

Accident Rates for Public Works Contracts and the Construction Industry from 2013 to 2022

Year ¹	Public Works Contracts			Accident Rates					
				Fatal Accidents			Reportable Accidents		
	No. of Fatalities	No. of Non-fatal Reportable Accidents ²	No. of Man-hours Worked ³	Public Works Contracts		Construction Industry	Public Works Contracts		Construction Industry
				a ⁴	b ⁵	c ⁶	a ⁴	b ⁵	c ⁶
2013	5	238	104,440,354.7	0.005	0.17	0.28	0.23	8.4	40.8
2014	5	248	107,492,392.9	0.005	0.17	0.27	0.24	8.5	41.9
2015	4	287	107,550,537.8	0.004	0.13	0.20	0.27	9.7	39.1
2016	4	314	108,949,465.3	0.004	0.13	0.11	0.29	10.5	34.5
2017	6	411	124,246,121.5	0.005	0.17	0.19	0.34	12.1	32.9
2018	1	380	118,320,916.2	0.001	0.03	0.13	0.32	11.6	31.7
2019	0	189	101,225,099.5	0.00	0.00	0.16	0.19	6.7	29.0
2020	4	165	100,464,169.5	0.004	0.14	0.19	0.17	6.0	26.1
2021	3	206	108,458,875.1	0.003	0.10	0.22	0.19	6.9	29.5
2022	1	180	125,092,200.4	0.001	0.03	0.16	0.14	5.2	29.1

¹ The figures for 2022 are captured as at 28 April 2023.

² A “non-fatal reportable accident” means industrial accident, which results in any injury that incapacity the worker for more than 3 days.

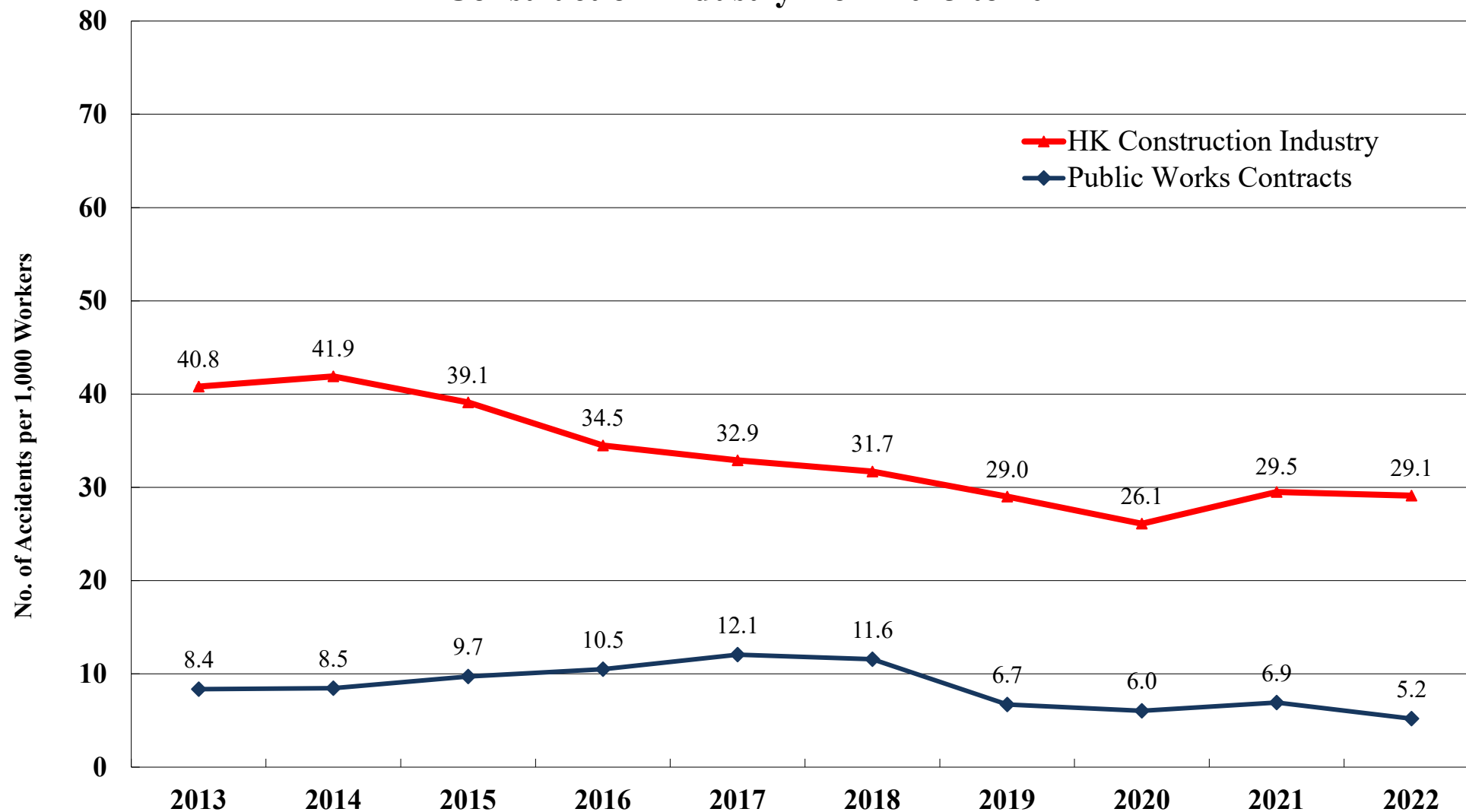
³ The “man-hours worked” means the man-hours worked by all persons employed on the works whether in the employ of main contractor and his sub-contractors who are exposed to the risks on the sites, including supervisory staff, site agent and engineer(s), workers, watchman etc.

⁴ The accident rates for columns marked with (a) are given in term of no. of accidents per 100,000 man-hours worked.

