

European Statistics on Accidents at Work (ESAW)

Summary methodology

2013 edition

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1. Introduction

The Framework Directive 89/391/EEC ⁽¹⁾ on measures to encourage improvements in the safety and health of workers at work introduced the obligation for employers to keep a list of occupational accidents resulting in a worker being unfit for work for more than three days, and, in accordance with national laws and/or practices, to draw up reports on occupational accidents suffered by their workers (Article 9(1), paragraphs c) and d)).

On this basis, the European Statistics on Accidents at Work (ESAW) project was launched in 1990, to harmonise data on accidents at work for all accidents resulting in more than three days' absence from work. In 2001, 'European Statistics on Accidents at Work - Methodology' ⁽²⁾, was published by Eurostat and DG Employment and social affairs, setting out work on methodology since 1990.

This document summarises and updates the ESAW methodology published in 2001. Its main purpose is to provide a clear, correct, up-to-date description and references. It is not intended to provide guidelines for the structure of data files to be sent to Eurostat.

2. Legal context

Regulation (EC) No 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety at work ⁽³⁾ (hereafter referred to as *Framework Regulation*), sets out obligations to supply statistics on accidents at work to the Commission (Eurostat) in Article 2 and Annex IV.

The harmonised and common micro-data set to be provided on accidents at work cover the following subjects:

- characteristics of the injured person
- characteristics of the injury, including severity (days lost)
- characteristics of the enterprise including economic activity
- characteristics of the workplace
- characteristics of the accident, including the sequence of event characterising the causes and circumstances of the accident.

Statistics are to be provided 'annually', and submitted 'not later than 18 months after the end of the reference year'.

⁽¹⁾ Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work, OJ L183, 29.06.1989.

⁽²⁾ European statistics on accidents at work (ESAW) — Methodology — 2001 edition (KE-36-019-60-EN-C), its update for the Member States joining the EU in 2004, and the addendum to take account of NACE Rev.2.

⁽³⁾ OJ L 354, 31.12.2008, p. 70.

The Implementing Commission Regulation (EU) No 349/2011 ⁽⁴⁾ (hereafter referred to as *ESAW Regulation*) adopted on 11 April 2011 implements the *Framework Regulation* as regards statistics on accidents at work, sets up the variables, definitions and classifications of the subjects listed above and the breakdown of characteristics.

Article 4 of the ESAW Regulation also specifies that Member States have to send Eurostat an annual verification and update of the metadata together with the data.

3. Basic concept: Accident at work

'*Accident at work*' is defined in ESAW methodology as a discrete occurrence in the course of work which leads to physical or mental harm. The phrase 'in the course of work' means 'while engaged in an occupational activity or during the time spent at work'.

3.1. Cases included

The following types of accidents are covered by the above definition:

- Cases of **acute poisoning**
- **Wilful acts of other persons**
- Accidents that occurred **on the premises of an employer other than that which employs the victim**. This might include accidents during attendance at meetings or in the course of providing services on the premises of another employer visited for that purpose, during the course of the victim's work. Examples:
 - Accidents that occur during meetings or other visits to locations outside the premises of the employer in which the employee is normally based; accidents during regular breaks, including lunch, in places organised by the employer; accidents during the delivery of goods to customers' premises (company, public administration or private individual) or while carrying out other services such as repairs, maintenance, errands, etc. on clients' premises; more permanent secondments to another employer, or during activities at home which are in the course of work; accidents caused by other work activities not related to the victim's work activities, etc.
- **Accidents in public places or public means of transport during a journey in the course of work:**
- Road traffic accidents in the course of work (public roads, car parks or private roads within the premises

⁽⁴⁾ OJ L97, 12.04.2011, p3.

of the enterprise). Road accidents may involve persons whose occupational activity is exerted mainly on public roads, e.g., lorry or coach drivers, as well as occupational activities which frequently or occasionally imply journeys on public roads. Such occupational activities include, e.g., repairs, commercial activities or other service activities carried out on the premises of a customer. This category includes car accidents involving employees who occasionally drive from their office to an external meeting in the course of their work, or to places where the employer organised activities during regular breaks, including lunch.

- Accidents on board any means of transport used in the course of work (underground railway, tram, train, boat, aircraft, etc.).
- Other accidents (slips, falls, assaults, etc.) in a public place (pavement, staircases, etc.) or in the arrival and departure areas (station, port, airport, etc.) for any mean of transport during a journey in the course of work.

3.2. Cases excluded

- **Commuting accidents:** accidents that occur during the normal journey to or from home and place of work, i.e. road accidents that occur during the journey between the worker's principal or secondary residence and the workplace, or while picking up children from school. Accidents between home and a location attended for work-related training or between the workplace and a restaurant at which an employee habitually has lunch are excluded unless the restaurant is on company⁽⁵⁾ premises.
- **Deliberate self-inflicted injuries**
- **Accidents from strictly natural causes:** Accidents caused solely by a medical condition, e.g., cardiac or cerebral incidents, or any other sudden-onset medical condition that occurred during work, without any obvious link to the occupational activity of the victim.

Nevertheless, such cases should be excluded **only if other work-related causal elements are ruled out**. For example, if a bricklayer felt faint (medical cause) and fell from scaffolding (work-related causal element), the accidental injury must be included in the ESAW methodology. Though the fall might not have occurred had he not felt faint, the injury he incurred was aggravated by the fact that he fell from scaffolding high above ground level in the course of his normal work.

- **Accidents, purely private:** Accidents in which the victims are not at their workplace, carrying out activities

⁽⁵⁾ In this document the term 'company' has to be understood as covering both the private and the public sectors.

which are not work-related, for example, visiting a shop, a town hall, bank, station, hospital, post office, port, airport, etc.

- **Accidents to members of the public,** even if such an accident is due to a work activity within a company. This includes the family members of an employee or employer if they are on the premises of the company and become victims of an accident, i.e. children in, for example, the nursery in the company. Such accidents should not be counted as accidents at work although responsible employers would ensure that such incidents would normally be factored into insurance cover.

4. Scope of data collection

Annex IV of the Framework Regulation defines 'accident at work' and establishes that 'data shall be collected for **fatal accidents at work** and **accidents at work resulting in more than three days of absence from work**'.

4.1. Fatal accident at work

A '*fatal accident*' means an accident which leads to the death of a victim within one year of the accident.

4.2. Accidents at work with more than three calendar days' absence from work

Only full calendar days⁽⁶⁾ of absence from work have to be considered, excluding the day of the accident. Consequently, '*more than three calendar days*' means '*at least four calendar days*', which implies that only if the victim resumes work on the fifth (or subsequent) working day after the date on which the accident occurred should the incident be included.

4.3. Population coverage

Article 2 of the *ESAW Regulation* covers the provision of data on persons who had an accident at work during the reference period and states that if the victim is self-employed, a family worker or a student, providing data is voluntary. The same applies to some professions subject to confidentiality rules under national legislation. These cases should be clearly identified in the metadata.

⁽⁶⁾ Article 9 of the Framework Directive (Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work, OJ L183, 29.06.1989) speaks about 'working days'. However, it has been decided for ESAW methodology to follow the most common practice in the Member States, which is to use calendar days in calculating the number of days with an absence from work.

5. Variables

The following basic information is needed to describe an accident properly:

- *Information to identify where the accident occurred, who was injured and when: (the characteristics of the injured person, the enterprise and the workplace)*
i.e.: the economic activity of the employer; the victim's occupation, employment status, sex, age and nationality; the geographic location and size of the enterprise's local unit; the date and time; the working environment, the workstation and the working process

- *Information to show how the accident occurred, in what circumstances and how the injuries came about (the characteristics of the accident):*
i.e.: the specific physical activity at the time of the accident, how the incident deviated from normal practice, the precise way in which the injury was incurred, and details of any associated material agents
- *Information on the nature and seriousness of the injuries and the consequences of the accident (the characteristics of the injury):*
i.e.: the body part injured, the type of injury and the number of days lost.

ENTERPRISE

- economic activity
- size of enterprise
- geographic location, date and time

EXPOSURE

ORGANISATION

WORKING CONDITIONS

- working Environment

WORKER

- occupation
- age and sex
- nationality
- employment status

WORKPLACE

- working Process
- workstation

SEQUENCE OF EVENTS

- specific physical activity and associated material agent
- deviation and associated material agent
- contact - mode of injury and associated material agent

VICTIM

- type of injury
- body part injured
- days lost

Table 1 below summarises the full list of variables and reporting obligations included in *ESAW regulation*:

Table 1: List of ESAW variables and reporting obligations

Variables	Specification	Optional
Case number		
Economic activity of the employer	4-digit level of NACE Rev.2 covering all economic activities except those (see besides) related to professions subject to confidentiality rules by national legislation	<i>NACE Rev.2 divisions:</i> 84.22: defence activities; 84.23: Justice and judicial activities 84.24: Public order and safety activities 84.25: fire services activities
Occupation of the victim	2-digit level of ISCO-08 covering all professions except those (see besides) subject to confidentiality rules by national legislation	<i>ISCO-08 codes:</i> 0: Armed forces 3351: Customs and border inspectors 3355: Police inspectors and detectives 541 Protected services workers
Employment status of the victim	Employees	<i>Self-employed, family workers and students</i>
Age of the victim		
Sex of the victim		
<i>Nationality of the victim</i>		
Geographical location of the accident	5-digit code of the NUTS classification (NUTS 3)	
Date of the accident		
<i>Time of the accident</i>		
<i>Size of the enterprise</i>		
Type of injury	3-digit code of ESAW classification 'Type of injury'	
Part of body injured	2-digit code of the ESAW classification 'Part of body injured'	
Days lost (Severity)	4 days or more of absence from work	
Weight	For data correction of under-reporting and /or if sampling is used for recording accidents	
<i>Workstation (*)</i>		
<i>Working environment (*)</i>	3-digit of ESAW classification 'Working environment'	
<i>Working Process (*)</i>	2-digit of ESAW classification 'Working Process'	
<i>Specific Physical Activity (*)</i>	2-digit of ESAW classification 'Specific Physical activity'	
<i>Deviation (*)</i>	2-digit of ESAW classification 'Deviation'	
<i>Contact — Mode of injury (*)</i>	2-digit ESAW classification 'Contact — mode of injury'	
<i>Material agent associated with the Specific Physical activity (*)</i>	4-digit code of ESAW classification of 'Material agent'	
<i>Material agent associated with the Deviation (*)</i>	4-digit code of ESAW classification of 'Material agent'	
<i>Material agent associated with the Contact — Mode of injury (*)</i>	4-digit code of ESAW classification of 'Material agent'	
Weight Causes and Circumstances	For data correction if additional sampling is used for recording causes and circumstances	

In italics: optional data provision

(*) At least 3 of these variables should be provided

The list of variables is split in two main groups:

- Main characteristics of the accident, the victim and the employer ('Phase I' and 'Phase II' ⁽⁷⁾ variables). They are intended to identify *where the accident occurred, who was injured and when, as well as the nature and seriousness of the injuries and the consequences of the accident.*
- Variables on causes and circumstances, also called 'Phase III' variables. They are intended to provide information on *how the accident occurred, in what circumstances and how the injuries came about.*

5.1. Main characteristics of the accident, the victim and the employer ('Phase I' and 'Phase II' variables)

All these variables provide information which makes it possible to identify the characteristics of the business, the victim, the injury and its consequences, and the location and date on which the accident took place. Most of these variables have already been required since 1993 or 1996. Most are compulsory, a few are optional.

5.1.1. Case Number

Definition: unique case number that should identify each individual record to ensure that each record represents a separate incident at work and to avoid double counting.

Each Member State determines the format for the case number, which must be prefixed by the four digits of the year in which the accident is notified to the authorities (the 'reference year').

The number should not allow the victim to be identified. It should be noted that the year of notification, which is also the reference period for the ESAW data, is not necessarily the same as the year when the accident occurred.

5.1.2. Economic activity of the employer

Definition: main 'economic' activity of the local unit of the enterprise where the victim works. The main activity is defined here as the *most important kind of activity in terms of highest number of employees.*

The local unit of an enterprise means the geographical location of a business, professional practice, farm, manufacturer, public corporation, etc. It is classified according to a

detailed version (4-digit level) of the NACE Rev.2. ⁽⁸⁾ The classification can be downloaded from Eurostat web site at the following address:

<http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/metadata/classifications>

The code 'UNK' should be used when there is no information on the economic activity of the employer.

The 'local unit' to be considered is a 'geographically identified location where the job is mainly carried out or can be considered as to be based'. If a person works in more than one place (transport, construction, maintenance, surveillance, peripatetic work) or at home, the local unit is taken to be the place from which instructions emanate or from where the work is organised. It usually consists of a single building, part of a building, or a self-contained group of buildings. The local unit is therefore the group of employees geographically located at the same site.

A geographically-identified place must be interpreted on a strict basis: two units belonging to the same enterprise at different locations (*even if these local units are very close to each other*) must be regarded as two local units. However, a single local unit may be spread over several adjacent administrative areas. Moreover, the boundaries of the unit are determined by the boundaries of the site, which means, for example, that a public highway running through the site does not materially affect its definition.

If the concept of 'local unit of the enterprise' mentioned above is not directly applicable in a country, the national definition should be used as a proxy. Eurostat must be notified of the national definition.

Data must be provided at the 4-digit level of NACE Rev. 2.

5.1.3. Victim's occupation

Definition: victim's occupation at the time of the accident, classified according to the International Standard Classification of Occupations (ISCO).

Data for reference period from 2011 onwards should be provided at the 2-digit level of the version 2008 of that classification, named ISCO-08. The code 'UN' should be used if there is no information on the victim's occupation.

The full description of ISCO-08 classification can be downloaded from the web site of the International Labour Organisation (ILO) and is also available from Eurostat server on statistical classifications:

http://ec.europa.eu/eurostat/ramon/other_documents/index.cfm?TargetUrl=DSP_ISCO_08

⁽⁷⁾ Phases I, II and III are the different phases of the development of the ESAW project. They have been running since 1993, 1996 and 2001 respectively. The Phase I covers variables which seek to identify the economic activity of the employer, the occupation, age and sex of the victim, the nature of the injury and the part of the body injured, as well as the geographical location, date and time of the accident, whilst Phase II supplements these initial data with information on the size of the enterprise, the victim's nationality and employment status, as well as the consequences of the accident in terms of the number of days lost, permanent incapacity or death as a result of the accident.

⁽⁸⁾ Regulation (EC) No 1893/2006 of the European Parliament and of the council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains (OJ L 393, 30.12.2006, p1).

The link also includes the structure of the classification in all EU official languages and full explanatory notes on the content of each item available from the ILO web site.

5.1.4. Employment status of the victim

Definitions: employment status (professional status) of the victim, for example ‘employee’, ‘self-employed’, ‘family worker’, etc. The following definitions used in the Labour Force Survey (LFS), based on ISCE-93,⁽⁹⁾ are proposed:

Employees: persons who work for a public or private employer and who receive compensation in the form of wages, salaries, fees, gratuities, payment by results or payment in kind. Non-conscript members of the armed forces are also included.

Self-employed: persons working in their own business, farm or professional practice. Self-employed persons without employees are defined as persons who work in their own business, professional practice or farm for the purpose of earning a living or making profit, and who employ no other persons.

Family worker: Family workers are persons who help another member of the family to run an agricultural holding or other business, provided they are not considered as employees.

For the employees, if the information is available, the data can specify if the job is permanent (contract of unlimited duration) or temporary (on a contract of limited duration), and whether it is full or part-time.

- The concept of ‘permanency of the job’ to be taken into account is that of the Labour Force Survey (LFS):

In the majority of Member States most jobs are based on written work contracts. However, in some countries such contracts exist only for specific cases (for example in the public sector, for apprentices, or for other persons undergoing some formal training within an enterprise). Taking account of these different institutional arrangements the notions ‘temporary job’ and ‘work contract in limited duration’ (likewise ‘permanent job’ and ‘work contract in unlimited duration’) describe situations which under different institutional frameworks, can be regarded as similar.

A job may be regarded as temporary if it is understood by both employer and the employee that the termination of the job is determined by objective conditions such as reaching a certain date, completion of an assignment or return of another employee who has been temporarily replaced. In the case of a work contract of limited duration the condition for its termination is generally mentioned in the contract. Are also included in these groups persons with a seasonal job, persons engaged by an employment agency or business and

hired out to a third party for the carrying out of a ‘work mission’ (interim) and persons with specific training contracts.

If there exists no objective criterion for the termination of a job or work contract these should be regarded as permanent or of staff unlimited duration.

