



Workplace Safety and Health Report 2019

National Statistics



MINISTRY OF
MANPOWER

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NOTATIONS

- : Nil or negligible
- n.a. : Not applicable/Not available
- * : Estimated rates. The employment data excludes self-employed persons.

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KEY FACTS

39 WORKPLACE FATAL INJURIES IN 2019, TWO LESS THAN IN 2018; BUT MORE MAJOR AND MINOR INJURIES

Overall workplace injury cases¹ increased from 12,810 cases in 2018 to 13,779 cases in 2019. The number of workplace fatal injury cases decreased from 41 cases in 2018 to 39 cases in 2019, resulting in a lower fatal injury rate of 1.1 per 100,000 workers.

The number of workplace major injuries increased 5.5% from 596 in 2018 to 629 in 2019. Likewise, the number of workplace minor injuries increased 7.7% from 12,173 in 2018 to 13,111 in 2019.

The confirmed cases of occupational disease decreased from 563 cases in 2018 to 517 cases in 2019 while the number of dangerous occurrences decreased from 23 incidents in 2018 to 21 incidents in 2019.

Table 1: Number of workplace injuries, dangerous occurrences and occupational diseases, 2018 and 2019

	2018	2019
Workplace Injuries	12,810	13,779
Fatal Injuries	41	39
Major Injuries	596	629
Minor Injuries	12,173	13,111
Dangerous Occurrences	23	21
Occupational Diseases (OD)	563	517

Table 2: Key safety and health indicators, 2018 and 2019

Per 100,000 workers

	2018	2019
Workplace Injury Rate²	373	396
Fatal Injury rate	1.2	1.1
Major Injury rate	17.4	18.1
Minor Injury rate	355	377
Occupational Disease Incidence Rate³	16.4	14.9
Man-days Lost⁴	530,961	544,664

¹ A workplace injury is any personal injury or death resulting from a workplace accident, including work-related traffic injuries. Please refer to Annexes D and E for the types of workplace injuries covered.

² Workplace Injury Rate = $\frac{\text{No. of Fatal and Non-Fatal Workplace Injuries}}{\text{No. of Workers}} \times 100,000$

³ Occupational Disease Incidence Rate = $\frac{\text{No. of Occupational Disease Cases}}{\text{No. of Workers}} \times 100,000$

⁴ For the purpose of this publication, MOM considers a fatal injury as equivalent to the loss of 6,000 man-days, similar to the U.S. National Institute of Occupational Safety and Health (NIOSH)'s table of scheduled charges.

In addition to reporting outcome indicators like workplace injury rates and occupational disease incidence rates, this report has included leading indicators from prevention activities. The proactive activities include workplace Medical and Hygiene surveillance which monitors health risks from exposures to physical and toxic or harmful substances at work, and Business under Surveillance (BUS), which guides poor performing companies to improve their WSH management system.

The main findings on workplace safety and health performance for 2019 are:

WORKPLACE INJURIES

- 39 workers were fatally injured, a rate of 1.1 per 100,000 workers.
- 629 workers sustained workplace major injuries, a rate of 18.1 per 100,000 workers.
- 13,111 workers sustained minor injuries, a rate of 377 per 100,000 workers.
- 544,664 man-days were lost due to workplace injuries in 2019.

DANGEROUS OCCURRENCES

- 21 dangerous occurrences (DO) were reported to MOM in 2019.

OCCUPATIONAL DISEASES

- 517 occupational disease (OD) cases were confirmed in 2019, with an incidence rate of 14.9 per 100,000 workers.
- The leading OD was work-related musculoskeletal disorders (WRMSD) with 293 cases, including back injury cases due to ergonomic risks.
- The second most common OD was noise-induced deafness (NID) with 169 cases.

BUSINESS UNDER SURVEILLANCE

- 20 companies entered the Business under Surveillance⁵ (BUS) programme in 2019.

MEDICAL AND HYGIENE SURVEILLANCE

- 133,740 workers from 2,156 workplaces were monitored under the Medical Surveillance⁶ Programme.
- Under the Hygiene Surveillance⁷ Programme, 80% of the workplaces had static noise levels greater than 85dBA.

⁵ Refer to Annex B and website <http://mom.gov.sg/workplace-safety-health/programmes/Pages/regulatory-programmes.aspx#bus> for information on BUS programme.

⁶ Medical surveillance monitors the results of the medical examinations of workers who are exposed to specific hazards for early detection and prevention of potential ill health. Examinations are conducted by Designated Workplace Doctors (DWDs). Refer to Annex C for more information.

⁷ Hygiene surveillance determines the levels of persons' exposure to noise and airborne toxic substances in the workplace. Refer to Annex C for more information.

OVERVIEW OF TRENDS

WORKPLACE INJURIES

For 2019, the overall number of reported injuries⁸ increased by 8% compared to 2018. The workplace injury rate increased from 373 per 100,000 workers to 396 per 100,000 workers.

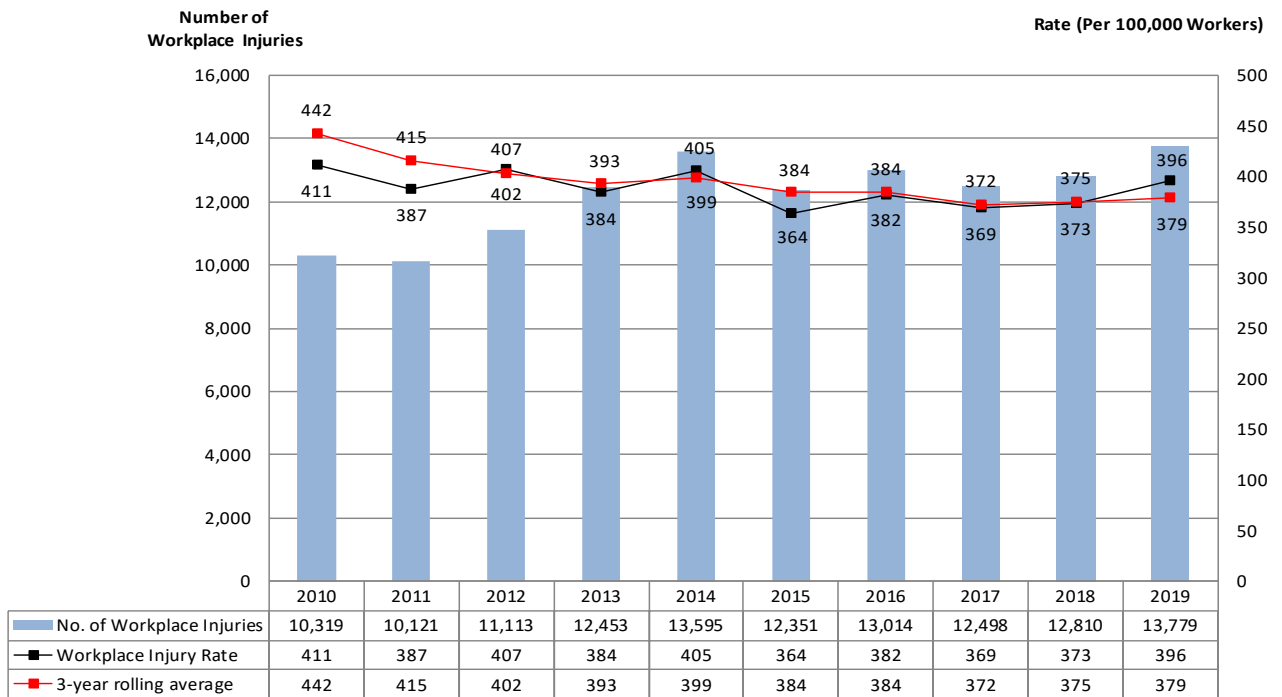


Figure 1: Number and rate of workplace injuries, 2010-2019

⁸ Employer or Occupier has to report work incidents to the Ministry of Manpower under the WSH (Incident Reporting) Regulations.

WORKPLACE FATAL INJURIES

There were 39 workplace fatal injuries in 2019, two cases less than in 2018. The workplace fatal injury rate per 100,000 workers decreased from 1.2 in 2018 to 1.1 in 2019.

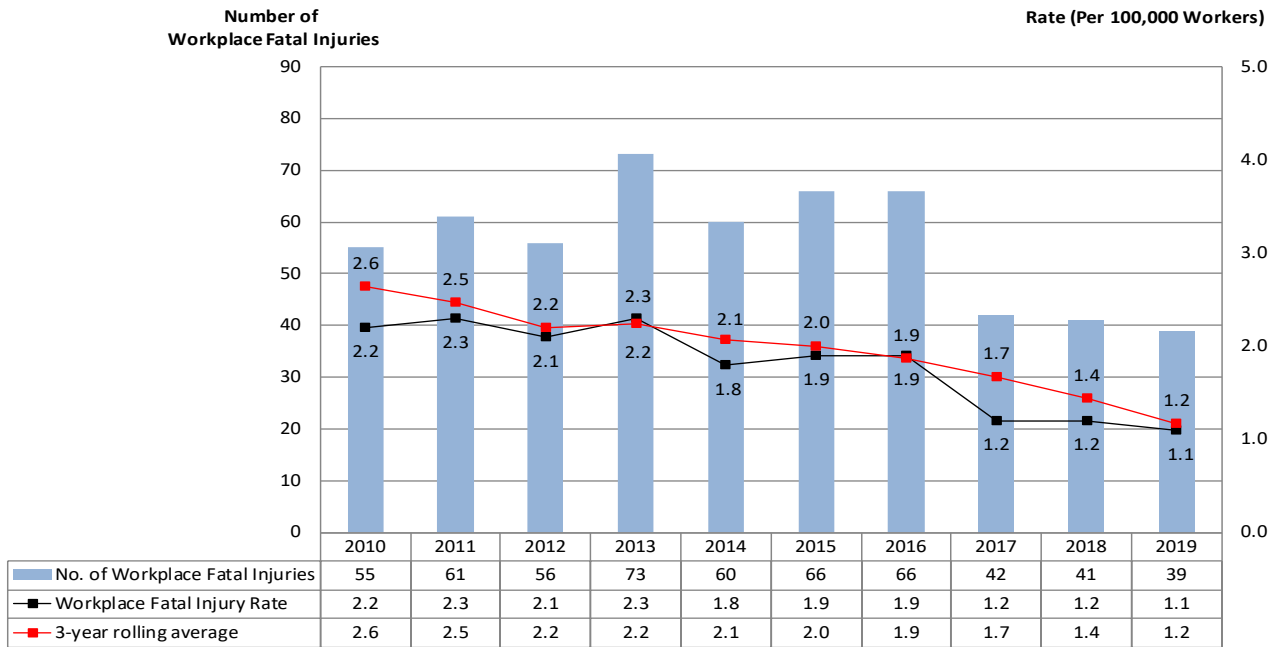


Figure 2: Number and rate of fatal injuries, 2010-2019

The Construction industry remained as the top contributor with 13 workplace fatal injuries. There was an increase of four workplace fatal injuries in the Transportation & Storage industry at eight cases compared to four cases in 2018. Both Marine and Manufacturing industries contributed four workplace fatal injuries each in 2019.

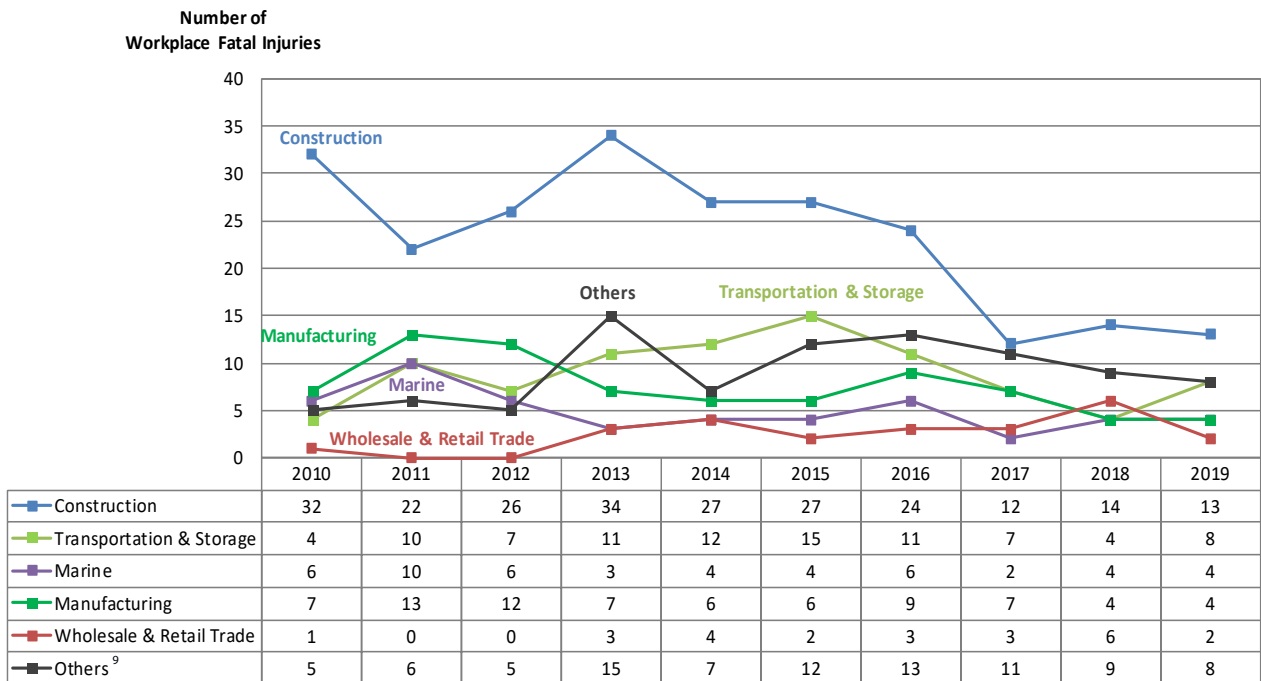


Figure 3: Number of workplace fatal injuries by industry, 2010-2019

⁹Others refers to the summation of various industries with low incidence of workplace fatalities. For more information, please refer to the statistical tables in Annex A.

CAUSES OF WORKPLACE FATAL INJURIES

In 2019, the top three causes of fatal injuries were Collapse/Failure of Structure & Equipment, Falls from Height and Vehicular Incidents¹⁰. Collectively, they accounted for 54% (21 cases) of all workplace fatal injuries in 2019.

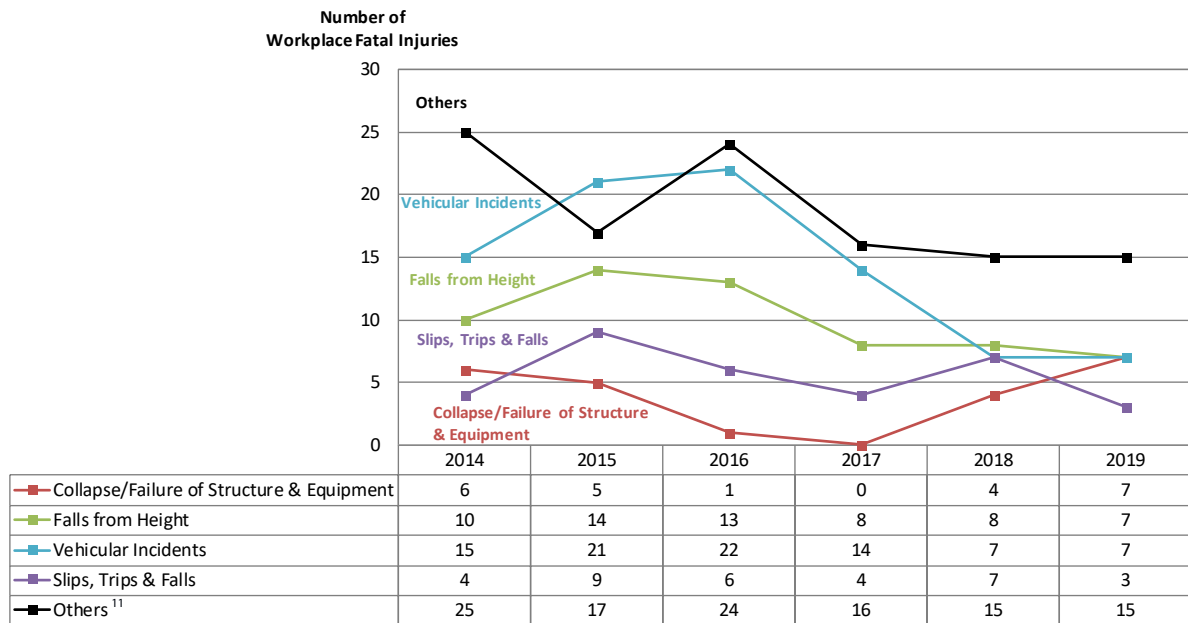


Figure 4: Number of workplace fatal injuries by cause of injury, 2014-2019

¹⁰Vehicular Incidents includes Struck by Moving Objects and Caught In/Between Objects where the agent(s) was a vehicle.

¹¹ Others refers to the summation of various fatal injury causes with low incidence of workplace fatalities. For more information, please refer to the statistical tables in Annex A.

WORKPLACE FATAL INJURIES BY HIGH-RISK INDUSTRY

CONSTRUCTION

The workplace fatal injury rate in the Construction industry decreased from 3.1 per 100,000 workers in 2018 to 2.9 per 100,000 workers in 2019. A total of 13 workplace fatal injuries occurred in the Construction industry in 2019.

