

Fatal and non-fatal accidents in civil engineering work in Japan in 1999-2022

civil engineering work industry Code No.0301

Type of accidents in civil engineering 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	2,072	1,917	1,761	1,612	1,433	1,413	1,318	1,218	1,201	1,176	996	1,012	1,002	971	1,033	1,038	918	864	918	889	925	890	962	935	28,474
falling to same level	981	881	748	705	658	555	566	529	438	519	412	419	446	459	457	490	441	422	453	445	430	460	482	490	12,886
crash	450	429	382	342	278	257	278	268	222	207	192	203	190	191	222	182	194	158	192	181	184	196	177	173	5,748
struck by flying or falling object	1,504	1,403	1,191	1,091	949	842	833	745	687	665	619	571	568	568	509	511	459	467	450	406	386	400	412	413	16,649
collapse	526	476	437	391	336	318	305	284	252	273	207	192	182	194	185	192	190	159	158	163	138	153	162	152	6,025
crashed by	966	883	786	687	660	617	570	518	509	445	418	389	368	391	364	373	353	301	306	335	351	353	342	333	11,618
caught in/between	1,880	1,729	1,583	1,488	1,266	1,176	1,090	957	879	852	791	717	669	727	710	722	651	546	647	615	590	608	622	612	22,127
cut	578	575	513	446	424	430	384	356	352	318	310	334	296	308	296	294	275	266	326	278	260	305	294	281	8,499
injury to the sole of the foot	33	22	32	20	18	18	23	19	4	14	14	14	21	9	11	11	11	15	10	10	12	9	14	9	373
drown	9	5	8	9	8	8	6	9	4	14	10	5	31	12	4	15	4	5	7	8	3	5	9	2	200
contact to high/low-temperature	86	106	93	90	66	57	64	52	68	60	34	93	64	76	75	54	58	52	61	91	79	89	66	85	1,719
contact to harmful	37	44	42	32	13	26	24	28	22	26	14	21	14	14	19	16	11	23	21	18	14	23	23	17	542





mobile silviculture machine																	8	4	9	6	5	8	10	5	55
crane	399	405	328	353	312	282	280	234	221	245	212	192	186	165	205	197	185	154	173	177	173	178	171	161	5,588
conveying machine	1,010	971	911	881	762	718	686	625	606	563	499	505	503	513	518	534	468	429	489	502	468	446	527	487	14,621
vehicle	333	266	262	254	259	200	212	201	175	160	166	164	133	165	168	143	138	164	130	140	135	138	126	148	4,380
pressure vessel	10	6	3	7	10	3	1	5	3	2	3	2		3	1	4	2	3	2	4	2	3	2	3	84
chemical facilities			1																						1
welding equipment	13	10	6	3	7	8	10	4	10	3	8	4	4	2		3	3	2	2	5	3	5	4	5	124
kiln, caldron	1	2	2		2		1	2		1	3		1		1				1		1	1		1	20
electric equipment	9	8	19	6	10	8	5	6	6	9	5	7	4	8	2	8	4	9	6	3	6	3	9	10	170
human power machine, tools	366	337	314	247	253	238	203	192	148	180	178	141	149	145	128	144	119	95	122	113	122	130	123	118	4,305
tools	650	592	543	486	449	428	458	396	388	398	357	329	370	342	328	322	335	298	324	293	306	334	346	317	9,389
other equipments, facilities	77	92	79	63	43	56	63	46	66	42	36	44	40	44	34	53	44	45	49	40	27	45	44	42	1,214
temporary buildings, establishments	1,685	1,541	1,483	1,245	1,141	1,034	986	965	873	889	714	695	703	706	745	727	684	673	703	684	690	686	747	716	21,715
hazards, harmful substances	64	87	68	60	25	37	35	40	31	27	18	22	21	34	21	16	10	21	27	21	33	28	25	20	791
materials	1,615	1,619	1,286	1,146	929	816	828	748	691	580	566	521	506	507	447	477	425	412	426	390	405	380	375	377	16,472
load	210	227	226	223	160	181	145	124	128	131	112	107	100	118	113	102	114	85	97	108	98	89	116	86	3,200

natural environment	1,096	920	885	776	696	709	649	628	528	541	468	531	545	560	564	509	456	415	437	498	414	473	438	493	14,229
other causal agent	69	56	49	37	43	40	35	34	22	20	24	18	34	16	21	18	19	25	36	26	15	54	257	27	995
no causal agent	133	125	107	100	89	76	84	78	58	72	81	73	63	64	85	69	66	79	84	95	88	91	93	76	2,029
unclassifiable	16	20	11	11	10	17	7	9	5	9	13	10	8	5	9	3	5	2	5	1	6	1	2	3	188
total	10,014	9,292	8,378	7,602	6,772	6,282	6,053	5,564	5,141	5,017	4,446	4,415	4,301	4,392	4,374	4,331	3,956	3,760	4,015	3,889	3,808	3,963	4,277	3,942	127,984