- For the concept of ‘full-time’/‘part-time’, following the Labour Force Survey (LFS) and the Statistics on Income and Living Conditions (EU-SILC), a job may be considered full time if over 30 hours per week (e.g., 6 hours daily on 5 days or 7.5 hours daily on 4 days), and part time if less than this. However, this indicative threshold has to be flexible. For instance, teachers have full-time jobs with a very low number of contact hours with students, while some craft or trade occupations may involve working hours well above the average. When information is taken from the accident declaration, the workplace definition of ‘full-time’ or ‘part-time’ will be used.

The classification to be used for coding this variable is available in Annex I.

5.1.5. Age of the victim

Definition: age of the victim at the time of the accident.

The age of the victim at the time of the accident should be recorded in years. See proposed classification in Annex I.

5.1.6. Sex of the victim

Sex is a simple categorical variable. See classification in Annex I.

5.1.7. Nationality of the victim

Definition: country of citizenship of the victim.

If a person has more than one citizenship, the citizenship of the country where the person notified the accident should be used. An aggregated classification is used for this optional variable (see Annex I).

5.1.8. Geographical location of the accident

Definition: ‘territorial unit’ where the accident has occurred.

This information has to be provided as a 5-digit code according to the NUTS classification,⁽¹⁰⁾ which corresponds to the NUTS 3 level. This classification describes the country in question and the defined regions in this country. It can be downloaded from the following address:

http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction

⁽⁹⁾ ISCE-93: International Classification of Status in Employment of the International Labour Organisation (ILO).

⁽¹⁰⁾ Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics, OJ. L 154, 21.6.2003, p. 1) and its amendments.

For accidents taken place outside the European Union, Eurostat proposes to use the code 'NEU'. If there is no information on the geographical location of the accident the code 'UNK' must be used.

5.1.9. Date of the accident

Definition: date when the accident occurred.

The date on which the accident took place is recorded using the 8-digit format 'YYYYMMDD', where 'YYYY' is the year, 'MM' refers to the month of the year, and 'DD' refers to the day of the month, e.g. 31 March 2001 would be coded as '20010331'. If the year is unknown 'YYYY' must be coded '0000', if the month is unknown 'MM' must be coded '00' and if the day is unknown 'DD' must be coded '00'.

5.1.10. Time of the accident

Definition: time of the day when the accident occurred.

This optional variable describes the time of the day when the accident occurred 'expressed as time intervals in whole hours' (HH), e.g. 2 p.m. gives 14 which covers the time from 2 p.m. to 2:59 p.m. See codes in Annex I.

5.1.11. Size of the enterprise

Definition: 'number of employees working at the local unit of the workplace. The employer should not be included in the number of employees. For a specification of the local unit please see above under 'Economic activity of the employer'.

An aggregated classification is used for this optional variable (see Annex I).

5.1.12. Type of injury

Definition: 'physical consequences for the victim' e.g. bone fracture, wounds etc.

The 3-digit version of the ESAW classification for 'Type of injury' should be used for encoding of information on this variable (see Annex I). See practical guidelines for the coding of this variable in Annex II.

5.1.13. Part of body injured

Definition: description of the part of the body injured.

The current 2-digit version of the classification of 'part of body injured' (see Annex I) should be used for encoding this variable.

The ESAW methodology and data delivery allows only one choice, i.e. only one code can be chosen to describe the injured part(s) of the body. In cases where several parts of the body have been injured, the most serious injury should be chosen e.g. an amputation ranks above a bone fracture, which ranks above a wound etc. In other cases a code for

multiple sites should be used at the appropriate level of the classification, e.g., broken hand and foot. In cases where larger parts of the body have been affected, e.g., injuries caused by burns or skalds, a code for multiple sites should be used as well.

5.1.14. Days lost (severity)

Definition: 'number of full calendar days' where the victim is unfit for work due to an accident at work.

As mentioned above (see under item 3.1) only **full calendar days** of absence from work of the victim have to be considered, **excluding the day of the accident**. This means that Saturdays, Sundays, Bank holidays or other days where the person is not usually working are also included. For example, for workers working only several days per week/month, the number of days lost include the days when they were not usually working. Similarly, only full calendar days of absence from work should be counted disregarding if the victim is working part-time or full-time.

The number of days lost to be reported for each accident is the total lost at the time when the data is sent to Eurostat. This means that for accidents notified close to the end of the reference year, the number of days lost should be revised before forwarding the data to Eurostat so as to provide information that is as accurate possible.

The number of days lost is provided using a 3-digit level format (see Annex I). This is to enable the report to specify the exact number of days lost or one of the proposed classes, when the information is only available using classes of days lost. 'Specific codes' should be used to define **permanent incapacity (997)** and **fatal accident (998)**. The days lost before the diagnosis of a permanent incapacity (or death) are not considered.

5.1.15. Weight

Definition: numeric value to be used when the Member State uses a sample for the collection of data on non-fatal accidents and/or wants to correct for under-reporting (or over-reporting).

The weighting is only applicable for non-fatal accidents. If no weight is specified for a non-fatal accident it is assumed to be 1.

For fatal accidents the weight is always 1.

A reporting level of accidents at work is defined as the relation between the (estimated) number of notifiable accidents covered by the statistics and the number of accidents actually notified. A reporting level of 100 % for one NACE sector corresponds to the fact that all accidents at work that happened in that sector are reported. If this is not the case, the reporting level is below 100 % and a weighting should be calculated in order to estimate the number of notifiable accidents.

Some Member States might decide to encode only a sample of accidents and to forward these data to Eurostat. In such a case, a weighting should also be used to reflect the sampling and to enable the estimated numbers of accidents to be calculated.

Weightings should be calculated and specified directly by the Member States in the data file even if they are based solely on reporting levels.

When various corrections are cumulated — correction for reporting and for sampling — the Member State should provide for each case (of a non-fatal accident) only one weighting cumulating both effects.

The reporting levels should be described in the metadata (as well as the method of calculation, see later under ‘Metadata’).

5.2. Variables on causes and circumstances (‘Phase III’ variables)

The variables on the causes and circumstances of accidents supply additional information to identify where, and especially how, accidents occur, with a view to formulating a prevention policy. A description of the moment when something abnormal occurred is just as important as the description of what the victim was doing at the time of the accident, if not more so.

The causes and circumstances of an accident include three levels or sequences:

- the circumstances just before the accident, with four variables: ‘Workstation’, ‘Working Environment’, ‘Working Process’ and ‘Specific Physical Activity’,
- the ‘Deviation’, a description of the way in which the circumstances of the accident differed from normal practice,
- the ‘Contact — Mode of Injury’, that is, the precise way in which the departure from normal practice resulted in an accident.

Moreover, the system links to each of the 3 levels a ‘Material Agent’ associated to each corresponding action:

- the ‘Material Agent’ associated to the ‘Specific Physical Activity’,
- the ‘Material Agent’ associated to the ‘Deviation’,
- the ‘Material Agent’ associated to the ‘Contact — Mode of Injury’.

Annex I of the *ESAW Regulation* establishes the obligation to provide data for at least 3 of the 9 variables mentioned above.

The variables ‘Workstation’, ‘Working Environment’ and ‘Working Process’ describe the circumstances in which the

accidents occurred. The various stages of the event are registered using three pairs of variables:

- The ‘Specific Physical Activity’ and its associated ‘Material Agent’ describe what the victim was doing when the accident happened. This activity is very precise and different from the ‘Working Process’, which gives a broader description of the work being carried out.
- The ‘Deviation’ and its associated ‘Material Agent’ describe the abnormal event leading to the accident. The change from normal practice does not describe the root cause of the accident, nor the responsibilities. It should merely describe the abnormal event or the last link in a chain of abnormal events.
- The ‘Contact — Mode of Injury’ and its associated ‘Material Agent’ describe how the victim came into contact with the ‘Material Agent’ that caused the injury. It describes precisely how the victim was injured.

Each level is independent from the others and is one of three elements essential for an accurate description. Therefore, there must be at least one element for each of the three levels.

5.2.1. Workstation

Definition: usual or, alternatively, occasional nature of the job /post the victim held at the time of the accident. It does not take into account whether the job was permanent or not (see variable ‘Employment status’ above).

The concept of ‘usual workstation’ should be understood in a restrictive sense, always inside the premises of the usual local unit of work: fixed workstation in a workshop, shop, office and more generally, premises of the local unit of the employer.

The concept of ‘occasional workstation’ is used in a broader sense and covers both:

- jobs for which the workstation is mobile (truck driver, construction worker, fitter, repairer, policeman, watchman, street sweeper, etc.),
- occasional situations for people usually working at a fixed workstation:
 - occasional journey on behalf of the employer,
 - specific intervention on behalf of the employer outside the usual local unit and inside the premises of a client or another employer (meeting, mission, business interview, installation or repair, etc.),
 - temporary assignment in a fixed workstation outside the usual location or in a local unit different from the usual one. The definition includes workstations occupied during several days or weeks but which are not a definitive assignment workplace (temporary assignment as employee of an enterprise working inside the

premises of another employer or as person engaged by an employment agency or business, important maintenance activities at a client premises, teleworking, etc.).

This variable should be coded according to the classification available in Annex I.

5.2.2. Working environment

Definition: the workplace, work premises or general environment where the accident happened.

This means the workplace, working area or location 'where the victim was present or working just before the accident'.

This variable is to be encoded following the 3-digit version of the classification 'Working Environment' according to the ESAW Methodology (see Annex I). See also guidelines for coding this variable in Annex II.

5.2.3. Working process

Definition: main type of work or task (general activity) being performed by the victim at the time of the accident.

This variable is neither the 'victim's occupation' nor his or her precise 'Specific Physical Activity' at the moment of the accident. It is the description of the type of work and the task, in broad terms, that the victim was performing during a period of time ending at the instant of the accident.

The 'Working Process', i.e. the main task being performed at the time and location of the accident, does not need necessarily to be linked with the victim's 'Specific Physical Activity' at the moment the accident occurs. The 'Working Process' presupposes a certain duration.

This variable is to be encoded following the 2-digit version of the classification 'Working Process' according to the ESAW Methodology (see Annex I). See also guidelines for coding this variable in Annex II.

5.2.4. Specific Physical Activity

Definition: the victim's exact 'Specific Physical Activity' at the instant of the accident, i.e. what exactly the victim was doing at the exact time of the accident.

This means the 'activity being performed by the victim just before the accident'. It covers only a short period of time. While the variable 'Working process' describes a task that is performed over a substantial period of time, the variable 'Specific Physical Activity' is far more precise and can be isolated from the chain of events leading to the accident. In each case, both variables must be adapted to properly describe the accident.

This variable should be coded following the 2-digit version of the classification of 'Specific Physical Activity' according to ESAW methodology (see Annex I). See also guidelines for coding this variable in Annex II.

5.2.5. Deviation

Definition: last event differing from the norm and leading to the accident.

This is the description of the abnormal event, i.e. the deviation from normal working process. The 'Deviation' is the event that triggers the accident.

If there is a chain of events, the last 'Deviation' must be recorded (the 'Deviation' closest in time to the point at which the accident occurred. This rule complies with a double need: 1) the homogeneity of the coding by all codifiers, and therefore the need for an 'objective' definition (contrary to the 'subjective' concept of deviation 'most useful for prevention'); 2) the maximisation of the information obtained by coding, because in the declarations of the accidents at work, which are a 'photograph' and not a survey on the accident, the 'last' elements are those that are more frequently described.

Certainly this rule is not 'in theory' the best for prevention, because the 'last' deviating event and the 'last' associated object are not always the elements on which one must carry out preventive actions to limit the occurrence of these accidents. Nevertheless, in practice, in numerous Member States this rule is the one which allows the best collection of information within the framework of the reporting system of the accidents at work, and therefore actually constitutes the best possible 'input' for prevention.

This variable should be coded following the 2-digit version of the classification of 'Deviation' according to ESAW methodology (see Annex I). See also guidelines for coding this variable in Annex II.

5.2.6. Contact and mode of injury

Definition: the contact that injured the victim.

This describes how the victim was hurt (physical or mental trauma) by the 'Material Agent' that caused the injury. If there are several 'Contacts -Modes of Injury', the one causing the most serious injury must be recorded.

This variable should be coded following the 2-digit version of the classification 'Contact — Mode of injury' according to ESAW Methodology (see Annex I). See also guidelines for coding this variable in Annex II.

5.2.7. The Material Agents

There are three variables providing information on the material agents involved in the accident:

- the 'Material Agent' associated to the 'Specific Physical Activity'
- the 'Material Agent' associated to the 'Deviation'
- the 'Material Agent' associated to the 'Contact — Mode of Injury'.

The three ‘Material Agents’ need not be different. In practice, the same ‘Material Agent’ may be associated with one or more of the three variables, though it is equally possible for each variable to correspond to a different ‘Material Agent’. In some cases there is no ‘Material Agent’ to be recorded or coded, i.e. a shop assistant is standing up and turns to serve a customer, but the movement causes an internal injury and leaves her unable to move.

5.2.7.a. Material Agent of the Specific Physical Activity

Definition: the tool, object, or instrument being used by the victim when the accident happened, just before the accident.

The ‘Material Agent’ may or may not be implicated in the accident. However, if there are several ‘Material Agents’ associated with the ‘Specific Physical Activity’, the ‘Material Agent’ most closely linked to the accident or injury must be recorded.

5.2.7.b. Material Agent associated with the Deviation

Definition: the tool, object, or instrument involved in the abnormal event.

If several ‘Material Agents’ are associated with the (last) ‘Deviation’, the last ‘Material Agent’ involved should be recorded, i.e. that closest in time to the injuring contact.

5.2.7.c. Material Agent associated with the Contact — Mode of injury

Definition: the object, tool or instrument with which the victim came into contact or the psychological mode of injury.

It is the principal ‘Material Agent’ associated or linked with the injuring contact. If several ‘Material Agents’ are associated with the injury, the ‘Material Agent’ linked with the most serious injury must be recorded.

5.2.7.d. Coding of Material Agents

All variables on ‘Material agents’ mentioned above should be coded following the 4-digit version of the classification ‘Material Agent’ according to the ESAW Methodology (see Annex I). See also guidelines for coding this variable in Annex II.

The detailed 8-digit version of the classification, which can be used by the countries at national level, can be downloaded at the following address:

http://circa.europa.eu/Public/irc/dsis/hasaw/library?l=/statistics_methodology&vm=detailed&sb=Title

The principle underlying this coding system is that the victim was performing an ‘activity’ (the ‘Specific Physical

Activity’) with the first ‘Material Agent’, the second ‘Material Agent’ behaved abnormally (the ‘Deviation’) and the third ‘Material Agent’ injured the victim (the ‘Contact — Mode of Injury’). The three ‘Agents’ may be different, identical or may not even exist.

5.2.8. Weight Causes and Circumstances

Definition: numeric value to be used when the Member State applies a sampling for the encoding of the ESAW Phase III variables on causes and circumstances for non-fatal accidents. If not applicable, the default value 1 is used.

For the fatal accidents, it is proposed not to sample for coding the variables on causes and circumstances.

6. Metadata

The ESAW data are *occurrence-related* and based on *administrative sources* in the Member States. Mainly, two types of reporting procedures can be identified in the various Member States of the European Union: The *insurance based systems* and *those based on the legal obligation of the employers to notify* the accidents to the relevant national authorities.

The *insurance based systems*, have reporting procedures mainly based on the notification of the accidents to the insurer, public or private according to the case. In the insurance based systems, the supply or the refunding of care benefits and the payment of benefits in cash (daily subsistence allowances, rents where applicable, etc.) resulting from accidents at work, are conditioned in its report to the public or private insurer. Additionally, in a number of these countries, the benefits thus paid under the accidents at work insurance legislation are higher than in the case of non-occupational accidents. Thus, there is an *economic incentive* for the employer and the employee to notify an accident at work in the insurance-based systems. Due to these various factors, the reporting levels for accidents at work are in general very high in the insurance based systems and considered to be about 100 per cent.

On the other hand the reporting procedures *based on the legal obligation of the employer to notify the accidents* to the relevant national authorities, which is often the *National Labour Inspection Service* are based on a system of universal social security ‘coverage’. In such systems the benefits provided to the victim of an accident at work are not depending on a preliminary reporting of the accident, except for the specific benefits paid for the most serious accidents (rents for permanent disability, etc.). Consequently, the economic incentive for notifying accidents at work is not

very strong in the non-insurance based systems. In practice only a part of work accidents are actually reported and the systems based on the employers liability to notify work accidents to the authorities have reporting levels lower than the *insurance based systems*.

Article 4 of *ESAW Regulation* establishes that Member States shall transmit to Eurostat an annual verification and update of metadata according to a standard template specified by Eurostat. The following items should be included:

- the population covered in terms of NACE Rev.2 sectors, and possibly subsectors, and employment status,
- the information on professions/activities for which data on accidents at work are subject to confidentiality by national legislation,
- the declaration rates of accidents at work which are to be used for correction of under-reporting (or over-reporting):

Countries providing data on a voluntary basis on non-fatal accidents of self-employed should declare the reporting levels separately for employees and for self-employed.

