

Development-led Archaeology Health and Safety Injury Survey 2019-20

FAME HEALTH AND SAFETY SURVEY SERIES



Development-led Archaeology Health and Safety Injury Survey 2019-20. Version 1, April 2021.

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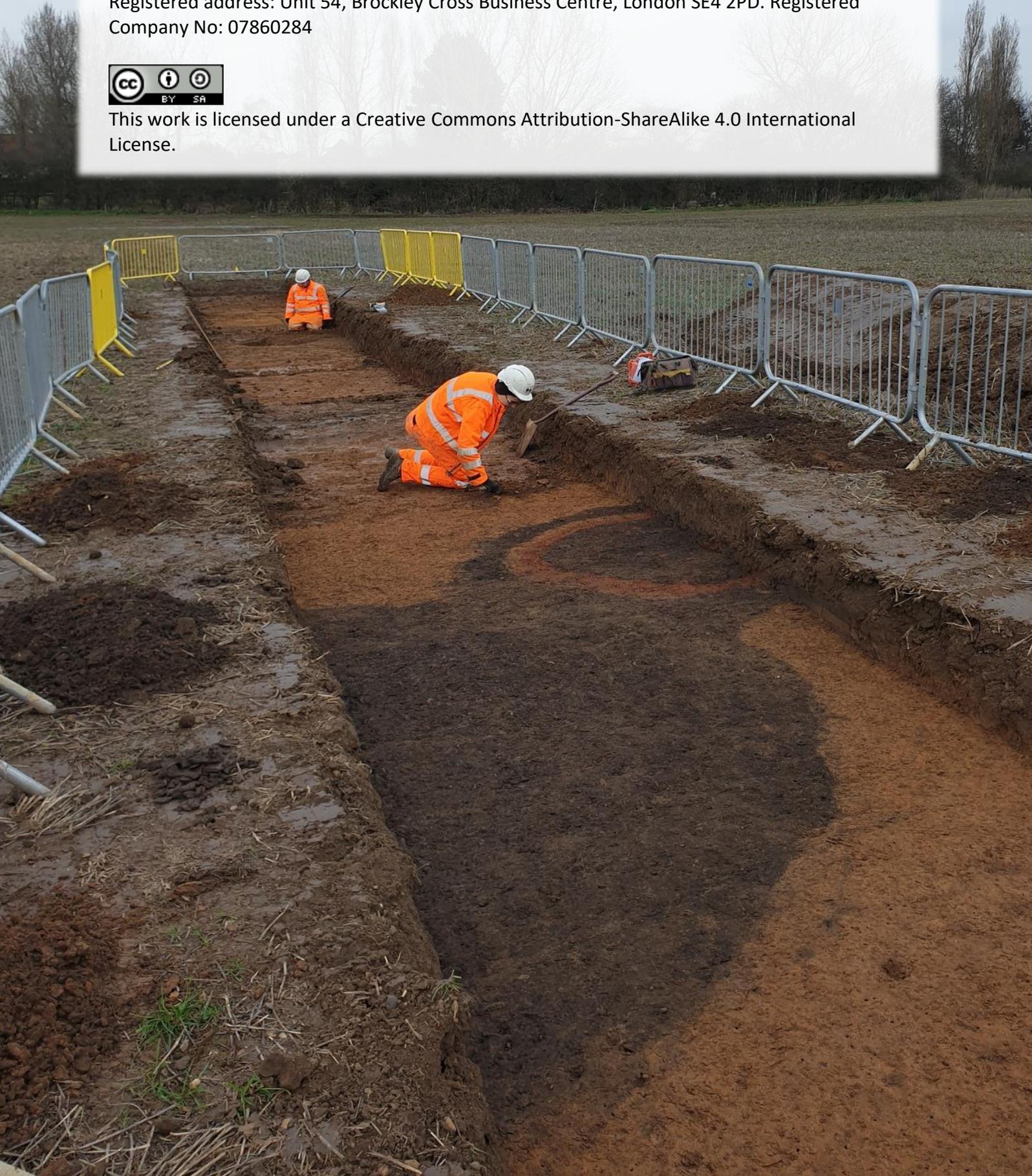
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3 Key Findings