Causal agents (small) of fatal and non-fatal accidents in civil engineering 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			2		2		6	2	3	9	4	3	1	1	4	2	1	1	2	3	1		2	2	51
power transmission mechanism			16		10		9	5	6	10	4	6	4	3	7	2	6	3	2	5	1	3	1	3	106
circular sawing machine			137		114		98	83	90	69	57	67	53	57	63	53	33	43	37	41	37	39	32	44	1,247
band sawing machine			1		2					1	1				1				1			1			8
wood planer machine			7		3		1	1	2	3	1	2	1	1	2	1		3		2	1	1	1	1	34
hollow chisel mortiser, wood borer							2		1			1	1			2									7
chamfering machine, router, woodworking																		1					1		4

milling machine																									
chain saw			71		83		59	60	58	49	75	69	69	62	63	80	60	70	80	65	79	98	92	85	1,427
other woodworking machines			28		26		28	20	16	26	19	23	24	15	23	14	13	13	21	17	11	10	18	11	376
leveling, transporting or loading machine			180		169		124	139	116	115	80	110	77	85	103	75	108	88	95	84	76	65	83	78	2,050
excavating machine			611		493		495	384	381	378	302	308	291	327	320	321	245	249	262	228	271	292	275	301	6,734
foundation work machine			47		39		34	38	27	28	23	18	16	26	26	23	28	19	26	24	13	21	20	17	513
hardening machine			128		92		74	73	61	68	61	74	50	53	43	58	50	49	37	34	43	34	33	20	1,135
demolition machine			50		42		40	38	34	34	40	42	22	36	36	31	33	30	26	16	21	24	22	22	639
vehicle for high lift work			8		11		5	7	8	17	9	4	6	4	7	5	6	6	6	9	8	9	11	11	157
other construction machines			200		178		158	133	122	146	107	104	128	115	109	130	84	89	80	69	69	70	78	71	2,240
lathe			2		1		1		1	7		3	2	1		1	1	1		1	2	2	1	1	28
drill press, milling machine			2		3		2	4	2	1	2	1	1	2				2		2			1		25
grinding machine, buffing machine			41		49		48	30	46	40	34	37	29	49	37	46	43	35	56	40	31	41	34	28	794
power press			1		1			1							1		2						1		7
forging pressure hammer									2								1								3







motorcycle			240		237		189	187	157	143	144	150	119	155	153	133	125	145	117	128	118	125	113	127	3,005
railway vehicle			3		1		4	1	1	2	5	1		1	2	1	3	3	4	1	3	3	1	2	42
other vehicles			19		21		19	13	17	15	17	13	14	9	13	9	10	16	9	11	14	10	12	19	280
boiler								1				1		1								1			4
pressure vessel					2				2			1					1					1	1		8
other pressure vessels			3		8		1	4	1	2	3			2	1	4	2	2	2	4	2	1	1	3	46
chemical facilities			1																						1
gas welding equipment			4		5		7	1	4	2	7	1	4	1		1	1	2	1	3	2		3	3	52
arc welding equipment			1		2		3	2	5	1		2				1	2		1	2	1	5			28
other welding equipment			1					1	1		1	1		1		1							1	2	10
kiln, caldron			1		1			2		1	1		1		1				1			1		1	11
industrial dryer																									
other kiln, caldron			1		1		1				2										1				6
transmission			4		3			3	2	5				3	1	4	2	4	3	2	1	1	1	6	45
electric power facilities			1		1		3	2	2		1	4	2			1	1	2	1	1	1		2	2	27
other electrical equipment			14		6		2	1	2	4	4	3	2	5	1	3	1	3	2		4	2	6	2	67
human power cranes			3		10			8	3	8	7	2	12	4	6	6	2	3	8		3	4	10	6	105

