

**Annual Report on
Accident Statistics and Analyses for Public Works Contracts 2018**

This report provides a summary of the accident statistics and analysis of the accidents occurred in public works construction sites during 2018.

Accident Statistics (Appendices A to F)

2. Some key accident statistical data and their trends are summarized below:

	Key Statistical Data	Remarks
(a)	Accident rate for 2018 (fatal + non-fatal)	The accident rates for 2017 and 2018 were 0.224 and 0.247 accidents per 100,000 man-hours worked (or equivalent to 8.1 and 8.9 accidents per 1,000 workers per year) respectively. An increase of about 10% was observed.
(b)	No. of reportable accidents (fatal + non-fatal)	The total numbers of reportable accidents for 2017 and 2018 were 278 and 291 respectively. An increase of about 5% was observed. The numbers of man-hours worked for 2017 and 2018 were 124,058,977 and 117,958,151 respectively. A decrease of about 5% was observed.
(c)	Fatal accidents	One fatal accident occurred in public works sites in 2018 whilst a total of 14 fatal accidents happened under the whole industry.

3. A brief account of the fatal accident happened under public works contracts is given below:

Date of Accident	Accident Nature	Brief Description of Accident
6/12/2018	Struck By Moving Vehicle	A worker who was engaged in asphalt laying preparation work inside a tunnel under construction was knocked over to death by an unmanned lorry which rolled backwards. The incident happened under CEDD capital works Contract No. CV/2012/08 – Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 2.

4. The 2018 accident rates for works departments are summarized below:

Departments	No. of Fatal Accident(s)	Accident Rates (Fatal + Non-fatal)	
		No. of accidents per 100,000 man-hours worked	No. of accidents per 1,000 workers per year
ArchSD	0	0.38	13.5
CEDD	1	0.22	8.1
DSD	0	0.12	4.3
EMSD	0	0.04	1.6
HyD	0	0.21	7.6
WSD	0	0.17	6.2
Overall	1	0.25	8.9

Note: The limit set by DEVB with effect from 1 February 2011 is 0.60 accidents per 100,000 man-hours worked (or equivalent to 22 accidents per 1,000 workers per year).

5. The severity rates (in terms of no. of man-days lost per 100,000 man-hours worked) for 2017 and 2018 were 45.9 and 71.1 respectively. An increase of 55% was observed.

Accident Analyses

6. The accident analyses for the following aspects are given in **Appendices G to O** of this Report respectively. Some key findings are summarized below.

(a) **Types of Contracts (Appendix G)**

The four types of contracts having the highest accident rates are listed below:

Types of Contracts	Accident rate (no. of accident per 1,000 workers per year)			
	2016	2017	2018	Changes between 2017 & 2018
Other Specialist Works	4.3	7.9	12.0	4.1 (51%)
Building	9.3	9.4	11.9	2.5 (27%)

Types of Contracts	Accident rate (no. of accident per 1,000 workers per year)			
	2016	2017	2018	Changes between 2017 & 2018
Site Formation	4.3	6.3	11.0	4.7 (75%)
Roads and Drainage	8.3	8.5	10.7	2.2 (26%)

Since the accident rates under Other Specialist Works, Building, Site Formation and Roads and Drainage contracts in 2018 are increased, the corresponding contract administrators and site supervisory staff are reminded to pay particular attention to the safety performance on sites.

(b) Types of Accidents (Appendix H)

The five most common types of accidents are listed below:

Types of Accidents	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Slip, Trip or Fall On Same Level	46 (19.5%)	55 (19.8%)	72 (24.7%)	17 (31%)
Injured Whilst Manual Lifting or Carrying/ Manual Lifting/ Manual Handling/ Handling Without Machinery	33 (14.0%)	41 (14.7%)	43 (14.8%)	2 (5%)
Struck By Moving or Falling Object	24 (10.2%)	19 (6.8%)	30 (10.3%)	11 (58%)
Fall of Person From Height	28 (11.9%)	28 (10.1%)	23 (7.9%)	-5 (-18%)
Hand Tool Accident	15 (6.4%)	16 (5.8%)	23 (7.9%)	7 (44%)

The aggregate of these five categories has been accounted for 65.6% of the total number of accidents in 2018. Works Departments are to devise effective means to further reduce the number of accident in these categories.