1. Significant drops in RIDDOR Injury frequency rates & Incident rates:
 - Specified injuries:
 - 0.21 & 42 in 2019-20
 - 2.01 & 342 in 2018-19
 - Injuries resulting in over 7 days absence:
 - 0.43 & 84 in 2019-20
 - 1.51 & 256 in 2018-19
2. Archaeology had comparable RIDDOR injury rates to the arts and entertainment industries in 2019-20, lower than construction and construction-related industries. **Caution:** it will take averaging multiple years to get accurate numbers for the sector, this is only year two of a four- to five-year process.
3. Ergonomic/Manual Handling made up a third of non-RIDDOR reported injuries as it did for 2018-19 and is of concern for the sector.

Background

An aspect of FAME's Health & Safety strategy is to assemble industry injury and accident data to assist with the development of preventative measures and improved ways of working. This is FAME's third Health and Safety Injury Survey, the first was for the 2009-10 financial year, and the second for the 2018-19 financial year. This report covers financial year 2019-20.

Methods

The questions used for this survey were included in the 2019-20 *Profiling the Profession* survey, a pan-archaeology labour market intelligence exercise. This was to avoid overloading the sector with too many surveys, resulting in fewer responses because of survey fatigue. *Profiling the Profession* used conditional answering, which meant only those working in development-led archaeology in consultation or contractor roles were asked the health and safety questions considered here. A total 92 responses were received from organisations employing 2,386 fulltime equivalent positions (37.5 hours per week, 52 weeks per year). This represents 55% of the estimated 4375 FTE archaeologists working in this area. This survey samples the sector and makes the assumption that the rates for this sample are reflective of the whole sector. Given that it represents 55%, that is a safe assumption.



Results

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR)

RIDDOR is the legal instrument that requires employers, and those in charge of work premises, to report and keep records of:

- work-related accidents which cause deaths
- work-related accidents which cause certain serious injuries (reportable injuries)
- diagnosed cases of certain industrial diseases; and
- certain 'dangerous occurrences' (incidents with the potential to cause harm)

It was last updated in 2013 and applies to many archaeological organisations and settings. The 2019-20 results are compared here against the 2018-19 data. The changes in 2013 means that the 2009-10 data are mostly not comparable. Respondents were asked about their RIDDOR reportable injuries and the responses were:

Table 1: Reported types of RIDDOR injuries from 2018-20.

Type	2018-19	2019-20	annual average
Specified injuries (including fatality)	4	1	2.5
Injuries resulting in over 7 days absence	3	2	2.5
Occupational diseases (including carpal tunnel syndrome, tendonitis and occupational dermatitis)	0	0	0
Occupational disease caused by exposure to carcinogens, mutagens & biological agents (including occupational cancers)	0	0	0
Specified dangerous occurrences	0	1	0.5
Total (n=)	7	4	5.5

Non-Reportable Accidents and Near Misses

In order to provide data on incidence of commonly occurring accidents/incidents across the sector, respondents were asked to report the number of accident book entries, that were not RIDDOR, by categories:

Table 2: Non-RIDDOR accidents and near misses from 2018-20

Type	2018-19	2019-20	annual average
Total number of non-reportable accidents	147	159	153
Total number of near misses reported	140	133	136.5
Total (n=)	287	292	289.5

This year respondents were asked the totals for each specific type instead of a total and then specifying the type, also separating out near misses. This meant that for 2019-20 all of the non-reportable accidents and near misses were categorised as opposed to the 2018-19 data when only a small portion was. This explains why there is a difference between the totals in

Table 2 (which lists 287 total accidents and near misses) and Table 3 (which lists only 60 incidents in categories) for that year.

Table 3: Types of Non-RIDDOR accidents and near misses from 2018-2020

Type	2018-19	2019-20	
	All	Non-reportable	Near misses
Ergonomic / manual handling	23	78	8
Slip, trip or fall	9	6	13
Contact with or knocking into object	7	34	14
Vehicle accident (travelling on work business, including to or from site)	3	10	49
Other	18	31	49