human power hauling equipment			33		28		25	21	17	20	15	16	23	13	17	19	9	9	12	15	19	12	15	11	349
human power machine			11		9		11	8	4	3	6	6	3	1	5	2	5	2	4	7	6	7	5	3	108
hand tool			267		206		167	155	124	149	150	117	111	127	100	117	103	81	98	91	94	107	93	98	2,555
ladder			297		248		261	231	207	231	223	200	216	209	214	202	221	190	204	194	204	216	216	208	4,392
slinging tool			100		100		91	79	75	69	70	61	59	61	45	42	56	42	49	41	44	52	50	47	1,233
other tools			146		101		106	86	106	98	64	68	95	72	69	78	58	66	71	58	58	66	80	62	1,608
other equipment, facilities			79		43		63	46	66	42	36	44	40	44	34	53	44	45	49	40	27	45	44	42	926
scaffolding			190		131		113	92	111	102	71	66	71	56	80	74	64	53	63	43	57	45	39	41	1,562
timbering			113		59		45	49	50	44	36	31	18	23	23	12	28	12	22	21	15	14	19	14	648
stairs, landing stage			78		66		57	57	57	52	64	40	47	68	60	45	49	56	33	39	50	48	49	68	1,083
opening			42		25		32	25	34	23	22	15	14	23	24	21	20	27	24	31	27	28	26	16	499
roof, beam, haze, crossbeam, principal rafter			50		37		43	39	24	29	23	26	36	18	35	19	19	23	14	31	28	20	19	37	570
working platform, boot board			169		152		104	104	89	128	106	76	69	77	66	107	80	74	90	81	74	65	84	77	1,872
passage			250		196		200	200	150	174	141	153	158	153	151	171	154	193	195	188	167	191	226	212	3,623
building, establishment			423		320		250	259	247	224	162	194	182	190	197	182	170	148	163	164	182	176	182	161	4,176
other temporary buildings,			168		155		142	140	111	113	89	94	108	98	109	96	100	87	99	86	90	99	103	90	2,177



temperature environment			54		26		31	40	37	38	9	70	38	54	69	42	37	37	44	78	57	76	45	69	951
other environments			118		67		78	94	49	52	47	65	76	91	91	92	81	54	83	79	61	73	75	94	1,520
other causal agent			49		43		35	34	22	20	24	18	34	16	21	18	19	25	36	26	15	54	257	27	793
no causal agent			107		89		84	78	58	72	81	73	63	64	85	69	66	79	84	95	88	91	93	76	1,595
unclassifiable			11		10		7	9	5	9	13	10	8	5	9	3	5	2	5	1	6	1	2	3	124
total	10,014	9,292	8,378	7,602	6,772	6,282	6,053	5,564	5,141	5,017	4,446	4,415	4,301	4,392	4,374	4,331	3,956	3,760	4,015	3,889	3,808	3,963	4,277	3,942	127,984

#### Workers age of fatal and non-fatal accidents in civil engineering 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	278	236	201	182	146	103	87	74	74	65	71	89	81	84	110	106	79	83	100	67	67	72	76	63	2,594
20-29	1,577	1,506	1,435	1,341	1,077	914	872	766	616	586	487	489	435	494	457	423	389	381	437	404	382	451	557	468	16,944
30-39	1,198	1,218	1,110	1,052	1,048	1,017	1,002	963	903	893	788	836	848	783	742	698	622	569	553	517	491	495	582	445	19,373
40-49	1,690	1,544	1,420	1,311	1,152	1,050	930	893	820	818	775	799	749	849	852	849	835	788	842	830	769	780	910	758	23,013
50-59	2,713	2,527	2,361	2,081	1,939	1,850	1,840	1,650	1,515	1,475	1,230	1,085	1,052	989	992	952	838	762	822	817	825	840	901	830	32,886
60 years old or more	2,558	2,261	1,851	1,635	1,410	1,348	1,322	1,218	1,213	1,180	1,095	1,117	1,136	1,193	1,221	1,303	1,193	1,177	1,261	1,254	1,274	1,325	1,251	1,378	33,174
total	10,014	9,292	8,378	7,602	6,772	6,282	6,053	5,564	5,141	5,017	4,446	4,415	4,301	4,392	4,374	4,331	3,956	3,760	4,015	3,889	3,808	3,963	4,277	3,942	127,984

#### Workers' number of workplace of fatal and non-fatal accidents in civil engineering 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	4,571	4,362	3,858	3,669	3,409	3,201	3,102	2,842	2,715	2,670	2,287	2,264	2,200	2,225	2,215	2,210	1,994	1,856	1,960	1,942	1,844	1,861	1,924	1,854	63,035