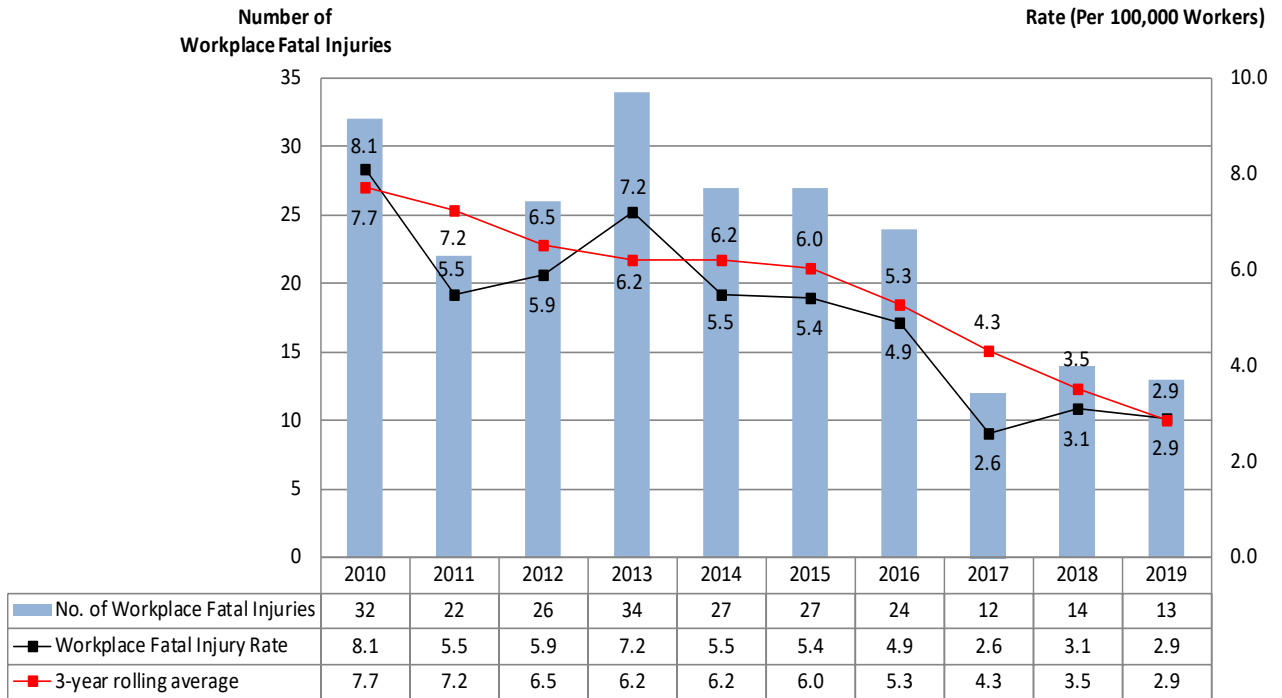


Figure 5: Number and rate of fatal injuries for Construction industry, 2010-2019

MARINE

The number of workplace fatal injuries in the Marine¹² industry remained unchanged at four fatal injuries, from 2018 to 2019. The workplace fatal injury rate in the Marine industry decreased from 6.2 per 100,000 workers in 2018 to 6.0 per 100,000 workers in 2019.

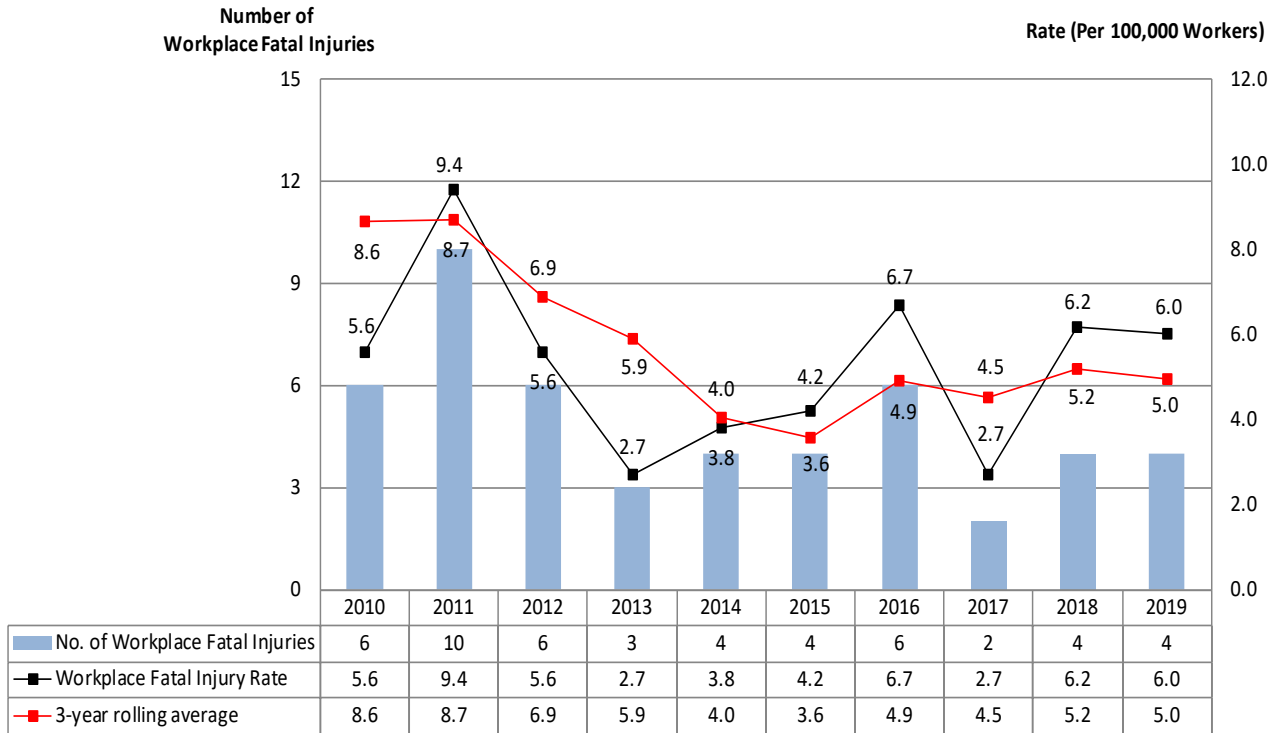


Figure 6: Number and rate of fatal injuries for Marine industry, 2010-2019

¹² The marine industry includes the following activities:

- Shipbuilding and Ship Repair
- Marine Surveying Services (other than classification societies)
- Salvaging of distressed vessels and cargo

Works carried out in the anchorage are also included.

MANUFACTURING

The number of workplace fatal injuries in the Manufacturing industry remained unchanged at four fatal injuries, from 2018 to 2019. The workplace fatal injury rate in the Manufacturing industry increased from 0.9 per 100,000 workers in 2018 to 1.0 per 100,000 workers in 2019.

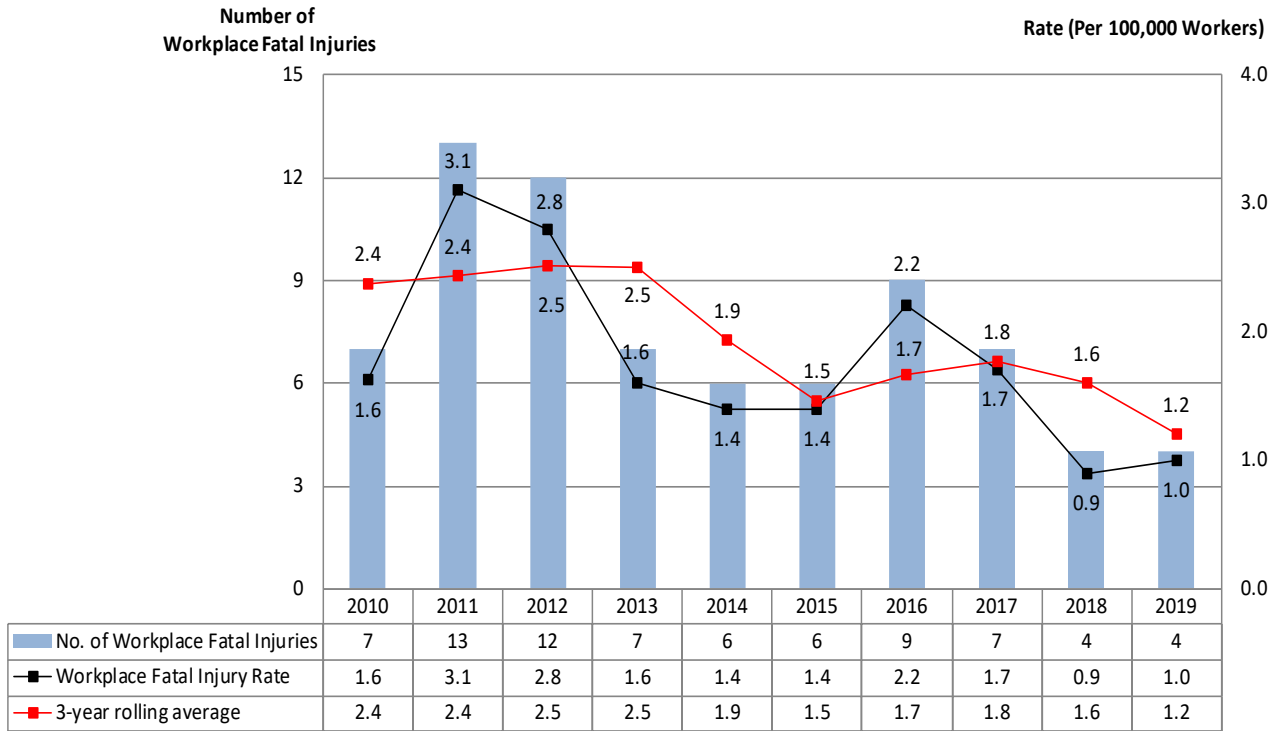


Figure 7: Number and rate of fatal injuries for Manufacturing industry, 2010-2019

TRANSPORTATION & STORAGE

The workplace fatal injury rate in the Transportation & Storage industry increased from 1.5 per 100,000 workers in 2018 to 3.1 per 100,000 workers in 2019. A total of eight workplace fatal injuries occurred in the Transportation & Storage industry in 2019.

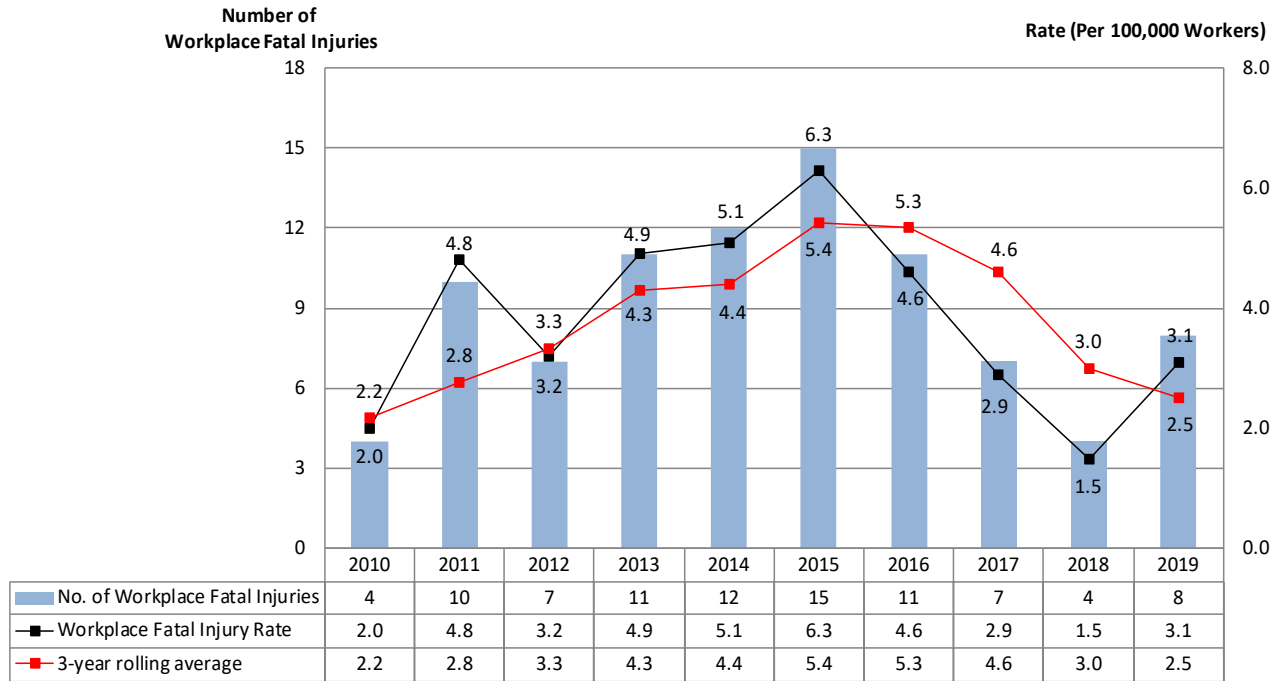


Figure 8: Number and rate of fatal injuries for Transportation & Storage industry, 2010-2019

WORKPLACE MAJOR INJURIES

The number of workplace major injuries¹³ increased from 596 cases (17.4 per 100,000 workers) in 2018 to 629 cases (18.1 per 100,000 workers) in 2019.

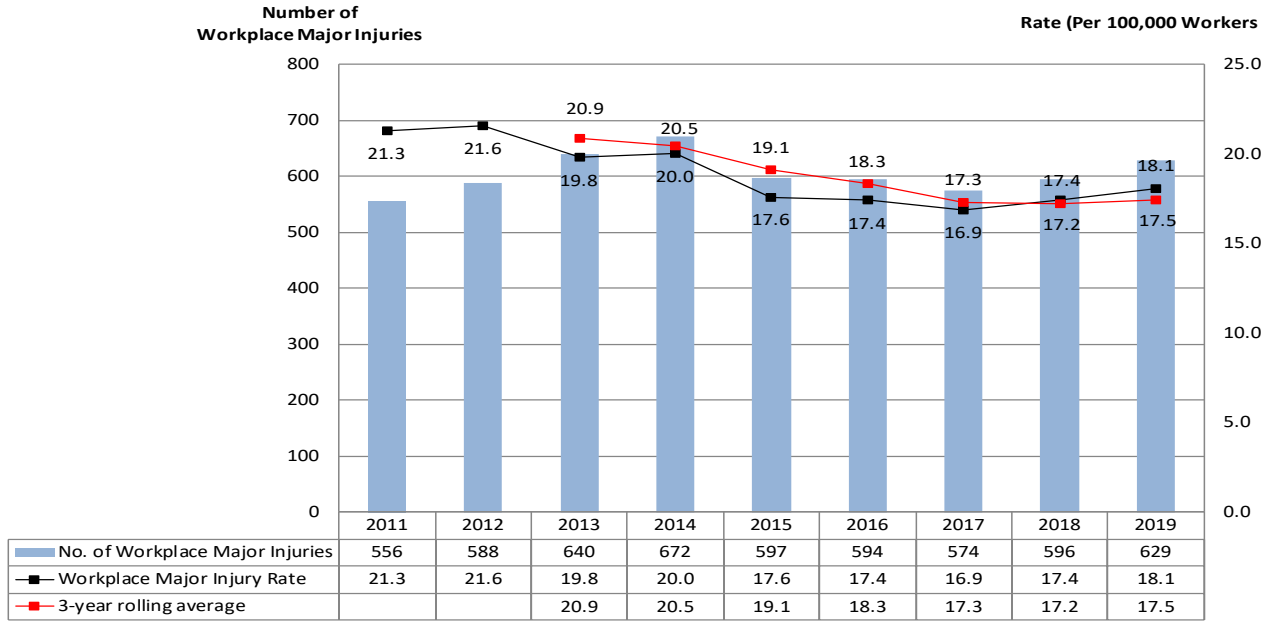


Figure 9: Number and rate of workplace major injuries, 2011-2019

The Manufacturing industry was the top contributor in 2019 with 137 workplace major injuries followed by the Construction and Transportation & Storage industries with 121 and 57 workplace major injuries, respectively. These industries collectively accounted for 50% (315 cases) of all workplace major injuries in 2019.

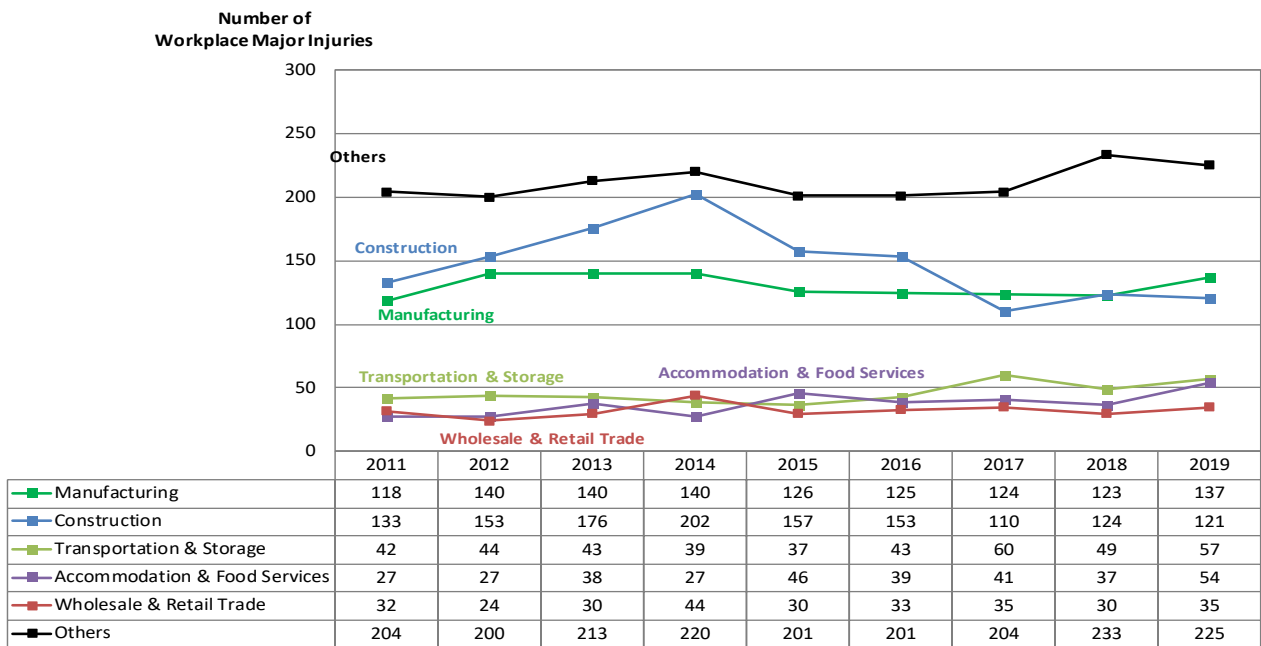


Figure 10: Number of workplace major injuries by industry, 2011-2019

¹³ Refer to Annex F for definition workplace major injury.

CAUSES OF WORKPLACE MAJOR INJURIES

In 2019, the top three causes of workplace major injuries were Slips, Trips and Falls, Machinery Incidents¹⁴ and Falls from Height. They collectively accounted for 57% (360 cases) of all workplace major injuries in 2019.