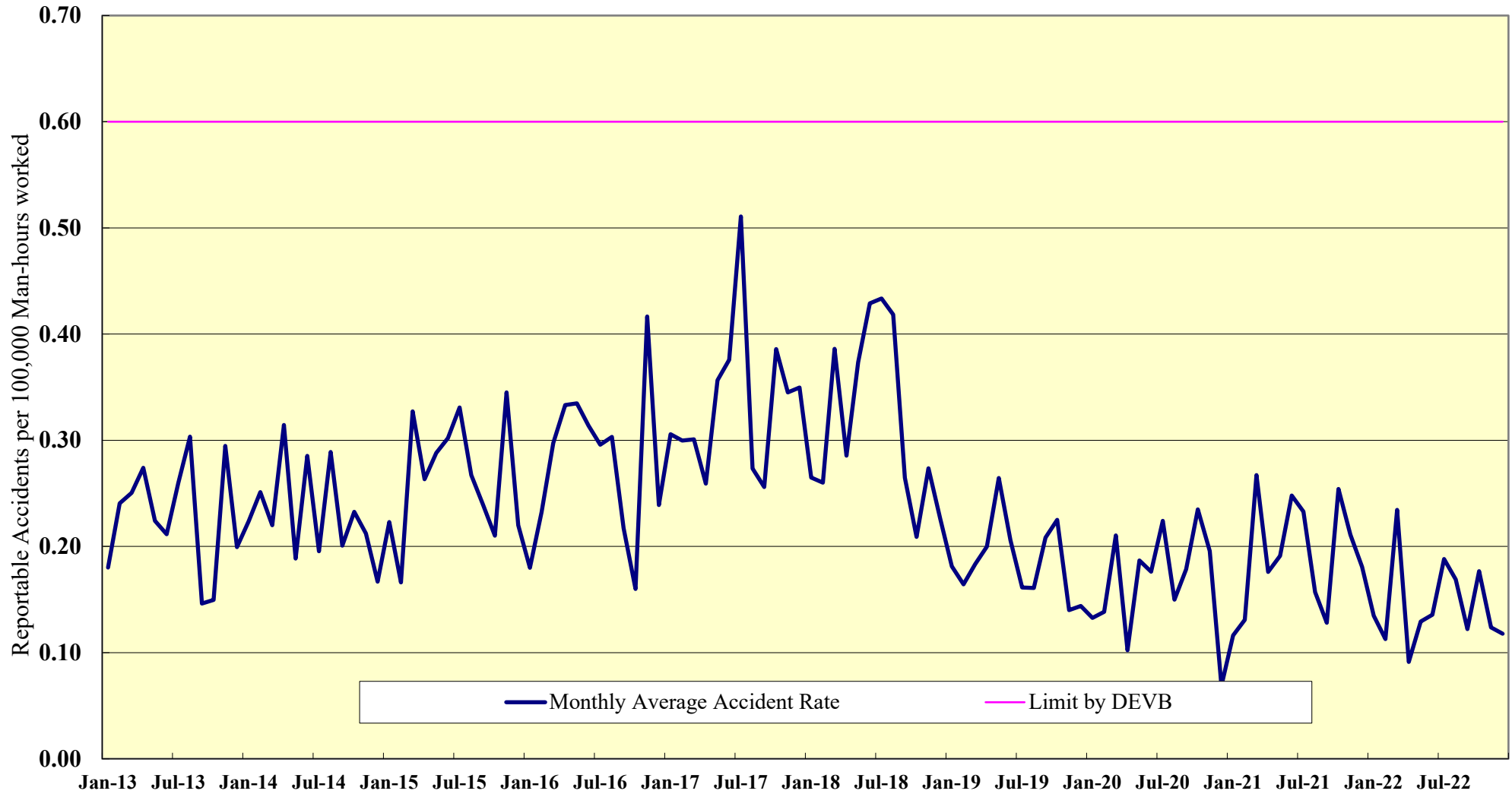
⁵ The accident rates for columns marked with (b) are given in term of no. of accidents per 1,000 workers per year based on a conversion of 1.67 accidents per 100,000 man-hours worked equivalent to 60 accidents per 1,000 workers per year.

⁶ The accident rates for columns marked with (c) are given in term of no. of accidents per 1,000 workers per year based on the statistics of the Labour Department.

Chart of Yearly Accident Rates for Public Works Contracts and the Construction Industry from 2013 to 2022



**Chart of Monthly Average Accident Rates
for Public Works Contracts from January 2013 to December 2022**



Period	1/02 - 12/02	1/03 - 3/04	4/04 - 3/05	4/05 - 1/11	since 2/11
Limit by DEVB	1.4	1.25	1.0	0.75	0.6

Number of Accidents for Public Works Contracts with Breakdown by Works Departments from 2013 to 2022**(A) No. of Fatalities**

Department	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ArchSD	0	1	0	2	1	0	0	1	0	1
CEDD	0	0	0	0	0	1	0	2	2	0
DSD	2	0	1	0	1	0	0	0	1	0
EMSD	0	0	0	0	0	0	0	0	0	0
HyD	1	4	3	2	2	0	0	1	0	0
WSD	2	0	0	0	2	0	0	0	0	0
Total	5	5	4	4	6	1	0	4	3	1

(B) No. of Non-fatal accidents

Department	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ArchSD	68	80	98	71	103	155	82	61	98	89
CEDD	26	30	32	47	64	74	41	38	52	34
DSD	28	20	20	11	16	9	8	14	12	15
EMSD	15	4	8	9	10	3	5	8	12	12
HyD	68	94	107	152	198	123	41	38	27	19
WSD	33	20	22	24	20	16	12	6	5	11
Total	238	248	287	314	411	380	189	165	206	180

Accident Rates for Public Works Contracts
with Breakdown by Works Departments from 2013 to 2022