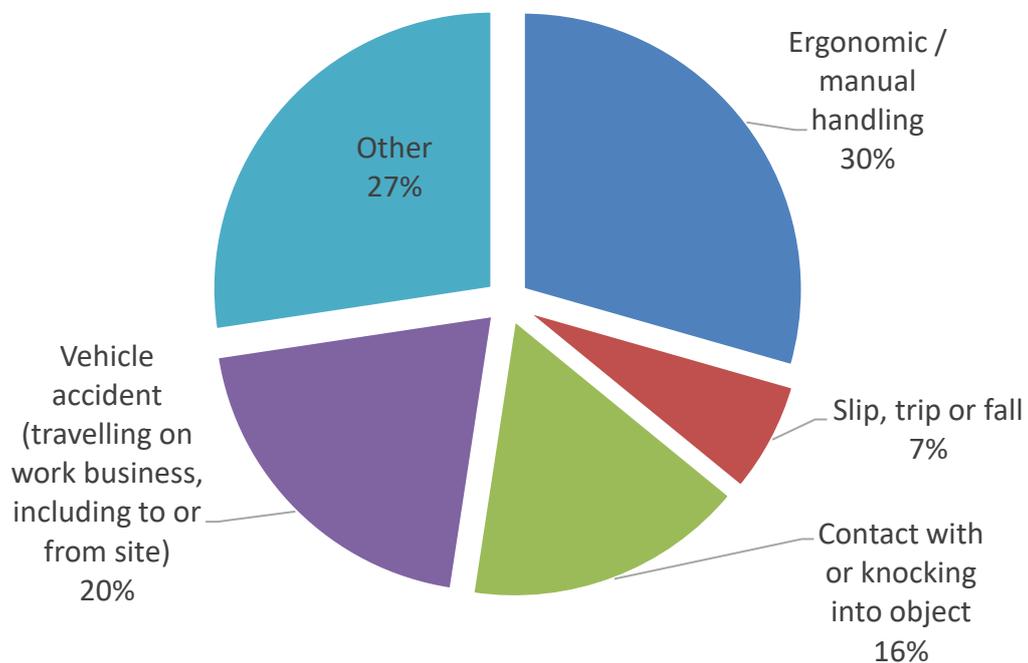


Figure 1: Type of Non-RIDDOR accidents and near misses (combined) for 2019-20

While the respondents were asked for 'more information', it was not clear this was referring to the 'other' category and most commented 'We didn't have any' instead. In the future we will make it clear the final free text answer is to explain those answers.

Injury Frequency Rate and Incident Rate

There are two primary injury figures: Incident Rate or Frequency Rate¹. The Injury Frequency Rate indicates the number of Reportable Injuries employees are likely to have for every 1,000,000 hours worked. It is calculated in the following manner:

$$\text{(Number of Reportable Injuries in the period / Total hours worked (by all employees) during the period)} \times 1,000,000$$

While the Incident Rate is the number of injuries per 100,000 employees and is calculated in this manner:

$$\text{(Injuries (per year) / employed)} * 100,000$$

With the sample representing 2,386 FTE archaeologists (37.5 hrs per week x 52 weeks) the estimated Injury frequency and Incident rates for the sector are as follow:

Table 4: Estimated injury frequency and incident rate of respondents to the survey

RIDDOR	2018-19		2019-20		average 2018-20	
	Injury frequency rate	Incident rate	Injury frequency rate	Incident rate	Injury frequency rate	Incident rate
Specified injuries (including fatality)	2.01	342	0.16	31.83	1.11	191.96
Injuries resulting in over 7 days absence	1.51	256	0.33	63.65	0.97	169.91
Occupational diseases	-	-	-	-	-	-
Occupational disease caused by exposure to carcinogens, mutagens & biological agents	-	-	-	-	-	-
Specified dangerous occurrences	-	-	0.16	31.83	-	-

Compared to other sectors

The Health and Safety Executive (HSE) provides data for Incident Rates for different sectors by Standard Industrial Classification codes (SIC 2007). This year archaeology compares well to other sectors (Table 5), significantly better than last year. However, this is because archaeology is such a small sector that a small amount of variation, such as that represented

¹ for more information see <http://www.hse.gov.uk/statistics/adhoc-analysis/injury-frequency-rates.pdf>

by only one or two injuries, can greatly change the outcomes. It will take several years of averaging the result to get an accurate picture of the sector's rates.

