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

subway construction work industry Code No.030103

Type of accidents in subway 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	12	7	4	3	4	2		5	1	5	1	3		1	2	1	1	3	1					1	57
falling to same level	7	1		3	1	1	1	2			2	1		2	1	1	1	1		2	1	1	1		30
crash	3	2		1			1				1				1					2	1				12
struck by flying or falling object	10	3	2	2		4	5		1	2	1	2			1			1		1					35
collapse	5	2	2	1			1	1		1															13
crashed by	3	1	5	1	1	1	1		3		1	3	1		1	1									23
caught in/between	4	5	3	1	3	2	1	2	1	3	1	2	1				1	1	2		2	4		3	42
cut	1					1		3	1		1									1	1			1	10
injury to the sole of the foot								1																	1
drown				1																					1
contact to high/low-		2																							2

temperature																									
contact to harmful substance										1	1														2
electric shock		1										1													2
explosion																									
burst																									
fire																									
traffic accident (public road)	9		1	1		5							4	2				6							28
traffic accident (others)																									
reaction to motion/improper motion	3								1	1									1	1			1	1	9
others															1										1
unclassifiable																									
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

Causal agents (large) of fatal and non-fatal accidents in subway 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	2	3	2		3	2	2	2	3		2	2				1	1	1	2		3	2		2	35

crane, conveying machine	15	2	4	2		5	2	2	2	2		1	4	3				7		1	1	1		1	55
other equipment	10	3	1	3	2	1	3	2		5	1	3			1			1	1	1				3	41
temporary buildings, establishments	14	8	6	5	3	4		7	1	4	2	4	1	1	4	1	2	3	1	4	1	1	2		79
substance, material	12	6	3		1	3	1	1	1	2	4	2	1		1					1					39
load	2	1	1	2		1	1		1													1			10
environment				1			1							1		1									4
others	2	1		1											1										5
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

Causal agents (middle) of fatal and non-fatal accidents in subway 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																									
power transmission mechanism																								1	1
woodworking machine	1				1	1		1	1		1														6

construction machine	1	2	2		2	1	2		1		1	2				1		1	1			2		1	20
metal manufacturing machine								1											1		1				3
general machine		1							1								1				2				5
mobile silviculture machine																									
crane	4	1	3	1			2	1	2	1										1	1	1		1	19
conveying machine	3	1				5		1		1		1	4	1				1							18
vehicle	8		1	1										2				6							18
pressure vessel																									
chemical facilities																									
welding equipment																									
kiln, caldron																									
electric equipment		1										1													2
human power machine, tools	3			2		1	1	2		1					1									2	13
tools	7	2	1	1	2		2			4	1	2						1	1	1				1	26

other equipments, facilities																									
temporary buildings, establishments	14	8	6	5	3	4		7	1	4	2	4	1	1	4	1	2	3	1	4	1	1	2		79
hazards, harmful substances		2								1															3
materials	12	4	3		1	3	1	1	1	1	4	2	1		1					1					36
load	2	1	1	2		1	1		1													1			10
natural environment				1			1							1		1									4
other causal agent															1										1
no causal agent	2	1		1																					4
unclassifiable																									
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

Causal agents (small) of fatal and non-fatal accidents in subway construction work 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																								1	1

circular sawing machine								1	1		1														3
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw																									
other woodworking machines					1																				1
leveling, transporting or loading machine			1		1																				2
excavating machine			1		1				1			2						1				2		1	9
foundation work machine																									

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

machine)																									
injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines									1								1				2				4
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane			1																						1
mobile crane			2				2		1	1										1	1	1		1	10
derrick crane																									
elevator, lift																									
cargo lifting appliance																									

gondola																									
lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane								1	1																2
truck								1					4	1				1							7
forklift																									
railway equipment												1													1
conveyor																									
loader																									
straddle carrier																									
rough terrain hauler																									
other powered conveying machines										1															1
cars, bus, motorcycle			1											2				6							9
railway vehicle																									
other vehicles																									

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

hauling equipment							1								1									1	3
human power machine																									
hand tool								1		1														1	3
ladder					1					4	1							1	1					1	9
slinging tool			1				2					2													5
other tools					1															1					2
other equipment, facilities																									
scaffolding			1		2			2		1		1			1						1		1		10
timbering			2		1			1		1	2	1					1								9
stairs, landing stage												1			2					3					6
opening			1					1				1													3
roof, beam, haze, crossbeam, principal rafter																									
working platform, boot board			1						1					1											3
passage								2										1	1	1		1	1		7
building, establishment			1							2					1	1		1							6

other temporary buildings, establishments								1					1				1	1							4
explosive substance																									
inflammable substance																									
inflammable gas																									
harmful substance										1															1
radiation																									
other hazards, harmful substances																									
metal material			3				1	1			2	2	1		1					1					12
lumber, bamboo					1																				1
stone, sand, substance									1		2														3
other materials										1															1
load			1						1													1			3
machine/equipment as load							1																		1
natural ground, rock							1																		1
standing tree																									

water																									
abnormal environment																									
high/cold temperature environment																									
other environments														1		1									2
other causal agent															1										1
no causal agent																									
unclassifiable																									
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