(c) Trades of Workers (Appendix I)

The three most common trades involved in the accidents are listed below:

Trades of Workers	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Labourer	119 (50.4%)	148 (53.2%)	157 (54.0%)	9 (6%)
Carpenter (formworker)	14 (5.9%)	17 (6.1%)	22 (7.6%)	5 (29%)
Rigger/ Metal Formwork Erector	8 (3.4%)	11 (4.0%)	10 (3.4%)	-1 (-9%)

More morning briefings or toolbox talks for workers are recommended in order to enhance their safety awareness.

(d) Natures of Injury (Appendix J)

The three most common natures of injury are listed below:

Natures of Injury	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Fracture	77 (26.9%)	94 (28.4%)	98 (28.6%)	4 (4%)
Contusion & Bruise	63 (22.0%)	62 (18.7%)	83 (24.2%)	21 (34%)
Sprain/ Strain/ Twist	39 (13.6%)	35 (10.6%)	54 (15.7%)	19 (54%)

The numbers of accident associated with 'Fracture' have been the highest for the past five years.

(e) Parts of Body Injured (Appendix K)

The three most common body parts injured in the accidents are listed below:

Parts of Body Injured	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Finger	60 (19.8%)	64 (19.3%)	70 (20.4%)	6 (9%)
Back	31 (10.2%)	35 (10.6%)	43 (12.5%)	8 (23%)
Ankle	18 (5.9%)	11 (3.3%)	23 (6.7%)	12 (109%)

The numbers of accident under 'Finger' injury have been the highest for the past five years. Works Departments should continue to pay close attention to the safe use of hand tools, lifting operations, portable power equipment, wearing of suitable gloves and provide sufficient training and instruction to workers to ensure their safety at work.

(f) Agents Involved (Appendix L)

The three most common agents involved in the accidents are listed below:

Agents Involved	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Material / Product Being Handled or Stored	42 (15.5%)	51 (17.6%)	62 (20.4%)	11 (22%)
Floor, Ground, Stairs or Any Working Surface	41 (15.1%)	54 (18.6%)	62 (20.4%)	8 (15%)
Portable Power or Hand Tools	33 (12.2%)	27 (9.3%)	33 (10.9%)	6 (22%)

The numbers of accidents associated with ‘Material / product being handled or stored’ and ‘Floor, ground, stairs or any working surface’ have been the highest two for the past five years. Contractors should be asked to make extra efforts to improve these areas.

(g) Unsafe Actions (Appendix M)

The four most common unsafe actions leading to accidents are listed below:

Unsafe Actions	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Lapse of Attention	105 (36.2%)	105 (33.8%)	103 (32.7%)	-2 (-2%)
Adopting Unsafe Position or Posture	39 (13.4%)	63 (20.3%)	45 (14.3%)	-18 (-29%)
Failure To Secure Objects	10 (3.4%)	15 (4.8%)	26 (8.3%)	11 (73%)

Unsafe Actions	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Use Unsafe Equipment/ Use Equipment Unsafely	10 (3.4%)	13 (4.2%)	26 (8.3%)	13 (100%)

The numbers of accident under 'Lapse of attention' have been the highest for the past five years. Contractors are to provide sufficient information and instructions to workers so that the workers would be more alert in the work place.

(h) Unsafe Conditions (Appendix N)

The three most common unsafe conditions involved in the accidents are listed below:

Unsafe Conditions	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Unsafe Process or Job Methods	29 (10.4%)	41 (14.0%)	45 (14.2%)	4 (10%)
Improper Procedure	29 (10.4%)	32 (10.9%)	25 (7.9%)	-7 (-22%)
Slippery Area	18 (6.5%)	19 (6.5%)	24 (7.6%)	5 (26%)

The aggregate of these three categories represented about 32.3% of the total number of accidents, which showed that the unsafe conditions involved in accident varied substantially. Works Departments should closely monitor the contractors' performance, and take prompt actions to rectify any unsafe actions or conditions observed on site.