10-29	3,904	3,529	3,220	2,807	2,444	2,216	2,208	2,029	1,792	1,739	1,593	1,606	1,507	1,538	1,551	1,503	1,366	1,302	1,430	1,358	1,376	1,459	1,617	1,458	46,552
30-49	976	867	800	690	544	536	442	445	392	407	375	333	369	386	365	379	384	358	406	380	371	404	453	381	11,443
50-99	397	387	345	299	262	236	215	191	174	149	147	146	170	173	164	171	165	167	172	156	157	163	190	177	4,973
100-299	158	131	145	125	102	87	77	50	60	42	40	60	46	66	78	65	43	73	41	47	53	68	87	66	1,810
300 workers or more	8	16	10	12	11	6	9	7	8	10	4	6	9	4	1	3	4	4	6	6	7	8	6	6	171
total	10,014	9,292	8,378	7,602	6,772	6,282	6,053	5,564	5,141	5,017	4,446	4,415	4,301	4,392	4,374	4,331	3,956	3,760	4,015	3,889	3,808	3,963	4,277	3,942	127,984

Month of fatal and non-fatal accidents in civil engineering 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	862	842	709	662	598	624	518	510	436	465	421	387	406	392	388	388	358	304	362	335	331	273	377	354	11,302
February	923	921	767	769	719	648	569	590	509	539	444	431	375	454	362	402	323	353	370	349	337	363	387	325	12,229
March	960	925	919	726	689	660	589	489	499	492	410	479	439	401	420	389	335	315	324	346	327	341	357	336	12,167
April	711	614	619	520	464	416	431	374	337	359	268	285	265	302	302	315	272	308	271	265	266	289	279	298	8,830
May	705	642	548	516	447	371	413	381	358	346	313	307	288	318	291	349	263	274	292	283	269	270	326	276	8,846
June	729	676	615	565	490	466	483	374	392	349	336	325	324	305	300	288	318	292	321	303	275	313	343	338	9,520
July	859	797	711	648	611	522	504	439	430	452	362	352	325	362	412	434	371	361	395	385	371	300	397	329	11,129
August	810	765	657	617	523	449	478	467	436	390	354	354	390	371	367	338	340	315	334	337	327	359	392	303	10,473
September	866	728	655	617	563	507	471	461	397	402	353	373	344	337	382	333	342	310	266	310	316	357	371	348	10,409
October	857	805	744	679	582	555	507	501	443	459	404	394	388	377	364	406	359	327	350	380	356	361	368	377	11,343
November	914	780	724	686	526	566	587	521	450	374	405	360	407	360	417	334	363	319	378	334	330	396	349	333	11,213
December	818	797	710	597	560	498	503	457	454	390	376	368	350	413	369	355	312	282	352	262	303	341	331	325	10,523

total	10,014	9,292	8,378	7,602	6,772	6,282	6,053	5,564	5,141	5,017	4,446	4,415	4,301	4,392	4,374	4,331	3,956	3,760	4,015	3,889	3,808	3,963	4,277	3,942	127,984
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Prefecture of fatal and non-fatal accidents in civil engineering 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	721	692	613		475		441	435	325	287	315	311	274	291	362	318	316	269	302	338	279	320	359	316	8,359
Aomori	159	137	139		96		86	64	58	66	61	64	83	85	70	66	58	72	81	61	73	70	82	83	1,814
Iwate	156	166	153		113		89	86	76	60	67	63	96	73	83	100	90	82	102	99	100	83	94	62	2,093
Miyagi	156	156	129		130		76	94	95	101	77	75	134	141	129	123	109	149	123	123	111	94	112	102	2,539
Akita	151	107	147		98		95	87	63	74	80	59	58	73	85	68	76	50	60	65	68	78	73	78	1,793
Yamagata	154	145	131		109		87	77	80	58	54	81	74	65	60	76	71	64	75	69	54	68	75	61	1,788
Fukushima	208	193	146		129		106	95	118	124	98	99	105	137	119	157	114	95	94	97	85	99	134	130	2,682
Ibaraki	196	141	135		119		101	75	77	85	74	74	99	109	101	78	82	80	96	73	68	70	85	69	2,087
Tochigi	142	135	106		66		64	61	62	69	63	53	52	56	46	40	56	44	42	37	55	48	57	77	1,431
Gunma	230	212	187		140		87	82	79	97	90	85	67	56	69	59	61	64	61	65	67	69	76	64	2,067
Saitama	272	250	211		209		203	163	164	200	172	167	134	146	137	168	147	109	135	135	123	129	147	99	3,620
Chiba	251	202	212		218		204	197	160	187	172	172	150	155	182	161	127	138	127	148	130	146	142	135	3,716
Tokyo	424	373	330		343		335	321	277	307	242	238	230	254	225	230	214	180	229	173	171	179	201	176	5,652
Kanagawa	384	395	357		317		289	301	277	244	194	222	241	175	170	177	167	190	183	178	183	193	190	162	5,189
Niigata	358	316	279		204		272	235	181	168	153	145	138	156	142	134	110	121	83	119	91	98	138	130	3,771
Toyama	145	140	120		87		87	68	70	56	74	67	67	85	51	64	53	43	49	45	55	66	51	46	1,589
Ishikawa	74	74	57		64		39	41	31	41	48	43	41	34	27	38	29	28	30	29	46	37	40	37	928
Fukui	121	110	105		82		65	57	52	67	43	41	55	53	41	40	51	32	42	40	62	54	74	44	1,331