- the coverage of different types of accidents as explained in this summary methodology, i.e. road accidents, fatal accidents, etc.,
- the sampling method, if applicable, used in the setup of micro-data collection,
- the sampling method, if applicable, which is used for encoding of the variables on causes and circumstances,
- the method used to compute the weights, if relevant, and the aspects included in the computation (correction for under/over reporting and/or for sampling),
- the numbers of fatal road traffic accidents and fatal accidents on board by means of transport during journey in the course of work for persons employed outside the NACE rev. 2 sector H (Transportation),
- information about any national specificity essential for the interpretation and compilation of comparable statistics and indicators, i.e. description of the work insurance system for reporting accidents at work, discrepancies between national definitions and those included in ESAW methodology (definition of local unit, commuting accidents, etc.).

It is also proposed to include the type of reporting system from which data on accidents at work are collected, as well as, general information on the national authorities responsible for collecting ESAW data.

7. Indicators and methods of standardisation of data

The ESAW methodology considers two main types of indicators on accidents at work: the number of accidents and the incidence rates. Obviously, the number of accidents has to be related to the reference population, which ideally is the number of persons in employment (persons exposed to the risk of accident at work), to reach an accurate report on incidence rates (frequency).

7.1. Reference population

A reference population for ESAW data should be set up to calculate incidence rates for accidents at work.

The ESAW data are occurrence-related and are mainly based on registers of insurers: the accidents at work reported to the insurer, public or private according to the case. Consequently, the appropriate reference population to be used for calculating the incidence rates should be the number of workers insured for accidents at work.

If ESAW coverage includes all persons employed, the reference population would be the entire working population. In this case, one could consider using as reference population one of the two main data sources for this information: the Labour Force Survey and the national accounts.

The Labour Force Survey focuses on the resident population, while employment data from national accounts include all persons employed in a country irrespective of the place of residence of the employed person. So, employment data includes cross-border workers.

Both data sources provide information by employment status (employees, self-employed). The European Labour Force Survey also provides detailed information by other variables such as the occupation, sex and age of the worker. This information is not available in national accounts. However, one should keep in mind that the Labour Force Survey does not provide information on employed non-resident persons nor on employment in full-time equivalents. This is a problem for countries with a high share of cross-border workers, as well for those with a high share of part-time work, particularly for women.

Taking into consideration the elements mentioned above, Eurostat recommends the countries to provide the reference population that corresponds to the national coverage of ESAW data. If this information is not available, they should provide the exact coverage of the data (see above under 'metadata') in order to choose the best source for the reference population.

The reference year used for the reference population should be the same as the reference year for the ESAW data.

7.2. Incidence rates

The incidence rate is defined as the number of accidents at work per 100 000 persons in employment. It can be calculated for Europe, a Member State, or any sub-population breakdown according to one or more of the variables above characterising the victim of the accident (economic activity, age, etc.). Separate incidence rates are calculated for fatal accidents and accidents leading to more than three days' absence.

$$\text{Incidence rate} = \frac{\text{Number of accidents (fatal or non-fatal)}}{\text{Number of employed persons in the covered population}} \times 100000$$

7.3. Standardised incidence rates

Accidents at work happen more often in some occupations than in others. For this reason, the industrial structure of a country will influence the number of accidents depending on the share of high-risk sectors. For example, a country where high-risk sectors like agriculture, construction or transport account for a high proportion of jobs is likely to have a higher accident rate than one with a preponderance of jobs in the service sector.

To correct for this effect a 'standardised' number of accidents at work per 100 000 persons in employment is calculated per Member State by giving each branch the same weight at national level as in the European Union total ('standardised' incidence rate). This standardisation method is used in current ESAW publications on accidents at work.

Annex I: Classifications

Employment status of the victim

The proposed codes to be used for coding this variable are based on ICSE-93 classification of ILO.

Code (*)	Label	Remarks
000	Employment status unknown	
100	Self-employed (with or without employees)	Optional
300	Employee, with a job permanent/temporary (unlimited/limited duration) and full-time/part-time not specified	
301	Employee, with a job permanent/temporary (unlimited/limited duration) not specified - - full-time	Optional
302	Employee, with a job permanent/temporary (unlimited/limited duration) not specified - - part-time	Optional
310	Employee with a permanent job (contract of unlimited duration) - full-time/part-time not specified	Optional
311	Employee with a permanent job (contract of unlimited duration) - full-time	Optional
312	Employee with a permanent job (contract of unlimited duration) - part-time	Optional
320	Employee with a temporary job (contract of limited duration) - full-time/part-time not specified	Optional
321	Employee with a temporary job (contract of limited duration) - full-time	Optional
322	Employee with a temporary job (contract of limited duration) - part-time	Optional
400	Family worker	Optional
500	Trainee / Apprentice	Optional
900	Other employment status	Optional

(*) Please notice that the code **200** IS NOT USED to be coherent with the LFS classification that have the two codes **1** and **2** for the self-employed persons (with or without employees) and have the employees in code **3** and the family workers in code **4**.

Age of the victim

Code	Label
00	Less than 1 year
01	1 year old
02	2 years
...	..etc.
10	10 years
...	..etc.
90	90 years
98	Above 90 years of age
99	Age unknown

Sex of the victim

Code	Label
1	Man
2	Woman
9	Sex unknown

Nationality of the victim

Code	Label
0	Nationality unknown
1	National
2	Non-national from EU
3	Non-national outside EU

Time of the accident

Code	Label
00	00:00 to 00:59
01	01:00 to 01:59
02	02:00 to 02:59
.....	etc., to
23	23:00 to 23:59
99	Time of accident unknown

Size of the enterprise

Code	Label	Specifications
0	0 employees	Self-employed without employees
1	1-9 employees	full-time equivalent
2	10-49 employees	full-time equivalent
3	50-249 employees	full-time equivalent
4	250-499 employees	full-time equivalent
5	500 employees or more	full-time equivalent
9	Unknown size	full-time equivalent

Type of injury

Code	Label
000	Type of injury unknown or unspecified
010	Wounds and superficial injuries
011	Superficial injuries
012	Open wounds
019	Other types of wounds and superficial injuries
020	Bone fractures
021	Closed fractures
022	Open fractures
029	Other types of bone fractures
030	Dislocations, sprains and strains
031	Dislocations and subluxations
032	Sprains and strains
039	Other types of dislocations, sprains and strains
040	Traumatic amputations (Loss of body parts)
050	Concussion and internal injuries
051	Concussion and intracranial injuries
052	Internal injuries
059	Other types of concussion and internal injuries
060	Burns, scalds and frostbites
061	Burns and scalds (thermal)
062	Chemical burns (corrosions)
063	Frostbites
069	Other types of burns, scalds and frostbites
070	Poisonings and infections
071	Acute poisonings
072	Acute infections
079	Other types of poisonings and infections
080	Drowning and asphyxiation
081	Asphyxiation
082	Drowning and non-fatal submersions
089	Other types of drowning and asphyxiation
090	Effects of sound, vibration and pressure
091	Acute hearing losses
092	Effects of pressure (barotrauma)
099	Other effects of sound, vibration and pressure
100	Effects of temperature extremes, light and radiation
101	Heat and sunstroke
102	Effects of radiation (non-thermal)
103	Effects of reduced temperature
109	Other effects of temperature extremes, light and radiation

Code	Label
110	Shock
111	Shocks after aggression and threats
112	Traumatic shocks
119	Other types of shocks
120	Multiple injuries
999	Other specified injuries not included under other headings

Part of body injured

Code	Label
00	Part of body injured, not specified
10	Head, not further specified
11	Head (Caput), brain and cranial nerves and vessels
12	Facial area
13	Eye(s)
14	Ear(s)
15	Teeth
18	Head, multiple sites affected
19	Head, other parts not mentioned above
20	Neck, inclusive spine and vertebra in the neck
21	Neck, inclusive spine and vertebra in the neck
29	Neck, other parts not mentioned above
30	Back, including spine and vertebra in the back
31	Back, including spine and vertebra in the back
39	Back, other parts not mentioned above
40	Torso and organs, not further specified
41	Rib cage, ribs including joints and shoulder blades
42	Chest area including organs
43	Pelvic and abdominal area including organs
48	Torso, multiple sites affected
49	Torso, other parts not mentioned above
50	Upper Extremities, not further specified
51	Shoulder and shoulder joints
52	Arm, including elbow
53	Hand
54	Finger(s)
55	Wrist
58	Upper extremities, multiple sites affected
59	Upper extremities, other parts not mentioned above

Code	Label
60	Lower Extremities, not further specified
61	Hip and hip joint
62	Leg, including knee
63	Ankle
64	Foot
65	Toe(s)
68	Lower extremities, multiple sites affected
69	Lower Extremities, other parts not mentioned above
70	Whole body and multiple sites, not further specified
71	Whole body (Systemic effects)
78	Multiple sites of the body affected
99	Other Parts of body injured, not mentioned above

Days lost (severity)

Code	Label
000	Number of days lost unknown
004 - 182	Number of whole days lost in numerical (less than 6 months' absence)
A01	4 - 6 days lost
A02	7 - 13 days lost
A03	14 - 20 days lost
A04	At least 21 days but less than 1 month lost
A05	At least 1 month but less than 3 months lost
A06	At least 3 months but less than 6 months lost
997	Permanent incapacity (to work) or 183 or more days lost (6 months' absence or more).
998	Fatal accident

Workstation

Code	Label
0	Not specified
1	Usual workstation or within the usual local unit of work
2	Occasional or mobile workstation or in a journey on behalf of the employer
9	Other workstation

Working environment

Code	Label
000	No information
010	Industrial site - Not specified
011	Production area, factory, workshop
012	Maintenance area, repair workshop
013	Area used principally for storage, loading, unloading
019	Other group 010 type Working Environments not listed above
020	Construction site, construction, opencast quarry, opencast mine - Not specified
021	Construction site - building being constructed
022	Construction site - building being demolished, repaired, maintained
023	Opencast quarry, opencast mine, excavation, trench (including opencast mines and working quarries)
024	Construction site - underground
025	Construction site - on / over water
026	Construction site - in a high-pressure environment
029	Other group 020 type Working Environments not listed above
030	Farming, breeding, fish farming, forest zone - Not specified
031	Breeding area
032	Farming area - ground crop
033	Farming area - tree or bush crop
034	Forestry zone
035	Fish farming zone, fishing, aquaculture (not on a vessel)
036	Garden, park, botanical garden, zoological garden
039	Other group 030 type Working Environments not listed above
040	Tertiary activity area, office, amusement area, miscellaneous - Not specified
041	Office, meeting room, library etc.
042	Teaching establishment, school, secondary school, college, university, crèche, day nursery
043	Small or large sales area (including street commerce)
044	Restaurant, recreational area, temporary accommodation (including museums, auditoriums, stadiums, fairs etc.)
049	Other group 040 type Working Environments not listed above
050	Health establishment - Not specified
051	Health establishment, private hospital, hospital, nursing home
059	Other group 050 type Working Environments not listed above
060	Public area - Not specified
061	Area permanently open to public thoroughfare – (highways, byways, parking areas, station or airport waiting rooms etc.)
062	Means of transport - by land or rail – private or public (all kinds: train, bus, car etc.)
063	Zone attached to public places but with access restricted to authorised personnel: railway line, airport apron, motorway hard shoulder
069	Other group 060 type Working Environments not listed above
070	In the home - Not specified
071	Private home
072	Communal parts of a building, annexes, private family garden
079	Other group 070 type Working Environments not listed above

Code	Label
080	Sports area - Not specified
081	Indoor sports area – sports hall, gymnasium, indoor swimming pool
082	Outdoor sports area – sports ground, outdoor swimming pool, skiing piste
089	Other group 080 type Working Environments not listed above
090	In the air, elevated, excluding construction sites - Not specified
091	Elevated – on a fixed level (roof, terrace, etc.)
092	Elevated – mast, pylon, suspended platform
093	In the air - aboard aircraft
099	Other group 090 type Working Environments not listed above, excluding construction sites
100	Underground, excluding construction sites - Not specified
101	Underground – tunnel (road, train, tube)
102	Underground – mine
103	Underground - drains/sewers
109	Other group 100 type Working Environments not listed above, excluding construction sites
110	On /over water, excluding construction sites - Not specified
111	Sea or ocean – aboard all types of vessels, platforms, ships, boats, barges
112	Lake, river, harbour – aboard all types of vessels, platforms, ships, boats, barges
119	Other group 110 type Working Environments not listed above, excluding construction sites
120	In high pressure environments, excluding construction sites - Not specified
121	In a high pressure environment – underwater (e.g. diving)
122	In a high pressure environment - chamber
129	Other group 120 type Working Environments not listed above, excluding construction site
999	Other Working Environments not listed in the classification

Working process

Code	Label
00	No information
10	Production, manufacturing, processing, storing - All types - Not specified
11	Production, manufacturing, processing – all types
12	Storing - all types
19	Other group 10 type Working Processes not listed above
20	Excavation, Construction, Repair, Demolition - Not specified
21	Excavation
22	New construction - building
23	New construction - civil engineering, infrastructures, roads, bridges, dams, ports
24	Remodelling, repairing, extending, building maintenance - all types of constructions
25	Demolition - all types of construction
29	Other group 20 type Working Processes not listed above
30	Agricultural type work, forestry, horticulture, fish farming, work with live animals - Not specified
31	Agricultural type work - working the land
32	Agricultural type work- with vegetables, horticultural
33	Agricultural type work - with live animals
34	Forestry type work
35	Fish farming, fishing
39	Other group 30 type Working Processes not listed above
40	Service provided to enterprise and/or to the general public; intellectual activity - Not specified
41	Service, care, assistance, to the general public
42	Intellectual work - teaching, training, data processing, office work, organising, managing
43	Commercial activity - buying, selling and associated services
49	Other group 40 type Working Processes not listed above
50	Other work related to tasks coded under 10, 20, 30 and 40 - Not specified
51	Setting up, preparation, installation, mounting, disassembling, dismantling
52	Maintenance, repair, tuning, adjustment
53	Cleaning working areas, machines - industrial or manual
54	Waste management, disposal, waste treatment of all kinds
55	Monitoring, inspection of manufacturing procedures, working areas, means of transport, equipment - with or without monitoring equipment
59	Other group 50 type Working Processes not listed above
60	Movement, sport, artistic activity - Not specified
61	Movement, including aboard means of transport
62	Sport, artistic activity
69	Other group 60 type Working Processes not listed above
99	Other Working Processes not listed in the above classification

Specific Physical Activity

Code	Label
00	No information
10	Operating machine - Not specified
11	Starting the machine, stopping the machine
12	Feeding the machine, unloading the machine
13	Monitoring the machine, operating or driving the machine,
19	Other group 10 type Specific Physical Activities not listed above
20	Working with hand-held tools - Not specified
21	Working with hand-held tools - manual
22	Working with hand-held tools - motorised
29	Other group 20 type Specific Physical Activities not listed above
30	Driving/being on board a means of transport or handling equipment - Not specified
31	Driving a means of transport or handling equipment - mobile and motorised
32	Driving a means of transport or handling equipment - mobile and non-motorised
33	Being a passenger on board a means of transport
39	Other group 30 type Specific Physical Activities not listed above
40	Handling of objects - Not specified
41	Manually taking hold of, grasping, seizing, holding, placing - on a horizontal level
42	Tying, binding, tearing off, undoing, squeezing, unscrewing, screwing, turning
43	Fastening, hanging up, raising, putting up - on a vertical level
44	Throwing, flinging away
45	Opening, closing (box, package, parcel)
46	Pouring, pouring into, filling up, watering, spraying, emptying, baling out
47	Opening (a drawer), pushing (a warehouse/office /cupboard door)
49	Other group 40 type Specific Physical Activities not listed above
50	Carrying by hand - Not specified
51	Carrying vertically - lifting, raising, lowering an object
52	Carrying horizontally - pulling, pushing, rolling an object
53	Transporting a load - carried by a person
59	Other group 50 type Specific Physical Activities not listed above
60	Movement - Not specified
61	Walking, running, going up, going down, etc.
62	Getting in or out
63	Jumping, hopping, etc.
64	Crawling, climbing, etc.
65	Getting up, sitting down
66	Swimming, diving
67	Movements on the spot
69	Other group 60 type Specific Physical Activities not listed above
70	Presence - Not specified
99	Other Specific Physical Activities not listed in this classification