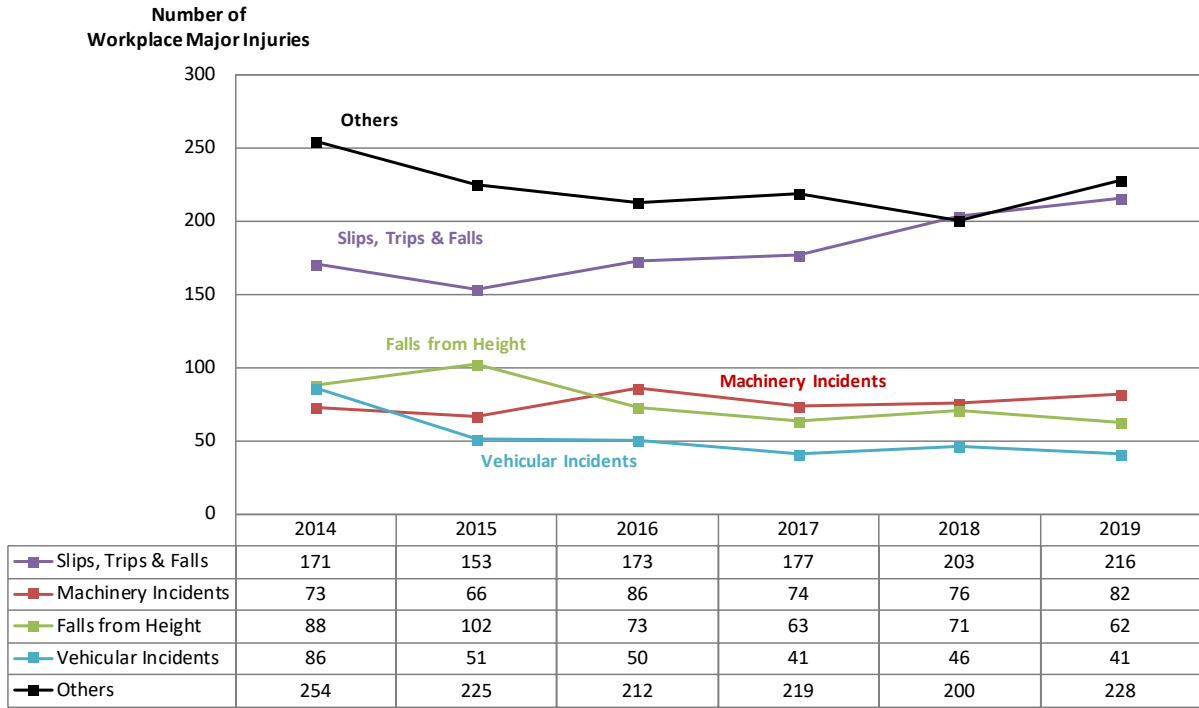


Figure 11: Number of workplace major Injuries by cause of injury, 2014-2019

¹⁴ Machinery-related Incidents includes Struck by Moving Objects, Caught In/Between Objects and Cut/Stabbed by Objects where the agent(s) is an industrial machine, industrial hand tool or other machines and tools.

WORKPLACE MAJOR INJURIES BY HIGH-RISK INDUSTRY

CONSTRUCTION

The workplace major injury rate in the Construction industry decreased from 27.8 per 100,000 workers in 2018 to 26.6 per 100,000 workers in 2019. A total of 121 workplace major injuries occurred in the Construction industry in 2019.

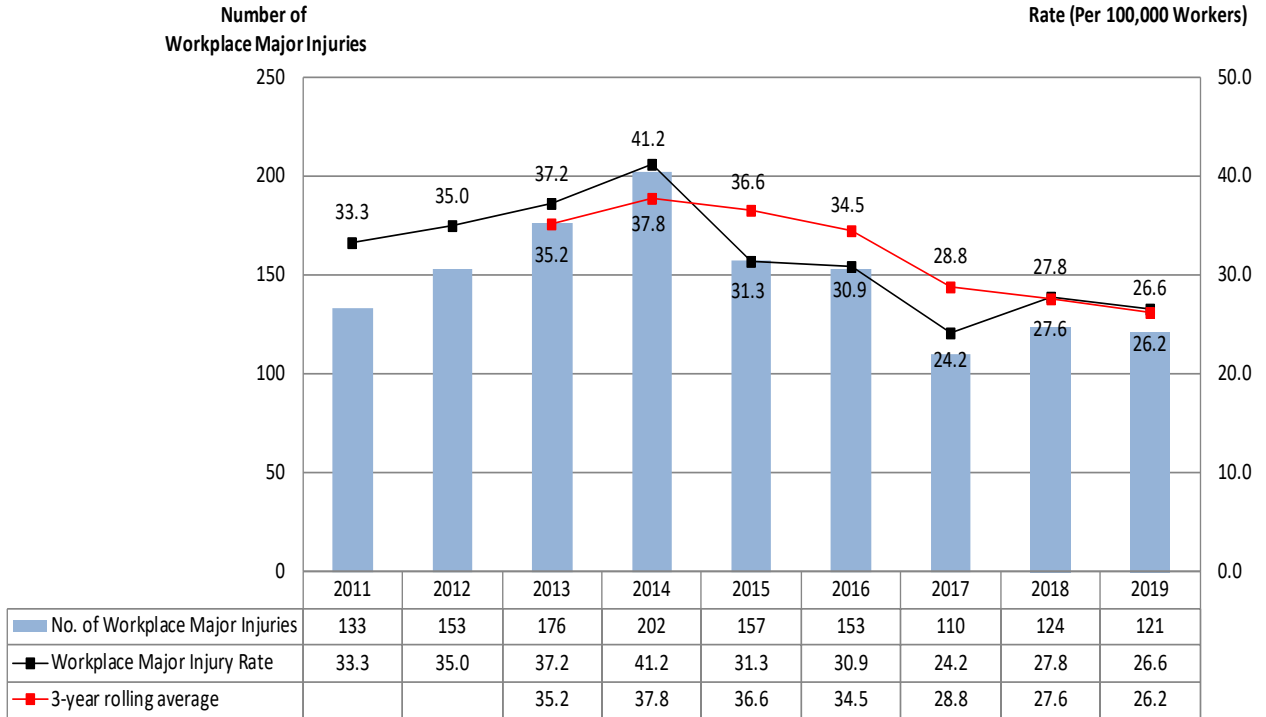


Figure 12: Number and rate of major injuries for Construction industry, 2011-2019

MARINE

The workplace major injury rate in the Marine industry increased from 23.1 per 100,000 workers in 2018 to 28.5 per 100,000 workers in 2019. A total of 19 workplace major injuries occurred in the Marine industry in 2019.

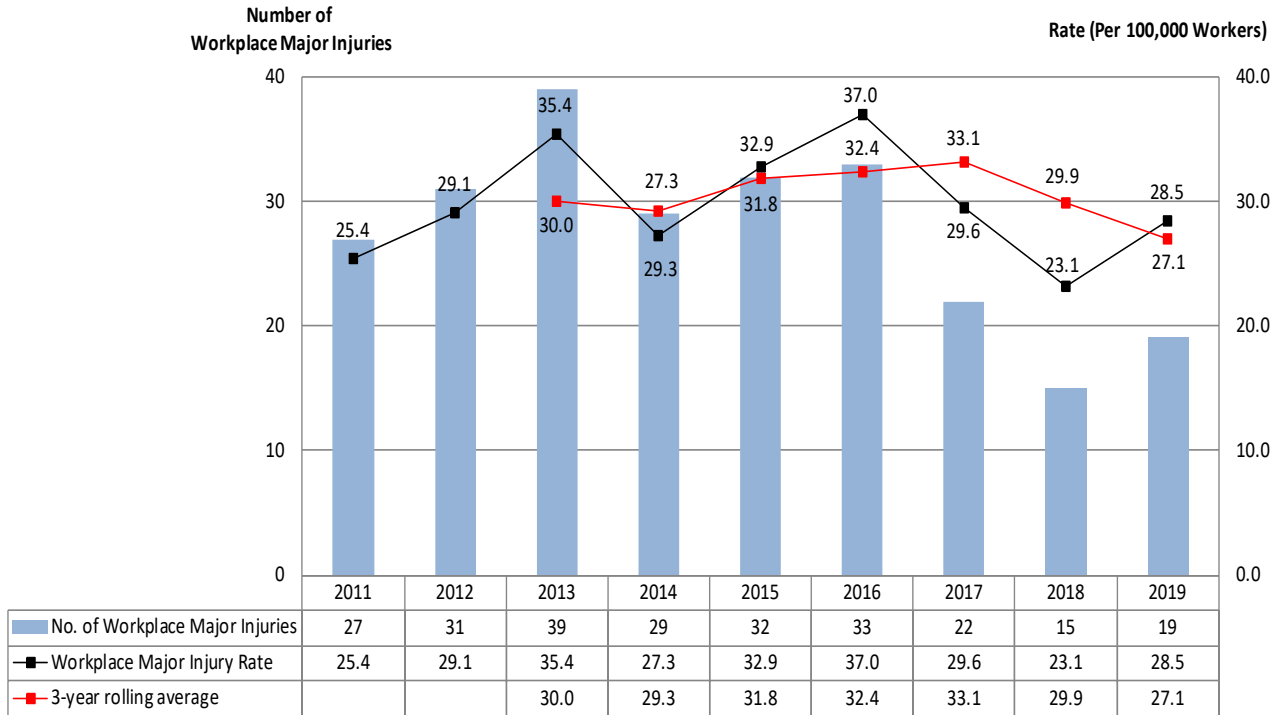


Figure 13: Number and rate of major injuries for Marine industry, 2011-2019

MANUFACTURING

The workplace major injury rate in the Manufacturing industry increased from 28.9 per 100,000 workers in 2018 to 32.7 per 100,000 workers in 2019. A total of 137 workplace major injuries occurred in the Manufacturing industry in 2019.

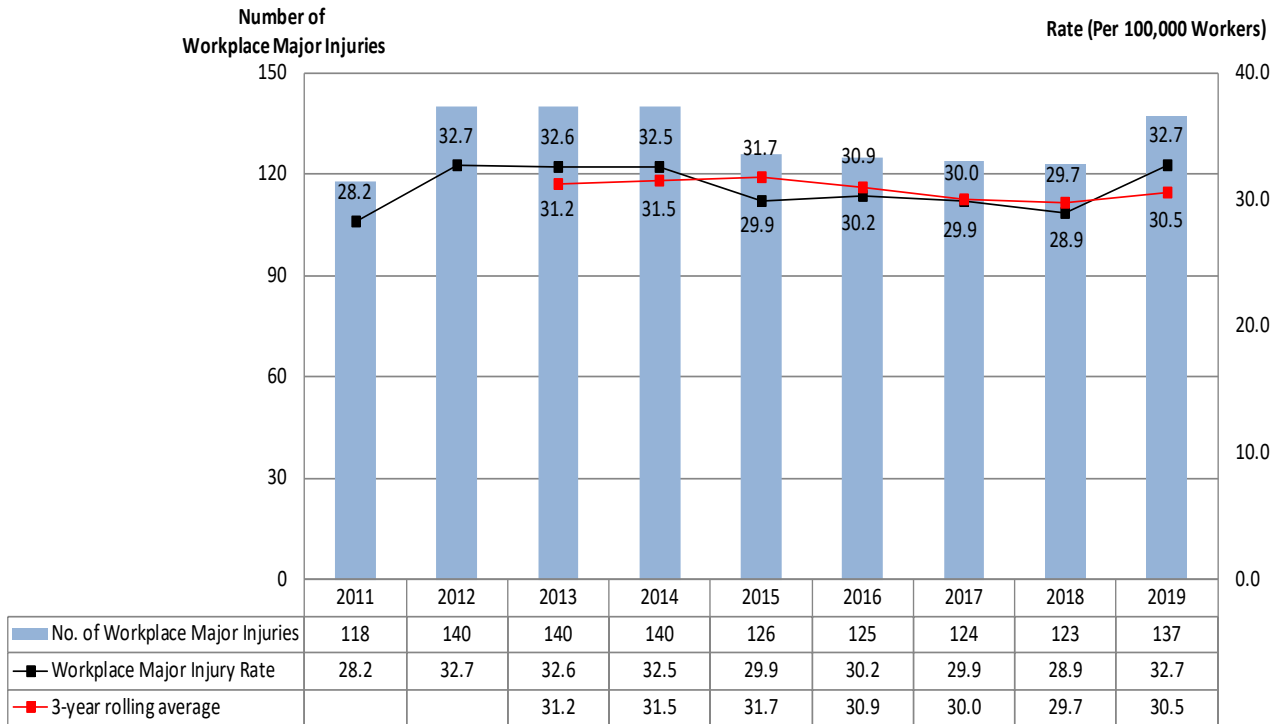


Figure 14: Number and rate of major injuries for Manufacturing industry, 2011-2019

TRANSPORTATION & STORAGE

The workplace major injury rate in the Transportation & Storage industry increased from 18.9 per 100,000 workers in 2018 to 21.8 per 100,000 workers in 2019. A total of 57 workplace major injuries occurred in the Transportation & Storage industry in 2019.

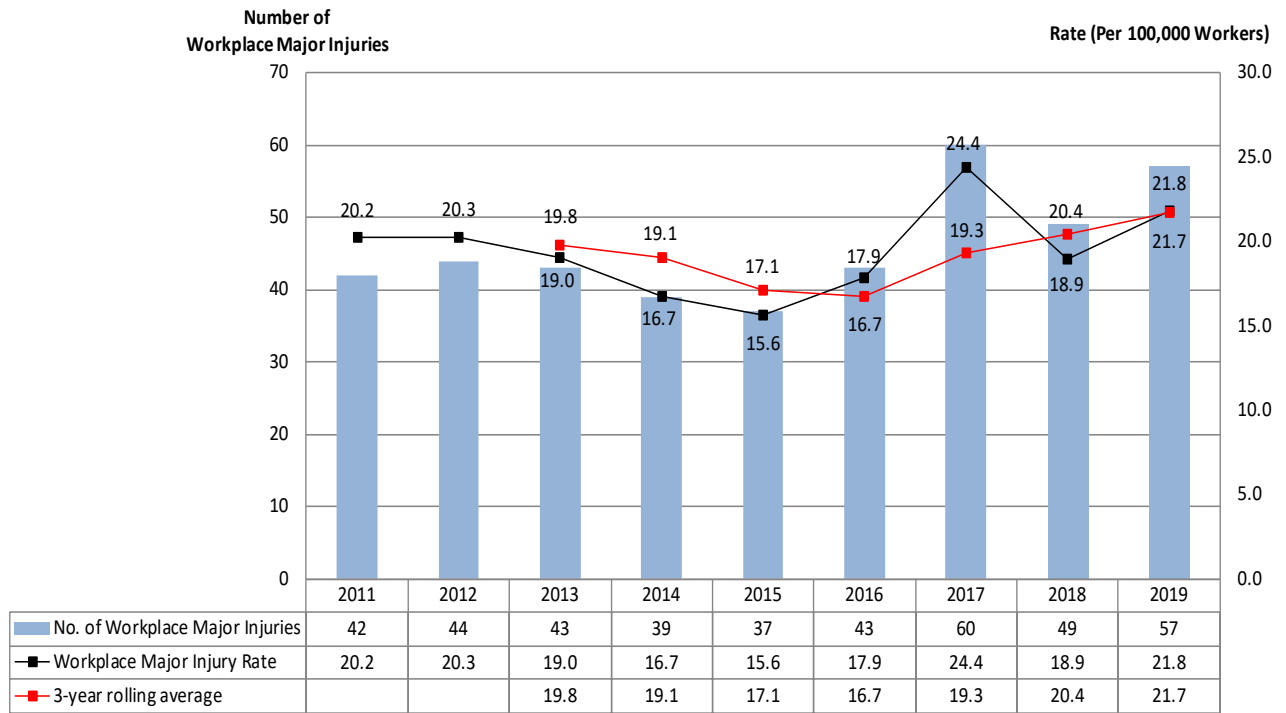


Figure 15: Number and rate of major injuries for Transportation & Storage industry, 2011-2019

WORKPLACE MINOR INJURIES

The number of workplace minor injuries increased by 8% from 12,173 cases (355 per 100,000 workers) in 2018 to 13,111 cases (377 per 100,000 workers) in 2019.

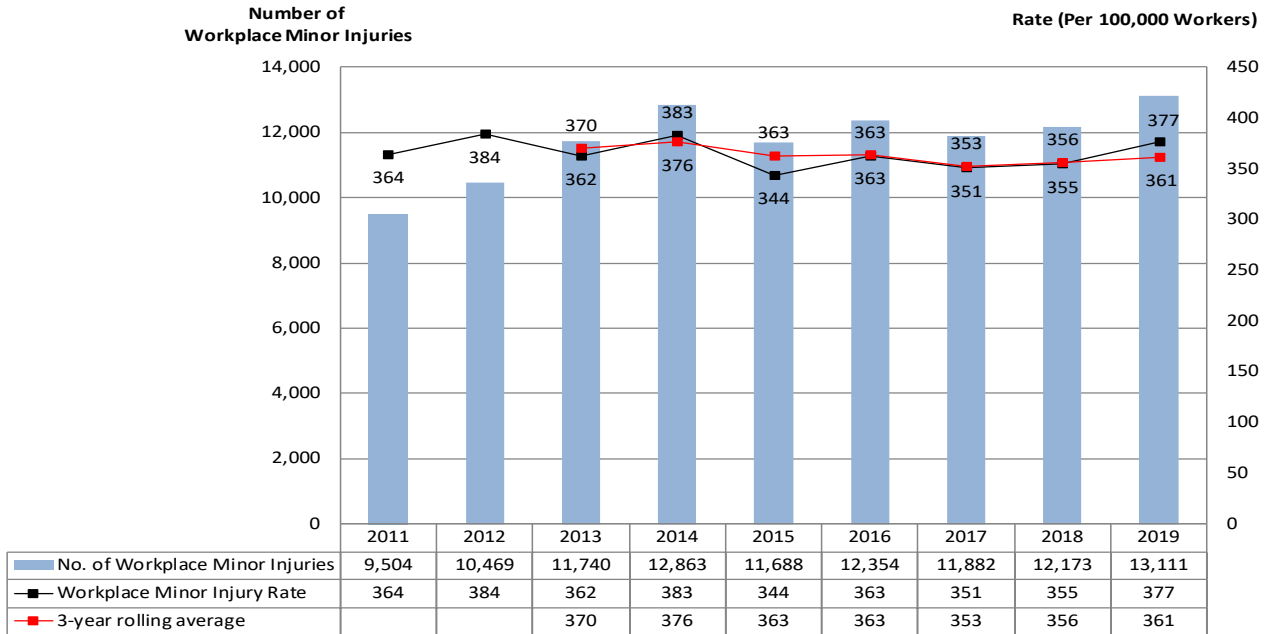


Figure 16: Number and rate of workplace minor injuries, 2011-2019

The Manufacturing industry was the top contributor in 2019 with 2,653 workplace minor injuries followed by the Construction and Accommodation & Food Services industries with 1,981 and 1,265 workplace minor injuries, respectively. These industries collectively accounted for 45% (5,899 cases) of all workplace minor injuries in 2019.