Yamanashi	100	102	97		83		49	60	47	60	40	41	40	36	42	51	46	37	44	36	32	30	25	33	1,131
Nagano	251	217	204		161		121	99	109	106	107	90	83	82	82	110	90	82	83	81	95	89	103	106	2,551
Gifu	264	249	215		189		112	110	89	102	84	83	62	83	79	75	83	63	76	73	71	86	79	78	2,405
Shizuoka	298	307	255		206		188	165	191	164	145	152	133	125	117	131	123	107	102	103	115	124	102	129	3,482
Aichi	324	345	304		257		200	178	205	200	187	185	149	152	155	169	145	130	152	149	128	142	148	151	4,155
Mie	259	207	214		155		112	103	109	95	82	99	85	84	91	85	80	79	76	81	79	65	65	89	2,394
Shiga	86	89	66		69		41	52	40	61	41	27	27	31	25	31	30	23	21	25	29	28	42	38	922
Kyoto	160	153	142		88		108	109	91	68	79	54	67	85	60	68	69	47	67	50	48	62	50	53	1,778
Osaka	263	249	254		218		185	168	190	196	156	124	117	114	109	130	114	86	85	107	79	97	102	87	3,230
Hyogo	372	360	307		227		215	203	176	155	125	140	140	147	144	137	97	106	114	102	99	82	102	103	3,653
Nara	136	91	112		94		67	70	54	59	68	55	47	56	44	51	31	33	35	28	41	39	46	45	1,302
Wakayama	184	139	131		102		90	105	82	65	72	62	73	77	80	59	63	56	41	37	45	50	45	37	1,695
Tottori	71	49	56		53		35	39	29	29	27	24	30	29	28	34	28	30	32	19	24	32	21	26	745
Shimane	101	106	124		87		65	57	59	62	41	42	49	43	46	35	36	33	31	37	43	29	48	39	1,213
Okayama	217	210	176		127		137	89	93	83	74	74	66	80	92	71	58	59	75	64	60	50	77	70	2,102
Hiroshima	286	278	242		185		167	141	134	111	110	93	96	87	96	69	69	65	87	98	87	114	104	70	2,789
Yamaguchi	140	137	142		101		91	83	89	85	67	68	78	66	59	52	55	65	71	44	56	53	66	50	1,718
Tokushima	156	133	130		81		104	99	82	77	59	57	59	41	41	57	49	52	57	36	50	63	58	43	1,584
Kagawa	85	70	48		57		82	54	40	47	40	43	35	42	37	25	25	34	36	37	36	42	46	43	1,004
Ehime	237	234	226		149		144	103	95	83	67	63	62	68	63	64	50	65	65	82	56	54	73	70	2,173
Kochi	228	193	170		114		110	93	94	73	51	59	82	72	82	73	79	69	73	62	71	81	68	73	2,070
Fukuoka	376	371	323		264		251	229	225	212	179	176	168	173	183	181	168	153	172	180	130	149	189	143	4,595
Saga	79	97	66		56		52	44	42	46	47	55	45	41	63	59	53	36	59	44	50	59	38	56	1,187

Nagasaki	185	177	150		107		93	86	72	66	67	80	54	62	54	73	63	53	53	63	60	61	80	71	1,830
Kumamoto	211	168	144		125		100	92	95	75	92	99	65	73	96	87	65	79	99	80	89	90	79	90	2,193
Oita	232	179	171		129		118	91	102	97	70	77	66	73	98	81	72	86	84	90	84	64	68	71	2,203
Miyazaki	153	160	147		83		90	116	95	104	64	82	73	76	71	55	45	62	55	53	75	84	69	63	1,875
Kagoshima	213	240	175		176		167	163	136	114	107	119	110	118	116	92	103	129	118	104	116	112	120	113	2,961
Okinawa	45	38	30		30		33	24	31	31	21	33	42	32	22	29	36	31	38	30	39	31	34	31	711
total	10,014	9,292	8,378	7,602	6,772	6,282	6,053	5,564	5,141	5,017	4,446	4,415	4,301	4,392	4,374	4,331	3,956	3,760	4,015	3,889	3,808	3,963	4,277	3,942	127,984

