging tool
other tools																									other tools
other equipment,	1						1																	2	other equipment,
scaffolding	7	3		3	5	4	1	3	2		1	11	3	4	1	2		2	3	4	1	1		61	scaffolding
timbering	1			1								1	1						1					5	timbering
stairs, landing stage																									stairs, landing stage
opening	1	1												1					1					4	opening
roof, beam, haze, crossbeam, principal rafter				1						1														2	roof, beam, haze, crossbeam, principal rafter
working platform,	2	1	1			1				2	1		1		1								2	12	working platform,
passage	1		1																					2	passage
building, establishment	5	4	1	1	4	1		1		2			1		1	2	2	3	1			1		30	building, establishment
other temporary buildings, establishments	1			1		1	1									1	1				1			7	other temporary buildings, establishments
explosive substance																									explosive substance
inflammable substance																									inflammable substance

inflammable gas																			inflammable gas
harmful substance						1				1						1		3	harmful substance
radiation																			radiation
other hazards,																			other hazards,
harmful substances																			harmful substances
metal material				1	1									1	2			5	metal material
lumber, bamboo		1														1		2	lumber, bamboo
stone, sand,																			stone, sand,
substance																			substance
other materials																			other materials
load	1		1	1					1									4	load
machine/equipment																1		1	machine/equipment
as load																I			as load
natural ground,		3					1					1		1			2	8	natural ground,
rock												<u> </u>							rock
standing tree								1					1					2	standing tree
water	1	1		1		1				4					1		1	10	water
abnormal																			abnormal
environment																			environment
high/cold																			high/cold
temperature				3				1										4	temperature
environment																			environment
other environments										1						1		2	other environments
other causal agent																			other causal agent

no causal agent																		1		1				2	no causal agent
unclassifiable													1												unclassifiable
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total

Workers age of fatal accidents in bridge construction work 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		2			1			1		2		2		1	1	1			1					12	19 years old or less
20-29	2	3	1	2		3		2	1	2	1	4	1	1			1		1	3	1	2	2	33	20-29
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	30-39
40-49	2	6	3	4	1	2		1	1	1		3	3			2	3	2	3	4		2	1	44	40-49
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	50-59
60 years old or	4	7	3	2	5	3			1	2	1		3	4	1	2			2	2	2	3	1	49	60 years old or
more									<u> </u>		<u> </u>												<u> </u>	II I	more
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total

Workers' number of workplace of fatal accidents in bridge construction work 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	11	10	7	9	6	5	2	7	3	3	2	6	5	2	1	2	2	5	8	3	2	4	1	106	9 workers or less
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	10-29
30-49	2	2		2	1		1		2	2	1	1	3	2	1	2	1			2	1	3	1	30	30-49
50-99	3			1	2		1	1				1		2	2	2	1		1	2				19	50-99
										\Box															

100-299	1	1	3	1		2	1		1	1	1	1	1	1									1	16	100-299
300 workers or																							1	1	300 workers or
more																									more
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total

Month of fatal accidents in bridge construction work 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		2	2			2		1			1	2	1			1			1			1	2	16	January
February	2	2		5	5		2	1		1	1	1	2	1		2	2		1			1	2	31	February
March	3	2	1	1	1	3		2				1	4			1		1	3	1	1			25	March
April	4	1	2	1		1	1	1	1	1			1	2			1	2		1		1		21	April
May	1	1	1	1	1					2		1	2				1		1	2	1			15	May
June	4	3	2			2			2		1		1	2			1			3				21	June
July	1	2		3	1	2		2	1		2				1		1		2		1	1		20	July
August	2		2	4				1		2		1	2	1						1	1			17	August
September	3	2	1	1	3				1	2		1		1	1			1	2	1		2		22	September
October		4	1	1	1	3	1	3	1	1	1		1	2	1	3		3	1	1		2		31	October
November	4	2			1					1		3	1		2	2	1		1	1			1	20	November
December	3	4	3		1	1	2	1		1	1	3	2	1				1	3	2	1	1	1	32	December
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total

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		3	1		3				1	1		3	2	2		1	2	1					22	Hokkaido
Aomori								1					1	1					1	1	1			6	Aomori
lwate				1									4	1				1	1	1			1	10	lwate
Miyagi										1													1	2	Miyagi
Akita							1						1		1			1						4	Akita
Yamagata																									Yamagata
Fukushima	2	1		1																		1		5	Fukushima
Ibaraki					3																			3	Ibaraki
Tochigi	1			1		2																	2	6	Tochigi
Gunma	1		1																1					3	Gunma
Saitama					1					2						2			1	1	1			8	Saitama
Chiba		1			1											1	1							4	Chiba
Tokyo	3		1	1	1		1					2	2	2							1			14	Tokyo
Kanagawa	2					1		1						1		1				1		1		8	Kanagawa
Niigata																				1				1	Niigata
Toyama			1	1							1	3	4									1	1	12	Toyama
Ishikawa	1	1																	1		1			4	Ishikawa
Fukui												1												1	Fukui
Yamanashi				1															1					2	Yamanash
Nagano			1	1			1									1								4	Nagano
Gifu	1	2			1														1	2				7	Gifu

Shizuoka				4	1		1		2	1	1	1					1			1		1	1	15	Shizuoka
Aichi	2	2	1	1	4	4		1		1		1				2			1	1				21	Aichi
Mie	1	2	2	1					1	1					1		1			1		1		12	Mie
Shiga	1	1									1			1										4	Shiga
Kyoto		1		1							1						1			1				5	Kyoto
Osaka		1		1				1				1				1			1			1		7	Osaka
Hyogo	1	4		1		1		1							1			3						12	Hyogo
Nara																1								1	Nara
Wakayama	1							4						1								1		7	Wakayama
Tottori	3																							3	Tottori
Shimane			1		1					1	1													4	Shimane
Okayama			1																1					2	Okayama
Hiroshima			1						1	1	1	1	1											6	Hiroshima
Yamaguchi	1					1			2										1					5	Yamaguchi
Tokushima	1	1																				1		3	Tokushima
Kagawa	1									1														2	Kagawa
Ehime			1																					1	Ehime
Kochi							2																	2	Kochi
Fukuoka		1	1		1			1												1				5	Fukuoka
Saga																									Saga
Nagasaki		1				2				1							1				1			6	Nagasaki
Kumamoto		1										3							1			1		6	Kumamoto
Oita	1	1																	1	1				4	Oita

Miyazaki													1	1				1	1					4	Miyazaki
Kagoshima	1	4																						5	Kagoshima
Okinawa								2									1							3	Okinawa
total	27	25	15	17	14	14	6	12	6	11	7	13	17	10	5	9	7	8	15	13	5	9	6	271	total

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

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