Table 5: RIDDOR Incident Rates for different sectors

Industry	Total Reported Non-fatal Injury	Specified	Over-7-day
Water supply; sewerage, waste management and remediation activities	880	228	651
Transportation and storage	696	158	538
Agriculture, forestry and fishing	505	219	286
Manufacturing	430	99	331
Construction	330	121	209
Human health and social work activities	300	64	236
Administrative and support service activities	267	73	194
Accommodation and food service activities	262	59	203
All industry	238	62	176
Public administration and defence; compulsory social security; education; human health and social work activities	223	57	166
Wholesale and retail trade; repair of motor vehicles and motorcycles; accommodation and food service activities	208	51	157
Public administration and defence; compulsory social security	199	51	148
Electricity, gas, steam and air conditioning supply	196	54	142
Wholesale and retail trade; repair of motor vehicles and motorcycles	184	48	136
Arts, entertainment and recreation	172	66	106
Mining and quarrying	154	41	114
Education	141	52	89
Arts, entertainment and recreation; other service activities; activities of households as employers; undifferentiated goods-and services-producing activities of households for own use; activities of extraterritorial organisations and bodies	135	48	87
Archaeology	126	42	84
Other service activities	114	35	79
Information and communication; financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities	75	22	53
Real estate activities	42	15	28
Information and communication	37	11	27
Financial and insurance activities	20	7	13
Professional, scientific and technical activities	20	7	12

The Health and Safety Executive only reports data using the Incident Rate and does not report on Frequency Rates. However, they do provide a methodology for generating the Frequency Rates for sectors². This is done by using the average hours worked to provided estimates:

$$\text{Incidence Rate} * 10 / (\text{average Hours per week} * \text{Weeks per Year})$$

HSE does not produce these ‘hours worked’ data, but the Office for National Statistics (ONS) does. There are two main sources of data on hours of work:

- the Annual Survey of Hours and Earnings (ASHE) survey
- the Labour Force Survey (LFS)

Downloading³ and combining the LFS & ASHE data with the Incidence Rate data produces the Calculated Injury Frequency Rate. LFS only holds data on large, top-level, sectors but the calculated table shows that archaeology has relatively low rates for injuries specified on the RISSOR pre-defined list or those that resulted in more than 7 days absence from work:

Table 6: Calculated Injury Frequency Rate for sectors based on the LFS data.

	Specified		Over 7 day absence
Mining, energy & water supply	1.69	Mining, energy & water supply	4.76
Agriculture, forestry & fishing	0.99	Transport & storage	2.86
Transport & storage	0.84	Manufacturing	1.77
Other services	0.67	Human health & social work activities	1.53
Construction	0.64	Accommodation & food services	1.40
Manufacturing	0.53	Agriculture, forestry & fishing	1.29
Administrative & support services	0.46	Other services	1.24
Human health & social work activities	0.42	Administrative & support services	1.21
Accommodation & food services	0.41	Construction	1.10
Education	0.36	Public admin & defence; social security	0.88
Wholesale, retail & repair of motor vehicles	0.31	Wholesale, retail & repair of motor vehicles	0.87
Public admin & defence; social security	0.30	Education	0.62
Archaeology	0.21	Archaeology	0.43
Financial, insurance & real estate activities	0.13	Financial, insurance & real estate activities	0.24
Information & communication	0.06	Information & communication	0.15
Professional, scientific & technical activities	0.04	Professional, scientific & technical activities	0.07

² see <http://www.hse.gov.uk/statistics/adhoc-analysis/injury-frequency-rates.pdf>

³ Downloaded from

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/industry4digisic2007ashtable16> & <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/averagehoursworkedbyindustryhour03>

ASHE data is broken down into significantly smaller categories with makes it easier to compare archaeology with other professions. All the categories are provided in the appendix, while Table 7 shows the sectors with the highest rates and the ones nearest to archaeology, with another 68 sectors skipped to make the table more readable.

Table 7: Calculated Injury Frequency Rate for sectors based on the ASHE data.