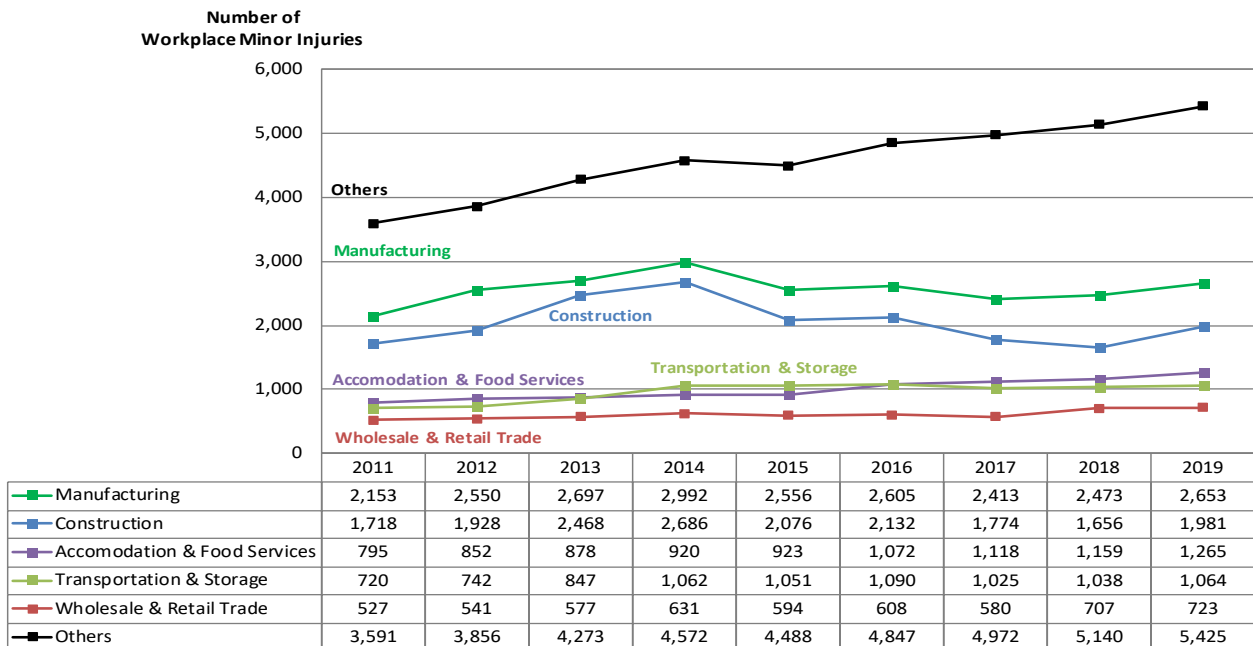


Figure 17: Number of workplace minor injuries by industry, 2011-2019

CAUSES OF WORKPLACE MINOR INJURIES

In 2019, the top three causes of workplace minor injuries were Slips, Trips and Falls, Machinery Incidents and Struck by Moving Objects. They collectively accounted for 54% (7,045 cases) of all workplace minor injuries in 2019.

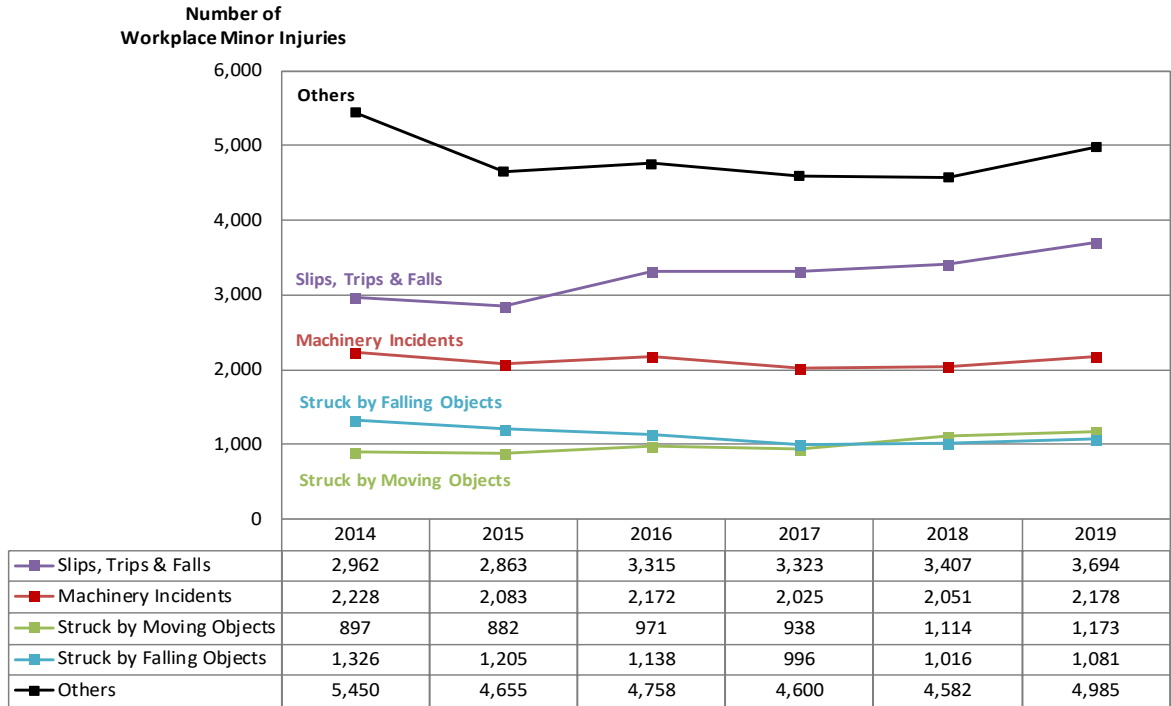


Figure 18: Number of workplace minor Injuries by cause of injury, 2014-2019

DANGEROUS OCCURRENCES

The number of DOs decreased by 9% from 23 in 2018 to 21 in 2019. Among the DO cases, 13 were due to Collapse/Failure of Structures & Equipment of which eight cases were Crane-related. The eight remaining DO cases were due to Fires and Explosion.

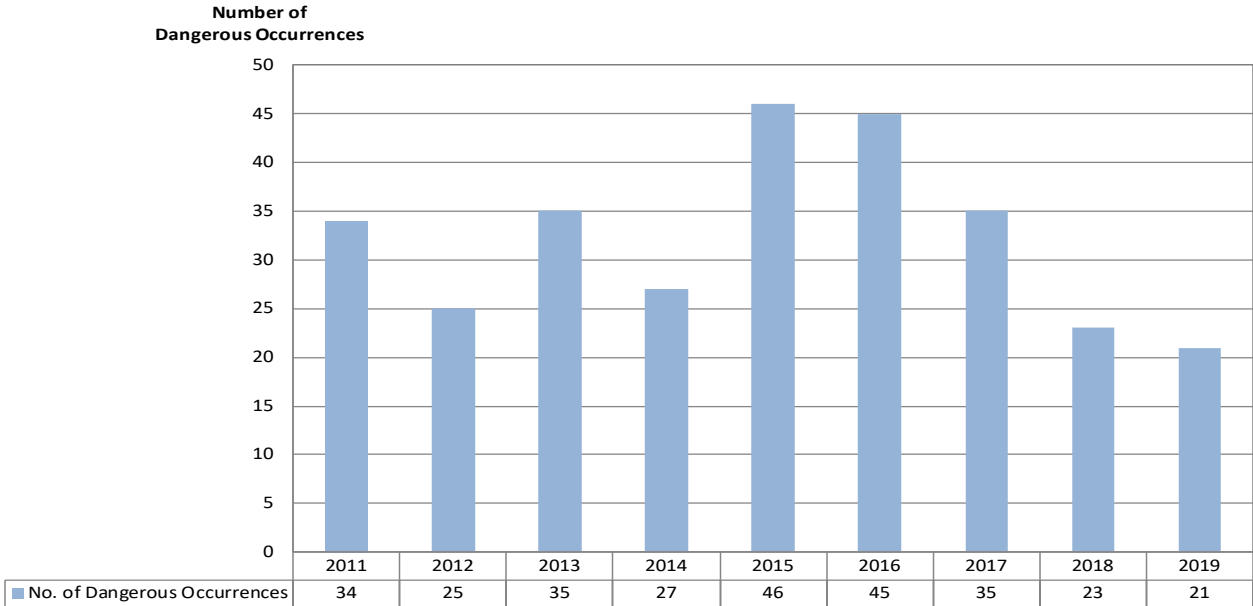


Figure 19: Number of dangerous occurrences, 2011-2019

DANGEROUS OCCURRENCES BY INDUSTRY

The Construction industry was the top contributor in 2019 with 10 cases followed by the Marine and Manufacturing industries with 4 and 3 cases, respectively. These industries collectively accounted for 81% (17 cases) of all DO in 2019.

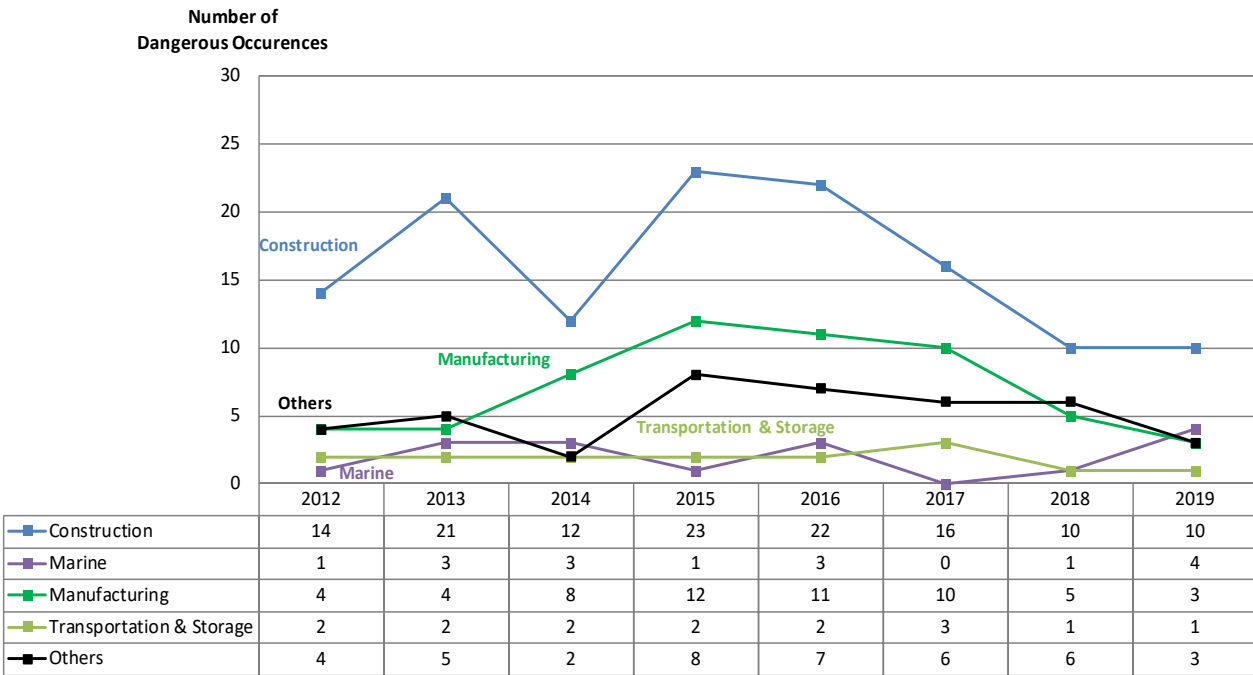


Figure 20: Number of dangerous occurrences by industry, 2012-2019

OCCUPATIONAL DISEASES

The number of OD cases decreased by 8% from 563 in 2018 to 517 in 2019. Likewise, the OD incidence rate decreased from 16.4 confirmed cases per 100,000 workers in 2018 to 14.9 confirmed cases per 100,000 workers in 2019.

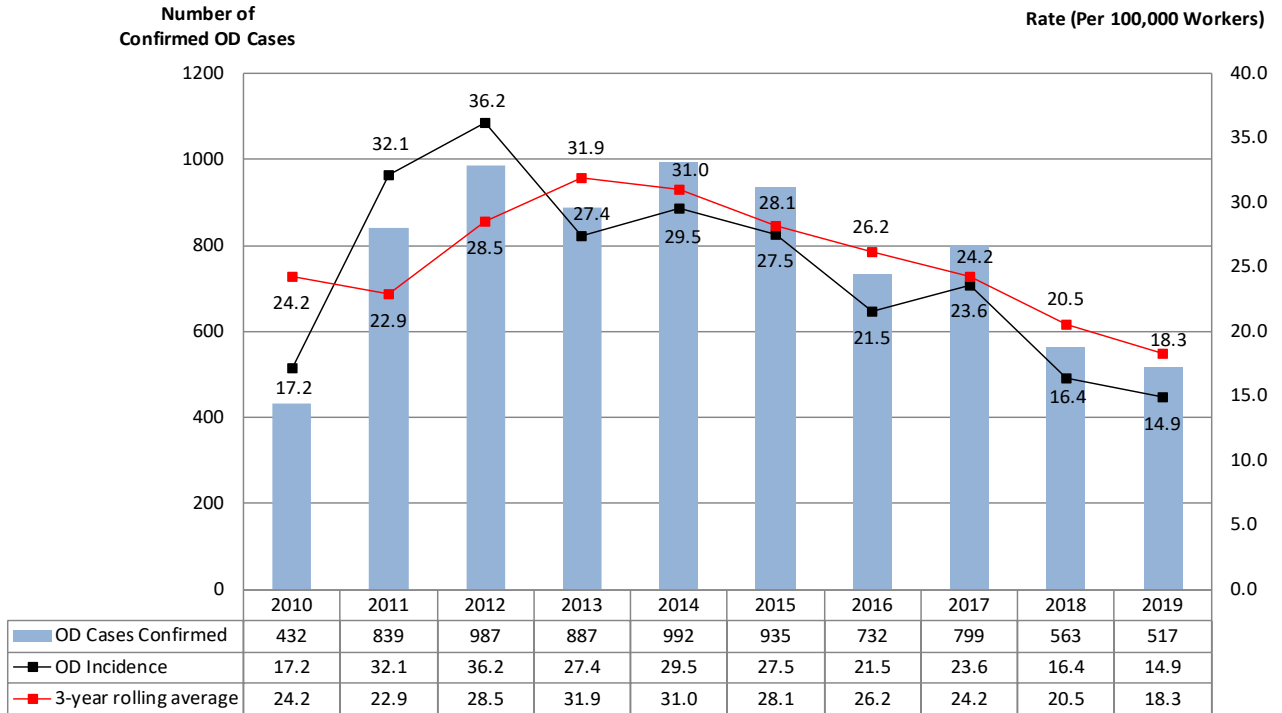


Figure 21: Number and rate of occupational diseases, 2010-2019

OCCUPATIONAL DISEASES BY INDUSTRY

The Manufacturing industry was the top contributor in 2019 with 154 OD cases confirmed followed by the Transportation & Storage industry and the Construction industry with 62 and 53 OD cases, respectively. These industries collectively accounted for 52% (269 cases) of all OD cases confirmed in 2019.

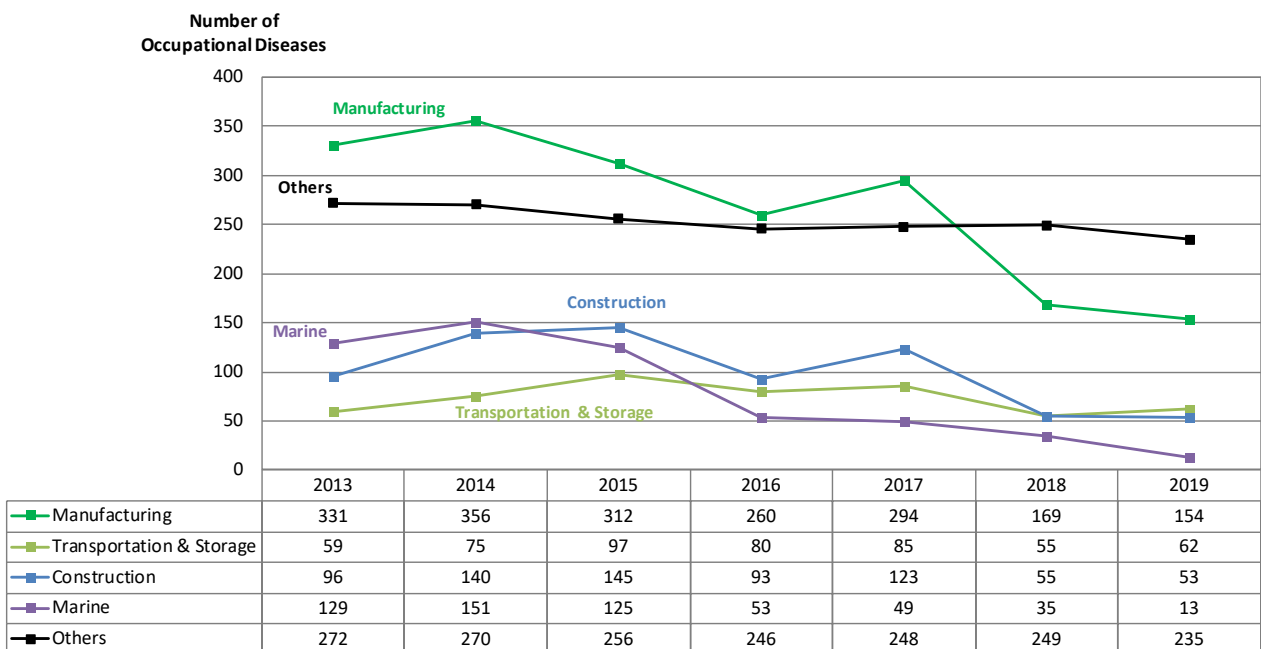


Figure 22: Number of occupational diseases by industry, 2013-2019

TYPES OF OCCUPATIONAL DISEASES

In 2019, the top three types of OD cases confirmed were WRMSD¹⁵, NID and Occupational Skin Diseases (OSD). They collectively accounted for 97% (501 cases) of all OD cases confirmed in 2019.