Department		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ArchSD	a ¹	0.27	0.31	0.34	0.27	0.31	0.42	0.27	0.21	0.31	0.22
	b ²	9.6	11.0	12.3	9.7	11.1	15.3	9.6	7.6	11.3	8.1
CEDD	a ¹	0.19	0.19	0.20	0.16	0.27	0.30	0.18	0.16	0.20	0.11
	b ²	6.9	6.9	7.0	5.8	9.7	10.9	6.3	5.9	7.0	3.9
DSD	a ¹	0.17	0.14	0.20	0.13	0.23	0.13	0.11	0.17	0.13	0.12
	b ²	6.2	5.0	7.3	4.8	8.4	4.8	4.0	6.1	4.6	4.3
EMSD	a ¹	0.23	0.06	0.10	0.13	0.16	0.04	0.06	0.10	0.12	0.11
	b ²	8.3	2.0	3.6	4.6	5.7	1.5	2.3	3.4	4.3	4.0
HyD	a ¹	0.25	0.33	0.35	0.44	0.46	0.36	0.17	0.19	0.14	0.10
	b ²	9.1	11.9	12.6	15.7	16.5	12.8	6.2	6.8	4.9	3.5
WSD	a ¹	0.24	0.14	0.18	0.22	0.22	0.18	0.14	0.06	0.05	0.11
	b ²	8.5	5.0	6.6	7.8	8.0	6.5	5.0	2.3	1.9	3.9
All Dept.	a ¹	0.23	0.24	0.27	0.28	0.34	0.32	0.19	0.17	0.19	0.14
	b ²	8.4	8.5	9.8	10.0	12.1	11.6	6.7	6.0	6.9	5.2
HA ^{3,4}	b ^{3,4}	7.3/4.1	6.4/2.2	9.2/1.5	6.8/1.5	6.9/4.2	7.4/5.7	5.2/5.3	4.5/0.3	5.2/0.7	5.3/0
Construction Industry ³	b ³	40.8	41.9	39.1	34.5	32.9	31.7	29.0	26.1	29.5	29.1

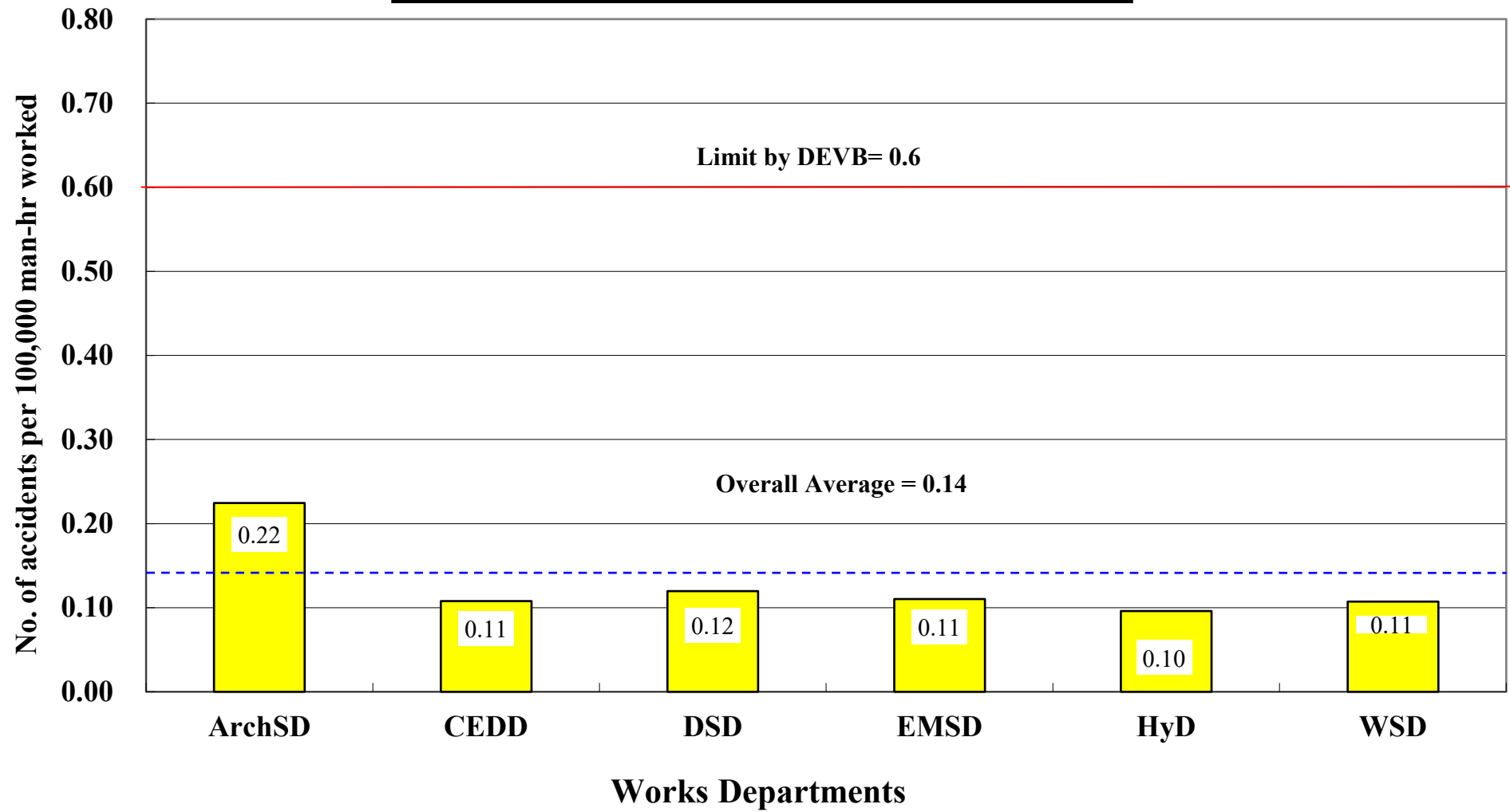
¹ The accident rates for columns marked with (a) are given in term of no. of accidents per 100,000 man-hours worked.

² The accident rates for columns marked with (b) are given in term of no. of accidents per 1,000 workers per year based on a conversion of 1.67 accidents per 100,000 man-hours worked equivalent to 60 accidents per 1,000 workers per year.

³ The accident rates for Housing Authority (HA) and the construction industry are given in terms of no. of accidents per 1,000 workers per year.