Specified		Over-7-day	
Other manufacturing	2.09	Other manufacturing	6.73
Waste collection, treatment and disposal activities; materials recovery	1.96	Waste collection, treatment and disposal activities; materials recovery	5.70
Skipped 49 rows			
Manufacture of electrical equipment	0.21	Rental and leasing activities	0.54
Archaeology	0.21	Manufacture of electrical equipment	0.51
Remediation activities and other waste management services	0.19	Libraries, archives, museums and other cultural activities	0.50
Manufacture of basic pharmaceutical products and pharmaceutical preparations	0.16	Programming and broadcasting activities	0.48
Manufacture of other transport equipment	0.15	Archaeology	0.43
Gambling and betting activities	0.11	Manufacture of basic pharmaceutical products and pharmaceutical preparations	0.40
Manufacture of wearing apparel	0.10	Manufacture of wearing apparel	0.38
Skipped 19 rows			

Discussion

As discussed in the report on the previous 2018-19 survey, tiny changes in reported accidents can greatly alter the results. Two archaeologists carrying a bulky piece of equipment who trip and hurt themselves can easily change the rate for the whole sector, significantly. With a second year of data it is possible to start to average the results to provide more accurate comparisons. However, we are likely to still be a few years away from being able to accurately compare archaeology to other sectors. Averaging aside, it is good to see that the rates can be so low in the sector.

Of greater concern are the non-RIDDOR results. Ergonomic/Manual Handling is the most significant cause of problems. Muscle injuries can be cumulative and repetitive stress injuries would not be caught by RIDDOR reporting as they are not caused by a single identifiable event, which is required for RIDDOR reporting. Yet they make up roughly one third of injuries for the second year in a row. As there is a significant number of such instances this means that they are not affected by slight changes in reporting. While there will be multiple causes of Ergonomic/Manual Handling injuries, not all of which can be prevented, employers would be advised to consider investigating routes to reduce the risk of such injuries across working routines. Addressing the causes of those injuries would have a significant impact on the wellbeing of the workforce.



Appendix

Table 8: Calculated Injury Frequency Rate for sectors based on ASHE data – full table.

Specified		Over-7-day	
Other manufacturing	2.09	Other manufacturing	6.73
Waste collection, treatment and disposal activities; materials recovery	1.96	Waste collection, treatment and disposal activities; materials recovery	5.70
Warehousing and support activities for transportation	1.52	Warehousing and support activities for transportation	5.34
Crop and animal production, hunting and related service activities	1.28	Manufacture of food products	4.25
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1.10	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	4.03
Manufacture of basic metals	1.10	Manufacture of basic metals	3.37
Extraction of crude petroleum and natural gas	1.06	Air transport	3.23
Manufacture of food products	1.04	Extraction of crude petroleum and natural gas	3.19
Services to buildings and landscape activities	0.83	Services to buildings and landscape activities	2.57
Forestry and logging	0.82	Accommodation	2.35
Manufacture of paper and paper products	0.78	Manufacture of paper and paper products	2.07
Construction of buildings; Specialised construction activities	0.73	Postal and courier activities	1.96
Postal and courier activities	0.72	Manufacture of textiles	1.94
Accommodation	0.72	Manufacture of other non-metallic mineral products	1.93
Manufacture of other non-metallic mineral products	0.69	Manufacture of furniture	1.81
Air transport	0.64	Human health activities	1.78
Sports activities and amusement and recreation activities	0.59	Manufacture of fabricated metal products, except machinery and equipment	1.78
Creative, arts and entertainment activities	0.58	Manufacture of beverages	1.73
Manufacture of textiles	0.58	Manufacture of rubber and plastic products	1.66
Residential care activities	0.56	Forestry and logging	1.65
Manufacture of furniture	0.54	Crop and animal production, hunting and related service activities	1.51