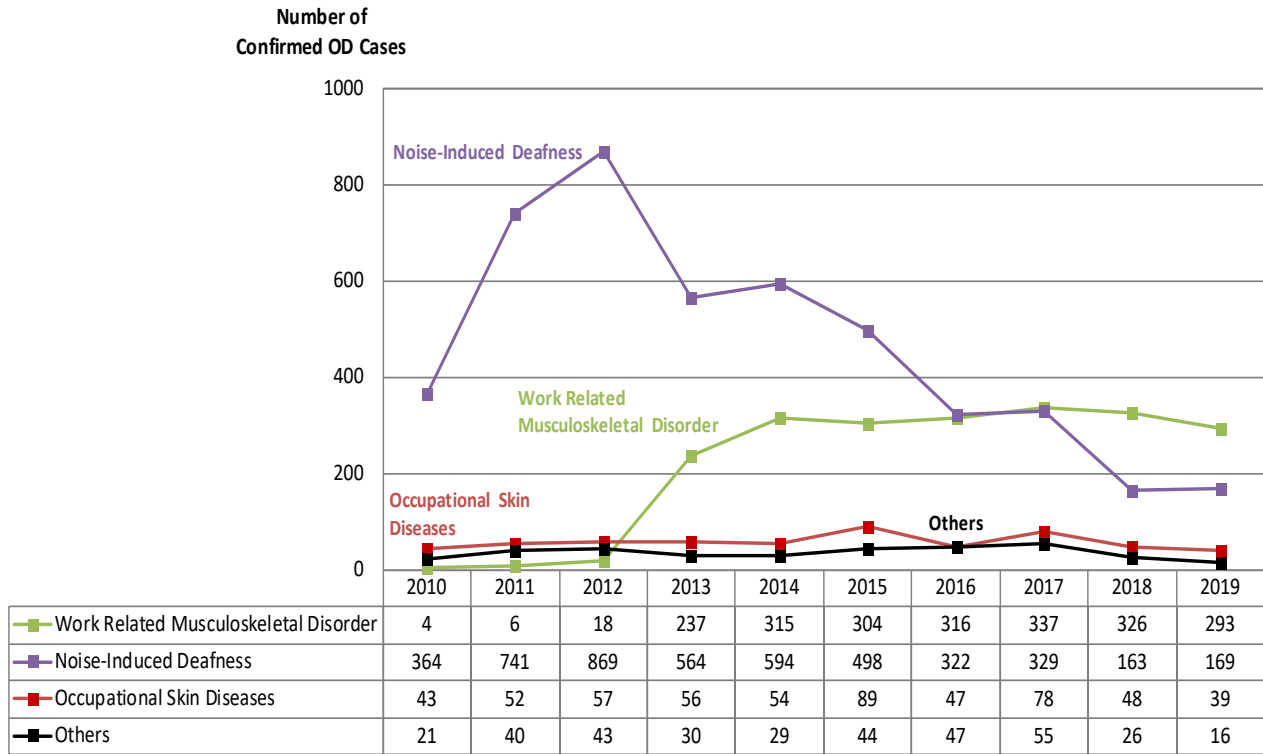


Figure 23: Number of occupational disease by type, 2010-2019

¹⁵Back injuries due to ergonomic risks were considered as a WRMSD cases and included as an occupational disease since 2013.

WORK-RELATED MUSCULOSKELETAL DISORDERS

WRMSD cases reduced from 326 cases in 2018 to 293 cases in 2019. The Manufacturing and Transportation & Storage industries were the highest contributors, with each having 41 cases, or 14% of all WRMSD. This is followed by the Health Activities industry, which contributed 12% (35 cases) of all WRMSD cases in 2019.

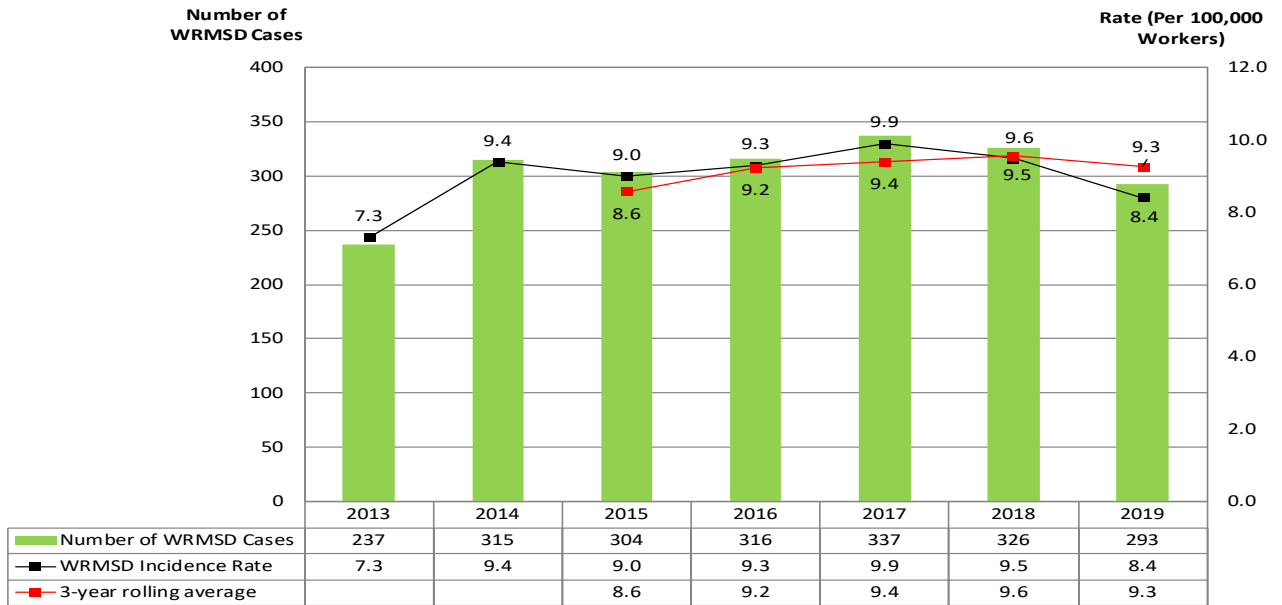


Figure 24: Number and rate of work-related musculoskeletal disorders, 2013-2019

NOISE-INDUCED DEAFNESS

NID cases increased from 163 cases in 2018 to 169 cases in 2019. The Manufacturing industry continued to be the top contributor to NID cases, accounting for 60% (101 cases) of all NID cases. This is followed by the Construction industry and the Transportation & Storage industry with 18 (11%) and 17 (10%) cases, respectively.

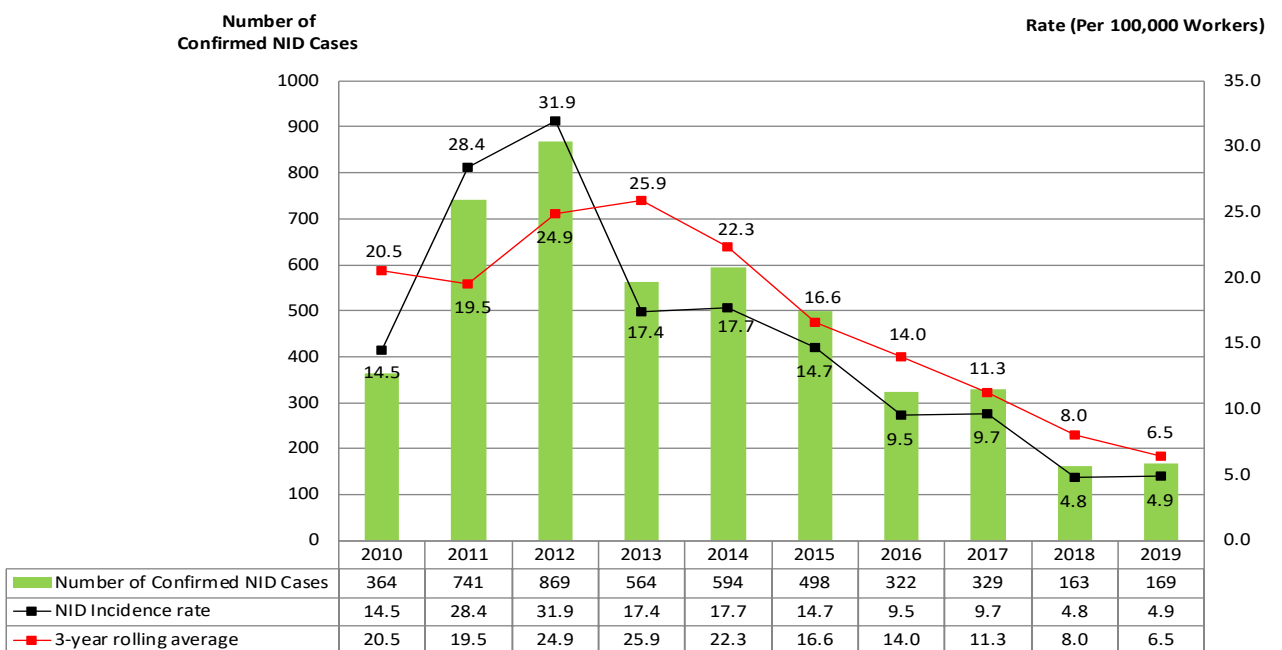


Figure 25: Number and rate of noise-induced deafness, 2010-2019

WORK INJURY COMPENSATION

The Work Injury Compensation Act (WICA) lets employees make claims for work-related injuries or diseases without having to file a civil suit under common law. It is a low-cost and quicker alternative to common law for settling compensation claims.

NUMBER OF WORK INJURY CLAIMS AND PAYOUT AMOUNT

The total number of work injury claims¹⁶ increased 10% from 14,585 cases in 2018 to 15,992 cases in 2019. Correspondingly, the total compensation payout increased 7% from \$111.73 million in 2018 to \$120.02 million in 2019. These increases were seen across the board for Temporary Incapacity (TI)¹⁷, Permanent Incapacity (PI)¹⁸ and Fatal claims.

Table 3: Number of TI and PI workplace injuries compensation claims and amount awarded, 2017-2019

Year	Temporary Incapacity		Permanent Incapacity		
	No. of Cases	MC Wages (\$million)	No. of Cases	MC Wages (\$million)	PI Compensation (\$million)
2017	10,354	\$8.80	4,513	\$14.15	\$74.35
2018	10,170	\$9.48	4,304	\$12.41	\$73.88
2019	11,496	\$11.22	4,370	\$14.92	\$76.26

Table 4: Number of Fatal and Total workplace injuries compensation claims and amount awarded, 2017-2019

Year	Fatal		Total		
	No. of Cases	Death Compensation (\$million)	No. of Cases	MC Wages (\$million)	PI/Death Compensation (\$million)
2017	149	\$20.58	15,016	\$22.95	\$94.93
2018	111	\$15.96	14,585	\$21.89	\$89.84
2019	126	\$17.62	15,992	\$26.14	\$93.88

¹⁶Work injury compensation data excludes cases that were withdrawn, cases with No-Further-Action required and cases that were not admitted under WICA.

¹⁷Temporary incapacity claims arise from non-permanent work injuries where an injured employee is temporarily unable to perform work and earn his usual wages after being placed on medical leave.

¹⁸Permanent incapacity claims arise from injuries which cause permanent injuries or loss of bodily functions to an injured employee.

BUSINESS UNDER SURVEILLANCE

Proactive surveillance of high risk workplaces enables preventive measures to be taken early. The Business Under Surveillance (BUS) programme focuses on improvement of WSH management systems.

BUSINESS UNDER SURVEILLANCE

More than 300 companies have been placed under the programme since inception in 2007. Companies on the BUS programme include those with serious accidents, and those which were issued with Stop Work Orders (SWO) for poor WSH management or which have accumulated a substantial number of demerit points. Companies exit the programme when their WSH standards have improved to a level where they can effectively manage their WSH risks.

In 2019, 20 companies entered the BUS programme. They were all from the Construction industry. For the seven companies which exited the programme in 2019, they were under surveillance for an average of 20 months.

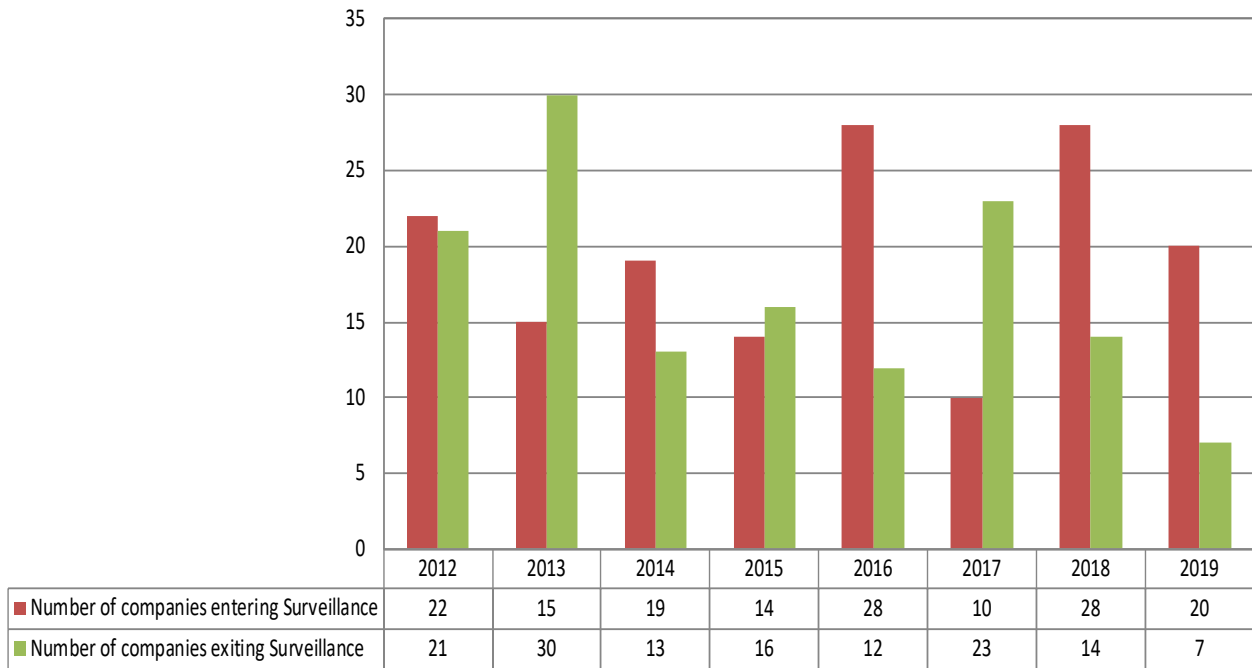


Figure 26: Number of companies entering and exiting surveillance, 2012-2019

MEDICAL AND HYGIENE SURVEILLANCE

Hygiene and Medical surveillance programmes monitor workers' exposure and health effects from exposure to the list of hazards under the Workplace Safety and Health (General Provisions) Regulations, Workplace Safety and Health (Noise) Regulations and the Workplace Safety and Health (Medical Examinations) Regulations.

MEDICAL SURVEILLANCE

Workplaces with hazards listed in the Schedule of the WSH (Medical Examinations) Regulations are required to send their exposed workers for pre-placement and periodic medical examinations.

There was an increase in the number of workers under surveillance from 121,219 in 2018 to 133,740 in 2019. Similarly, the numbers of workplaces under medical surveillance increased from 2,137 in 2018 to 2,156 in 2019.