⁴ Housing Authority has two accident rates figures (New Works / Maintenance Works).

Accident Rates for Public Works Contracts in 2022



Appendix F**Severity for Public Works Contracts with Breakdown by Works Department from 2018 to 2022****No. of Man-Day Lost per 100,000 Man-Hours Worked**

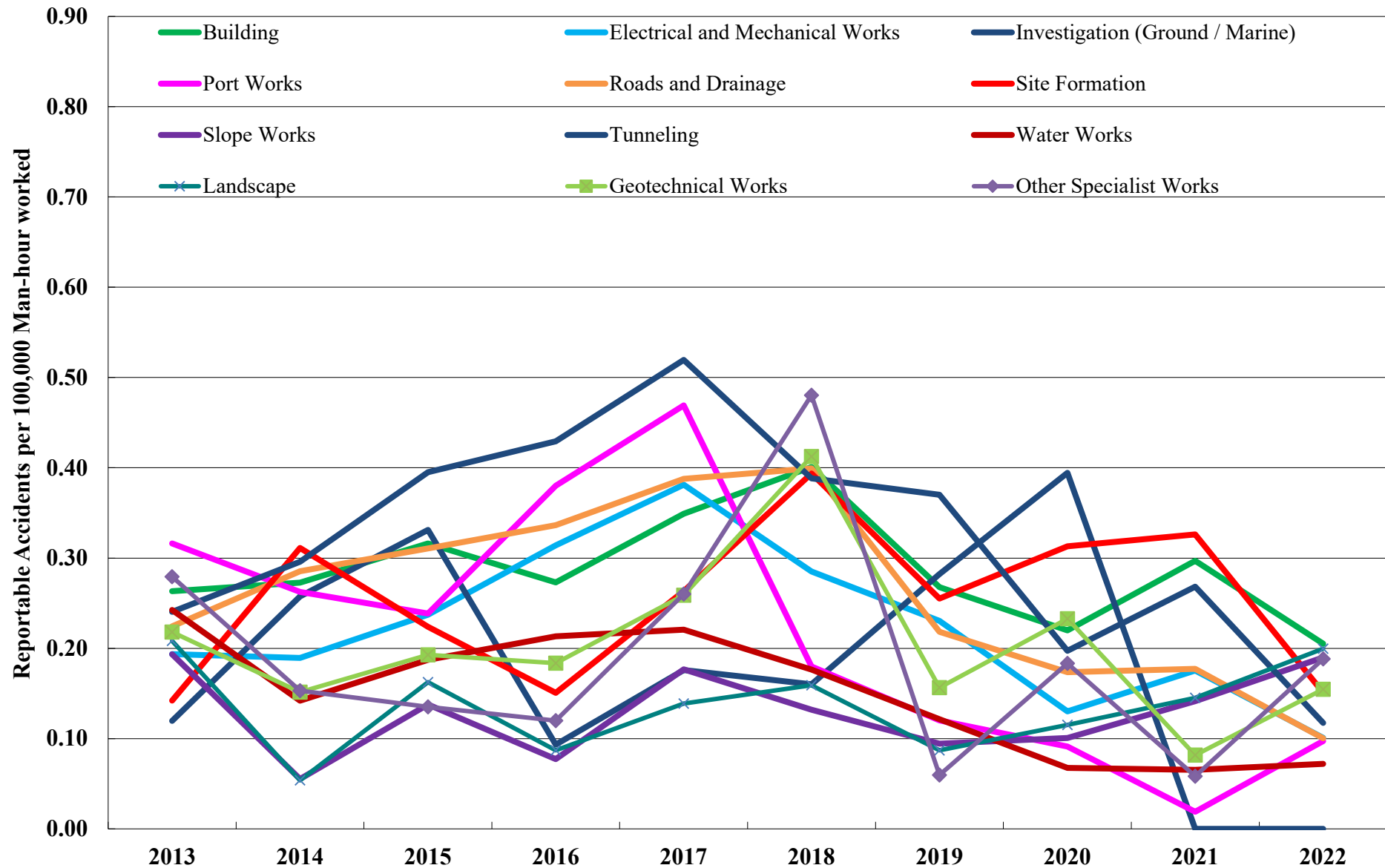
Department	2018	2019	2020	2021	2022
ArchSD	81.8	72.7	53.3	59.6	54.8
CEDD	100.9	97.6	60.3	52.8	42.9
DSD	55.6	36.1	34.5	24.9	35.4
EMSD	11.9	11.7	11.1	18.5	14.9
HyD	92.1	51.8	38.6	45.0	36.5
WSD	58.2	40.4	24.4	14.2	20.0
All Departments	81.4	63.5	44.2	44.2	40.7

Accident Rates for Public Works Contracts from 2013 to 2022
Analyzed by Types of Contracts

Types of Contracts	Accident Rates (in no. of accidents per 1,000 workers per year)										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Change ¹
Building	9.5	9.8	11.4	9.8	12.5	14.4	9.6	7.9	10.7	7.4	-30.8%
Landscape	7.5	1.9	5.8	3.1	5.0	5.7	3.1	4.1	5.2	7.2	38.5%
Slope Works	7.0	2.0	4.9	2.8	6.3	4.7	3.4	3.6	5.1	6.8	33.3%
Other Specialist Works	10.0	5.5	4.9	4.3	9.3	17.3	2.1	6.6	2.1	6.8	223.8%
Geotechnical Works	7.8	5.4	6.9	6.6	9.3	14.8	5.6	8.4	2.9	5.6	93.1%
Site Formation	5.1	11.2	8.0	5.4	9.5	14.1	9.2	11.2	11.7	5.4	-53.8%
Tunneling	8.6	10.6	14.2	15.4	18.7	13.9	13.3	7.1	9.6	4.2	-56.3%
Electrical and Mechanical Works	7.0	6.8	8.5	11.3	13.7	10.2	8.3	4.7	6.3	3.6	-42.9%
Roads and Drainage	8.1	10.3	11.2	12.1	13.9	14.3	7.8	6.2	6.4	3.6	-43.8%
Port Works	11.4	9.4	8.6	13.7	16.9	6.5	4.3	3.3	0.7	3.5	400.0%
Water Works	8.7	5.1	6.7	7.7	7.9	6.3	4.4	2.4	2.3	2.6	13.0%
Investigation (Ground / Marine)	4.3	9.3	11.9	3.4	6.3	5.8	10.1	14.2	0.0	0.0	0.0%
All Contracts	8.4	8.5	9.7	10.5	12.1	11.6	6.7	6.0	6.9	4.9	-29.0%

¹ The “Change” is the percentage difference in accident rates between 2021 and 2022.