Specified		Over-7-day	
Office administrative, office support and other business support activities	0.54	Land transport and transport via pipelines	1.47
Manufacture of fabricated metal products, except machinery and equipment	0.52	Residential care activities	1.43
Manufacture of rubber and plastic products	0.51	Food and beverage service activities	1.40
Water transport	0.49	Water transport	1.25
Water collection, treatment and supply; Sewage	0.44	Construction of buildings; Specialised construction activities	1.24
Land transport and transport via pipelines	0.43	Printing and reproduction of recorded media	1.11
Repair and installation of machinery and equipment	0.42	Manufacture of motor vehicles, trailers and semi-trailers	1.03
Food and beverage service activities	0.40	Water collection, treatment and supply; Sewage	1.02
Other mining and quarrying	0.39	Retail trade, except of motor vehicles and motorcycles	1.01
Manufacture of beverages	0.39	Repair and installation of machinery and equipment	0.98
Veterinary activities	0.39	Security and investigation activities	0.96
Manufacture of motor vehicles, trailers and semi-trailers	0.36	Sports activities and amusement and recreation activities	0.93
Human health activities	0.36	Creative, arts and entertainment activities	0.90
Education	0.35	Other mining and quarrying	0.85
Retail trade, except of motor vehicles and motorcycles	0.33	Public administration and defence; compulsory social security	0.84
Wholesale and retail trade and repair of motor vehicles and motorcycles	0.33	Veterinary activities	0.83
Civil engineering	0.33	Remediation activities and other waste management services	0.82
Security and investigation activities	0.31	Wholesale and retail trade and repair of motor vehicles and motorcycles	0.78
Rental and leasing activities	0.31	Electricity, gas, steam and air conditioning supply	0.75
Printing and reproduction of recorded media	0.30	Manufacture of other transport equipment	0.71

Specified		Over-7-day	
Libraries, archives, museums and other cultural activities	0.30	Manufacture of chemicals and chemical products	0.71
Public administration and defence; compulsory social security	0.29	Office administrative, office support and other business support activities	0.69
Electricity, gas, steam and air conditioning supply	0.29	Social work activities without accommodation	0.64
Social work activities without accommodation	0.29	Manufacture of machinery and equipment n.e.c.	0.61
Manufacture of machinery and equipment n.e.c.	0.25	Civil engineering	0.61
Telecommunications	0.25	Education	0.60
Information service activities	0.24	Wholesale trade, except of motor vehicles and motorcycles	0.57
Manufacture of chemicals and chemical products	0.23	Information service activities	0.55
Wholesale trade, except of motor vehicles and motorcycles	0.22	Telecommunications	0.54
Manufacture of electrical equipment	0.21	Rental and leasing activities	0.54
Archaeology	0.21	Manufacture of electrical equipment	0.51
Remediation activities and other waste management services	0.19	Libraries, archives, museums and other cultural activities	0.50
Manufacture of basic pharmaceutical products and pharmaceutical preparations	0.16	Programming and broadcasting activities	0.48
Manufacture of other transport equipment	0.15	Archaeology	0.43
Gambling and betting activities	0.11	Manufacture of basic pharmaceutical products and pharmaceutical preparations	0.40
Manufacture of wearing apparel	0.10	Manufacture of wearing apparel	0.38
Motion picture, video and television programme production, sound recording and music publishing activities	0.10	Gambling and betting activities	0.35
Manufacture of coke and refined petroleum products	0.09	Motion picture, video and television programme production, sound recording and music publishing activities	0.26
Real estate activities	0.09	Manufacture of coke and refined petroleum products	0.24
Other professional, scientific and technical activities	0.07	Manufacture of computer, electronic and optical products	0.18

Specified		Over-7-day	
Manufacture of computer, electronic and optical products	0.07	Real estate activities	0.16
Programming and broadcasting activities	0.07	Financial service activities, except insurance and pension funding	0.14
Financial service activities, except insurance and pension funding	0.06	Scientific research and development	0.10
Travel agency, tour operator and other reservation service and related activities	0.06	Other professional, scientific and technical activities	0.10
Insurance, reinsurance and pension funding, except compulsory social security	0.05	Advertising and market research	0.06
Scientific research and development	0.04	Insurance, reinsurance and pension funding, except compulsory social security	0.04
Legal and accounting activities	0.04	Mining support service activities	0.04
Activities of head offices; management consultancy activities	0.03	Legal and accounting activities	0.04
Employment activities	0.03	Employment activities	0.04
Advertising and market research	0.03	Publishing activities	0.03
Mining support service activities	0.02	Travel agency, tour operator and other reservation service and related activities	0.03
Publishing activities	0.02	Activities of head offices; management consultancy activities	0.02
Activities auxiliary to financial services and insurance activities	0.01	Computer programming, consultancy and related activities	0.02
Architectural and engineering activities; technical testing and analysis	0.01	Architectural and engineering activities; technical testing and analysis	0.01
Computer programming, consultancy and related activities	0.01	Activities auxiliary to financial services and insurance activities	0.01