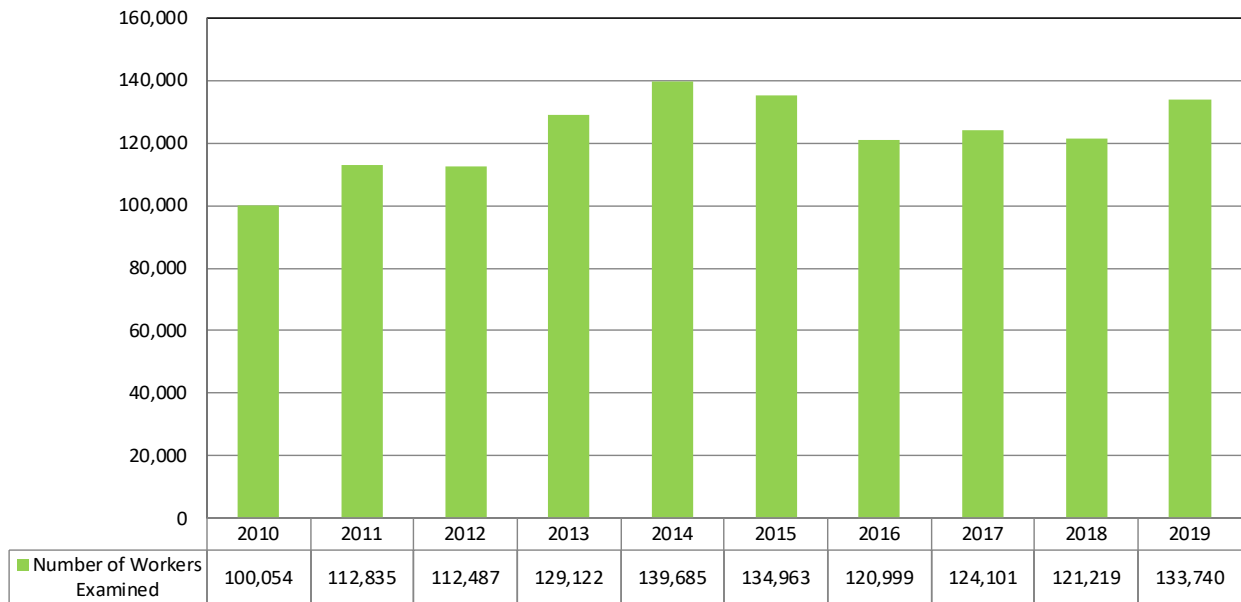


Figure 27: Number of workers under medical surveillance, 2010-2019

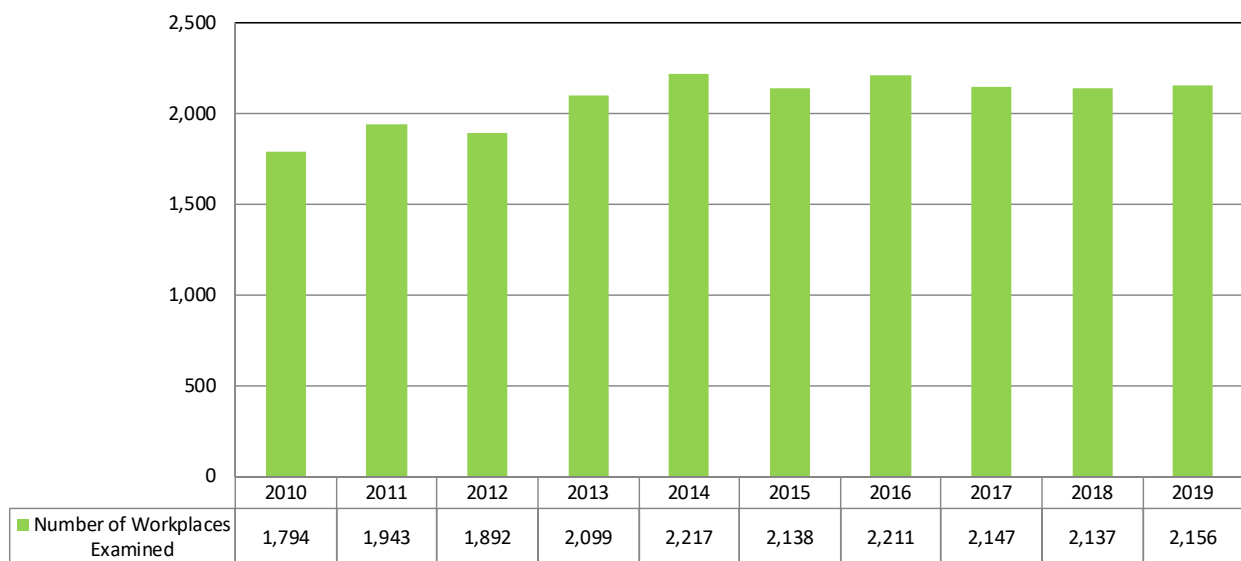


Figure 28: Number of workplaces under medical surveillance, 2010-2019

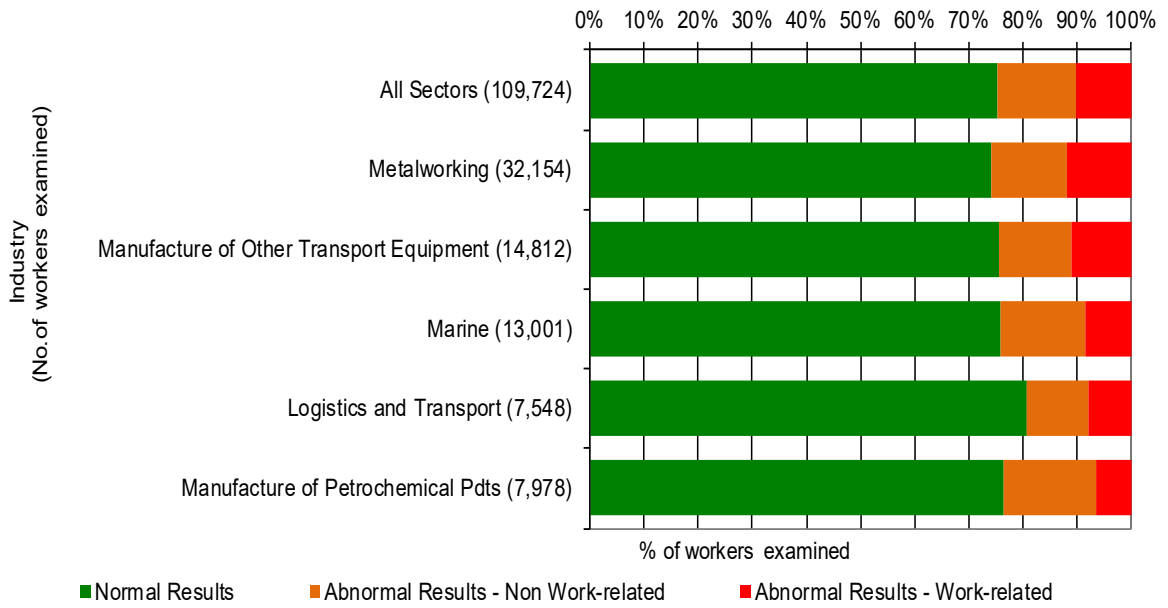


Figure 29: Medical monitoring for noise exposure by Top 5 industries, 2019

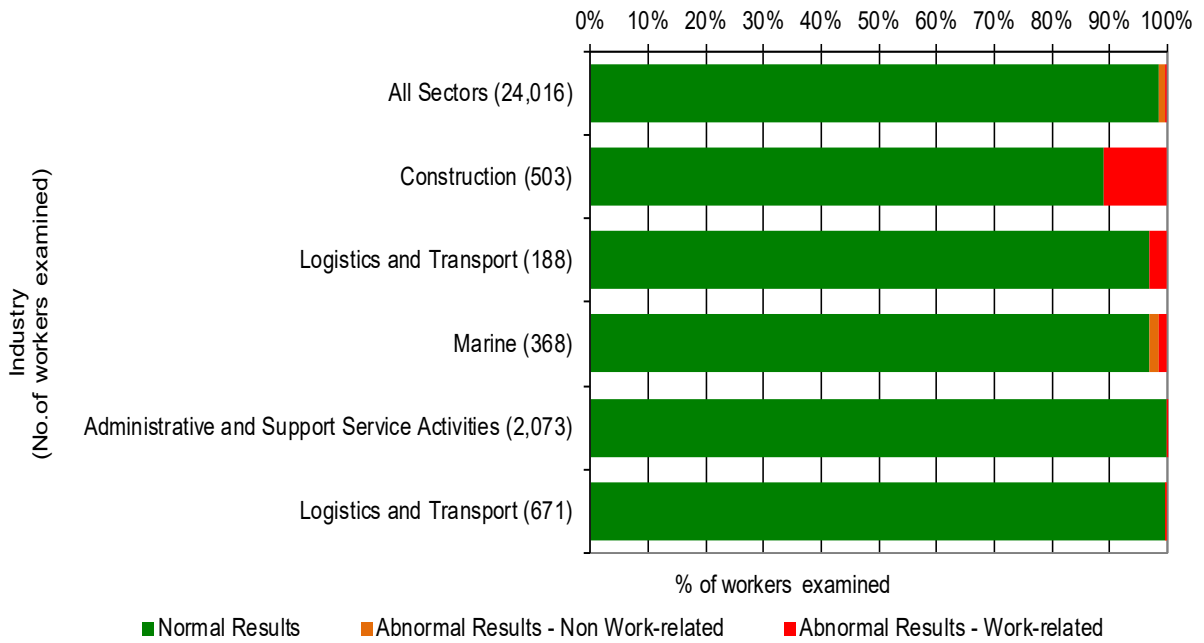


Figure 30: Medical monitoring for chemical exposure by Top 5 industries, 2019

HYGIENE SURVEILLANCE

Workplaces where persons are likely to be exposed to excessive noise or toxic substances are required to conduct regular hygiene monitoring to measure their workers' exposure to noise and chemicals under the WSH (Noise) Regulations and the WSH (General Provisions) Regulations respectively.

NOISE EXPOSURE LEVELS

Based on the noise monitoring results submitted over the past three years, 80% of the workplaces had noisy processes exceeding 85dBA. 79% of the workplaces that conducted personal exposure monitoring had workers who were exposed to excessive noise (above an equivalent sound pressure level of 85dBA over an eight-hour workday).

Workplaces with noisy processes or workers who are exposed to excessive noise will need to implement additional control measures to reduce or control the noise generated from machinery or equipment so as to reduce workers' exposure to below the permissible limits as stipulated in the Schedule of the WSH (Noise) Regulations.

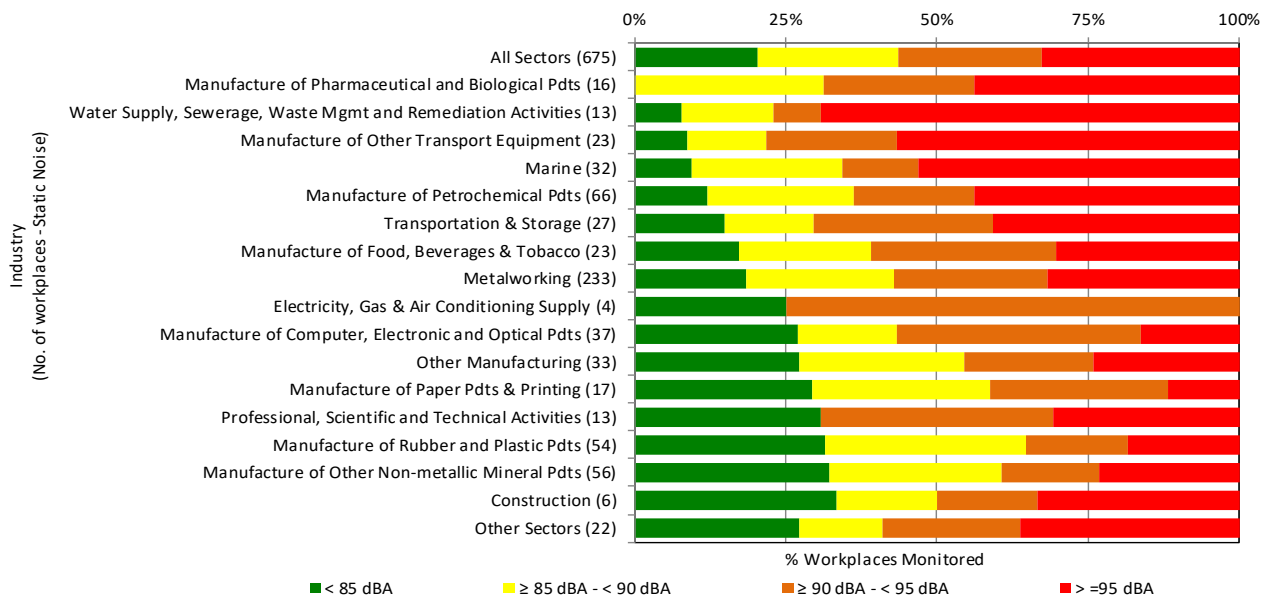


Figure 31: Static noise monitoring results by industry, 2017-2019

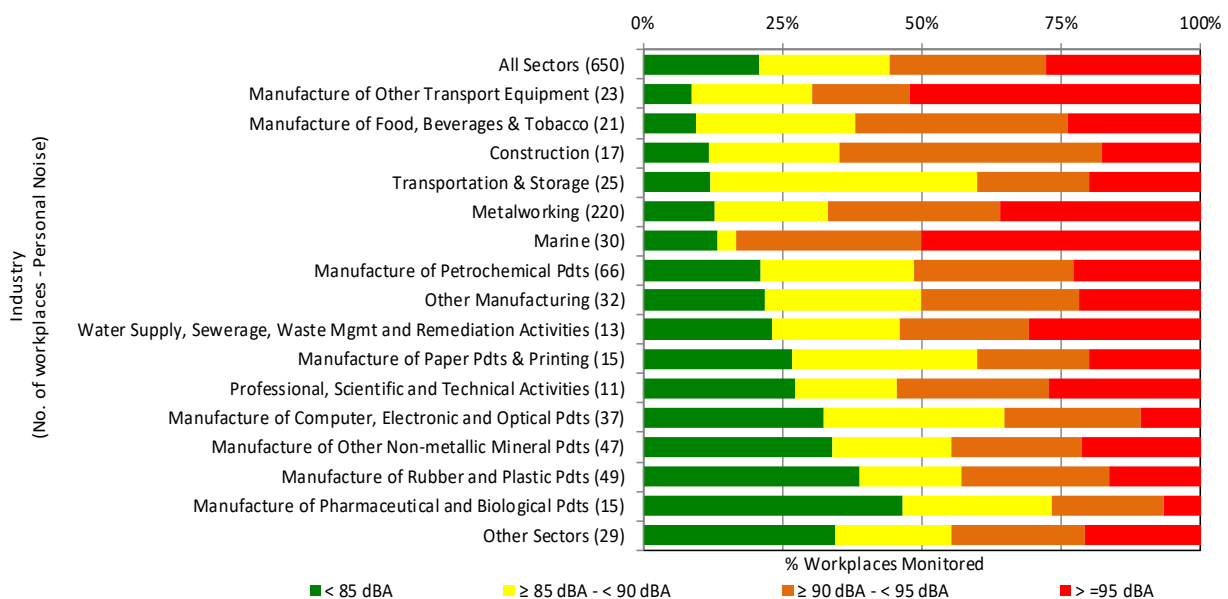


Figure 32: Personal noise exposure results by industry, 2017-2019

CHEMICAL EXPOSURE LEVELS

A total of 1,405 chemical monitoring results were received in 2019, of which 21% of the results were from the Manufacture of Petrochemical Products industry and 9% from the Metalworking industry. Workplaces with chemical exposure levels higher than permissible exposure level (PEL¹⁹) will require implementation of additional engineering control measures to eliminate or reduce workers' exposure to below the PEL.

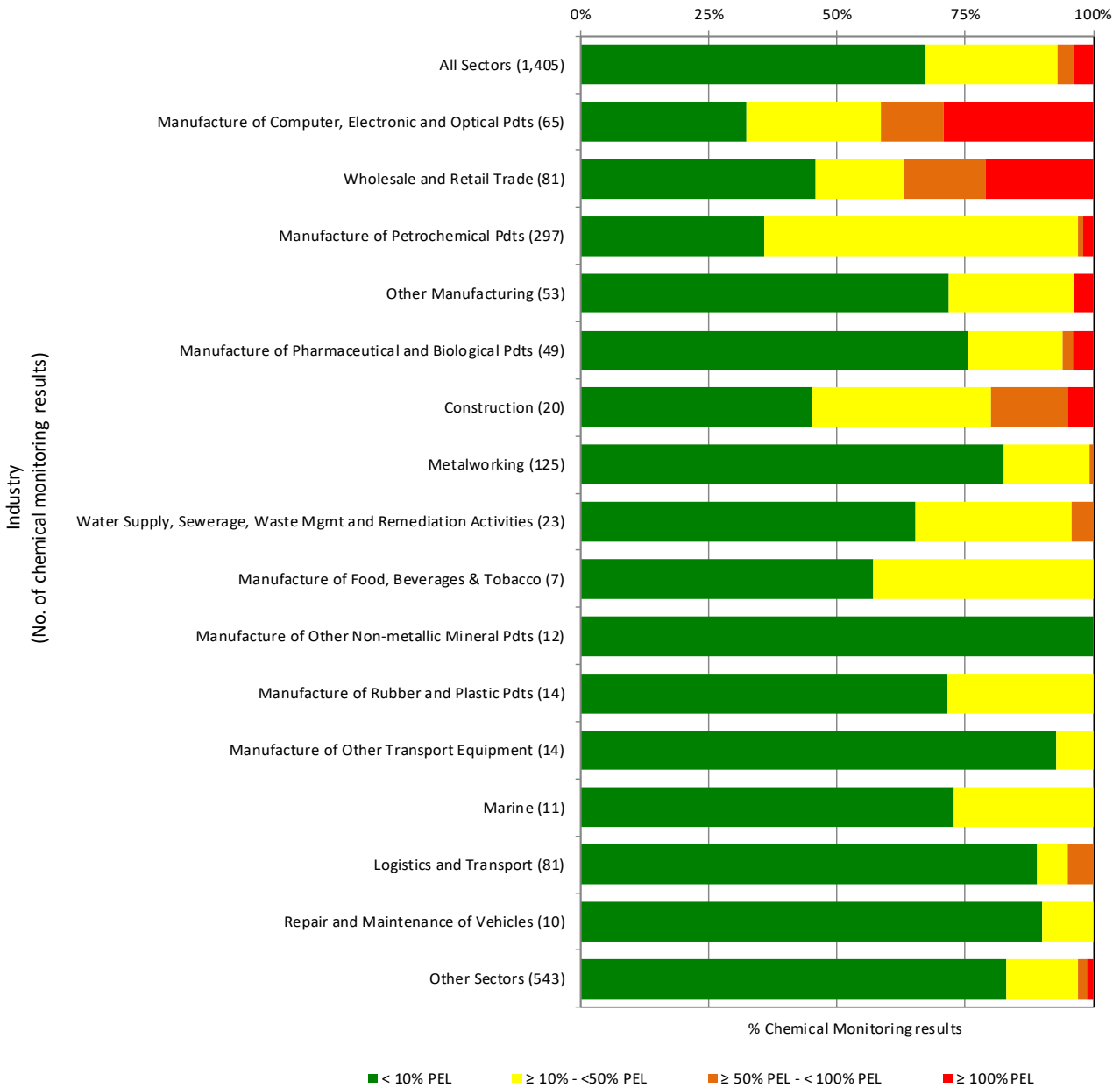


Figure 33: Chemical exposure results by industry, 2019

¹⁹Permissible Exposure Level (PEL) refer to the maximum time weighted average concentration of a toxic substance to which any person may be exposed.

ANNEX A

STATISTICAL TABLES

Table 5: Number of workplace fatal injuries by industry, 2018 and 2019

Industry	2018	2019
All Industries	41	39
Construction	14	13
Marine	4	4
Manufacturing	4	4
<i>Metalworking</i>	1	3
<i>Manufacture of Petrochemical Products</i>	0	1
<i>Manufacture of Computer, Electronic and Optical Products</i>	1	0
<i>Manufacture of Food Products</i>	1	0
<i>Manufacture of Other Non-metallic Mineral Products</i>	1	0
Electricity, Gas, & Air Conditioning Supply	1	1
Water Supply, Sewerage & Waste Management and Remediation Activities	1	1
Wholesale & Retail Trade	6	2
<i>Wholesale Trade</i>	5	2
<i>Retail Trade</i>	1	0
Transportation & Storage	4	8
<i>Logistics & Transport</i>	3	3
Food & Beverage Service Activities	0	2
Rental & Leasing Activities	1	2
Real Estate Services	4	1
Social Services	0	1
Telecommunications	1	0
Cleaning & Landscape Maintenance Activities	1	0

Table 6: Workplace fatal injury rates by industry, 2018 and 2019

Per 100,000 employed persons

Industry	2018	2019
All Industries	1.2	1.1
Construction	3.1	2.9
Marine	6.2	6.0
Manufacturing	0.9	1.0
<i>Metalworking</i>	0.9	2.8
<i>Manufacture of Petrolchemical Products</i>	0.0	1.9
<i>Manufacture of Computer, Electronic and Optical Products</i>	1.1	0.0
<i>Manufacture of Food Products</i>	2.1	0.0
<i>Manufacture of Other Non-metallic Mineral Products</i>	23.8	0.0
Electricity, Gas & Air Conditioning Supply	n.a.	n.a.
Water Supply, Sewerage & Waste Management and Remediation Activities	6.1	6.0
Wholesale & Retail Trade	1.2	0.4
<i>Wholesale Trade</i>	1.5	0.6
<i>Retail Trade</i>	0.6	0.0
Transportation & Storage	1.5	3.1
<i>Logistics & Transport</i>	2.9	2.9
Food & Beverage Service Activities	0.0	0.9
Rental & Leasing Activities	n.a.	n.a.
Real Estate Services	4.6	1.2
Social Services	n.a.	n.a.
Telecommunications	n.a.	n.a.
Cleaning & Landscape Maintenance Activities	1.3	0.0

Table 7: Number of workplace fatal injuries by incident type and incident agent, 2018 and 2019