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 civil engineering work in Japan in 1999-2022

civil engineering work industry Code No.0301

Type of fatal accidents in civil engineering 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	105	83	59	55	69	65	56	44	45	34	31	39	33	39	35	23	19	26	34	30	25	25	19	22	1,015
falling to same level	15	16	12	8	10	7	9	5	5	3	5	8	4	6	6	7	6	2	2	3	2	4	5	5	155



crash	3	1	2	1	2	4	1		1		3	1		2	2	1				1	1		1		27
struck by flying or falling object	32	28	16	20	11	11	10	13	16	13	10	8	8	5	8	8	8	7	7	10	5	6	4	6	270
collapse	65	42	45	46	40	31	23	25	20	23	22	17	13	21	22	17	12	13	15	11	18	14	13	15	583
crashed by	38	50	34	23	16	27	27	25	16	18	18	12	13	19	15	19	17	13	14	13	14	9	11	19	480
caught in/between	66	52	52	47	39	31	32	25	25	28	26	21	15	22	10	21	24	10	20	18	6	17	15	15	637
cut	2	3		1			2	1	1	1		1	1	2	1	1				3	1	1		1	23
injury to the sole of the foot																									
drown	5	6	5	7	7	9	4	6	3	14	7	4	31	11	4	14	3	4	5	7	3	3	9	1	172
contact to high/low-temperature	5	8	8	8	3	2	2	4	1	5		6	1	5	3	1	3	2	3	1	2	2	4	8	87
contact to harmful substance	1	7	3	2		2	1	5	1	8	1	5	2		4	3	2		1			2	3		53
electric shock	1			1		1	1	1	1									1					2	1	10
explosion	1						1			2		1		2	1									2	10
burst		1	1				1			1		1													5
fire	1	3	2					1			1				1	3							1	1	14
traffic accident (public road)	60	48	58	35	34	35	28	31	23	16	22	16	14	14	15	19	9	18	19	11	10	15	10	8	568
traffic accident (others)			1	6	1	1	4	2	1		3		1	2					1		1	1	1	1	27
reaction to motion/improper motion																									
others	4	2	1	1	2	4	5	11	1	2			30	3	3	1	3	4	2	2	1	3	3	3	91
unclassifiable	1			1				1			1		1		1		1			1	1		1		10
total	405	350	299	262	234	230	207	200	160	168	150	140	167	153	131	138	107	100	123	111	90	102	102	108	4,237

Causal agents (large) of fatal accidents in civil engineering work in 1999-2022



crane	12	22	17	13	14	16	9	5	8	5	8	9	3	5	5	10	8	8	4	7	5	5	5	5	208
conveying machine	70	59	56	41	26	41	35	23	35	21	28	18	8	21	13	17	12	16	23	11	17	13	11	20	635
vehicle	35	24	30	29	19	19	20	23	7	8	13	10	12	11	9	11	9	8	6	9	5	9	8	3	337
pressure vessel		1		1			1																		3
chemical facilities																									
welding equipment			1						1											1				1	4
kiln, caldron																									
electric equipment	1		1												1			1							4
human power machine, tools	1		1		1	1		2			1		1	1					1						10
tools	12	14	12	6	10	6	13	11	6	10	4	6	5	4	4	4	6	2	4	3	2	2	5	4	155
other equipments, facilities	2					1	2	1	1		2			2				1							12
temporary buildings, establishments	68	41	39	38	37	34	20	26	23	20	16	24	20	28	16	18	16	11	21	18	15	13	14	12	588
hazards, harmful substances	2	7		2			2		1	3	1	3	2	3	4	3	1		1			2	2	2	41
materials	12	8	5	6	3	3	5	3	4	3	3		2	3	1	2			3	3		3	1	1	74
load	4	3	3	1	2	1	3	1		3	1	2		2	2	1	1	1				2			33
natural environment	75	75	59	62	54	55	40	48	39	47	31	29	78	31	44	32	27	23	27	25	29	23	26	31	1,010
other causal agent		1	2			1					1					3						1	2		11
no causal agent						1		2		1			4	3	3	1	3	4	2	2	2		1	1	30
unclassifiable	2	2		2		1		1					1	1	2		1	1					1		15
total	405	350	299	262	234	230	207	200	160	168	150	140	167	153	131	138	107	100	123	111	90	102	102	108	4,237