Deviation

Code	Label
00	No information
10	Deviation due to electrical problems, explosion, fire - Not specified
11	Electrical problem due to equipment failure - leading to indirect contact
12	Electrical problem - leading to direct contact
13	Explosion
14	Fire, flare up
19	Other group 10 type Deviations not listed above
20	Deviation by overflow, overturn, leak, flow, vaporisation, emission - Not specified
21	Solid state - overflowing, overturning
22	Liquid state - leaking, oozing, flowing, splashing, spraying
23	Gaseous state - vaporisation, aerosol formation, gas formation
24	Pulverulent material - smoke generation, dust/particles in suspension/emission of
29	Other group 20 type Deviations not listed above
30	Breakage, bursting, splitting, slipping, fall, collapse of Material Agent - Not specified
31	Breakage of material - at joint, at seams
32	Breakage, bursting - causing splinters (wood, glass, metal, stone, plastic, others)
33	Slip, fall, collapse of Material Agent - from above (falling on the victim)
34	Slip, fall, collapse of Material Agent - from below (dragging the victim down)
35	Slip, fall, collapse of Material Agent - on the same level
39	Other group 30 type Deviations not listed above
40	Loss of control (total or partial) of machine, means of transport or handling equipment, hand-held tool, object, animal - Not specified
41	Loss of control (total or partial) - of machine (including unwanted start-up) or of the material being worked by the machine
42	Loss of control (total or partial) - of means of transport or handling equipment, (motorised or not)
43	Loss of control (total or partial) - of hand-held tool (motorised or not) or of the material being worked by the tool
44	Loss of control (total or partial) - of object (being carried, moved, handled, etc.)
45	Loss of control (total or partial) - of animal
49	Other group 40 type Deviations not listed above
50	Slipping - Stumbling and falling - Fall of persons - Not specified
51	Fall of person - to a lower level
52	Slipping - Stumbling and falling - Fall of person - on the same level
59	Other group 50 type Deviations not listed above
60	Body movement without any physical stress (generally leading to an external injury) - Not specified
61	Walking on a sharp object
62	Kneeling on, sitting on, leaning against
63	Being caught or carried away, by something or by momentum
64	Uncoordinated movements, spurious or untimely actions
69	Other group 60 type Deviations not listed above
70	Body movement under or with physical stress (generally leading to an internal injury) - Not specified
71	Lifting, carrying, standing up
72	Pushing, pulling
73	Putting down, bending down
74	Twisting, turning
75	Treading badly, twisting leg or ankle, slipping without falling
79	Other group 70 type Deviations not listed above

Code	Label
80	Shock, fright, violence, aggression, threat, presence - Not specified
81	Shock, fright
82	Violence, aggression, threat - between company employees subjected to the employer's authority
83	Violence, aggression, threat - from people external to the company towards victims performing their duties (bank hold-up, bus drivers, etc.)
84	Aggression, jostle - by animal
85	Presence of the victim or of a third person in itself creating a danger for oneself and possibly others
89	Other group 80 type Deviations not listed above
99	Other Deviations not listed above in this classification.

Contact-Mode of injury

Code	Label
00	No information
10	Contact with electrical voltage, temperature, hazardous substances - Not specified
11	Indirect contact with a welding arc, spark, lightning (passive)
12	Direct contact with electricity, receipt of electrical charge in the body
13	Contact with naked flame or a hot or burning object or environment
14	Contact with a cold or frozen object or environment
15	Contact with hazardous substances - through nose, mouth via inhalation
16	Contact with hazardous substances - on/through skin or eyes
17	Contact with hazardous substances - through the digestive system by swallowing or eating
19	Other group 10 type Contacts -Modes of Injury not listed above
20	Drowned, buried, enveloped - Not specified
21	Drowned in liquid
22	Buried under solid
23	Enveloped in, surrounded by gas or airborne particles
29	Other group 20 type Contacts -Modes of Injury not listed above
30	Horizontal or vertical impact with or against a stationary object (the victim is in motion) - Not specified
31	Vertical motion, crash on or against (resulting from a fall)
32	Horizontal motion, crash on or against
39	Other group 30 type Contacts -Modes of Injury not listed above
40	Struck by object in motion, collision with - Not specified
41	Struck - by flying object
42	Struck - by falling object
43	Struck - by swinging object
44	Struck - by rotating, moving, transported object, including vehicles
45	Collision with an object, including vehicles - collision with a person (the victim is moving)
49	Other group 40 type Contacts -Modes of Injury not listed above
50	Contact with sharp, pointed, rough, coarse Material Agent - Not specified
51	Contact with sharp Material Agent (knife, blade etc.)
52	Contact with pointed Material Agent (nail, sharp tool etc.)
53	Contact with hard or rough Material Agent
59	Other group 50 type Contacts -Modes of Injury not listed above
60	Trapped, crushed, etc. - Not specified
61	Trapped, crushed - in
62	Trapped, crushed - under
63	Trapped, crushed - between
64	Limb, hand or finger torn or cut off
69	Other group 60 type Contacts -Modes of Injury not listed above
70	Physical or mental stress - Not specified
71	Physical stress - on the musculoskeletal system
72	Physical stress - due to radiation, noise, light or pressure
73	Mental stress or shock
79	Other group 70 type Contacts -Modes of Injury not listed above

Code	Label
80	Bite, kick, etc. (animal or human) - Not specified
81	Bite
82	Sting from insect or fish
83	Blow, kick, head butt, strangulation
89	Other group 80 type Contacts -Modes of Injury not listed above
99	Other Contacts - Modes of Injury not listed in this classification

Material agent

Code	Label
00.00	No material agent or no information
00.01	No material agent
00.02	No information
00.99	Other known group 00 situation not listed above
01.00	Buildings, structures, surfaces - at ground level (indoor or outdoor, fixed or mobile, temporary or not) - not specified
01.01	Building components, structural components - doors, walls, partitions etc. and intentional obstacles (windows, etc.)
01.02	Surfaces at ground level - ground and floors (indoor or outdoor, farmland, sports fields, slippery floors, cluttered floors, plank with nails in)
01.03	Surfaces at ground level - floating
01.99	Other known buildings, structures and surfaces, - at same level, in group 01 but not listed above
02.00	Buildings, structures, surfaces - above ground level (indoor or outdoor) - not specified
02.01	Parts of building, above ground level - fixed (roofs, terraces, doors and windows, stairs, quays)
02.02	Structures, surfaces, above ground level - fixed (including gangways, fixed ladders, pylons)
02.03	Structures, surfaces, above ground level - mobile (including scaffolding, mobile ladders, cradles, elevating platforms)
02.04	Structures, surfaces, above ground level - temporary (including temporary scaffolding, harnesses, swings)
02.05	Structures, surfaces, above ground level - floating (including drilling platforms, scaffolding on barges)
02.99	Other known buildings, structures, surfaces - above ground level, in group 02 but not listed above
03.00	Buildings, structures, surfaces - below ground level (indoor or outdoor) - not specified
03.01	Excavations, trenches, wells, pits, escarpments, garage pits
03.02	Underground areas, tunnels
03.03	Underwater environments
03.99	Other known buildings, structures, surfaces - below ground level, in group 03 but not listed above
04.00	Systems for the supply and distribution of materials, pipe networks - not specified
04.01	Systems for the supply and distribution of materials, pipe networks - fixed - for gas, air, liquids, solids - including hoppers
04.02	Systems for the supply and distribution of materials, pipe networks - mobile
04.03	Sewers, drains
04.99	Other known systems for the supply and distribution of materials, pipe networks, in group 04 but not listed above
05.00	Motors, systems for energy transmission and storage - not specified
05.01	Motors, power generators (thermal, electric, radiation)
05.02	Systems for energy transmission and storage (mechanical, pneumatic, hydraulic, electric, including batteries and accumulators)
05.99	Other known motors, systems for energy transmission and storage, in group 05 but not listed above

Code	Label
06.00	Hand tools, not powered - not specified
06.01	Hand tools, not powered - for sawing
06.02	Hand tools, not powered - for cutting, separating (including scissors, shears, secateurs)
06.03	Hand tools, not powered - for carving, slotting, chiselling, trimming, clipping, shearing
06.04	Hand tools, not powered - for scraping, polishing, buffing
06.05	Hand tools, not powered - for drilling, turning, screwing
06.06	Hand tools, not powered - for nailing, riveting stapling
06.07	Hand tools, not powered - for sewing, knitting
06.08	Hand tools, not powered - for welding, gluing
06.09	Hand tools, not powered - for extracting materials and working the ground (including farming tools)
06.10	Hand tools, not powered - for waxing, lubricating, washing, cleaning
06.11	Hand tools, not powered - for painting
06.12	Hand tools, not powered - for holding in place, grasping
06.13	Hand tools, not powered - for kitchen work (except knives)
06.14	Hand tools, not powered - for medical and surgical work - sharp, cutting
06.15	Hand tools, not powered - for medical and surgical work - non-cutting, others
06.99	Other known hand tools, not powered, in group 06 but not listed above
07.00	Hand-held or hand-guided tools, mechanical - not specified
07.01	Mechanical hand tools - for sawing
07.02	Mechanical hand tools - for cutting, separating (including scissors, shears, secateurs)
07.03	Mechanical hand tools - for carving, slotting, chiselling, (hedge cutting see 09.02) trimming, clipping, shearing
07.04	Mechanical hand tools - for scraping, polishing, buffing (including disc cutters)
07.05	Mechanical hand tools - for drilling, turning, screwing
07.06	Mechanical hand tools - for nailing, riveting, stapling
07.07	Mechanical hand tools - for sewing, knitting
07.08	Mechanical hand tools - for welding, gluing
07.09	Mechanical hand tools - for extracting materials and working the ground (including farming tools, concrete breakers)
07.10	Mechanical hand tools - for waxing, lubricating, washing, cleaning (including high-pressure vacuum cleaner)
07.11	Mechanical hand tools - for painting
07.12	Mechanical hand tools - for holding in place, grasping
07.13	Mechanical hand tools - for kitchen work (except knives)
07.14	Mechanical hand tools - for heating (including driers, flame guns, irons)
07.15	Mechanical hand tools - for medical and surgical work - sharp, cutting
07.16	Mechanical hand tools - for medical and surgical work - non-cutting, others
07.17	Pneumatic guns (without specification of tool)
07.99	Other known hand-held or hand-guided mechanical tools, in group 07 but not listed above
08.00	Hand tools - without specification of power source - not specified
08.01	Hand tools, without specification of power source - for sawing
08.02	Hand tools, without specification of power source - for cutting, separating (including scissors, shears, secateurs)
08.03	Hand tools, without specification of power source - for carving, slotting, chiselling, trimming, clipping, shearing
08.04	Hand tools, without specification of power source - for scraping, polishing, buffing
08.05	Hand tools, without specification of power source - for drilling, turning, screwing
08.06	Hand tools, without specification of power source - for nailing, riveting stapling
08.07	Hand tools, without specification of power source - for sewing, knitting
08.08	Hand tools, without specification of power source - for welding, gluing
08.09	Hand tools, without specification of power source - for extracting materials and working the ground (including farming tools)
08.10	Hand tools, without specification of power source - for waxing, lubricating, washing, cleaning
08.11	Hand tools, without specification of power source - for painting

Code	Label
08.12	Hand tools, without specification of power source - for holding in place, grasping
08.13	Hand tools, without specification of power source - for kitchen work (except knives)
08.14	Hand tools, without specification of power source - for medical and surgical work - sharp, cutting
08.15	Hand tools, without specification of power source - for medical and surgical work - non-cutting, others
08.99	Other known hand tools, without specification of power source, in group 08 but not listed above
09.00	Machines and equipment – portable or mobile – not specified
09.01	Portable or mobile machines – for extracting materials or working the ground – mines, quarries and plant for building and civil engineering works
09.02	Portable or mobile machines – for working the ground, farming
09.03	Portable or mobile machines (not for working the ground) – for construction sites
09.04	Mobile floor cleaning machines
09.99	Other known portable or mobile machines and equipment in group 09 but not listed above
10.00	Machines and equipment – fixed – not specified
10.01	Fixed machines for extracting materials or working the ground
10.02	Machines for preparing materials, crushing, pulverising, filtering, separating, mixing, blending
10.03	Machines for processing materials – chemical processes (reactive, fermenting processes)
10.04	Machines for processing materials – hot processes (ovens, driers, kilns)
10.05	Machines for processing materials – cold processes (production of cold)
10.06	Machines for processing materials – other processes
10.07	Forming machines – by pressing, crushing
10.08	Forming machines – by calendering, rolling, cylinder presses (including paper presses)
10.09	Forming machines – by injection, extrusion, blowing, spinning, moulding, melting, casting
10.10	Machine tools – for planning, milling, surface treatment, grinding, polishing, turning, drilling
10.11	Machine tools – for sawing
10.12	Machine tools – for cutting, splitting, clipping (including die cutters, shearing machines, clippers, oxygen cutting equipment)
10.13	Machines for surface treatment – cleaning, washing, drying, painting, printing
10.14	Machines for surface treatment – galvanising, electrolytic surface treatment
10.15	Assembling machines (welding, gluing, nailing, screwing, riveting, spinning, wiring, sewing, stapling)
10.16	Packing machines, wrapping machines (filling, labelling, closing...)
10.17	Other machines for specific industries (miscellaneous monitoring and testing machines)
10.18	Specific machines used in farming which are not included with the above machines
10.99	Other known fixed machines and equipment in group 10 but not listed above
11.00	Conveying, transport and storage systems – not specified
11.01	Fixed conveyors, continuous handling equipment and systems – belts, escalators, cableways, conveyors, etc.)
11.02	Elevators, lifts – hoists, bucket elevators, jacks, etc.
11.03	Fixed cranes, mobile cranes, vehicle-mounted cranes, overhead travelling cranes, hoisting devices with suspended load
11.04	Mobile handling devices, handling trucks (powered or not) – barrows, pallet trucks, etc.
11.05	Lifting equipment, securing, gripping and miscellaneous handling devices (including slings, hooks, ropes...)
11.06	Storage systems, packaging equipment, containers (silos, tanks) – fixed – tanks, vats, containers, etc.
11.07	Storage systems, packaging equipment, containers – mobile
11.08	Storage accessories, shelving, pallet racks, pallets
11.09	Miscellaneous packaging, small and medium-sized, mobile (skips, miscellaneous containers, bottles, crates, extinguishers...)
11.99	Other known conveying, transport and storage systems in group 11 but not listed above
12.00	Land vehicles – not specified
12.01	Vehicles – heavy: lorries, buses, coaches (passenger transport)
12.02	Vehicles – light: goods or passengers

Code	Label
12.03	Vehicles – two or three wheels, powered or not
12.04	Other land vehicles: skis, roller-skates
12.99	Other known land vehicles in group 12 but not listed above
13.00	Other transport vehicles – not specified
13.01	Vehicles – on rails, including suspended monorails: goods
13.02	Vehicles – on rails, including suspended monorails: passengers
13.03	Vehicles – nautical: goods
13.04	Vehicles – nautical: passengers
13.05	Vehicles – nautical: fishing
13.06	Vehicles – aerial: goods
13.07	Vehicles – aerial: passenger
13.99	Other known transport vehicles in group 13 but not listed above
14.00	Materials, objects, products, machine or vehicle components, debris, dust – not specified
14.01	Building materials – large and small: prefabricated shells, formwork, girders, beams, bricks, tiles, etc.
14.02	Machine components, vehicle components: chassis, crankcase, levers, wheels, etc.
14.03	Machined parts or components, machine tools (including fragments and chips from these material agents)
14.04	Joining devices : nuts, bolts, screws, nails, etc.
14.05	Particles, dust, splinters, fragments, splashes, shards, other debris
14.06	Farm products (including seeds, straw, other farm products)
14.07	Products for use in farming and breeding (including fertilisers, animal feeds)
14.08	Stored products – including objects and packaging in storage areas
14.09	Stored products – in rolls, coils
14.10	Loads – transported by a mechanical handling or conveying device
14.11	Loads – suspended from a hoisting device, a crane
14.12	Loads – handled by hand
14.99	Other known materials, objects, products, machine components in group 14 but not listed above
15.00	Chemical, explosive, radioactive, biological substances – not specified
15.01	Substances – caustic, corrosive (solid, liquid or gaseous)
15.02	Substances – harmful, toxic (solid, liquid or gaseous)
15.03	Substances – flammables (solid, liquid or gaseous)
15.04	Substances – explosive, reactive (solid, liquid or gaseous)
15.05	Gases, vapours with no specific effects (inert for life forms, suffocating)
15.06	Substances – radioactive
15.07	Substances – biological
15.08	Substances, materials – with no specific risk (water, inert materials...)
15.99	Other known chemical, explosive, radioactive, biological substances in group 15 but not listed above
16.00	Safety devices and equipment – not specified
16.01	Safety devices – on machines
16.02	Protective devices – individual
16.03	Emergency devices and equipment
16.99	Other known safety devices and equipment in group 16 but not listed above
17.00	Office equipment, personal equipment, sports equipment, weapons, domestic appliances – not specified
17.01	Furniture
17.02	Equipment – computer, office automation, reprographic, communications
17.03	Equipment – for teaching, writing, drawing – including typewriters, stamping machines, enlargers, time-recorders
17.04	Items and equipment for sports and games

Code	Label
17.05	Weapons
17.06	Personal items, clothing
17.07	Musical instruments
17.08	Domestic-type equipment, tools, objects, linen (professional use)
17.99	Other known office equipment, personal equipment, sports equipment, weapons in group 17 but not listed above
18.00	Living organisms and human-beings - not specified
18.01	Trees, plants, crops
18.02	Animals - domestic and for breeding
18.03	Animals – wild animals, insects, snakes
18.04	Micro-organisms
18.05	Infectious viral agents
18.06	Humans
18.99	Other known living organisms and human-beings in group 18 but not listed above
19.00	Bulk waste - not specified
19.01	Bulk waste - from raw materials, products, materials, objects
19.02	Bulk waste - from chemicals
19.03	Bulk waste - from biological substances, plants, animals
19.99	Other known bulk waste in group 19 but not listed above
20.00	Physical phenomena and natural elements - not specified
20.01	Physical phenomena - noise, natural radiation, light, light arcs, pressurisation, depressurisation, pressure
20.02	Natural and atmospheric elements (including stretches of water, mud, rain, hail, snow, ice, wind, etc.)
20.03	Natural disasters (including floods, volcanic eruptions, earthquakes, tidal waves, fire, conflagration)
20.99	Other known physical phenomena and elements in group 20 but not listed above
99.00	Other material agents not listed in this classification

Annex II: ESAW Classifications guidelines

Type of Injury

General coding principle: In case of multiple injuries suffered in one accident where one of the injuries is obviously more severe than the others, then this accident should be

classified in the group corresponding to the nature of the more obviously severe injury. Only in cases where the victim has contracted two or more types of injuries and one of them cannot be said to be more serious than the other(s) the code 120 'multiple injuries' should be used.