Accident Rates for Public Works Contracts Analyzed by Types of Contracts from 2013 to 2022



No. of Accidents for Public Works Contracts from 2018 to 2022
Analyzed by Types of Accidents

Types of Accidents	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Slip, Trip or Fall On Same Level	85	22.3%	35	18.5%	39	23.1%	37	17.7%	49	27.1%	12
Struck By Moving or Falling Object	36	9.4%	18	9.5%	26	15.4%	22	10.5%	28	15.5%	6
Injured Whilst Lifting or Carrying/ Manual Lifting/ Manual Handling/ Handling Without Machinery	56	14.7%	29	15.3%	23	13.6%	36	17.2%	23	12.7%	-13
Fall of Person From Height metres	23	6.0%	19	10.1%	13	7.7%	27	12.9%	19	10.5%	-8
Trapped In or Between Objects	21	5.5%	11	5.8%	10	5.9%	13	6.2%	12	6.6%	-1
Striking Against Fixed or Stationary Object	22	5.8%	9	4.8%	9	5.3%	25	12.0%	11	6.1%	-14
Hand Tool Accident	22	5.8%	21	11.1%	7	4.1%	9	4.3%	11	6.1%	2
Striking Against Moving Object	7	1.8%	5	2.6%	10	5.9%	5	2.4%	5	2.8%	0
Contact With Moving Machinery or Object Being Machined	9	2.4%	8	4.2%	3	1.8%	2	1.0%	5	2.8%	3
Exposure To Fire/ Burning	1	0.3%	-	-	1	0.6%	-	-	1	0.6%	1
Machinery Operation Accident	4	1.0%	1	0.5%	2	1.2%	3	1.4%	1	0.6%	-2
Exposure To or Contact With Harmful Substance (e.g. poison gas, toxic or corrosive substance)	2	0.5%	-	-	-	-	1	0.5%	-	-	-1
Contact With Electricity or Electric Discharge	1	0.3%	-	-	-	-	-	-	-	-	-
Trapped By Collapsing or Overturning Object	4	1.0%	1	0.5%	-	-	4	1.9%	-	-	-4
Struck By Moving Vehicle/ Traffic Accident	2	0.5%	1	0.5%	2	1.2%	1	0.5%	-	-	-1
Drowning or Asphyxiation	-	-	-	-	-	-	-	-	-	-	0
Exposure To Explosion	-	-	-	-	-	-	-	-	-	-	0
Dust/ Foreign Particle In Eye	4	1.0%	-	-	3	1.8%	2	1.0%	-	-	-2
Crushing/ Burial	1	0.3%	-	-	2	1.2%	1	0.5%	-	-	-1
Stepping On Object/ Nail	6	1.6%	1	0.5%	1	0.6%	2	1.0%	-	-	-2
Sub-total	306	80.3%	159	84.1%	151	89.3%	190	90.9%	165	91.2%	-25
Other Types	75	19.7%	30	15.9%	18	10.7%	19	9.1%	16	8.8%	-3
Total number of accidents	381	-	189	-	169	-	209	-	181	-	-28

¹ “Change” means the difference in no. of accidents between 2021 and 2022

No. of Accidents for Public Works Contracts from 2018 to 2022
Analyzed by Trades of Workers

Trades of Workers	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Labourer	194	50.9%	85	45.0%	81	47.9%	98	46.9%	78	43.1%	-20
Building Services/ E&M Worker	7	1.8%	5	2.6%	3	1.8%	10	4.8%	12	6.6%	2
Bar Bender and Fixer	6	1.6%	2	1.1%	6	3.6%	12	5.7%	10	5.5%	-2
Carpenter (formworker)	23	6.0%	13	6.9%	14	8.3%	13	6.2%	8	4.4%	-5
General Welder	9	2.4%	3	1.6%	2	1.2%	6	2.9%	8	4.4%	2
Manager/ Site Engineer/ General Foreman	4	1.0%	7	3.7%	6	3.6%	3	1.4%	6	3.3%	3
Rigger/ Metal Formwork Erector	15	3.9%	5	2.6%	14	8.3%	5	2.4%	6	3.3%	1
Ganger	3	0.8%	2	1.1%	0	-	3	1.4%	5	2.8%	2
Metal Scaffolder	11	2.9%	3	1.6%	5	3.0%	5	2.4%	3	1.7%	-2
Plumber	10	2.6%	-	-	0	-	2	1.0%	3	1.7%	1
Construction/ Mechanical Plant Mechanic or Fitter	3	0.8%	3	1.6%	2	1.2%	4	1.9%	2	1.1%	-2
Painter and Decorator	2	0.5%	4	2.1%	1	0.6%	-	-	2	1.1%	2
Plant & Equipment Operator (earthmoving machinery)	1	0.3%	2	1.1%	2	1.2%	1	0.5%	2	1.1%	1
Metal Worker	2	0.5%	2	1.1%	1	0.6%	9	4.3%	2	1.1%	-7
Bamboo Scaffolder	3	0.8%	-	-	-	-	-	-	2	1.1%	2
Plant & equipment Operator (Piling)	-	-	1	0.5%	-	-	-	-	2	1.1%	2
Excavator	2	0.5%	-	-	-	-	2	1.0%	1	0.6%	-1
Concretor	1	0.3%	4	2.1%	1	0.6%	3	1.4%	1	0.6%	-2
Drainlayer/ Mainlayer	-	-	1	0.5%	1	0.6%	0	-	1	0.6%	1
Joiner	-	-	1	0.5%	1	0.6%	3	1.4%	1	0.6%	-2
Leveller	-	-	1	0.5%	2	1.2%	-	-	1	0.6%	1
Plant & equipment Operator (hoist and crane)	3	0.8%	4	2.1%	-	-	1	0.5%	1	0.6%	0
Plasterer	4	1.0%	2	1.1%	-	-	2	1.0%	1	0.6%	-1
Truck and Other Vehicle Driver	1	0.3%	1	0.5%	4	2.4%	4	1.9%	1	0.6%	-3
Chainman	-	-	-	-	0	-	-	-	-	-	-
Drilling Assistant	-	-	1	0.5%	2	1.2%	-	-	-	-	-