Incident Type		Incident Agent	2018	2019
Total Workplace Fatal Injuries			41	39
Falls	Total		15	10
Falls from Height	Total		8	7
	<i>Physical Workplace - Structures</i>		4	4
	<i>Means of Access - Ladders</i>		1	1
	<i>Means of Access - Others</i>		0	1
	<i>Other Incident Agents</i>		0	1
	<i>Means of Access - Scaffold</i>		1	0
	<i>Physical Workplace - Roofs</i>		2	0
Slips, Trips & Falls	Total		7	3
	<i>Physical Workplace - Floor/Level Surfaces</i>		5	2
	<i>Goods / Cargo</i>		0	1
	<i>Vehicles</i>		1	0
	<i>Means of Access - Others</i>		1	0
Struck by Moving Objects	Total		5	9
	<i>Work-related Traffic</i>		2	4
	<i>Vehicles</i>		0	3
	<i>Other Incident Agents</i>		1	1
	<i>Lifting Equipment - Lifting Appliances / Gears</i>		0	1
	<i>Material & Substances - Metal Items</i>		1	0
	<i>Physical Workplace - Formwork</i>		1	0
Collapse/Failure of Structure & Equipment	Total		4	7
	<i>Physical Workplace - Structures</i>		2	3
	<i>Goods / Cargo</i>		2	1
	<i>Lifting Equipment - Cranes</i>		0	1
	<i>Lifting Equipment - Mobile Work Platform</i>		0	1
	<i>Means of Access - Scaffold</i>		0	1
Caught in/ between Objects	Total		7	4
	<i>Industrial Machines</i>		1	2
	<i>Lifting Equipment - Lifts & Hoists</i>		1	1
	<i>Other Incident Agents</i>		0	1
	<i>Vehicles</i>		5	0
Drowning	Total		2	3
Struck by Falling Objects From Heights	Total		1	2
	<i>Material & Substances - Metal Items</i>		0	2
	<i>Other Incident Agents</i>		1	0

(continued) Table 7: Number of workplace fatal injuries by incident type and incident agent, 2018 and 2019

Incident Type	Incident Agent	2018	2019
Total Workplace Fatal Injuries		41	39
Electrocution	Total	2	1
	<i>Electrical Equipment</i>	2	1
Crane-related	Total	1	1
	<i>Lifting Equipment - Cranes</i>	0	1
	<i>Lifting Equipment - Mobile Work Platform</i>	1	0
Fires and Explosion	Total	0	1
	<i>Pressurised Equipment</i>	0	1
Exposure to/ Contact With Extreme Temperature (Heat / Cold)	Total	0	1
	<i>Material & Substances - Hot Scalding Liquid / Steam</i>	0	1
Cave-In of Excavation, Tunnel, Etc	Total	2	0
	<i>Other Incident Agents</i>	2	0
Collapse of Formwork/ Failure of its Supports	Total	1	0
Suffocation	Total	1	0
	<i>Dust, Gas, Liquids & Chemicals</i>	1	0

Table 8: Number of workplace fatal injuries by industry and incident type, 2019

Industry	All	Construction	Marine	Manufacturing	Electricity, Gas & Air Conditioning Supply	Water Supply, Sewerage & Waste Management and Remediation Activities	Wholesale & Retail Trade
Total	39	13	4	4	1	1	2
Falls	10	2	1	2	0	0	0
<i>Falls from Height</i>	7	3	1	1	0	0	0
<i>Slips, Trips & Falls</i>	3	0	0	1	0	0	0
Struck by Moving Objects	9	1	1	0	0	1	1
Collapse/Failure of Structure & Equipment	7	4	1	0	0	0	0
Caught in/between Objects	4	2	0	1	0	0	0
Drowning	3	0	1	0	0	0	0
Struck by Falling Objects From Heights	2	2	0	0	0	0	0
Electrocution	1	0	0	1	0	0	0
Crane-related	1	1	0	0	0	0	0
Fires and Explosion	1	0	0	0	1	0	0
Exposure to/Contact With Extreme Temperature (Heat / Cold)	1	0	0	0	0	0	1

(continued) Table 8: Number of workplace fatal injuries by industry and incident type, 2018

Industry	Transportation & Storage	Food & Beverage Service Activities	Rental & Leasing Activities	Real Estate Services	Social Services
Total	8	2	2	1	1
Falls	1	2	0	0	1
<i>Falls from Height</i>	1	1	0	0	0
<i>Slips, Trips & Falls</i>	0	1	0	0	1
Struck by Moving Objects	4	0	1	0	0
Collapse/Failure of Structure & Equipment	1	0	1	0	0
Caught in/between Objects	0	0	0	1	0
Drowning	2	0	0	0	0
Struck by Falling Objects From Heights	0	0	0	0	0
Electrocution	0	0	0	0	0
Crane-related	0	0	0	0	0
Fires and Explosion	0	0	0	0	0
Exposure to/Contact With Extreme Temperature (Heat / Cold)	0	0	0	0	0

Table 9: Number of workplace major injuries by industry, 2018 and 2019

Industry	2018	2019
All Industries	596	629
Construction	124	121
Marine	15	19
Manufacturing	123	137
<i>Metalworking</i>	35	42
<i>Manufacture of Food, Beverages & Tobacco</i>	29	24
<i>Manufacture of Paper/ Rubber/ Plastic Products & Printing</i>	13	12
<i>Manufacture of Petrochemical</i>	14	10
Water Supply, Sewerage & Waste Management and Remediation Activities	6	5
Wholesale & Retail Trade	30	35
<i>Wholesale Trade</i>	15	15
<i>Retail Trade</i>	15	20
Transportation & Storage	49	57
<i>Logistics & Transport</i>	33	38
Accommodation & Food Service Activities	37	54
<i>Accommodation</i>	7	12
<i>Food & Beverage Service Activities</i>	30	42
Financial & Insurance Activities	12	5
Real Estate Activities	15	15
Professional, Scientific & Technical Activities	13	12
Administrative & Support Service Activities	25	30
<i>Cleaning and Landscape Maintenance Activities</i>	7	10
<i>Security and Investigation Activities</i>	7	9
Community, Social & Personal Services	59	61
<i>Health Activities</i>	11	15
<i>Education</i>	14	11
<i>Repair & Maintenance of Vehicles</i>	10	6

Table 10: Workplace major injury rates by industry, 2018 and 2019

Per 100,000 employed persons

Industry	2018	2019
All Industries	17.4	18.1
Construction	27.8	26.6
Marine	23.1	28.5
Manufacturing	28.9	32.7
<i>Metalworking</i>	31.6	39.5
<i>Manufacture of Food, Beverages & Tobacco</i>	57.0	45.8
<i>Manufacture of Paper/ Rubber/ Plastic Products & Printing</i>	43.5	41.8
<i>Manufacture of Petrochemical</i>	25.9	18.9
Water Supply, Sewerage & Waste Management and Remediation Activities	36.4	30.1
Wholesale & Retail Trade	6.1	7.2
<i>Wholesale Trade</i>	4.6	4.6
<i>Retail Trade</i>	9.2	12.5
Transportation & Storage	18.9	21.8
<i>Logistics & Transport</i>	31.4	36.3
Accommodation & Food Service Activities	14.6	20.6
<i>Accommodation</i>	20.1	32.7
<i>Food & Beverage Service Activities</i>	13.7	18.6
Financial & Insurance Activities	6.1	2.5
Real Estate Activities	17.3	17.9
Professional, Scientific & Technical Activities	5.3	4.7
Administrative & Support Service Activities	10.3	11.9
<i>Cleaning and Landscape Maintenance Activities</i>	9.2	14.8
<i>Security and Investigation Activities</i>	14.5	18.1
Community, Social & Personal Services	7.1	7.2
<i>Health Activities*</i>	9.9	13.1
<i>Education</i>	<i>n.a.</i>	<i>n.a.</i>
<i>Repair & Maintenance of Vehicles*</i>	<i>n.a.</i>	<i>n.a.</i>

Table 11: Types of workplace major injuries, 2018 and 2019

Workplace Major Injury Types	2018	2019
Total	596	629
Crushing, Fractures and Dislocations	358	368
Amputations	106	132
Burns, with more than 20 MC days	66	55
Multiple Injuries	38	38
Concussion, with more than 20 MC days	15	13
Exposure to/ contact with Electric Current	10	18
Blindness	1	3
Exposure to Biological Materials	0	1
Mosquito Borne	0	1
Paralysis	1	1
Deafness	1	0

Table 12: Number of workplace major injuries by key incident type and key incident agent, 2018 and 2019

Incident Type	Incident Agent	2018	2019
Total Workplace Major Injuries		596	629
Falls	Total	274	278
Slips, Trips & Falls	Total	203	216
	<i>Physical Workplace - Floor/Level Surfaces</i>	84	113
	<i>Means of Access - Stairs or Steps</i>	33	29
Falls from Height	<i>Vehicles</i>	30	25
	Total	71	62
	<i>Means of Access - Ladders</i>	45	29
	<i>Physical Workplace - Structure</i>	4	15
Struck by Moving Objects	<i>Means of Access - Scaffold</i>	6	7
	Total	76	102
	<i>Vehicles</i>	16	22
	<i>Work-related Traffic</i>	25	17
	<i>Metal Items (excluding knives/needles)</i>	2	14
Caught in/ between Objects	<i>Industrial Machines</i>	10	13
	Total	50	59
	<i>Industrial Machines</i>	26	24
	<i>Metal Items (excluding knives/needles)</i>	9	13
Exposure to/ contact with Extreme Temperatures	<i>Vehicles</i>	5	2
	Total	43	34
	<i>Hot scalding liquid/Steam</i>	36	31
Struck by Falling Objects	<i>Industrial Machines</i>	2	1
	Total	45	34
	<i>Metal Items (excluding knives/needles)</i>	16	8
	<i>Wooden Items</i>	0	6
Cut/Stabbed by Objects	<i>Goods/Cargo</i>	5	4
	Total	33	30
	<i>Industrial Machines</i>	27	22
	<i>Industrial Hand Tools</i>	5	5
Exposure to Electric Current	<i>Knives and Needles</i>	1	3
	Total	13	23
	Electric Equipment	11	11
Over-exertion/ Strenuous Movements	Industrial Machines	1	8
	Total	16	21
	<i>Human Factors</i>	3	10
	<i>Goods/Cargo</i>	6	8

Table 13: Top 3 incident types for workplace major injuries by industry, 2019

Industry	Top 3 Incident Types		
	1st	2nd	3rd
All Industries	STF	SBMO	FFH
Construction	STF	FFH	SBMO
Marine	CIBO	FFH, STF	SBMO
Manufacturing	STF	CIBO	SBMO
<i>Metalworking</i>	<i>CIBO</i>	<i>SBMO</i>	<i>STF</i>
<i>Manufacture of Food, Beverages & Tobacco</i>	<i>STF</i>	<i>SBMO</i>	<i>CSBO</i>
<i>Manufacture of Paper/ Rubber/ Plastic Products & Printing</i>	<i>STF</i>	<i>CIBO</i>	<i>CSBO, SAO, SBFO</i>
<i>Manufacture of Petrochemical</i>	<i>STF</i>	<i>ETHS</i>	<i>ETET, FFH, FE, OESM, SBMO</i>
Water Supply, Sewerage & Waste Management and Remediation Activities	STF	CIBO, ETBM, ETHS	-
Wholesale & Retail Trade	STF	OESM	SBMO
<i>Wholesale Trade</i>	<i>STF</i>	<i>OESM, SBMO</i>	<i>CSBO, ETET, FFH, SAO</i>
<i>Retail Trade</i>	<i>STF</i>	<i>OESM</i>	<i>CSBO, ETET</i>
Transportation & Storage	STF	SBMO	SAO
<i>Logistics & Transport</i>	<i>STF</i>	<i>SBMO</i>	<i>FFH, SAO, SBFO</i>
Accommodation & Food Service Activities	STF	ETET	SBMO
<i>Accommodation</i>	<i>STF</i>	<i>EETEC, ETET, FFH</i>	-
<i>Food & Beverage Service Activities</i>	<i>ETET, STF</i>	<i>SBMO</i>	<i>FE</i>
Financial & Insurance Activities	STF	ETET, SBFO, SBMO	-
Real Estate Activities	STF	ETET	EETEC
Professional, Scientific & Technical Activities	FFH, STF	CIBO, CFOS, CSBO, OESM, SBFO, SBMO	-
Administrative & Support Service Activities	STF	SBMO	FFH
<i>Cleaning and Landscape Maintenance Activities</i>	<i>STF</i>	<i>CIBO, SAO, SBFO</i>	-
<i>Security and Investigation Activities</i>	<i>STF</i>	<i>CIBO, SBMO</i>	-
Community, Social & Personal Services	<i>STF</i>	<i>SBMO</i>	<i>FFH, OESM, SAO</i>
<i>Education</i>	<i>STF</i>	<i>SAO, SBMO</i>	<i>FFH</i>
<i>Health Activities</i>	<i>STF</i>	<i>OESM</i>	<i>CIBO, CSBO, OTH</i>
<i>Repair & Maintenance of Vehicles</i>	<i>SBMO</i>	<i>CSBO, STF</i>	-

Legend:

CIBO	Caught In/Between Objects	ETBM	Exposure to/ contact with Biological Materials	OESM	Over-exertion and Strenuous Movements
CSBO	Cut/Stabbed by Objects			OTH	Other Incident Types
CFOS	Collapse/Failure of Structures	ETHS	Exposure to/ Contact with Hazardous Substances		Strike Against Objects
EETEC	Exposure to/ Contact with Electric Current	FE	Fires & Explosion	SBFO	Struck by Falling Objects
ETET	Exposure to/ Contact with Extreme Temperature	FFH	Falls from Height	SBMO	Struck by Moving Objects
				STF	Slips, Trips and Falls

Table 14: Number of workplace minor injuries by industry, 2018 and 2019

Industry	2018	2019
All Industries	12,173	13,111
Construction	1,656	1,981
Marine	252	330
Manufacturing	2,473	2,653
<i>Metalworking</i>	985	1,089
<i>Manufacture of Food, Beverages & Tobacco</i>	497	535
<i>Manufacture of Paper/ Rubber/ Plastic/ Products & Printing</i>	188	186
Water Supply, Sewerage & Waste Management and Remediation Activities	111	125
Wholesale & Retail Trade	707	723
<i>Wholesale Trade</i>	351	352
<i>Retail Trade</i>	356	371
Transportation & Storage	1,038	1,064
<i>Logistics & Transport</i>	780	819
Accommodation & Food Service Activities	1,159	1,265
<i>Accommodation</i>	257	273
<i>Food & Beverage Service Activities</i>	902	992
Financial & Insurance Activities	163	200
Real Estate Activities	402	455
Professional, Scientific & Technical Activities	427	442
<i>Legal, Accounting & Management Activities</i>	171	186
<i>Architectural & Engineering Activities</i>	195	185
Administrative & Support Service Activities	580	715
<i>Cleaning & Landscape Maintenance Activities</i>	210	281
<i>Office Administrative, Office Support & Other Business Support Activities</i>	186	205
<i>Security and Investigation Activities</i>	140	182
Community, Social & Personal Services	1,339	1,539
<i>Health Activities</i>	481	567
<i>Education</i>	275	310
<i>Other Personal Service Activities</i>	166	180
<i>Arts, Entertainment and Recreation</i>	137	143
<i>Repair & Maintenance of Vehicles</i>	109	117

Table 15: Workplace minor injury rates by industry, 2018 and 2019

Industry	Per 100,000 employed persons	
	2018	2019
All Industries	355	377
Construction	371	436
Marine	389	495
Manufacturing	581	634
<i>Metalworking</i>	891	1,023
<i>Manufacture of Food, Beverages & Tobacco</i>	976	1,021
<i>Manufacture of Paper/ Rubber/ Plastic/ Products & Printing</i>	629	648
Water Supply, Sewerage & Waste Management and Remediation Activities	673	753
Wholesale & Retail Trade	145	149
<i>Wholesale Trade</i>	108	109
<i>Retail Trade</i>	218	231
Transportation & Storage	401	407
<i>Logistics & Transport</i>	741	782
Accommodation & Food Service Activities	456	482
<i>Accommodation</i>	739	744
<i>Food & Beverage Service Activities</i>	411	439
Financial & Insurance Activities	83	100
Real Estate Activities	465	543
Professional, Scientific & Technical Activities	175	175
<i>Legal, Accounting & Management Activities</i>	136	140
<i>Architectural & Engineering Activities</i>	324	303
Administrative & Support Service Activities	239	283
<i>Cleaning & Landscape Maintenance Activities</i>	277	353
<i>Office Administrative, Office Support & Other Business Support Activities</i>	<i>n.a.</i>	<i>n.a.</i>
<i>Security and Investigation Activities</i>	290	367
Community, Social & Personal Services	161	181
<i>Health Activities*</i>	432	494
<i>Education</i>	<i>n.a.</i>	<i>n.a.</i>
<i>Other Personal Service Activities</i>	<i>n.a.</i>	<i>n.a.</i>
<i>Arts, Entertainment and Recreation</i>	241	249
<i>Repair & Maintenance of Vehicles*</i>	<i>n.a.</i>	<i>n.a.</i>

Table 16: Number of workplace minor injuries by key incident type and key incident agent, 2018 and 2019

Incident Type	Incident Agent	2018	2019
Total Workplace Minor Injuries		12,173	13,111
Falls	Total	3,987	4,313
Slips, Trips & Falls	Total	3,407	3,694
	Physical Workplace - Floor/Level Surfaces	1,734	2,008
	Means of Access - Stairs or Steps	500	604
Falls from Height	Vehicles	276	282
	Total	580	619
	Means of Access - Ladders	426	431
	Means of Access - Scaffold	51	55
Struck by Moving Objects	Physical Workplace - Structures	44	47
	Total	2,388	2,428
	Industrial Hand Tools	415	455
	Metal Items (excluding knives/needles)	380	452
Cut/Stabbed by Objects	Vehicles	360	339
	Total	1,352	1,452
	Knives and Needles	534	625
	Industrial Machines	294	305
Struck by Falling Objects	Industrial Hand Tools	285	277
	Total	1,016	1,081
	Metal Items (excluding knives/needles)	319	335
	Furniture and Fittings	151	166
Caught in/ between Objects	Goods/Cargo	146	143
	Total	840	923
	Industrial Machines	269	269
	Metal Items (excluding knives/needles)	184	207
	Furnitures & Fittings	98	112
Over-exertion/ Strenuous Movements	Vehicles	96	112
	Total	835	902
	Human Factors	469	561
	Goods/Cargo	163	186
Strike against Objects	Furniture and Fittings	32	33
	Total	669	784
	Metal Items (excluding knives/needles)	191	241
	Furniture & Fittings	182	184
Exposure to Extreme Temperatures	Industrial Machines	51	71
	Total	368	398
	Hot scalding liquid/steam	310	320
	Industrial Machines	17	24
	Pressure Equipment	6	10