The table below indicates the inclusions and exclusions for each code. It also includes cross-references to the ICD10 classification of diseases and injuries of WHO as well as with the codes used by ILO.

Code	Label	Includes	Excludes	ICD-10 reference	ILO code
000	Unknown injury	Missing information			10
010	Wounds and superficial injuries				1
011	Superficial injuries	Contusion, bruise, haematoma, abrasions, scratches, blisters, bites of non-venomous insects, superficial wounds; also includes scalp wounds and superficial injuries to foreign bodies entering the eye, ear etc.	Bites of venomous animals (code 071)	S00, S10, S20, S30, S40, S50, S60, S70, S80, S90, T00, T15-T19	1.01
012	Open wounds	Lacerations, open wounds, cuts, contusions with wounds, as well as loss of nails; wounds involving injury to muscles, tendons and nerves	Traumatic amputations, enucleations; avulsion of the eye (code 040); compound fractures (code 022); burns with open wounds (code 061); superficial injuries (code 011)	S01, S11, S21, S31, S41, S51, S61, S71, S81, S91, T01	1.02
019	Other types of wounds and superficial injuries				-
020	Bone Fractures				2
021	Closed fractures	Simple fractures; fractures with injuries to articulations (dislocations, etc.); fractures with internal or nerve injuries		S020, S120, S220, S320, S420, S520, S620, S720, S820, S920, T020, S080, T100, T120 (0=closed fracture)	2.01
022	Open fractures	Fractures with injuries to soft parts of the body (compound fractures)		S021, S121, S221, S321, S421, S521, S621, S721, S821, S921, T021, S081, T101, T121 (1=open fracture)	2.02
029	Other types of bone fractures				2.03

Annex II: ESAW Classifications guidelines

Code	Label	Includes	Excludes	ICD-10 reference	ILO code
030	Dislocations, sprains and strains	All acute musculo-skeletal problems due to overexertion of muscles, tendons, ligaments and joints			3
031	Dislocations	Subluxations and displacement of bones at the joints	Fracture dislocation (code 021)	(S03, S13, S23, S33, S43, S53, S63, S73, S83, S93, T03, T11.2, T13.2, T14.3)	3.01
032	Sprains and strains	Overexertion leading to ruptures, tears and lacerations of muscles, tendons, ligaments (and joints) as well as hernias due to overexertion	Any displacements of the bones at the joints should be coded in 031; if it is associated with an open wound it should be coded in group 012	(S03, S13, S16, S23, S29.0, S33, S39.0, S43, S46, S53, S56, S63, S66, S73, S76, S83, S86, S93, S96, T03, T06.4, T09.5, T11.2, T11.5, T13.2, T13.5, T14.3, T14.6, T73.3)	3.02
039	Other types of dislocations sprains and strains				-
040	Traumatic amputations (Loss of body parts)	Amputations and crushing injuries, enucleations including traumatic avulsion of the eye and loss of ear(s)		S07, S08, S17, S18, S28, S38, S47, S48, S57, S58, S77, S78, S87, S88, S97, S98, T04, T05	4
050	Concussions and internal injuries	All internal injuries without fracture, i.e. all internal contusions, haemorrhages, lacerations, ruptures to the brain and internal organs	Open wounds (code 012) and those injuries involving fracture (codes in group 020)		5
051	Concussions	Intra-cranial injuries		S06	(5)
052	Internal injuries	Injury of intra-thoracic, intra-abdominal organs and pelvic organs		S25-26, S35-37	(5)
059	Other types of concussion and internal injuries			S15, S45, S55, S65, S75, S85, S95	-
060	Burns, scalds and frostbites				6
061	Burns, scalds (thermal)	Burns from hot objects or open fire; scalds; friction burns; radiation burns (infrared); sunburns; effects of lightning; burns due to electric current, burns with open wound	Radiation effects other than burns (code 102)	(T20-T32, T95) T75.4, L55	6.01, 6.03
062	Chemical burns (corrosions)	Chemical burns (external burns only)	Burns due to swallowing a corrosive or caustic substance (code 071)	(T20-T32, T95)	6.02
063	Frostbites	Effects of reduced temperature (frostbite); partial-thickness skin loss, frostbite with dead tissue (necrosis)	Abnormal low body temperature (Hypothermia) and other effects of excessive cold (code 103)	T33-T35, (T95)	6.04
069	Other types of burns, scalds and frostbite				-

Code	Label	Includes	Excludes	ICD-10 reference	ILO code
070	Poisonings and infections				7
071	Acute poisonings	The acute effects of the injection, ingestion, absorption or inhalation of toxic, corrosive or caustic substances; bites of venomous animals; asphyxiation by carbon monoxide or other toxic gases	External chemical burns (code 062); anaphylactic shock code 119	T36-T65, T96, T97	7.01
072	Acute Infections	Infection by virus, bacteria and other infectious agents		A00 - B99	7.02
079	Other types of poisonings and infections				-
080	Drownings and asphyxiations				(8)
081	Asphyxiations	Asphyxiation or suffocation by compression, constriction or strangulation; also includes asphyxiation by suppression or reduction of oxygen in the surrounding atmosphere and asphyxiation by foreign bodies in the respiratory tract	Asphyxiation by carbon monoxide or other toxic gases (code 071)	T17, T71	8.05
082	Drownings or non-fatal submersions		Asphyxiation as defined in 081; buried under materials or other non-liquid masses, e.g., snow, soil etc.	T75.1	8.08
089	Other types of drowning and asphyxiation				-
090	Effects of sound, vibration and pressure				(8)
091	Acute hearing losses	Partial or total loss of hearing		(H83.3)	(8.09)
092	Effects of pressure	Effects caused by pressure and water pressure (barotrauma)		T70	8.04
099	Other acute effects of sound, vibration and pressure	Sound trauma, pneumatic hammer syndrome etc.		(H83.3), T75.2	(8.09)
100	Effects of temperature extremes, light and radiation				(8)
101	Heats and sunstrokes	The effects of excessive natural heat and insolation (heatstrokes, sunstrokes) or man-made heat	Shock caused by lightning (code 112); sun burns (code 061)	T67	8.02
102	Effects of radiation (non-thermal)	Effects caused by X-rays, radioactive substances, ultraviolet rays, ionising radiation, welder's eyes		(T66)	8.01

Annex II: ESAW Classifications guidelines

Code	Label	Includes	Excludes	ICD-10 reference	ILO code
103	Effects of reduced temperature	Accidental hypothermia and other effects of reduced temperature	Frostbite code 063	T68-T69	8.03
109	Other effects of temperature extremes, light and radiation				-
110	Shocks				(8)
111	Shocks after aggressions and threats	Shock after aggression and threats by persons; e.g. shock after bank hold-up, aggression from customers and clients; 'social conflicts'	Anaphylactic shock code 119; shock after traumatic injuries code 112	(F43.0), (T74)	8.06
112	Traumatic shocks	Electrical shock, shock caused by lightning, shock immediate or delayed following injury	Anaphylactic shock code 119; aggression and threats from persons code 111; cases with no direct physical injuries	(T75.0), T75.4, T79.4	8.07, 8.10
119	Other types of shock	Aggressions from animals with no direct physical injury to the victim; natural disasters and other events not directly caused by human beings and causing no direct physical injury to the victim; anaphylactic shock		(F43.0), (T78.0, T78.2)	-
120	Multiple injuries	This group is restricted to cases where two or more <i>equally serious</i> types of injuries are contracted by the victim.			-
999	Other specified injuries not included under other headings	This group should only be used to classify injuries which are not included under other headings: injury of nerves and spinal cord; injury to blood vessels; foreign bodies entering through a natural orifice; etc.		(S09), S19, S29, S39, S49, S59, S69, S79, S89, S99, T07-T14, T73, T75, T78, T79-T94, T98 S04, S14, S24, S34, S44, S54, S64, S74, S84, S94; T15-T19; T69; T75.3; (T78)	8.19

General comments about the variables on the causes and circumstances

The organisation of the variables

The variables on the causes and circumstances of the accidents at work supply additional information to identify where, and especially how, accidents occur, with the aim of establishing a prevention policy. The variables Workstation, Working Environment and Working Process describe the circumstances in which the accidents occurred. The various stages of the event are registered using the following three pairs of variables:

- i) 'Specific Physical Activity' and the associated Material Agent
- ii) 'Deviation' and the associated Material Agent
- iii) 'Contact — Mode of injury' and the associated Material Agent.

Each pair combines an action (a noun, but could also be described with a verb) and an object. This system ensures extremely flexible and precise codification thanks to the numerous combinations possible, without the need for huge classification systems. At each of the three levels, a Material Agent is coded, using a single Material Agent nomenclature. This does not mean that the same Material Agent has to be coded three times. In the majority of cases different Material Agents will be coded, which does require the various Material Agents involved in the sequence of events to be identified. However, the aim of improving accident prevention justifies this additional work.

- i) The 'Specific Physical Activity' and its associated Material Agent describe what the victim was doing when the accident happened. This activity is very precise and different from the 'Working Process', which gives a broader description of the work being carried out.

Example: while *cleaning* (Working Process 53) the victim was *going up* (Specific Physical Activity 61) some *stairs* (Material Agent 02.01),

Example: while manufacturing a piece of furniture (Working Process 11), the victim used his or her hands to lift (Specific Physical Activity 51) a piece of wood (Material Agent 14.11).

- ii) The 'Deviation' and its associated Material Agent describe the abnormal event leading to the accident. The change from normal practice does not describe the root cause of the accident, nor the responsibilities. It should merely describe the abnormal event or the last link in a chain of abnormal events.

Example: the victim *fell* (Deviation 51) on some *stairs* (associated Material Agent 02.01),

Example: the victim *loses control* (Deviation 43) of a *hand-held screwdriver* (associated Material Agent 07.05).

- iii) The 'Contact — Mode of Injury' and its associated Material Agent describe how the victim came into contact with the Material Agent that caused the injury. It describes precisely how the victim was injured.

Example: the victim *falls and hits* (Contact — Mode of injury 31) the *floor* (Material Agent 01.02),

Example: the victim was *hit* (Contact — Mode of injury 42) by a *falling screwdriver* (Material Agent 07.05).

Details concerning the use of codes 00 or 99

The use of code 00 or 000 means 'not known', i.e. the accident report does not give information allowing the accident to be coded. In each classification, the first line (code 00 or 000) reads 'No information'.

Code 99 or 999, on the other hand, means that the information is available, but the list does not contain an appropriate code. In each list, the last line (code 99 or 999) reads 'Other [name of variable] not listed in the classification'.

Similarly, for groups 10, 20, 30 (or 010, 020, 030 etc.) the code ending in '0' means that the information available is sufficient to be able to choose a group, but not detailed enough to go any further. Codes 19, 29, 39 (or 019, 029, 039 etc.) mean that precise information is available, but there is no corresponding code in the list. For example, for the Working Environment variable, we understand on reading the accident report that the accident took place within an industrial enterprise. If there are no further details the code 010 'Industrial site - Not specified' will be used. If, however, on reading the accident report, it is possible to identify more precisely the type of industrial site involved but the type of site is not included in the list, the code used will be 019 'Other group 010 type Working Environments not listed above'.

Specific aspects concerning the Material Agent

There are cases in which the Material Agent is the same for the three variables with which it is associated, but it can also vary in each case (three different Agents). For each variable, it is necessary to record the most relevant Agent, i.e. that which allows the accident circumstances to be reconstructed most completely, most accurately and in the manner which is most useful in terms of future prevention. Against this general background, it is also necessary to comply with the rules in the guidelines for using the variables: the Material Agent coded for the Specific Physical Activity must be that most closely linked to the accident or injury, the Material Agent for the Deviation must be that closest in time to the injuring contact, and the Material Agent of the Contact — Mode of Injury must be that linked with the most serious injury. A more 'specific' Agent in accordance with these

criteria is generally more useful in terms of understanding and preventing than a more general one.

In some cases there is no Material Agent to be recorded or coded. For example, a shop assistant is standing up and turns to serve a customer, but the movement causes an internal injury and leaves her unable to move. This is a case of injury without external cause. The victim has hurt herself without any contact or lifting of loads. It is therefore a movement by the victim (Specific Physical Activity - 'Movements on the spot' - Code 67), the result of which is expressed in the form of a Deviation ('Twisting, turning' - Code 74) leading to a Contact — Mode of Injury ('Physical stress - on the musculoskeletal system' - Code 71). For none of these three variables is there a Material Agent, and code 00.01 'No material agent' must be entered for each of the three Agents.

It is also possible for the 'Specific Physical Activity', 'Deviation' or 'Contact — Mode of Injury' to take place with the involvement or use of a Material Agent, but the accident report does not include any information allowing the Material Agent to be identified or coded. In this case the code 00.00 'No material agent or no information' is used. However, an open wound requires use of code 00.02 'No information', as a Material Agent must have been involved.

Finally, for Member States that want to encode the Material agents with more detail, an optional 8 digits classification is publicly available in CIRCA (although, only the 4 digits classification is used by Eurostat).

The Working Environment

Reminder of the definition

The working environment is the workplace, work premises or general environment where the accident happened. This means the workplace, working area or location where the victim was present or working just before the accident

Approach

The type of activity undertaken by the victim should not be taken into consideration, with the exception of construction sites (codes 020-029). In the latter case, the primary use of the place is irrelevant; what is important is the construction activity. For example: 'repairs in a dance hall' are coded 021. But 'light maintenance work in a sales area' is coded 043 for the Working Environment and 52 for the Working Process (see below). To give a further example, operations such as 'replacing a bulb in a store' or 'working on a supermarket fridge' (e.g. repairing it or refilling it with refrigerant) will be coded as Working Environment 043; however, when replacing the electric wiring or removing asbestos in these same sales locations, the Working Environment will be coded 021.

Entrances, corridors, stairs and other communal parts and annexes of the places described below are considered to be integral parts of those places and are coded the same way. The corridor in a hospital is coded 051 and stairs in a factory are coded 011.

The working environment classification is organised into broad divisions.

010-019 Industrial site

These are places primarily used to manufacture products of all kinds (code 011). Food processing plants including farm products and, broadly speaking, all areas where goods and objects are produced should be coded 011. The 010 group includes maintenance and repair areas - in the sense of workshops for repairing engines, machines or aircraft (012). There is no restriction regarding the size of the Material Agent being repaired, so long as the area can be clearly identified as a maintenance area (as opposed to a production area). By extension, code 012 includes industrial laundries. This code group also includes storage and loading/unloading areas (code 013).

020-029 Construction site, construction, opencast quarry or opencast mine

Construction sites for buildings and civil engineering. A distinction is made between new sites (021) and other sites (renovation, maintenance, etc., code 022). This group also includes opencast mines and working quarries (023), underground surfaces (024), and surfaces on or over water (025) when they are locations for construction sites or civil engineering. Underwater sites (ocean, sea, lake) are coded 026.

030-039 Farming, breeding, fish farming, forest zone

Sites mainly devoted to agriculture, forestry, fish farming, inside or in the open air, e.g. stables (031), greenhouses, cornfields (032), vineyards and orchards (033), tree nurseries (034), gardens (036).