Workers age of fatal and non-fatal accidents in subway 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	1	1				1							1												4
20-29	13	2	3	2	1	4	1	2	1	1	2		1		1			1						1	36
30-39	7	5	2	6	2	3	3	3	4	3	1	3	2	1	2		1	1			2			1	52
40-49	14	7	4	2	3	4	1	2	2	5	1	5	1	4	1	2	1	5	2	4			2	1	73
50-59	16	7	6	2	3	3	5	5	1	4	3	1			1		1	2	1	1	2	5		1	70
60 years old or	6	2	2	2		1		2			2	3	1		2	1		3	1	2	1			2	33

more																									
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

Workers' number of workplace of fatal and non-fatal accidents in subway 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	19	9	5	2	3	6	3	6	4	7	4	4	4	1	3		2	5	3	3	1		1	4	99
10-29	15	5	5	7	2	4	4	6	2	6	4	7	2	2	1	1		2		4	4	4	1	2	90
30-49	11	3	2	2	3	5	1	2	2		1			2	1	2	1	5	1						44
50-99	10	5	2	2	1	1	2					1			2							1			27
100-299	2	2	2	1																					7
300 workers or more			1																						1
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

Month of fatal and non-fatal accidents in subway 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	6	5		1				3				2			1			1				2	1	3	25
February	2		1	1		2	3	2		1				2	2	1	1								18
March	3	5	2	1	2			1	1	1	1		4					2		1	1			1	26
April	4	1	1	2		2	1	1	3		1	2					1		1						20

May	9	3		2			1	1				3							1	1					21
June	3	2	1	1		11			2			2				1		6		1	3			1	34
July	8	1	1	2			2	3		2								1	1	1		1			23
August	4	1		1	1		1		1	1	2		1										1		14
September	5	3	1	1	1		1	1		2					1					2					18
October	8	2	3		2	1		1	1	2	2				1						1	1			25
November	4	1	3	2	1			1		1	2	1	1	2	1	1	1	1	1	1				1	26
December	1		4		2		1			3	1	2		1	1			1				1			18
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

Prefecture of fatal and non-fatal accidents in subway 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																									
Aomori																									
Iwate																									
Miyagi										1	2	3	1	4	2	1									14
Akita																									
Yamagata												1													1
Fukushima																									
Ibaraki																									

Tochigi			1																						1
Gunma																									
Saitama	10	2			1																				13
Chiba	1		1						1																3
Tokyo	34	10	5		2		4	12	3	8	5	6	5	1	3	2	2	6	4	3	1			4	120
Kanagawa	2	3	1		3		1	1										5		1	2		2		21
Niigata																									
Toyama																									
Ishikawa																									
Fukui																									
Yamanashi																									
Nagano																									
Gifu																									
Shizuoka															1										1
Aichi	3	2			1				1	4	2	2													15
Mie									1															1	2
Shiga																									
Kyoto			1					1																	2
Osaka					1		4		2													2		1	10
Hyogo	5	1													1										7

Nara																									
Wakayama																									
Tottori																									
Shimane																									
Okayama																									
Hiroshima																									
Yamaguchi																									
Tokushima																									
Kagawa																									
Ehime																									
Kochi																									
Fukuoka	2	6	8		1		1										1			3	2	3			27
Saga																									
Nagasaki																									
Kumamoto																									
Oita																									
Miyazaki																									
Kagoshima																									
Okinawa																		1							1
total	57	24	17	14	9	16	10	14	8	13	9	12	6	5	7	3	3	12	4	7	5	5	2	6	268

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)