Causal agents (small) of fatal accidents in civil engineering work in 1999-2022







kiln, caldron																									
industrial dryer																									
other kiln, caldron																									
transmission	1													1			1								3
electric power facilities																									
other electrical equipment			1																						1
human power cranes							2			1		1	1					1							6
human power hauling equipment				1																					1
human power machine			1																						1
hand tool	1					1																			2
ladder	4	4	1	1	3	2	3	1		2		4	1	3	1	1	1	1	2	1		1	1		38
slinging tool	7	7	7	4	2	4	3	7	5	6	3	2	3	1	2	2	4	1	2	2	2	1	1	2	80
other tools	1	3	4	1	5		7	3	1	2	1		1		1	1	1						3	2	37
other equipment, facilities	2					1	2	1	1		2			2				1							12
scaffolding	14	9	3	6	10	6	4	4	3		2	11	3	6	3	2	2	3	5	5	3	2	1		107
timbering	4	2	5	2		3		1	1	1	1	2	3	7	1		2		1					1	37
stairs, landing stage	3	1	1			1									1		1					2	1		11
opening	3	2		4	1	4	2	1	3		2			2	2				2	5		1	3	1	38
roof, beam, haze, crossbeam, principal rafter	1		1	1		2		3		2			1	1			1		1	3	1			2	20
working platform, boot board	4	1	1	1	5	1		1		3	1	2	3		3						1		2		29
passage	2	2	4	2	2				3		1	1			1				1	1	2		1		23
building, establishment	31	20	19	17	13	12	10	12	12	11	5	5	7	10	4	13	7	8	8	2	6	7	6	6	251





unclassifiable	2	2		2		1		1						1	1	2		1	1					1			15
total	405	350	299	262	234	230	207	200	160	168	150	140	167	153	131	138	107	100	123	111	90	102	102	108	4,237		

#### Workers age of fatal accidents in civil engineering 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	4	8	6	2	4	3	2	2	1	3	1	3	2	3	5	4	1	1	3		1			4	63
20-29	41	34	32	34	27	19	19	18	19	8	9	14	5	10	9	4	7	6	14	7	11	6	7	6	366
30-39	39	25	38	27	24	26	21	31	24	25	17	22	20	23	14	20	10	18	9	16	10	10	7	7	483
40-49	76	67	46	39	36	36	30	24	17	28	18	21	34	23	18	30	19	13	22	13	10	23	23	26	692
50-59	115	88	95	78	87	81	69	69	50	50	47	39	54	44	30	32	25	23	25	27	15	17	24	13	1,197
60 years old or more	130	128	82	82	56	65	66	56	49	54	58	41	52	50	55	48	45	39	50	48	43	46	41	52	1,436
total	405	350	299	262	234	230	207	200	160	168	150	140	167	153	131	138	107	100	123	111	90	102	102	108	4,237

#### Workers' number of workplace of fatal accidents in civil engineering 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	135	136	117	106	94	95	87	102	72	67	61	67	62	66	53	50	49	35	57	46	42	54	37	52	1,742
10-29	178	130	117	90	96	93	75	71	64	76	57	53	61	56	48	55	36	44	47	40	35	35	37	28	1,622
30-49	57	47	38	41	29	26	32	16	14	16	24	10	29	17	15	20	12	14	11	13	9	10	15	18	533
50-99	26	27	13	12	12	11	6	8	7	5	7	8	9	8	7	9	8	6	8	9	2	2	7	6	223
100-299	8	8	13	13	3	4	6	3	3	4	1	2	6	6	8	3	2	1		3	2	1	5	3	108
300 workers or more	1	2	1			1	1									1							1	1	9
total	405	350	299	262	234	230	207	200	160	168	150	140	167	153	131	138	107	100	123	111	90	102	102	108	4,237