040-049 Tertiary activity area, office, amusement area, miscellaneous

Places primarily used for tertiary, intellectual or service activities. Offices of central or government administrative departments are coded 041. Hairdressing salons and laundrettes are coded 043. Code 044 covers artistic creation premises, including broadcasting and film studios. Police and fire stations and the like are coded 049.

050-059 Healthcare establishments

Establishments - whether medical or not - including old people's homes and crèches, sanatoria, health farms and thalassotherapy establishments.

060-069 Public areas

Public areas are those open to public thoroughfare. Corridors, stairs and parking areas are coded 061 only if they are open to the general public and cannot be classified under some other more specific Working Environment code.

Land transport (road, rail), whether public or private, is coded in this group (code 062) if the location of the accident can be considered as being 'on' or 'inside' the means of transport (but not on the infrastructure for the means of transport, see code 063 below). However, should the accident occur in a tunnel, the Working Environment should be coded 101. Accidents on board aircraft or seagoing or inland waterway vessels should be coded 093, 111 and 112 respectively.

Finally, certain public areas can include zones with restricted access, which come under code 063. For example, a maintenance operation on a railway track (which is not underground) is coded 063. Delivering supplies to an aircraft on the apron is coded 063. Changing a bulb on a railway station lighting column is elevated work coded 092, and cleaning a station concourse is coded 062, but cleaning the track ballast is coded 063.

070-079 In the home

This code applies to accidents in a private home (071) - be it the victim's or someone else's (this covers people working at home as well as those, such as plumbers and painters, who work in their clients' private homes).

080-089 Sports areas

These codes cover sports fields and gyms, and distinguish between indoor and outdoor sports. They include all outdoor sports grounds (skiing pistes, racing circuits, velodromes, etc.) and all halls where indoor sports are played.

Sites with exceptional conditions – 090-099 in the air or at high elevations – excluding construction sites – 100-109 underground – excluding construction sites – 110-119 on/over water – excluding construction sites

These codes are used wherever the work situation makes them appropriate, excluding construction sites (which should be classified under group 020). The 090 group is mostly used, with the exception of aircraft, in cases where there is danger of falling.

120-129 High-pressure environments - excluding construction sites

This is where the victim is in a high-pressure environment: caissons, diving, etc.

General comments

In certain cases several codes may appear appropriate. The following examples explain how to proceed in such cases:

- 1 a sports hall in a teaching establishment,
- 2 a workshop in a technical secondary school,
- 3 a library in a hospital,
- 4 a storage area in a factory,
- 5a normal maintenance work on underground railway tracks,
- 5b construction of a railway tunnel or a sewer,
- 6 building renovation works in a public library,
- 7 hypermarket goods reception area

The code to be selected is the one most appropriate to the location:

- | | | |
|----|--|------|
| 1 | is coded sports hall | 081, |
| 2 | is coded workshop | 011, |
| 3 | is coded library | 041, |
| 4 | is coded storage area | 013, |
| 5a | a is coded underground | 101, |
| 5b | is coded underground construction site | 023, |
| 6 | is coded construction site | 021, |
| 7 | is coded storage, loading, unloading | 013. |

Taking training as an example, a classroom in a high school is coded 042, as is a training room in a factory or a drama school based in a theatre, while apprentice training on a machine in a workshop is coded 011.

Shipyards on land (for construction or repair) are coded 011/012, but the same activity at sea is coded 111.

The code chosen must be that of the place most closely associated with the effective risk at the time of the accident. For example, when someone going to work on an underground railway slips in one of the passages, the working environment is coded 061; when a billsticker falls from his ladder in the same passage, the code is also 061. However, if a roadsweeper were knocked down by a car while sweeping the pavement of a road tunnel, the working environment code would be 101.

The same logic must be applied to generic words which can describe several different places. A teaching laboratory is coded 042, and a medical laboratory 059. A supermarket laboratory (meat preparation) is coded 011, as is a factory laboratory.

It is possible for there to be several accident victims on one site, each of them with a different working environment coding.

Example: a crane on a bridge construction site topples over and some parts fall on to the public highway: 'construction

site' (021) would be used for the crane operator, but 'means of transport' (062) would be used for a motorist crashing into the crane parts that fell into the road.

The Working Process

Reminder of the definition

This is the general activity or task being performed by the victim at the time of the accident. It is not the victim's occupation or precise Specific Physical Activity at the moment of the accident. It is a description of the type of work, in broad terms, i.e. the task that was being undertaken by the victim over a certain period of time ending at the instant of the accident.

Approach

Economic activity is broken down into various tasks with common characteristics. Each task corresponds to a large grouping of different work activities and tasks at a lower level. Another way of understanding the Working Process concept is to consider the manufacture of a product through the various stages from design to production. Manufacturing a product involves a successive chain of events, and each of these stages is classified under a different Working Process code. Breaking down this chain of events is independent of the size of the product, the quantity produced and whether or not it is a physical product.

The same worker can of course perform different tasks during the working day, and it is these tasks, in broad terms, that are coded under this heading. The Working Process describes a task that is performed for some period of time. The Specific Physical Activity is far more precise and can be isolated from the chain of events leading to the accident. In each case, the pair of variables for the Working Process and the Specific Physical Activity must be adapted to properly describe the accident. The Specific Physical Activity gives added precision to the initial description of the accident provided by the Working Process code.

However, if the Specific Physical Activity is an isolated action at the moment of the accident, the Working Process must not be too broad. It is not the economic activity of the company or the victim's occupation, as indicated previously, and it is also necessary to clearly separate tasks of different natures. For example, just because a worker has spent all morning cleaning a machine, the Working Process should not be coded as cleaning (53) if this worker has an accident on his way to the works canteen during the lunch break. When the accident occurred the worker was involved in movement (61), and this has nothing to do with his occupation or the economic activity of his company, or the company whose premises he was on when the accident

occurred. On the other side of the coin, an office cleaner who twists an ankle walking along the corridor between two offices should be regarded as performing a cleaning task (53) rather than movement at the time of the accident.

10-19 Production, manufacturing, processing, storing – all types

Code 10 covers industrial activity as well as the processing of agricultural products, irrespective of the size of the undertaking or workshop. All tasks leading directly to an object, a product or its storage are classified under this coding. For example: processing delicatessen and cured-meat products on an industrial or craft scale is coded 10, but pig breeding is coded 33. All types of storage work, including loading and unloading operations inherent to storage work, are coded separately under 12.

20-29 Excavation, construction, maintenance, demolition

Codes 20-29 cover excavating, constructing buildings, whether permanent or temporary, and repair and maintenance work to buildings and public works. All excavation and earth levelling is coded 21. All new construction work involving houses, blocks of flats, hangars, storage buildings, covered markets etc. (any construction that is closed or has a roof) should be coded 22. Constructing bridges, dams and roads and digging tunnels and canals are coded 23. These are open installations that are not usually inhabited or frequented by people.

Let us take as an example the construction of a new airport. The excavation/earthmoving work is coded 21, the construction of the terminal and hangars is coded 22, laying the tarmac and runways is coded 23, and renovating the old terminal to convert it into a museum is coded 24. Repainting a wall or ceiling is not machine, tool or equipment maintenance (code 52), but is classified as building maintenance, code 24. Code 24 also covers major renovation work on, for example, museums, high-rise buildings, private houses and structures. Code 25 covers all demolition of buildings and structures. Codes 24 and 25 cover all types of renovation and demolition respectively, in contrast to the distinctions made by codes 22 and 23.

30-39 Agricultural type work, forestry, horticulture, fish farming and work with live animals

Code 31 covers all work on the land: ploughing, manuring, etc. Code 32 covers all agricultural work involving crops (planting, growing or harvesting fruit, wheat or flowers). Code 33 covers work involving live animals (e.g. care, breeding). Forestry is coded 34, while all fishing activities,

whether industrial or small-scale, and the production and processing of sea, lake or river products are coded 35.

40-49 Providing services to enterprises and/or to the general public - intellectual work

All activities that do not produce a tangible, physical object are coded in the 40 group. For example: writing software is coded 42, producing it in the form of CD-ROMs or floppy discs is coded 10, and marketing it is coded 43.

50-59 Other work related to tasks coded under 10, 20, 30 and 40

Codes 50 cover all the ancillary tasks to activities coded in 10, 20, 30 and 40. The guideline for this category is that the task does not lead directly to an object or product. For example, installing a carburettor in an engine on a factory production line is coded 11, but changing a carburettor during garage repair work is coded 52, even if the carburettor and engine are identical, because the victim is performing a different task. In the first example, coded under the 10 group, it is a repetitive industrial process, while in the latter example, coded 52, it is a one-off job performed on what could be termed a craft scale. A distinction must therefore be made between 'production' activities proper, which can be 'industrial' (group 10 codes), 'construction' (group 20 codes), 'agricultural' (group 30 codes), or 'service' (group 40 codes). The following examples will help to make this clear.

Preparing a construction site for a new building is coded 51, but subsequent excavation or levelling work is coded 21. Setting up a crane on the site is then coded 51, but maintaining or repairing the crane on-site is coded 52. The construction work proper mainly comes under code 22, given the nature of the construction, or even other codes 20-29. At the end of the construction work, the company workforce clears the site (code 53) and loads the skips (code 54). The various construction activities and tasks are thus broken down into sub-groups, each of which is a Working Process.

Work linked to computer maintenance includes re-cabling of premises (code 24), as well as selling (code 43) and installation (code 51) of new computer equipment, and standard maintenance on existing computer equipment (code 52).

The day's activity in a restaurant starts with a number of preparatory tasks, such as receipt of produce and initial preparation in the kitchen (cleaning, cutting, etc.) and preparation of the dining room (laying of tables, etc.), coded 51. Work involved in receiving customers at lunch time or in the evening, as well as table service and preparation of dishes in the kitchen are coded 41. Finally, at the end of the meal, cleaning the dining room and kitchen and washing up come under code 53.

Furthermore, maintenance, repairs, regulating, etc. must not be confused with the concept of supervision. In practice, maintenance can begin with an inspection or check, but if the victim touches, carries or handles the Material Agent, code 52 must be used. Code 55 is used when the victim monitors and inspects the Material Agent without touching, carrying or handling it.

60-69 Movement, sport and artistic activity

Code 61 applies to people who are not engaged in codes 10-59 or 62-69 type tasks and are moving on foot, and to drivers and passengers on board a means of transport.

The Specific Physical Activity

Reminder of the definition

The classification for the Specific Physical Activity is designed to describe the victim's activity immediately before the accident. It records the victim's deliberate and purposeful action immediately before the accident. Example: what was the victim doing? Working with a hand-held electric drill.

Approach

The classification for the Specific Physical Activity is as follows:

Code	Label	With work tools	With work-related objects
10	Operating machinery	+	+
20	Work with hand-held tools	+	+
30	Driving or being on board handling equipment or a means of transport	+	+
40	Handling objects	-	+
50	Carrying by hand	-	+
60	Movement	-	-
70	Presence	-	-

This table illustrates the following cases:

Codes 10 - 39 concern activities where the victim uses a work tool and workpieces.

Codes 40 - 59 concern activities where the victim handles or transports an object without using any kind of handling or transport equipment or tool.

Codes 60 - 70 concern activities where there is no use of tools and no handling or transporting of any object. The victim's Specific Physical Activity is his or her own movements.

Distinction between tool and machine – fixed machine and mobile machine

A tool is a manufactured object used to work a material and perform a task. It may or may not be powered (agents 06-08). It can be carried by a single person by hand or on his body without having to roll or pull it along the ground. A machine is a manufactured object, generally complex, used to transform energy in such a way as to act on a material or perform a task. The concept of machine is linked to the energy needed to power it.

A machine is either fixed i.e. cannot be moved during the work (group 10 agents) or mobile (group 09 agents), where a single person, without the help of a second person or a handling device, can move it along the ground by using its own energy to roll it (self-propelled construction or agricultural machine), by pushing it (cleaning machine) or by pulling it (site saw), but not by carrying it in his arms or on his body.

10-19 Operating machinery

These codes should be used when the victim is using a machine in the manner foreseen by the manufacturer. They should not be used, for example, when the victim is lifting or repairing a machine (the concept of repair, maintenance, etc. comes under code 52 'maintenance, repair, tuning, adjustment' for the 'Working Process' variable. The associated Specific Physical Activity, if known, reflects exactly what is being done to carry out the repair, e.g. 'working with hand-held tools' (codes 20-29) if a screwdriver or drill etc. is used, or 'handling of objects' (codes 40-49) if the worker is in the process of handling a specific part of a machine, e.g. the crankcase, to gain access to the inside of the machine).

Comments

Code 11 should be used if the intervention on the machine consists in stopping it, for example.

Code 12 is also used if the operator intervenes when something has unexpectedly gone wrong - to remove something that has got stuck in the machine, for instance. If the intervention on the machine concerns transporting or driving conveyor equipment, codes 30-39 apply.

Code 13 applies when the victim's only activity is controlling (in the sense of operating) the machine, by means of control levers, switches and buttons. The victim is not feeding the machine with raw materials or unloading the final product from the machine. Code 13 should be used for operating a printing machine, an assembly line or a robot. In contrast, fixed video monitoring where there is no possibility of intervening on the machine (e.g. in a separate control room) would be coded as 'Presence' (70). This code does not apply to driving vehicles or transport or handling equipment.

20-29 Work with hand-held tools

These codes should be used when the injured person was using a hand-held tool in the normal manner intended by the manufacturer, i.e. for the purpose for which it was originally designed.

Where the victim is moving while using the tool, use of the tool is continuous, and movements are short, it is the use of the hand-held tool which takes precedence over the movement. It is only where the person stops using the tool to move to another position (e.g. to walk from one end of a workshop or room to another, or to enter or leave a room) before restarting use of the tool, and the accident occurs during such movement, that movement takes precedence (codes 60-69).

It is also useful here to refer to the general remark at the beginning of the 'Working Process' nomenclature: 1) An office cleaner who twists an ankle walking along the corridor between two offices should be regarded as performing a cleaning task (53) at the time of the accident. 2) Conversely, a person who has spent the morning cleaning a machine but has an accident on the way to the works canteen during the lunch break is involved in movement (61) at the time of the accident. But in both cases the Specific Physical Activity at the precise moment of the accident relates to a movement, code 61 (walking, etc.) or 62 (entering, leaving), for example. However, if a person bumps against a window when moving slightly sideways while cleaning windows with a sponge and other window-cleaning tools, the Working Process is cleaning (53) while the Specific Physical Activity is 'Working with hand-held tools' (21).

Comments

In this grouping, a distinction is made between manual and motorised tools. A manual tool is a tool that requires physical effort (for example a screwdriver or a hammer), while a motorised tool is powered by other means (electricity, petrol or other), e.g. an electric drill or an electric screwdriver.

If the tool is not used in the manner intended by the manufacturer, such as using a screwdriver for anything other than screwing or unscrewing screws, codes 40-49 apply. These other uses may or may not be intentional.

There must be a correlation between the Specific Physical Activity and the Material Agent. For example, for codes 20-29, only Material Agents from groups 06, 07 and 08 may be used.

Where the activity takes place on a machine, but consists, for example, in adjusting it by screwing or unscrewing an adjustment screw using a hand-held tool, e.g. a screwdriver, the code for working with a hand-held tool should be used (code 21 for screwdriver), rather than a machine operation, as this is not the Specific Physical Activity at the time of the accident (the concept of machine adjustment is coded using the Working Process variable - code 52 'adjustment' - and the associated Material Agent indicating the machine).

30-39 Driving or being on board handling equipment or a means of transport

These codes must be used when the victim is using the transport or handling equipment in the normal manner intended by the manufacturer. They cover motorised transport equipment, as well as equipment using muscle power, such as wheelbarrows.

Comments

This group of codes covers driving any sort of vehicle, whether motorised (truck, car, aeroplane, motor boat, etc.) or not (bicycle, wheelbarrow, non-motorised boat, etc.) and being on board any of the above vehicles. These codes also encompass driving mobile handling equipment (e.g. forklift trucks) whether motorised or not. Conversely, all fixed handling equipment is regarded as fixed machinery and coded in the 10 series.

The use of a winch to feed a machine is coded 11; operating a conveyor belt transporting materials is also coded 11, as the conveyor belt is fixed equipment. Using a forklift truck, which is considered to be mobile as it moves location, will be coded 31 or 32 depending on whether or not it is motorised. Being a passenger on board a means of transport (bus, plane, train, boat, etc.), whether motorised or not, and whether mobile (i.e. moving) or in a fixed position (i.e. stationary), should be coded 33.

40-49 Handling objects

These codes must be used when the injured person was holding or handling something.