Table 17: Top 3 incident types for workplace minor injuries by industry, 2019

Industry	Top 3 Incident Types		
	1 st	2 nd	3 rd
All Industries	STF	SBMO	CSBO
Construction	SBMO	STF	SBFO
Marine	SBMO	STF	CIBO
Manufacturing	SBMO	STF	CSBO
<i>Metalworking</i>	<i>SBMO</i>	<i>CIBO</i>	<i>STF</i>
<i>Manufacture of Food, Beverages & Tobacco</i>	<i>STF</i>	<i>CSBO</i>	<i>SBMO</i>
<i>Manufacture of Paper/ Rubber/ Plastic/ Products & Printing</i>	<i>STF</i>	<i>CIBO</i>	<i>CSBO</i>
Water Supply, Sewerage & Waste Management and Remediation Activities	STF	SBMO	CIBO
Wholesale & Retail Trade	STF	SBMO	CSBO
<i>Wholesale Trade</i>	<i>STF</i>	<i>SBMO</i>	<i>OESM</i>
<i>Retail Trade</i>	<i>STF</i>	<i>CSBO</i>	<i>SBMO</i>
Transportation & Storage	STF	SBMO	OESM
<i>Logistics & Transport</i>	<i>STF</i>	<i>SBMO</i>	<i>CIBO</i>
Accommodation & Food Service Activities	CSBO	STF	ETET
<i>Accommodation</i>	<i>CSBO</i>	<i>STF</i>	<i>SBFO</i>
<i>Food & Beverage Service Activities</i>	<i>CSBO</i>	<i>STF</i>	<i>ETET</i>
Financial & Insurance Activities	STF	OESM	CSBO
Real Estate Activities	STF	OESM, SBMO	CSBO
Professional, Scientific & Technical Activities	STF	SBMO	OESM
<i>Legal, Accounting & Management Activities</i>	<i>STF</i>	<i>OESM, SBMO</i>	<i>CSBO</i>
<i>Architectural & Engineering Activities</i>	<i>STF</i>	<i>SBMO</i>	<i>SBFO</i>
Administrative & Support Service Activities	STF	SBMO	OESM
<i>Cleaning & Landscape Maintenance Activities</i>	<i>STF</i>	<i>SBMO</i>	<i>CSBO</i>
<i>Office Administrative, Office Support & Other Business Support Activities</i>	<i>STF</i>	<i>SBMO</i>	<i>CSBO</i>
<i>Security and Investigation Activities</i>	<i>STF</i>	<i>SBMO</i>	<i>OESM</i>
Community, Social & Personal Services	STF	SBMO	OESM
<i>Health Activities</i>	<i>STF</i>	<i>OESM</i>	<i>SBMO</i>
<i>Education</i>	<i>STF</i>	<i>SBMO</i>	<i>OESM</i>
<i>Other Personal Service Activities</i>	<i>STF</i>	<i>SBMO</i>	<i>CSBO</i>
<i>Arts, Entertainment and Recreation</i>	<i>STF</i>	<i>ETBM</i>	<i>CSBO</i>
<i>Repair & Maintenance of Vehicles</i>	<i>SBMO</i>	<i>STF</i>	<i>CIBO</i>

Legend:

- | | | | | | |
|------|---|------|---------------------------------------|------|--------------------------|
| CIBO | Caught In/Between Objects | ETBM | Exposure to Biological Materials | SBMO | Struck by Moving Objects |
| CSBO | Cut/Stabbed by Objects | OESM | Over-exertion and Strenuous Movements | STF | Slips, Trips and Falls |
| ETET | Exposure to/ Contact with Extreme Temperature | SBFO | Struck by Falling Objects | | |

Table 18: Types of workplace minor injury, 2018 and 2019

Workplace Minor Injury Types	2018	2019
Total	12,173	13,111
Cuts and Bruises	4,041	4,500
Crushing, Fractures and Dislocations	3,127	3,107
Sprains & Strains	1,724	1,982
Burns	433	459
Multiple Injuries	260	276
Puncture Wound	162	168
Bites and Stings	94	102
Concussion	74	85
Others	2,258	2,432

Table 19: Dangerous occurrences by industry, 2018 and 2019

Industry	2018	2019
All Industries	23	21
Construction	10	10
Marine	1	4
Manufacturing	5	3
<i>Manufacture of Petrochemical Products</i>	2	1
<i>Manufacture of Computer, Electronic and Optical Products</i>	1	1
<i>Manufacture of Paper/ Rubber/ Plastic/ Products & Printing</i>	0	1
<i>Manufacture of Other Transport Equipment</i>	2	0
Water Supply, Sewerage & Waste Management and Remediation Activities	2	0
Wholesale & Retail Trade	0	2
Transportation & Storage	1	1
Accommodation & Food Service Activities	1	1
Cleaning and Landscape Maintenance Activities	1	0
Public Administration and Defence	1	0
Education	1	0

Table 20: Types of dangerous Occurrences, 2018 and 2019

Incident Type	Incident Agent	2018	2019
Total Dangerous Occurrences		23	21
Collapse/Failure of Structure & Equipment	Total	14	13
	Lifting Equipment - Cranes	12	8
	Lifting Equipment - Mobile Work Platform	1	2
	Physical Workplace - Formwork	1	1
	Lifting Equipment - Lifts and Hoists	0	1
	Lifting Equipment - Piling Machines	0	1
Fires & Explosion	Total	9	8
	Dust, Gas, Liquid and Chemicals	2	2
	Pressurised Equipment	0	2
	Other Incident Agents	3	2
	Goods/ Cargo	1	1
	Explosives/ Flammable Substances	0	1
	Electrical Installation	2	0
	Hot Scalding Liquid / Steam	1	0

Table 21: Number of confirmed occupational disease cases by industry, 2018 and 2019

Industry	2018	2019
All Industries	563	517
Construction	55	53
Marine	35	13
Manufacturing	169	154
<i>Manufacture of Petrolchemical</i>	5	53
<i>Metalworking</i>	75	36
<i>Manufacture of Food, Beverages & Tobacco</i>	22	23
Wholesale & Retail Trade	32	23
Transportation & Storage	55	62
<i>Logistics & Transport</i>	46	39
Accommodation & Food Service Activities	41	33
<i>Accommodation</i>	14	11
<i>Food & Beverage Service Activities</i>	27	22
Information & Communications	6	3
Financial & Insurance Activities	5	10
Real Estate Activities	12	13
Professional, Scientific & Technical Activities	21	29
<i>Legal, Accounting and Management Services</i>	15	8
Administrative & Support Service Activities	13	16
Community, Social & Personal Services	75	68
<i>Health Activities</i>	45	44
<i>Education</i>	4	9
<i>Other Personal Service Activities</i>	11	5

Table 22: Occupational disease incidence rates by industry, 2018 and 2019

Per 100,000 employed persons

Industry	2018	2019
All Industries	16.4	14.9
Construction	12.3	11.7
Marine	54.0	19.5
Manufacturing	39.7	36.8
<i>Manufacture of Petrochemical</i>	9.2	100.0
<i>Metalworking</i>	67.8	33.8
<i>Manufacture of Food, Beverages & Tobacco</i>	43.2	43.9
Wholesale & Retail Trade	6.6	4.8
Transportation & Storage	21.2	23.7
<i>Logistics & Transport</i>	43.7	37.2
Accommodation & Food Service Activities	16.1	12.6
<i>Accommodation</i>	40.2	30.0
<i>Food & Beverage Service Activities</i>	12.3	9.7
Information & Communications	4.2	2.0
Financial & Insurance Activities	2.6	5.0
Real Estate Activities	13.9	15.5
Professional, Scientific & Technical Activities	8.6	11.5
<i>Legal, Accounting and Management Services</i>	11.9	6.0
Administrative & Support Service Activities	5.3	6.3
Community, Social & Personal Services	9.0	8.0
<i>Health Activities*</i>	40.4	38.4
<i>Education</i>	<i>n.a.</i>	<i>n.a.</i>
<i>Other Personal Service Activities</i>	<i>n.a.</i>	<i>n.a.</i>

Table 23: Number of confirmed occupational diseases by type, 2018 and 2019

	2018	2019
Total	563	517
Work-related Musculoskeletal Disorders	326	293
<i>Back injuries due to ergonomic risks</i>	297	279
<i>Tendinitis</i>	10	6
<i>Trigger Finger/Thumb</i>	4	4
<i>Nerve Disorder such as Carpal Tunnel Syndrome, Cubital Tunnel Syndrome</i>	4	3
<i>Tenosynovitis</i>	0	1
<i>Musculoskeletal Disorder of the Back</i>	3	0
<i>Lateral Epicondylitis (Tennis Elbow)</i>	2	0
<i>Others</i>	6	0
Noise Induced Deafness	163	169
<i>NID (E) - Early</i>	148	163
<i>NID (A) - Advanced</i>	15	6
Occupational Skin Disease	48	39
<i>Eczema</i>	47	36
<i>Others</i>	1	3
Occupational Lung Disease	6	4
<i>Occupational Asthma</i>	3	3
<i>Silicosis</i>	1	1
<i>Asbestosis</i>	2	0
Barotrauma	5	2
<i>Sinus</i>	1	2
<i>Aural</i>	3	0
<i>Pulmonary</i>	1	0
Cancers	6	2
<i>Mesothelioma</i>	6	2
Heat Disorder	3	2
Infectious Disease	3	2
Compressed Air Illness	2	2
<i>CAI Type 1</i>	1	2
<i>CAI Type 2</i>	1	0
Others	1	2

Table 24: Number of confirmed NID cases by industry, 2018 and 2019

Industry	2018	2019
All Industries	163	169
Construction	22	18
Marine	32	8
Manufacturing	86	101
<i>Manufacture of Petrolchemical</i>	5	50
<i>Metalworking</i>	49	23
<i>Manufacture of Food, Beverages & Tobacco</i>	3	14
Electricity, Gas & Air Conditioning Supply	0	4
Wholesale & Retail Trade	2	2
Transportation & Storage	11	17
<i>Logistics & Transport</i>	9	5
Information & Communication	1	1
Professional, Scientific & Technical Activities	2	14
<i>Architectural & Engineering Activities</i>	1	10
Community, Social & Personal Services	3	2
<i>Education</i>	1	1

Table 25: Number of confirmed WRMSD cases by industry, 2018 and 2019

Industry	2018	2019
All Industries	326	293
Construction	24	29
Marine	1	2
Manufacturing	66	41
<i>Other Manufacturing</i>	7	9
<i>Metalworking</i>	20	8
<i>Manufacture of Food, Beverages & Tobacco</i>	19	7
Water Supply, Sewerage & Waste Management and Remediation Activities	1	3
Wholesale & Retail Trade	28	19
<i>Wholesale Trade</i>	16	12
<i>Retail Trade</i>	12	7
Transportation & Storage	40	41
<i>Logistics & Transport</i>	33	31
Accommodation & Food Service Activities	37	28
<i>Accommodation</i>	12	9
<i>Food & Beverage Service Activities</i>	25	19
Information & Communications	4	2
Financial & Insurance Activities	3	9
Real Estate Services	10	13
Professional, Scientific & Technical Activities	17	11
Administrative & Support Service Activities	8	12
Community, Social & Personal Services	46	56
<i>Health Activities</i>	28	35
<i>Other Personal Service Activities</i>	6	4
<i>Arts, Entertainment and Recreation</i>	5	2

Table 26: Number of confirmed OSD cases by industry, 2018 and 2019

Industry	2018	2019
All Industries	48	39
Construction	3	3
Marine	0	2
Manufacturing	11	11
<i>Metalworking</i>	5	4
<i>Manufacture of other Transport Equipment</i>	2	3
<i>Manufacture of Food, Beverages & Tobacco</i>	3	2
Wholesale & Retail Trade	2	1
Transportation & Storage	3	2
<i>Logistics & Transport</i>	3	1
Accommodation & Food Service Activities	4	5
<i>Accommodation</i>	2	2
<i>Food & Beverage Service Activities</i>	2	3
Financial & Insurance Activities	2	0
Administrative and Support Service Activities	0	2
Community, Social & Personal Services	21	9
<i>Health Activities</i>	15	8
<i>Other Personal Service Activities</i>	3	1

Table 27: Top Causative Agents of Occupational Skin Diseases, 2019

Causative Agents	No. of Cases
Wetwork and Occlusion	12
Alcohol	9
Oils	3
Thermal	3
Latex	2
Cement	2

Table 28: Number of man-days lost to workplace incidents in selected industries, 2018 and 2019

Industry	2018	2019
All Industries	530,961	544,664
Construction	135,013	137,243
Marine	30,288	34,309
Manufacturing	82,650	87,190
<i>Metalworking</i>	27,492	43,837
<i>Manufacture of Food, Beverages & Tobacco</i>	17,085	11,387
<i>Manufacture of Petrolchemical</i>	2,701	8,002
Water Supply, Sewerage & Waste Management and Remediation Activities	9,349	8,178
Wholesale & Retail Trade	50,385	29,524
<i>Wholesale Trade</i>	37,078	20,296
<i>Retail Trade</i>	13,307	9,228
Transportation & Storage	51,613	74,630
<i>Logistics & Transport</i>	36,275	38,636
Accommodation & Food Services	17,338	29,660
<i>Accommodation</i>	4,142	4,150
<i>Food & Beverage Service Activities</i>	13,196	25,510
Information & Communications	6,997	1,292
Financial & Insurance Activities	3,359	4,497
Real Estate Activities	32,198	15,545
Professional, Scientific & Technical Activities	8,629	8,985
<i>Architectural & Engineering Activities</i>	4,256	4,402
<i>Legal, Accounting & Management Activities</i>	2,857	3,135
Administrative & Support Service Activities	24,745	27,313
<i>Cleaning & Landscape Maintenance Activities</i>	10,805	6,176
<i>Security and Investigation Activities</i>	2,566	4,102
Community, Social & Personal Services	28,684	39,559
<i>Health Activities</i>	10,896	12,874
<i>Education</i>	5,114	6,498

ANNEX B

BUSINESS UNDER SURVEILLANCE

The Business under Surveillance (BUS) programme consists of two phases – Assessment and Surveillance.

The Assessment phase involves rigorous and methodical review on companies that are of concern to ascertain the effectiveness of their Risk Management programme as well as the strength of their WSH Management Systems.

Companies that fail the Assessment phase would then be placed under the Surveillance phase. During the Surveillance phase, the Occupational Safety and Health Division (OSHD) of Ministry of Manpower (MOM) works closely with the senior management and WSH personnel of these BUS companies to carry out a gap analysis and to develop outcome-based action plans.

OSHD then conducts frequent inspections to verify the progress of the companies' implementation of their action plans and closely monitors the companies' WSH performance. BUS companies can only exit from the programme upon successful implementation of their Action Plan, achieved satisfactory audit outcomes, and have plans to build a strong WSH culture within the company.

ANNEX C

HYGIENE AND MEDICAL SURVEILLANCE

HYGIENE SURVEILLANCE

Measuring the exposure levels of specific workplace chemical hazards provide a good indication on whether the conditions in the work environment are within the Permissible Exposure Levels (PEL), as stipulated under the WSH (General Provisions) Regulations. Companies with chemical exposures exceeding 10% PEL are required to monitor the exposure levels at least annually, conducted by a competent person.

Under the WSH (Noise) Regulations, workplaces with 10 or more workers who are exposed to excessive noise are required to monitor their workers' noise exposure at least once every three years, or earlier when there are changes to the processes. The monitoring must be conducted by a competent person using calibrated equipment to ensure accuracy of results.

Industrial hygiene data from assessments conducted by MOM and results submitted by companies with in-plant monitoring are maintained within a National Database for Noise and Chemical Exposure. This enables MOM to proactively identify high-risk workplaces, evaluate trends in exposure levels and advise employers on control measures and appropriate monitoring programmes.

MEDICAL SURVEILLANCE

The Medical Surveillance Programme serves to monitor workers' exposure to specific hazards and to identify early and possibly reversible changes in health effects. The programme aims to prevent overt occupational diseases through early detection of cases with excessive occupational exposure to specific health hazards. It involves monitoring of workers' health and implementation of measures to minimise the risks. High-risk workplaces would be monitored more rigorously to ensure control measures are put in place.

This monitoring assesses the "internal dose" of the worker and the effects from exposure by determining:

- a) The concentrations of the chemicals or their metabolites in biological samples (measuring the absorption or body burden) indirectly via blood, urine, and/or end-exhaled air.
- b) The indicators of health effect related to the internal dose so as to identify early and reversible changes, such as degree of hearing loss, and effects on liver and kidney.

Central to the Medical Surveillance Programme is the WSH (Medical Examinations) Regulations which prescribe a list of 19 hazards requiring medical examinations which can only be conducted by Designated Workplace Doctors (DWDs) registered with MOM. In addition, Occupational Safety and Health Division (OSHD) of the MOM may also recommend the implementation of medical surveillance programmes for non-prescribed hazards if the health risk is significant and where biological indicators are available. Some of these hazards include toluene, trinitrotoluene, xylene, fluoride and hexane.

Based on the findings of the medical examinations, workers who are medically unfit or who are over-exposed to chemicals are suspended, either on a temporary or permanent basis. The objective is to ensure that all exposed workers remain healthy and fit for work while exposed to the hazards. Medical monitoring is conducted once every six months for lead and organophosphate, and annually for all other hazards.

ANNEX D

SOURCE OF DATA

Data on workplace and work-related traffic injuries, dangerous occurrences and occupational diseases were collated from incident reports made by employers, occupiers and medical practitioners in fulfilment of their obligations under the Workplace Safety and Health Act and Workplace Safety and Health (Incident Reporting) Regulations.

Medical and Hygiene Surveillance data were collated from reports submitted to OSHD, MOM as well as industrial hygiene data from assessments conducted by OSHD, MOM. Business Under Surveillance information was obtained from OSHD, MOM.

Employment data used in the computation of workplace fatal, injury and occupational disease incidence rates and data on the average weekly hours worked used in the estimation of man-hours worked were extracted from records within the Ministry of Manpower.

ANNEX E

DATA COVERAGE

The types of workplace and work-related traffic injuries and occupational diseases covered in the reported statistics include the following:

- Workplace and work-related traffic injuries sustained by employees and resulting in more than three days of medical leave, regardless of whether these were consecutive days;
- Workplace and work-related traffic injuries sustained by employees and resulting in at least 24 hours of hospitalisation;
- Workplace and work-related traffic incidents resulting in the death of employees and self-employed persons;
- Workplace and work-related traffic incidents resulting in the injury of self-employed persons who have to be taken to the hospital for treatment; and
- Occupational diseases listed in the Second Schedule of the Workplace Safety and Health Act and Work Injury Compensation Act.

ANNEX F

CONCEPTS & DEFINITIONS

Incident Type refers to the type of event which resulted in the injury of a victim. Where the event involves a chain of incidents, the incident type should be the one that triggered the chain of other incidents.

Incident Agent refers to the object or physical environment, which due to its hazardous nature/condition, leads to the occurrence of a particular type of incident. It is related to the incident, not injury.

Major Injuries refer to non-fatal injuries which are more severe in nature. Major injuries are defined using a combination of factors, including the nature of injury, part of the body injured, incident type and duration of medical leave. These include:

- amputation
 - blindness
 - deafness
 - paralysis
 - crushing, fractures and dislocations: head, back, chest, neck and hip
 - exposure to electric current
 - asphyxia/drowning
 - burns with more than 20 days of medical leave
 - concussion with more than 20 days of medical leave
 - mosquito borne diseases with more than 20 days of medical leave
 - virus outbreak with more than 20 days of medical leave
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