Trades of Workers	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Bricklayer	-	-	-	-	-	-	-	-	-	-	-
Carpenter (fender)	-	-	-	-	1	0.6%	-	-	-	-	-
Demolition worker	-	-	-	-	1	0.6%	-	-	-	-	-
Plant & Equipment Operator (builders lift & other machinery)	-	-	-	-	-	-	-	-	-	-	-
Pneumatic Driller	-	-	-	-	-	-	-	-	-	-	-
Structural Steel Erector	-	-	-	-	1	0.6%	-	-	-	-	-
Concreting Labourer	2	0.5%	-	-	-	-	-	-	-	-	-
Tunnel Worker	1	0.3%	1	0.5%	-	-	1	0.5%	-	-	-1
Piling Operative	3	0.8%	1	0.5%	-	-	-	-	-	-	-
Mason	-	-	1	0.5%	-	-	-	-	-	-	-
Sub-total	310	81.4%	155	82.0%	151	89.3%	187	89.5%	159	87.8%	-28
Other Types	71	18.6%	34	18.0%	18	10.7%	22	10.5%	22	12.2%	-
Total number of accidents	381	---	189	---	169	---	209	---	181	---	-28

¹ “Change” means the difference in no. of accidents between 2021 and 2022.

No. of Accidents for Public Works Contracts from 2018 to 2022
Analyzed by Natures of Injury

Natures of Injury	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Fracture	109	24.8%	60	27.0%	44	21.6%	71	28.4%	67	32.4%	-4
Contusion & Bruise	96	21.9%	48	21.6%	60	29.4%	58	23.2%	62	30.0%	4
Laceration and Cut	52	11.8%	35	15.8%	23	11.3%	30	12.0%	23	11.1%	-7
Sprain/ Strain/ Twist	76	17.3%	39	17.6%	27	13.2%	34	13.6%	21	10.1%	-13
Abrasion	12	2.7%	9	4.1%	11	5.4%	4	1.6%	7	3.4%	3
Crushing	12	2.7%	6	2.7%	8	3.9%	10	4.0%	6	2.9%	-4
Burn (heat)	1	0.2%	3	1.4%	5	2.5%	5	2.0%	2	1.0%	-3
Burn/ Scald	4	0.9%	-	-	-	-	-	-	2	1.0%	2
Concussion & Other Internal Injury	4	0.9%	3	1.4%	2	1.0%	2	0.8%	2	1.0%	-
Puncture	3	0.7%	2	0.9%	1	0.5%	2	0.8%	1	0.5%	-1
Irritation	2	0.5%	-	-	1	0.5%	1	0.4%	1	0.5%	-
Amputation	2	0.5%	1	0.5%	2	1.0%	2	0.8%	-	-	-2
Asphyxia	-	-	-	-	-	-	-	-	-	-	-
Dislocation	5	1.1%	-	-	4	2.0%	5	2.0%	-	-	-5
Electric Shock/ Effects of Electric Current	-	-	-	-	-	-	-	-	-	-	-
Multiple Injuries	8	1.8%	-	-	2	1.0%	2	0.8%	-	-	-2
Sub-total	386	87.9%	206	92.8%	190	93.1%	226	90.4%	194	93.7%	-32
Other Types	53	12.1%	16	7.2%	14	6.9%	24	9.6%	13	6.3%	-11
Total number of accidents²	439 (381)	-----	222 (189)	-----	204 (169)	-----	250 (209)		207 (181)	-----	-43 (-28)

1 “Change” means the difference in no. of accidents between 2021 and 2022

2 The figures were the total sum of items “Nature of Injury Incurred 1”, “Nature of Injury Incurred 2” and “Nature of Injury Incurred 3” in the Injury Report Form. “()” is the total number of accidents of that year.

No. of Accidents for Public Works Contracts from 2018 to 2022
Analyzed by Parts of Body Injured in Accidents