The possibility that the machine, hand-held tool or transport equipment may be used other than for the manufacturer's intended purpose should also be considered. A chisel can be used to remove shavings from an object, in which case the Specific Physical Activity is coded 21; however, if it is used for anything else it is coded in group 40-49, for example if it is thrown (44), used to open a beer bottle (45), or simply held in the hand (41), etc.

Comments

Code 41 applies when the victim is holding an object in his/her hand, or when the victim reaches his/her arm out and grasps something (as distinct from 'movements on the spot, code 67', when the victim does not seize the object).

This activity should not be confused with carrying by hand, code 50-59. A number of indicators allow a distinction to be made between these two activities:

- First of all, handling linked to transport tends to take place 'before' (or 'after') rather than 'during' transport. For example, in grasping the handle of a trunk he intends to move, a worker injures himself during this first phase of the activity, e.g. by catching against an object or cutting himself on a sharp piece of metal next to the handle. The Specific Physical Activity at the time of the accident comes under code 41 'manually taking hold of, grasping, seizing, etc.' But if, after taking hold of the handle, he injures himself lifting the trunk, the Specific Physical Activity at the time of the accident comes under code 51 'carrying vertically'.
- Furthermore, as far as moving with an object in the hand is concerned, the code may be 41 if a small object is being transported. In this case the size or weight of the object is the indicator which allows a distinction to be made between handling of a 'small' object and manual transport of a 'larger' or 'heavier' load. Thus the Specific Physical Activity at the time of the accident in the case of a worker moving a screwdriver in his immediate vicinity and injuring himself with this tool in his hand will be coded 41 (or 61 if he is walking with the tool). But if, at the time of the accident, he is moving a full carton, the code will be 51 if the movement is vertical, 52 if it is horizontal or 53 if the victim is transporting the load while walking.

Similarly, handling should not be confused with working with hand-held tools (codes 20-29). Here too, a number of indicators can be used to distinguish between these two activities:

- Although the Working Process can be the same (e.g. repair work, code 52), the Specific Physical Activity – manual – differs. The task can be performed with a hand-held tool, e.g. screwing with a screwdriver (code 21) or with the hands only (code 42).
- In both cases the worker might have a tool in his hand, e.g. a screwdriver, but in one case he uses it for screwing (code 21), while in the other, at the time of the accident, he is just holding it but not actually using it (code 41).

Handling objects is not limited to one or both hands but may include other parts of the body, e.g. the feet.

50-59 Carrying by hand

This group of codes applies when an object or objects are carried using the hands alone and no other sort of transport equipment. The direction in which the object is moved dictates which code is used. Code 51 is used for vertical movements such as stacking shelves, code 52 is used for horizontal movements such as pushing a car into a garage, and code 53 applies when something is carried in the hands or arms, such as carrying a patient into bed or to an armchair or carrying a box from one point to another.

Example of the difference between codes 40 and 50, using the case of a garage mechanic removing a car wheel. When, after removing the bolts, the mechanic takes hold of the wheel before moving it, this is code 41 'manually taking hold of, grasping'. Once the wheel has been removed from the pins, it has to be lowered and placed on the ground, which is code 51 'carrying vertically'. This code indicates a downward movement. When replacing the wheel, the action of lifting it to the level of the pins comes under code 51. Once the wheel is on the pins, the task becomes code 43.

60-69 Movement

These codes should be used when the injured person was moving as the accident happened.

Comments

Code 61 applies only to victims moving or advancing under their own steam (walking or running forwards or backwards), even if the intention was to take just one step. It also applies when the victim walks or runs up or down, on stairs for example.

Code 62 applies when the victim is getting into or out of a car or train, the cab of a machine, or a piece of equipment.

Code 63 should be used when the victim is moving by hopping, skipping or jumping, while code 64 applies when the victim is crawling or climbing a ladder, tree or rope.

Code 67 applies when the victim moves his legs or arms etc. on the spot, turns around or lifts his head without changing location, or undertakes other more complex series of physical movements without really moving from the spot, e.g. showering, washing, dressing or undressing. This code should also be used where the victim tries unsuccessfully to catch hold of something (an object). In the event that the victim does pick up or catch hold of the object, code 41 applies.

70 Presence

This code is used only when the injured person was physically doing nothing other than being present at the workstation: sitting at a desk, attending a meeting, discussing with a customer, eating at the table, etc.

Being present on board a means of transport, however, is coded 33. Similarly, a person playing with children in a

nursery or school or looking after patients in a hospital generally has a Specific Physical Activity which comes under a specific code. For example, this could be taking hold of a toy (41), carrying a tired or sick child (code 53), lifting a patient into bed (code 51), etc.

The Deviation

Reminder of the definition

The proposed Deviation classification describes the abnormal event, such as totally or partially losing control of a machine or falling onto/off something.

Approach

If there are several interlinked events, the last Deviation must be recorded (the Deviation closest in time to the Contact — Mode of Injury). Let us imagine the case of a laboratory worker handling a toxic solution in glass flask. The worker drops it (Deviation 44 'loss of control (total or partial) of object'). The flask breaks (Deviation 32 'breakage, bursting, causing splinters of wood, glass, metal, stone, plastic, others'). The toxic product is thus released and splashes the victim (Deviation 22 'liquid state – leaking, oozing, flowing, splashing, spraying', causing burns (Contact — mode of injury 16 'contact with hazardous substances – on or through skin or eyes'). There are three successive Deviations of equal seriousness, but the last one (code 22) will be used as it is the closest to the injuring contact. This is logical, as it is the splashing of the hazardous substance which has burnt the victim.

The Deviation nomenclature has been organised into the following groups:

- Groups 10-30 The Deviation is normally out of the injured person's control and is mainly due to equipment problems.
- Groups 40-50 The victim totally or partially loses control of something (including falls).
- Groups 60-70 Body movements.
- Group 80 The victim, another person or an animal is an active party to the accident.

The classification must be clear and unambiguous, for which reason codes like 'bulky, cumbersome, inadequate equipment' have been removed from the classification.

10-19 Deviation due to electrical problems, explosion, fire

This code group must be used in the event of an electrical failure (including static electricity), explosion or fire. It includes all kinds of electrical discharges including shocks caused by static electricity.

Comments

Code 11 should be used where an electrical Deviation causes an electric arc leading to an indirect contact with a harmful electric current (including lightning). The victim is not in physical contact with the Material Agent that is normally or abnormally live.

Code 12 must be used when an electrical Deviation causes a direct contact with objects or installations that are not normally live. In this case the victim does come into physical contact with the Material Agent.

The Material Agent coded is the object from which the current comes and not the current itself. Correspondingly, for explosion and fire, the Material Agent is the object that explodes or ignites.

This group should not be used if the last Deviation is vaporisation, smoke production, etc., when codes 20-29 apply.

20-29 Deviation by overflow, overturn, leak, flow, vaporisation, emission

This group of codes must be used when the Deviation is due to an outflow, vaporisation or emission of gases, liquids, vapours or dust etc. that either should not have occurred or should not have come into contact with people.

Comments

Code 22 should be used when the Deviation is due to liquids or substances spraying or leaking; code 23 applies when there is an emission of steam. Code 24 should be used only in the case of dust and fine particles, but not for stones or suchlike, for which code 21 or the appropriate 40-49 code should be used.

30-39 Breakage, bursting, splitting, slipping, fall, collapse of Material Agent

The group is mainly used to cover slipping, falling, collapse of structure etc., where the occurrence is outside the victim's control.

Comments

Codes 31-32 should be used where a Deviation consists of a physical change in the form of the Material Agent.

Codes 33-34 should be used in cases of slipping, falling or collapse of a structure, i.e. when the slip, fall or collapse is beyond the injured person's control.

Code 33 is to be used in the case of falling objects, where the object falls to a lower level, e.g. from a shelf or crane. The victim is stationary with regard to the Material Agent, which falls on him from above. Files which are precariously balanced on the top shelf of a cupboard and fall on the victim's head when he opens the cupboard door constitute a code 33 Deviation.

Code 34 should be used when the base (e.g. earth, gravel or scaffolding) or object (e.g. ladder) on which the victim is standing slips (earth, gravel or scaffolding) or breaks (ladder). It is the victim who falls downwards. A settling landfill may cause a code 34 deviation. Note that a ladder rung break is coded 31 ('Breakage of material - at joint, at seams').

Code 35 is used where a Material Agent topples on the victim while remaining at the same level overall. This is a fall of a Material Agent on the same level. For example, a piece of furniture which topples on the victim. Where a piece of furniture being handled or moved tips over, this is coded 44 'loss of control (total or partial) of object'.

40-49 Loss of control (total or partial) of machine, means of transport or handling equipment, hand-held tool, object, animal

These codes should be used when the victim or another person loses control of a machine, tool, means of transport, or handling or conveyor equipment, while handling, operating or transporting with it. The victim or another person no longer has (sufficient) control over the Material Agent in question. Loss of control can be total (with no possibility of recovery) or partial (limited in extent but nevertheless leading to an injury, or limited in time with recovery of control by the victim but too late to prevent injury). For example, if a lorry taking a bend too fast overturns, injuring the driver, this is a total loss of control coded 42. By contrast, a worker whose screwdriver slips from the screw head without him dropping it has only 'partially' lost control of his tool; nevertheless, if the worker's hand knocks against the object being screwed, causing an injury, this is a code 43 Deviation. Similarly, where a person carrying a box lets it slip from his hands, stops it with his knee and regains control of it with his hands but injures his leg, this is a partial loss of control of an object and is coded 44.

Comments

Code 41 must be used in the case of accidentally starting a machine, or operating it by some involuntary action or movement. It also applies where a workpiece, waste from a workpiece, or a machine component is thrown out or otherwise moves in an unexpected manner. For example, a volley of woodchips thrown out by a fixed-position circular saw (the same reasoning applies for code 43) or an emery wheel that works loose and is thrown out of a milling machine. It must also be used in the case of some abnormality in the flow of raw material into a machine or in the Material Agent itself, without human action being the cause, such as a Deviation caused by worn parts.

Code 42 applies when the victim or another person totally or partially loses control of a means of transport or of handling or conveying equipment that is moving. This

code is to be used for the total or partial loss of control of any means of transport, whether manual, mechanical or automatic. For example, in the case of means of transport, a lorry going round a bend skids on ice and hits a postman's car travelling normally in the opposite direction. Code 42 applies both to the lorry driver and to the postman. But if the postman, in order to deliver mail, has stopped on the road just after the bend where the lorry driver is unable to see him in time, and is hit by the lorry which was travelling normally but could not avoid him owing to the surprise factor, the Deviation code for both the postman and the lorry driver will be 85. Similarly, a motorised truck toppling over is coded 42. If, on the other hand, the total or partial loss of control concerns the article being transported, e.g. an object that falls from a hoist, then code 33 applies.

Code 43 should be used when a hand-held tool (motorised or not) totally or partially escapes from the victim's or another person's control or throws out splinters which cause an injury.

Code 44 applies when the victim or another person drops an object such as a hammer or toolbox on someone's foot. This is also the case where the contents of a bag injure the victim. This must be regarded as a total or partial loss of control of the Material Agent being carried. Where a piece of furniture, a non-operational machine being transported, or a ream of paper slips out of the victim's hands, this comes under code 44. This code is used where the Material Agent slips from the hands of the victim(s). By contrast, if the object falls and breaks, causing splinters which injure the victim, the correct code is 32.

The total or partial loss of control of an animal (code 45) means that the victim is injured by an animal which was being looked after by himself or another person, regardless of whether the animal is a domestic, farm or wild animal. The animal in question must have escaped from the control of its owner, keeper or transporter.

50-59 Slipping or stumbling – with fall, fall of persons

Code 51 is to be used when the injured person slips, stumbles or falls to a lower level, measured in relation to his or her position before the deviant event. This code is used irrespective of the distance of the fall, and whether it is from a chair, a mobile or stationary ladder, scaffolding or a permanent stairway.

Code 52 applies when the injured person slips, stumbles or falls on the same level, measured in relation to his or her position before the deviant event. This includes uneven ground. However, code 52 always involves a fall, and code 75 must be used where the victim does not fall, but treads badly causing a dislocation or sprain (internal injury).

When the victim is injured by the fall of another person (Deviation), code 59 applies.

Preliminary note on the use of codes 60-69 and 70-79

A distinction between body movements without physical stress and body movements under or with physical stress is made by assessing the degree of physical effort being made by the victim at the time of the Deviation. For example, in the case of 'walking on a sharp object' (code 61), the effort can be said to be normal, whereas in the case of 'lifting, carrying' (code 71), a load is being carried, necessitating a greater muscular effort.

A greater than normal physical effort is not restricted to the handling of loads, but also includes a person's own actions, e.g. an injury caused by standing up or turning round.

The correct code is selected by applying the group of indicators method:

- the first indicator refers to the muscular effort involved,
- the second indicator concerns whether the injury is external or internal,
- the third indicator is the presence or absence of a Material Agent of the Contact — Mode of Injury.

A relatively substantial muscular effort suggests the use of the group 70 codes. External injuries generally require group 60 to be used, and internal injuries group 70. The absence of a Material Agent of the Contact — Mode of Injury very often results in a group 70 code.

60-69 Body movement without physical stress (generally leading to an external injury)

These codes must be used when the injured person's own body movement, which did not involve a special physical effort, led to (in general) an external injury. The body movement may be voluntary or involuntary.

Walking, as covered by code 61, does not necessitate a particular effort and is usually a voluntary movement, as is kneeling down (code 62), which does not need much more of an effort. This means it is necessary to assess the effort involved, rather than whether the movement is voluntary or involuntary. Walking on a sharp object causes an external injury and is therefore coded 61.

An example of code 62 is the victim injuring his knee on an open desk drawer while sitting down. This too is a voluntary body movement without effort, leading to an external injury.

The movement covered by code 63 is involuntary in most cases, but this is of little consequence, as it does not require a physical effort (the resistance effort is not taken into account) and leads to an external injury. Code 63 covers the concept of being carried by one's own momentum, so as to bring a part of the body into contact with a Material Agent which causes an injury.

Code 64 covers cases where the victim in most cases injures himself without the involvement of a third person; it is not necessary for a Material Agent or another person to be involved in the Deviation. It includes cases where the injury caused by uncoordinated movements or spurious/untimely actions is external. Generally speaking, this implies the presence of a Material Agent of the Contact — Mode of Injury, e.g. the victim bumps against an object as he stands up, bends down or turns round, causing a bruise or open wound.

Another case in which code 64 is used is where a person inadvertently places his hand or foot in a place or on an object which causes an injury, e.g. by touching a hotplate in a restaurant kitchen. Similarly, throwing something in a dustbin without paying attention and striking a sharp object is coded 64 in terms of the Deviation and 52 for the Contact. An example of this would be a nurse who, in disposing of dressings in a hospital bin, injures herself on a syringe which is already in the bin. In this case it is interesting to code the Material Agent of the Deviation if there is one, in addition to the Agent of the Contact, as it gives a sense in terms of prevention to what is just a simple movement. The Material Agent for the Contact will be the hotplate (10.04) or the syringe (06.14). For the Deviation, there is no object associated with the movement of the kitchen worker who touches a hotplate, as he is simply moving his hand. On the other hand, in the case of the nurse, the movement (which goes too far into the bin, leading to contact with the syringe) is the throwing away of the dressings, which are therefore associated with the Deviation and coded 19.01.

The preventive action will then consist in avoiding spurious, untimely and uncoordinated movements in kitchens, with or without an object in the hand. In hospitals, when handling contaminated objects, it is also necessary to pay attention to similar objects which are not being handled but which are in the vicinity and can cause an injury to anyone who is concentrating only on what he or she is handling.

Other examples of the use of code 64 with or without an associated Material Agent: a window-cleaner moves sideways and bumps against an open window; in manoeuvring an industrial cleaning machine, a worker strikes his foot against a pallet - associated Material Agent: the cleaning machine, code (09.04); in cleaning a metal cupboard, a person cuts his hand on the lock.

70-79 Body movement under or with physical stress (generally leading to an internal injury)

These codes should be used only in cases of movement involving a greater than normal physical effort on the part of the victim. They imply that the victim has injured himself without external involvement.

There may be an external Material Agent which is a source of an additional physical effort at the origin of the physical stress. Example: where a person suffers a musculoskeletal injury while handling a load or object, i.e. lifting it (71), pushing or pulling it (72), putting it down (73), twisting or turning while handling it (74), or treading badly while carrying it, without falling (75).

In these cases the first indicator is the muscular effort needed to handle the Material Agent, and the second is the occurrence of an internal injury.

However, codes 70-79 are also used where a Material Agent of the Deviation does not exist and therefore cannot be the source of a particular muscular effort. The physical stress will be directly internal. Example: a person suffering a musculoskeletal injury while standing up (71), bending down (73), turning round (74) or treading badly while walking forwards or backwards, but without falling (75) (see above for the difference between codes 52 and 75), i.e. moving in a spurious manner causing an internal injury, without carrying a load or handling an object. All such actions are commonly referred to as 'false movements'. The third indicator will then be the absence of a Material Agent of the Contact — Mode of Injury.