Return to https://www.jisha.or.jp/english/statistics/2022e_industry.html

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Fatal accidents in subway construction work in Japan in 1999-2022

subway construction work industry Code No.030103

Type of fatal accidents in subway 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				1			1																		2
falling to same level																									
crash																									
struck by flying or falling object																									
collapse			1																						1
crashed by							1																		1

caught in/between																						1			1
cut																									
injury to the sole of the foot																									
drown																									
contact to high/low-temperature																									
contact to harmful substance																									
electric shock																									
explosion																									
burst																									
fire																									
traffic accident (public road)	1																								1
traffic accident (others)																									
reaction to motion/improper motion																									
others																									

unclassifiable																									
total	1		1	1			2															1			6

Causal agents (large) of fatal accidents in subway 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							1																		1
crane, conveying machine	1																					1			2
other equipment																									
temporary buildings, establishments			1	1			1																		3
substance, material																									
load																									
environment																									
others																									
total	1		1	1			2															1			6

Causal agents (middle) of fatal accidents in subway 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																									
power transmission mechanism																									
woodworking machine																									
construction machine							1																		1
metal manufacturing machine																									
general machine																									
mobile silviculture machine																									
crane																						1			1
conveying machine	1																								1
vehicle																									
pressure vessel																									
chemical facilities																									
welding																									

equipment																									
kiln, caldron																									
electric equipment																									
human power machine, tools																									
tools																									
other equipments, facilities																									
temporary buildings, establishments			1	1			1																		3
hazards, harmful substances																									
materials																									
load																									
natural environment																									
other causal agent																									
no causal agent																									
unclassifiable																									
total	1		1	1			2															1			6

Causal agents (small) of fatal accidents in subway construction work 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																									
excavating machine																									
foundation work machine																									
hardening machine																									
demolition machine																									
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																								
roll machine (except printingroll machine)																								
injection molding machine																								
food manufacturing machine																								
printing machine																								
industrial robot																								
other general power machines																								
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	1																								1
forklift																									
railway equipment																									
conveyor																									
loader																									
straddle carrier																									

rough terrain hauler																									
other powered conveying machines																									
cars, bus, motorcycle																									
railway vehicle																									
other vehicles																									
boiler																									
pressure vessel																									
other pressure vessels																									
chemical facilities																									
gas welding equipment																									
arc welding equipment																									
other welding equipment																									
kiln, caldron																									
industrial dryer																									
other kiln, caldron																									
transmission																									

electric power facilities																									
other electrical equipment																									
human power cranes																									
human power hauling equipment																									
human power machine																									
hand tool																									
ladder																									
slinging tool																									
other tools																									
other equipment, facilities																									
scaffolding																									
timbering																									
stairs, landing stage																									
opening				1			1																		2
roof, beam, haze,																									

crossbeam, principal rafter																									
working platform, boot board																									
passage																									
building, establishment																									
other temporary buildings, establishments			1																						1
explosive substance																									
inflammable substance																									
inflammable gas																									
harmful substance																									
radiation																									
other hazards, harmful substances																									
metal material																									
lumber, bamboo																									
stone, sand, substance																									

other materials																									
load																									
machine/equipment as load																									
natural ground, rock																									
standing tree																									
water																									
abnormal environment																									
high/cold temperature environment																									
other environments																									
other causal agent																									
no causal agent																									
unclassifiable																									
total	1		1	1			2															1			6

Workers age of fatal accidents in subway 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																									
20-29							1																		1
30-39																									
40-49	1		1				1																		3
50-59																						1			1
60 years old or more				1																					1
total	1		1	1			2															1			6

Workers' number of workplace of fatal accidents in subway 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			1				1																		2
10-29							1															1			2
30-49	1			1																					2
50-99																									
100-299																									
300 workers or more																									
total	1		1	1			2															1			6

Month of fatal accidents in subway 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																									
February				1																					1
March																									
April																									
May	1						1																		2
June																									
July							1															1			2
August																									
September																									
October			1																						1
November																									
December																									
total	1		1	1			2															1			6

Prefecture of fatal accidents in subway 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																									

Aomori																									
Iwate																									
Miyagi																									
Akita																									
Yamagata																									
Fukushima																									
Ibaraki																									
Tochigi																									
Gunma																									
Saitama																									
Chiba																									
Tokyo																									
Kanagawa				1																					1
Niigata																									
Toyama																									
Ishikawa																									
Fukui																									
Yamanashi																									
Nagano																									
Gifu																									
Shizuoka																									

Aichi																									
Mie																									
Shiga																									
Kyoto																									
Osaka							2																		2
Hyogo	1																								1
Nara																									
Wakayama																									
Tottori																									
Shimane																									
Okayama																									
Hiroshima																									
Yamaguchi																									
Tokushima																									
Kagawa																									
Ehime																									
Kochi																									
Fukuoka			1																			1			2
Saga																									
Nagasaki																									

Kumamoto																									
Oita																									
Miyazaki																									
Kagoshima																									
Okinawa																									
total	1		1	1			2															1			6

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

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