(i) Personal Factors (Appendix O)

The distributions of accidents arising from personal factors are given below:

Personal Factors	No. of Accidents (% of total no. of accidents)			
	2016	2017	2018	Changes between 2017 & 2018
Carelessness / Not Concentrate	178 (59.9%)	169 (55.6%)	192 (61.0%)	23 (14%)
Incorrect Attitude / Motive	28 (9.4%)	28 (9.2%)	33 (10.5%)	5 (18%)
Lack of Knowledge or Skill	19 (6.4%)	33 (10.9%)	32 (10.2%)	-1 (-3%)

The numbers of accident associated with ‘Carelessness / Not Concentrate’ have been the highest for the past five years. Contractors shall strengthen the workers’ safety awareness and working attitude through training including morning briefings and toolbox talks.

7. To uphold the continuous improvement in site safety, Works Departments are recommended to pay particular attention to the following aspects:

- (i) promoting workers’ safety awareness in manual lifting or carrying, against fall from height, to prevent trapped in or between objects, and to prevent slip, trip and fall on same level;
- (ii) improving on site cleanliness and tidiness;
- (iii) providing sufficient instruction, training and supervision to workers to ensure their safety at work in particular for working at height, electrical works, confined space work, working in the vicinity to water and exposure to explosion;
- (iv) providing suitable fall arresting equipment e.g. safety harness, fall arrester and independent lifeline connected to a secured anchorage to workers who are at risk of falling from height;
- (v) maintaining an effective monitoring system to ensure workers and supervisory staff (both RSS and in-house staff) make full and proper use of personal protective equipment and safety equipment;
- (vi) enforcing the requirement to conduct risk assessment, and/or permit-to-work system, for all high-risk activities before commencement of the work;
- (vii) maintaining a safe system of work including proper site layout and

- work plan to segregate workers from construction plant and vehicles;
- (viii) providing adequate safety training, morning briefings or toolbox talks to workers in order to raise their safety awareness and working attitude;
- (ix) providing sufficient information and instruction to workers and paying particular attention to the workers' misbehaviours during safety inspection and supervision on site. Any unsafe actions or posture observed on site should be stopped immediately; and
- (x) checking of completeness of Independent Checking Engineer's design certificates and as-built certificates for the detailed design and method statements of temporary works before loading, and statutory form(s) for temporary works/scaffolding/working platform.

8. Apart from the analyses given in this report, Works Departments are recommended to carry out further detailed analyses of the accidents under their purview with a view to developing specific safety measures and programme for further improvement.

Development Bureau
July 2019

Attachments:

<u>Appendix</u>	<u>Title</u>
A	Accident Rates for Public Works Contracts and the Construction Industry from 2009 to 2018
B	Chart of Yearly Accident Rates for Public Works Contracts and the Construction Industry from 2009 to 2018
C	Chart of Monthly Average Accident Rates for Public Works Contracts from January 2009 to December 2018
D	Number of Accidents for Public Works Contracts with Breakdown by Works Departments from 2009 to 2018
E	Accident Rates for Public Works Contracts with Breakdown by Works Departments from 2009 to 2018
F	Severity for Public Works Contracts with Breakdown by Works Departments from 2014 to 2018
G	Accident Rates for Public Works Contracts from 2009 to 2018 Analyzed by Types of Contracts
H	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Types of Accident
I	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Trades of Workers
J	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Natures of Injury
K	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Parts of Body Injured in Accidents
L	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Agents Involved in Accidents
M	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Unsafe Actions Involved in Accidents
N	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Unsafe Conditions Involved in Accidents
O	No. of Accidents for Public Works Contracts from 2014 to 2018 Analyzed by Personal Factors Involved in Accidents