Iwate	4	5	5	6	8	2	5		2	5	5	1	29	3	1	5	5	3	3	6	5	2	6	4	120
Miyagi	12	7	5	3	4	1	1	2	3	5	4	3	25	4	4	4	1	4	2	2	3	1	3	3	106
Akita	4	4	2	2	3	3	5	7	3	1	2	3	2	1	9	1	5	2	2	1		1		3	66
Yamagata	7	5	4	1		2	2	2		1	2	1		4	1	4		2	1	1	1	1	1	3	46
Fukushima	10	5	8	8	6	3	6	4	2	3	6	2	7	5	7	6	5	3	4		2	5	1	7	115
Ibaraki	7	4	8	11	6	4	5	1	3	4	3	3	2	7	4	1	5	6	4	5	2	2	1	4	102
Tochigi	7	10	6	5	3	7	3	3	2		2	2	1	1			1				1	2	3	5	64
Gunma	9	2	8	2	5	4	5	3	3	1	3	2		1	1	3	1		3			2	4	1	63
Saitama	8	9	7	8	7	10	6	4	4	4	2	4	3	1	2	3	4	1	5	3	3	2	3	1	104
Chiba	6	8	9	9	8	13	9	11	8	3	6	5	2	3	2	5	5	3	4	3	1	4	3	1	131
Tokyo	20	15	6	9	4	6	11	10	6	10	3	9	8	6	3	13	5	6	5	2	3	5	3	4	172
Kanagawa	13	14	8	5	10	14	8	7	4	4	7	3	5	4	2	2	3	2	3	4	2	6	6	1	137
Niigata	11	7	7	7	8	7	14	4	4	8	6	6	4	6	5	2	1	1	1	4	3	3	1	3	123
Toyama	4	1	9	2	3	2	4	3	4	1	1	5	7	2	2	1	2		3	4	2	1	4	2	69
Ishikawa	4	3		2	3	4	4	1	2	3	3	1	1	2		1		2	4	1	3	1	1	1	47
Fukui	5	3	4	4	2	4	2	2	4	3	2	2	1	1		3				2		2	2		48
Yamanashi	5	7	7	7	4	5	1	4	4	7	3	1	3		3	5	2	3	2	1	1	3	1	1	80
Nagano	9	12	13	5	5		5	2	1	4	3	6	4	4	4	5	1	2	3	2	3	1	4	2	100
Gifu	8	12	3	7	12	3	4	5	1	3		8	1	1		1	4	2	4	2		2	3	2	88
Shizuoka	7	10	8	12	10	6	4	8	8	7	7	3	4	5	4	5	7	5		5		4	2	5	136
Aichi	13	9	13	13	11	14	6	10	5	8	5	5	4	2	8	6	3	2	6	4	4	4		4	159
Mie	13	12	10	6	5	1	1	2	4	8	1	3	2	4	2	2	3	2	1	3	3	2	3	3	96
Shiga	3	6	3	2	2	1	2	1	3	2	2			2	1	1				1	1	1	1	1	36

Kyoto	6	8	5	5	2		1	4		2	1	2		3	2	1	2	1	4	1	1	1		2	54
Osaka	7	9	7	5	6	4	8	9	7	8	3	3	2	1	2	2	1	1	6	3	1	5	3	3	106
Hyogo	11	14	7	12	5	7	3	9	5		6	2	7	7	3	4	3	4	2	4	4	4	1	2	126
Nara	6	2	4	1	3	4	1	1	4	1	1	2	2	3	2	4	2	2	1	2	1	1	1		51
Wakayama	6	3	4	3	2	3		5	3	2	3		1	3	3			3	2		2	3	2	1	54
Tottori	11	3	3	2		2	1	4	1	1	3			2	2	1			2			2	1		41
Shimane	8	2	6	2	7			2	2	1	3	1	2	2	3	1		1		1	1	1	1	1	48
Okayama	7	9	5	6	2	5	6	2	3	2	3	2	1	7	7	2	1	1	2	1	1		1	2	78
Hiroshima	10	12	11	3	3	8	5		4	4	3	5	6	3	4	3			3	5	2		1	3	98
Yamaguchi	8	8	5	1	3	5	3	7	4		1	2	2	2	2	3	2	2	3	1	2	1		1	68
Tokushima	9	4	5	3	2	3	5	2	3	2	1	2	2			3			3	4	2	1	1	1	58
Kagawa	5	1	2	5	2	3	2	2	3	2	1	1		3					1	2		1	2		38
Ehime	5	10	5	7	6	4	3	3	2	2	3	3	2	1	1	1	3	2	3	5	2	1	1	4	79
Kochi	9	8	7	7	2	7	6	2	2	1	1	2	2	6	4	2	2	4	1	1	3		2	1	82
Fukuoka	16	8	10	10	12	5	5	10	6	12	6	4	3	8	4	3	6		3	3	1	3	2	1	141
Saga	3	4	3	2	1	4	3	3		3		4			2		1	4	2	1		3	1	2	46
Nagasaki	7	6	5	2	5	3	4	4	2	4	5	1	3	2	1		1	3		1	2	1	4		66
Kumamoto	8	7	6	1	10	6	1	4	3	3	3	8	1	3	3	4		2	1	3	3	2	2	3	87
Oita	10	9	5	5	4	2	4		3	4	2	1	1	5	1	2	3	2	6	2	2	1	1		75
Miyazaki	4	6	7	5	5	3		3	4	1		2	2	1	3	2	4	3	1		3	2	2	2	65
Kagoshima	15	10	5	8	3	8	9	3	8	4	4	6	2	3	3	3	3	2	2	2	1	2	1	3	110
Okinawa	5	2	1	3	1	3	1	6	1	1	2	1	3			2	1	1	1	2	3	2	3		45
total	405	350	299	262	234	230	207	200	160	168	150	140	167	153	131	138	107	100	123	111	90	102	102	108	4,237

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