Parts of Body Injured	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Finger	84	19.1%	45	20.3%	34	16.7%	51	20.4%	36	17.4%	-15
Back	54	12.3%	24	10.8%	26	12.7%	30	12.0%	26	12.6%	-4
Leg	20	4.6%	12	5.4%	12	5.9%	14	5.6%	20	9.7%	6
Ankle	27	6.2%	17	7.7%	15	7.4%	7	2.8%	12	5.8%	5
Foot/ Toe	21	4.8%	18	8.1%	6	2.9%	21	8.4%	10	4.8%	-11
Skull/Scalp	17	3.9%	5	2.3%	8	3.9%	10	4.0%	9	4.3%	-1
Neck	11	2.5%	6	2.7%	1	0.5%	8	3.2%	8	3.9%	-
Hand/ Palm	19	4.3%	11	5.0%	8	3.9%	9	3.6%	8	3.9%	-1
Knee	14	3.2%	7	3.2%	11	5.4%	7	2.8%	8	3.9%	1
Chest	20	4.6%	10	4.5%	5	2.5%	10	4.0%	7	3.4%	-3
Forearm	17	3.9%	8	3.6%	5	2.5%	5	2.0%	7	3.4%	2
Shoulder	14	3.2%	10	4.5%	5	2.5%	10	4.0%	6	2.9%	-4
Waist	5	1.1%	2	0.9%	5	2.5%	3	1.2%	6	2.9%	3
Hip	8	1.8%	5	2.3%	5	2.5%	6	2.4%	5	2.4%	-1
Thigh	5	1.1%	4	1.8%	4	2.0%	4	1.6%	5	2.4%	1
Pelvis/ Groin	1	0.2%	-	-	2	1.0%	2	0.8%	4	1.9%	2
Wrist	16	3.6%	5	2.3%	16	7.8%	7	2.8%	4	1.9%	-3
Eye	10	2.3%	1	0.5%	6	2.9%	6	2.4%	3	1.4%	-3
Elbow	11	2.5%	1	0.5%	5	2.5%	6	2.4%	3	1.4%	-3
Ear	-	-	1	0.5%	-	-	1	0.4%	2	1.0%	1
Face/ Cheek/ Chin	6	1.4%	10	4.5%	5	2.5%	8	3.2%	2	1.0%	-6
Abdomen	-	-	-	-	1	0.5%	1	0.4%	2	1.0%	1
Trunk	2	0.5%	-	-	1	0.5%	-	-	2	1.0%	2
Mouth/ Tooth/ Lip	3	0.7%	-	-	4	2.0%	3	1.2%	1	0.5%	-2
Nose	-	-	-	-	3	1.5%	3	1.2%	1	0.5%	-2
Upper Arm	1	0.2%	6	2.7%	3	1.5%	-	-	1	0.5%	1
Sub-total	386	87.9%	208	93.7%	196	96.1%	232	92.8%	198	95.7%	-34
Other Types	53	12.1%	14	6.3%	8	3.9%	18	7.2%	9	4.3%	-9
Total number of accidents²	439 (381)	-----	222 (189)	-----	204 (169)	-----	250 (209)	-----	207 (181)	-----	-43 (-28)

¹ “Change” means the difference in no. of accidents between 2021 and 2022.

² The figures were the total sum of items “Body parts injured 1”, “Body parts injured 2” and “Body parts injured 3” in the Injury Report Form. “()” is the total number of accidents of that year.

No. of Accidents for Public Works Contracts from 2018 to 2022
Analyzed by Agents Involved in Accidents

Agents Involved	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Floor, Ground, Stairs or Any Working Surface	73	18.5%	39	20.3%	34	18.6%	33	15.0%	40	22.1%	7
Material/ Product Being Handled or Stored (e.g. Plank, timber, rope etc.)	81	20.5%	25	13.0%	28	15.3%	49	22.3%	27	14.9%	-24
Portable Power or Hand Tools	36	9.1%	27	14.1%	19	10.4%	16	7.3%	14	7.7%	-3
Other Machinery (specify)	6	1.5%	5	2.6%	6	3.3%	9	4.1%	12	6.6%	2
Ladder or Working At Height	16	4.1%	4	2.1%	11	6.0%	13	5.9%	5	2.8%	-8
Equipment For Lifting/ Conveying	17	4.3%	6	3.1%	8	4.4%	4	1.8%	4	2.2%	-
Steel Bar/ Rod	3	0.8%	1	0.5%	3	1.6%	6	2.7%	4	2.2%	-2
Electricity Supply, Wiring Apparatus or Equipment	-	-	1	0.5%	3	1.6%	1	0.5%	3	1.7%	2
Nail, Splinter or Chipping	-	-	-	-	-	-	-	-	1	0.6%	1
Scaffolding/ Gondola	4	1.0%	-	-	-	-	4	1.8%	1	0.6%	-3
Movable Container or Package of Any Kind	1	0.3%	-	-	3	1.6%	-	-	1	0.6%	1
Sewerage, Manhole or Other Confined Space	-	-	1	0.5%	2	1.1%	5	2.3%	1	0.6%	-4
Gas, Vapour, Dust or Fume	-	-	-	-	1	0.5%	-	-	-	-	-
Vehicle or Associated Equipment or Machinery	8	2.0%	6	3.1%	4	2.2%	4	1.8%	-	-	-4
Construction Formwork, Shuttering & Falsework	-	-	2	1.0%	1	0.5%	3	1.4%	-	-	-3
Excavation/ Underground Work	4	1.0%	2	1.0%	1	0.5%	4	1.8%	-	-	-4
Slope	4	1.0%	3	1.6%	-	-	-	-	-	-	-
Pipe	7	1.8%	3	1.6%	-	-	2	0.9%	-	-	-2
Sub-total	260	65.8%	125	65.1%	124	67.8%	153	69.5%	113	62.4%	-40
Other Types	135	34.2%	67	34.9%	59	32.2%	67	30.5%	68	37.6%	1
Total number of accidents ²	395 (381)	-----	192 (189)	-----	183 (169)	-----	220 (209)	-----	181 (181)	-----	-39 (-28)

¹ “Change” means the difference in no. of accidents between 2021 and 2022

² There were more records because multiple selection of “Agents Involved” was allowed. “()” is the total number of accidents of that year.

No. of Accidents for Public Works Contracts from 2018 to 2022
Analyzed by Unsafe Actions Involved in Accidents

Unsafe Actions	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Lapse Of Attention	113	27.8%	65	31.6%	50	25.8%	60	25.3%	61	31.4%	1
Adopting Unsafe Position or Posture	59	14.5%	31	15.0%	32	16.5%	35	14.8%	29	14.9%	-6
Failure To Secure Objects	26	6.4%	15	7.3%	15	7.7%	10	4.2%	12	6.2%	2
Use Unsafe Equipment/ Use Equipment Unsafely	28	6.9%	9	4.4%	14	7.2%	10	4.2%	10	5.2%	-
Use Unsuitable Access/ Failure To Use Access	16	3.9%	7	3.4%	6	3.1%	12	5.1%	8	4.1%	-4
Unsafe Loading, Placing, Mixing etc.	8	2.0%	3	1.5%	4	2.1%	9	3.8%	4	2.1%	-5
Failure To Warn Others or Give Proper Signals	1	0.2%	2	1.0%	3	1.5%	2	0.8%	3	1.5%	1
Failure To Use Safety Belt/ Harness	4	1.0%	1	0.5%	2	1.0%	3	1.3%	3	1.5%	-
Operating Without Authority	3	0.7%	2	1.0%	2	1.0%	4	1.7%	2	1.0%	-2
Failure To Use Gloves	4	1.0%	3	1.5%	5	2.6%	4	1.7%	2	1.0%	-2
Failure To Use Proper Footwear	-	-	3	1.5%	2	1.0%	3	1.3%	2	1.0%	-1
Making Safety Devices Inoperative	2	0.5%	-	-	-	-	-	-	1	0.5%	1
Working On Moving or Dangerous Equipment	-	-	-	-	1	0.5%	2	0.8%	1	0.5%	-1
Operating or Working At Unsafe Speed	2	0.5%	-	-	-	-	-	-	-	-	-
Failure To Use Eye Protector	3	0.7%	-	-	1	0.5%	3	1.3%	-	-	-3
Failure To Use Helmet	-	-	-	-	1	0.5%	4	1.7%	-	-	-4
Failure To use Proper Clothing	1	0.2%	-	-	1	0.5%	1	0.4%	-	-	-1
Sub-total	270	66.5%	141	68.4%	139	71.6%	162	68.4%	138	71.1%	-24
Other Types	136	33.5%	65	31.6%	55	28.4%	75	31.6%	56	28.9%	-19
Total sum of “Unsafe Actions” ²	406 (381)	-----	206 (189)	-----	194 (169)	-----	237 (209)	-----	194 (181)	-----	-43 (-28)

¹ “Change” means the difference in no. of accidents between 2021 and 2022

² There were more records because multiple selection of “Unsafe Actions” was allowed. “()” is the total number of accidents of that year.

Appendix N

No. of Accidents for Public Works Contracts from 2018 to 2022 Analyzed by Unsafe Conditions Involved in Accidents

Unsafe Conditions	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Improper Procedure	26	6.4%	16	7.9%	18	9.4%	27	12.0%	25	12.6%	-2
Unsafe Process or Job Methods	50	12.3%	26	12.9%	16	8.4%	29	12.9%	21	10.6%	-8
Poor Housekeeping	21	5.2%	9	4.5%	11	5.8%	8	3.6%	14	7.0%	6
Slippery Area	29	7.1%	9	4.5%	12	6.3%	13	5.8%	13	6.5%	-
Inadequate Working Space/ Platform	23	5.7%	6	3.0%	11	5.8%	9	4.0%	11	5.5%	2
Lack Of Warning System	4	1.0%	6	3.0%	3	1.6%	4	1.8%	8	4.0%	4
Improper Stacking/ Storage	19	4.7%	8	4.0%	17	8.9%	11	4.9%	8	4.0%	-3
Improper Guarding/ No Guarding	2	0.5%	2	1.0%	3	1.6%	3	1.3%	6	3.0%	3
Defective Tool, Machinery or Material	9	2.2%	6	3.0%	2	1.0%	4	1.8%	6	3.0%	2
Inadequate Tools and Protective Equipment	12	2.9%	4	2.0%	2	1.0%	2	0.9%	6	3.0%	4
Adverse Weather	3	0.7%	1	0.5%	2	1.0%	0	-	2	1.0%	2
No Protective Gear	6	1.5%	0	-	7	3.7%	2	0.9%	1	0.5%	-1
Improper Illumination	1	0.2%	0	-	0	-	1	0.4%	1	0.5%	-
Unsafe Layout Of Job, Traffic etc.	2	0.5%	0	-	2	1.0%	1	0.4%	1	0.5%	-
Improper Dress/ Footwear	4	1.0%	2	1.0%	1	0.5%	2	0.9%	0	-	-2
Defective Protective Gear	0	-	1	0.5%	1	0.5%	1	0.4%	0	-	-1
Sub-total	211	51.8%	96	47.5%	108	56.5%	117	52.0%	123	61.8%	6
Other Types	196	48.2%	106	52.5%	83	43.5%	108	48.0%	76	38.2%	-32
Total number of accidents ²	407 (381)	-----	202 (189)	-----	191 (169)	-----	225 (209)	-----	199 (181)	-----	-26 (-28)

1 “Change” means the difference in no. of accidents between 2021 and 2022.

2 There were more records because multiple selection of “Unsafe Conditions Involved” was allowed. “()” is the total number of accidents of that year.

Appendix O

No. of Accidents for Public Works Contracts from 2018 to 2022 Analyzed by Personal Factors Involved in Accidents

Personal Factors Involved	2018		2019		2020		2021		2022		
	No.	%	No.	%	No.	%	No.	%	No.	%	Change ¹
Carelessness/ Not Concentrate	228	56.3%	119	56.1%	96	50.3%	119	50.2%	119	61.0%	-
Incorrent Attitude/ Motive	37	9.1%	24	11.3%	23	12.0%	24	10.1%	21	10.8%	-3
Lack Of Knowledge or Skill	36	8.9%	22	10.4%	16	8.4%	23	9.7%	18	9.2%	-5
Unsafe Act By Another Person	12	3.0%	3	1.4%	17	8.9%	12	5.1%	6	3.1%	-6
Fatigue/ Exhaustion	1	0.2%	2	0.9%	1	0.5%	2	0.8%	2	1.0%	-
Physical Defects	6	1.5%	3	1.4%	2	1.0%	1	0.4%	1	0.5%	-
Sub-total	320	79.0%	173	81.6%	155	81.2%	181	76.4%	167	85.6%	-14
Other Types	85	21.0%	39	18.4%	36	18.8%	56	23.6%	28	14.4%	-28
Total number of accidents ²	405 (381)	-----	212 (189)	-----	191 (169)	-----	237 (209)	-----	195 (181)	-----	-42 (-28)

1 “Change” means the difference in no. of accidents between 2021 and 2022.

2 There are more records than the number of accidents because multiple selection of “Person Factors Involved” was allowed. “()” is the total number of accidents of that year.