80-89 Shock, fright, violence, aggression, threat, presence

These codes must be used when the victim is exposed to physical violence or experiences a traumatic situation, e.g. a hold-up; this group covers intentional and unintentional violence, and harassment.

Comments

Code 81 must be used for surprise or shock without physical contact.

Code 82 applies when the victim is subjected to aggression, threats or violence from inside the company.

Code 83 is used where the victim is subjected to aggression, threats or violence from outside the work unit (attack for robbery, angry customers, settlement of scores by a third person, etc.). Violence may also stem from college students or hospital patients.

Code 84 applies in the case of violence involving wild or unsupervised animals.

Code 85 should only be used if the only Deviation is that the victim or a third person is in the wrong place at the wrong time. It suggests that the victim or a third person does something which he or she is not expected to do (standing in the vicinity of a machine, presence in the middle of a road or on a railway, where the accident is caused by the machine, a car or a train operating or travelling

perfectly normally in its rightful place. If the accident can be coded more precisely on the basis of other data about the Deviation, it should be.

The Contact — Mode of injury

Reminder of the definition

The classification for the Contact — Mode of Injury (i.e. the action that leads to the injury) is designed to describe how the victim was injured and how he or she came into contact with the object that caused the injury. For instance: crashing onto the ground or the floor (31) or contact with a sharp object (e.g. a knife) (51).

Approach

The Contact — Mode of Injury leading to the most serious injury should be recorded.

The classification follows the structure indicated below:

10-29: The various injuries with non-mechanical sources (poison, temperature, electricity and asphyxiation);

30-69: The various injuries with mechanical sources;

70-79: The various injuries caused by physical or mental stress;

80-89: The various injuries caused by animals or humans.

10-19 Contact with electrical current, temperature, hazardous substances

These codes must be used when electric current, temperature or the hazardous substance is critical to why the object causes injury. This group should be used when the injury-causing factor is the intensity of the current.

Comments

Code 11 should also be used where the victim comes into contact with an electric arc and receives an electric shock or a burn caused by heat. The live object, e.g. the tool, nippers or pincers, is coded as the Material Agent, rather than the current.

Code 12 should be used where victims come into direct contact with an object that is normally or abnormally live such that the current passes through them.

Codes 11 and 12 apply when the intensity of the current is the factor causing the injury.

Code 13 applies when the temperature of the object/environment causes the injury. The injury-causing factor is the temperature of the object with which the victim comes into contact. The Material Agent to be coded is the object that is burning or from which the flames are coming, e.g. burning petrol, wooden beam, car on fire, etc.

Code 14 applies when the victim comes into contact with an agent causing frostbite, whether the agent is touched or not. It may be cold air, water, liquid oxygen, etc. The associated Material Agent is the cold object.

Codes 15-17 apply when a chemical or biological substance or its properties cause the injury. Injuries are coded according to how they occur, i.e. via the airways by inhalation; by contact with the skin or touching; or via the digestive system by eating or drinking. On the other hand, dust which in itself is not directly harmful but gets lodged in the eyes after being projected from a tool (mechanical origin) is a code 41 Contact, not code 16.

20-29 Drowned, buried, enveloped

These codes must be used where the victim is prevented from taking in oxygen, resulting in asphyxiation. The lack of oxygen can then lead to death. This group is used when the lack of oxygen intake is the injury-causing factor.

Comments

Code 21 is to be used where the lack of oxygen is due to immersion in a liquid that prevents oxygen intake, such as water. The associated Material Agent coded is the liquid or, if this is not specified, the 'container' holding the liquid in which the victim is immersed.

Code 22 applies where the lack of oxygen is due to being buried under solid materials that prevent oxygen supply, e.g. soil. The associated Material Agent coded is the substance in which the victim is buried, in this case soil.

Code 23 applies when suffocating vapours or gases prevent oxygen supply or when something else prevents the victim from breathing, such as a plastic bag over the face. The associated Material Agent to be coded is the suffocating vapours or gases or whatever is preventing the victim from breathing.

These codes do not apply when the chemical properties of vapours or gases make them toxic, caustic (corrosive) or harmful, or if the poisoning or chemical burns from these chemical products are the most serious injury. When this is the case, code 15, 16 or 17 'Contact with hazardous substances' must be used.

31-39 Horizontal or vertical impact with or against a stationary object (the victim is in motion)

These codes have to be used where the victim is in motion and the injury-causing object is not. The victim may be moving vertically or horizontally.

Code 31 should be used when the cause of the injury is the victim's vertical motion (i.e. the Deviation is a fall). The distance fallen prior to the impact is not relevant. This

code also applies when the victim falls (Deviation) and the injury-causing factor (Material Agent of the Contact) is the object the victim hits in falling, e.g. a chair.

Code 32 should be used when the victim knocks into something that is not in motion, such as a table. The victim is moving horizontally, and the Material Agent to be coded is the table. Or the case of a lorry driver who hits a tree or a stationary vehicle.

40-49 Struck by a moving object, collision

These codes should be used in cases where the injuring object is in motion and hits or collides with the victim. Codes 41-44 imply that the victim is stationary or does not move in relation to the Contact — Mode of Injury. In other words the collision is due entirely to the movement of the object. By contrast, code 45 implies that the collision involves movement of both the object and the victim at the time of the impact. A collision between two moving vehicles is coded 45. Road accidents will often be coded 44 or 45. The object is usually a vehicle (however, for the driver of a vehicle which hits a stationary obstacle such as a wall or stationary vehicle, the code is 32, and accidents involving pedestrians hit by vehicles come under codes 60-69).

Comments

Code 41 should be used where the victim is hit by an object flying through the air (e.g. projected from a machine), but not by an object falling vertically. This code is also used when the victim is struck by a door that has been flung open. The object may also be very small (e.g. sawdust or metal filings), see comment on code 16.

Code 42 is used where the victim is hit by a vertically falling object (Deviation), but not by an object flying through the air. Example: a brick falling from a height.

Code 43 should be used in cases where the victim is hit or knocked down by an object that springs back because it is under tension. Examples: branches, springs, elastic bands and similar. This code also applies to an object swinging like a pendulum.

Code 44 should normally be used where the victim is hit by a running or rolling object. Example: equipment on wheels (trolley) or a vehicle.

Code 45 should be used in cases in which both the victim and the injury-causing object are in motion. A collision is an impact between a person and an object moving in the same or opposite directions; this code also applies to two people or two vehicles colliding with each other.

50-59 Contact with a sharp, pointed, hard or rough Material Agent

These codes are to be used when the main reason for an object causing an injury is that it is sharp, pointed, hard

or rough, and not just the fact that the injured person has been struck by this object.

Comments

Code 51 should be used where the victim suffers a cut on something sharp, e.g. a knife or sharp edge.

Code 52 should be used where the victim is pricked by a pointed object, e.g. a punch or needle.

Code 53 should be used for cases where the victim suffers scratching or grazing on something rough (grater, sandpaper, unplanned wood, etc.). A hard agent is a Material Agent which is inflexible as a result of its mass or density and therefore does not soften or absorb the contact.

60-69 Trapped, crushed, etc.

These codes are to be used when the force, size, weight, pressure or speed of an object or machine is the injury-causing factor. Examples: a press that crushes the victim (or a limb), a heavy container that crushes the victim (or a limb) by its weight, a lifting truck that crushes the victim against a wall, or a car which overturns and crushes a road worker underneath it.

Comments

Code 61 is to be used when the victim gets caught in or crushed by something movable. This may be a part of a machine or something mobile. The Material Agent to be coded is the moving object (or whatever the moving object is part of), e.g. a machine (or machine component), a vehicle engine, or a strap (with a hook on it). The object that catches or crushes the victim should be coded as the Material Agent.

Code 62 should be used when the victim is crushed under something and against a surface (floor, road). Code 62 implies some vertical movement. For instance: crushed by a car, crushed under a concrete slab, etc. The Material Agent to be coded is the moving object (or whatever the moving object is part of), e.g. a car (or wheel which is part of it). This code therefore involves two objects, but it is the object that does the crushing that should be coded as the Material Agent, and not what the victim is caught or crushed against. If the victim is crushed by a car, 'car' should be coded and not 'road or surface'.

Code 63 is to be used when the victim is crushed between a tool in use and something else, for example between a heavy drilling machine and a wall, or between a heavy crate and a machine. Code 63 implies horizontal movement. The Material Agent to be coded is the object that is being used or handled, which is therefore moving, (or whatever the moving object is part of), i.e. the drilling machine or the crate in the examples given. This code applies when the victim is crushed between two objects, but it is the object

that does the crushing that should be coded as the Material Agent, not the object against which the victim is crushed. For example, if the victim is crushed against a wall by a lorry, 'lorry' and not 'wall' should be coded.

Code 64 concerns cases where the victim has a limb or finger torn off or severed. Example: where the victim's finger is trapped in and torn off by a rotating/cutting tool.

70-79 Physical or mental stress

These codes cover cases of strain of whatever degree on muscles, joints, organs or tissues, due to excessive movement, physical agents (noise, radiation, friction, etc.) or trauma. Actions causing external injury should be coded elsewhere. Only events that occur suddenly and accidentally are covered by this code; regular long-term exposure to physical stress, on the other hand, leads to occupational diseases.

There may or may not be a Material Agent associated with these codes, depending on the type of accident. For example, where a person is irradiated, Agent 15.06 may describe the Contact. An aircraft pilot whose hearing is damaged by loss of cabin pressure comes under Agent 20.1. By contrast, someone who suffers a strain as a result of standing up, without carrying or being struck by an object, does not have an associated Agent of the Contact (Contact code 71, Agent code 00.01). Similarly, there is no Material Agent of the Contact where a person treads badly and sprains an ankle (Contact code 71, Agent code 00.01).

Code 73 concerns in particular psychological shocks resulting from an act of aggression or violence, or shock resulting from witnessing an event such as accident to someone else. However, if the injury resulting from the act of aggression is essentially physical, the contact comes under another code, e.g. 50-59 for injuries caused by a blade or bullet or 83 for blows or kicks.

80-89 Bite, kick, etc. (animal or human)

These codes should be used when the causal factor of the injury is a person, animal or insect.

Comments

Code 81 applies when the victim is bitten by a person or an animal. Insect bites should be coded 82, which applies exclusively to harmful stings from dangerous insects (e.g. wasps, bees) or from fish with poisonous stings or fins (e.g. sea scorpions, weavers). Code 82 should not be confused with code 52 (contact with a pointed Material Agent), where the cause of injury is a pointed object.

The Material Agent

Reminder of the definition

The Material Agent associated with the Specific Physical Activity describes the tool, object, or instrument being used by the victim when the accident happened. If there are several Material Agents associated with the Specific Physical Activity, the Material Agent most closely linked to the accident or injury must be recorded.

The Material Agent associated with the Deviation describes the tool, object, or instrument involved in the abnormal event. If several Material Agents are associated with the (last) Deviation, the last Material Agent involved should be recorded, i.e. that closest in time to the injuring contact.

The Material Agent associated with the Contact — Mode of Injury refers to the object, tool, or instrument with which the victim came into contact or the psychological mode of injury. If several Material Agents are associated with the injury, the Material Agent linked with the most serious injury must be recorded.

Approach

It should be noted that there is a single list of Material Agents for all three variables (Specific Physical Activity, Deviation and Contact — Mode of Injury).

The three Material Agents need not be different. In practice, the same Material Agent may be associated with one or more of the three variables, though it is equally possible for each variable to correspond to a different Material Agent.

The principle underlying this coding system is that the victim was performing an 'activity' (the Specific Physical Activity) with the first Material Agent, the second Material Agent 'behaved abnormally' (the Deviation) and the third Material Agent 'injured' the victim (the Contact — Mode of Injury). The three Agents may be different, identical or may not even exist. See 'General comments about using the codes'.

Description of the groups at the 1-position level

Codes 01 - 02 - 03 (buildings, constructions and surface areas) are used mainly in cases where the victim falls or impacts.

Codes 04 to 11 (tools and machines) should be used for accidents resulting from their malfunction or for injuries directly caused by these devices; they are also associated with the Specific Physical Activities that require their use.

Distinction between tool and machine - fixed machine and mobile machine

A tool is a manufactured object used to work a material and perform a task. It may or may not be powered (agents 06-08). It can be carried by a single person by hand or on his body without having to roll or pull it along the ground.

A machine is a manufactured object, generally complex, used to transform energy in such a way as to act on a material or perform a task. The concept of machine is linked to the energy needed to power it.

A machine is either fixed i.e. cannot be moved during the work (group 10 agents) or mobile (group 09 agents), where a single person, without the help of a second person or a handling device, can move it along the ground by using its own energy to roll it (self-propelled construction or agricultural machine), by pushing it (cleaning machine) or by pulling it (site saw), but not by carrying it in his arms or on his body.

Agricultural equipment is in 06.09 or 07.09, according to whether it is manual or mechanised; however, equipment that is self-propelling, i.e. can be driven, such as lawn mowers, reapers, motorised cultivators and large agricultural machines, are coded in 09.02.

All machines for processing and manufacturing materials are coded 10.

Storage devices are coded 11.06 when they are fixed and 11.07 when they are mobile (transportable); they may also be permanently open or permanently closed, or pressurised. Code 11.07 covers bulk storage in the form of heaps of various materials.

Code 11.09 covers small containers, including those under pressure, such as bottles of liquefied or pressurised gas, fire extinguishers, etc. It applies to single containers. Large quantities in a storage room (on shelving for instance) should be coded 14.08.

Codes 12 and 13 apply to transportation vehicles; however, civil engineering and agricultural devices are coded 09.01 and 09.02 respectively.

Codes 14 include construction materials and the various objects to be found on a building site (14.01); 14.02 covers all machine and vehicle components and parts; code 14.03 covers workpieces or parts, machine tools (including parts and splinters coming from these Material Agents), and 14.04 covers assembly components (screws, nuts, bolts, nails etc.).

Code 14.05 includes products in the form of dust, chips, pieces or splinters. 14.06 and 14.07 cover products from or for agriculture.

All objects kept in storage are coded 14.08. Code 14.09 is used for products stored in rolls, such as paper or cables.

Codes 14.10, 14.11 and 14.12 cover all objects that constitute a load, either transported on mechanical devices, suspended from hoisting devices, or handled manually, where accidents occur due to impact, falls or overturning.

Codes 15, 16, 17 and 18 are self-explanatory.

Code 19 (waste) applies when the constituents cannot be coded in 14 - 15 or 18 because they are unknown or because they are complex mixtures to be disposed of. The use of the term 'bulk' emphasises the idea of large quantities.

Code 20 applies in cases where the elements, extreme weather conditions, earthquakes etc. are responsible for the accident.

Optional more detailed classification

If it is so desired, Material Agents can be classified in more detail at national level using the 6-digit or 8-digit classification developed for this purpose and is publicly available in CIRCA. However, Eurostat will only use the 4-digit classification.

Furthermore, most tools and machines have 4-digit classifications according to their function and independently of the materials worked. Using the more detailed 6-digit or 8-digit classification, however, it is possible, where necessary, to specify the material worked (mainly for machines in groups 10.02, 10.04 and 10.07 to 10.15), or the packaging used in packaging machines (codes 10.16).

The fourth position of the code is used to make this distinction. This position consists of a 0X classification to denote the type of material worked or a 0Y classification to denote the type of packaging. When encoding the Material Agent, the letters X and Y should be replaced by one of the letters below, depending on the nature of the material or packaging. However, for some Material Agents, only one material/packaging code is possible, in which case it is used in the classification directly.

Value of codes 0X or 0Y (fourth position)	Nature of the object
0A	Stone, mineral
0B	Metal,
0C	Wood,
0D	Rubber, plastic,
0E	Paper, cardboard,
0F	Textile,
0G	Leather,
0H	Foodstuffs

Examples

i) A circular saw will be coded:

10.11 for a sawing machine (4-digit code)

10.11.01 for a circular saw (6-digit code)

10.11.01.0X four-position classification code for a circular saw, however this 0X ending is not used for codifying a Material Agent; instead, the following codes are used depending on the material, namely:

10.11.01.0A for a circular saw to cut stone

10.11.01.0B for a circular saw to cut metal

10.11.01.0H for a circular saw to cut foodstuffs.

ii) A concrete mixer comes directly under code 10.02.15.0A, because it is used exclusively for concrete by definition.

Examples of codification of the causes and circumstances

1) On a new construction site, a bricklayer carrying a tool up some stairs treads on a nail sticking out of a piece of wood left lying around.

Variable	Code	Label (summarised)
Working Environment	021	Construction site - building under construction
Working Process	22	New construction - building
Specific Physical Activity	61	Walking, running, going up, going down
Material Agent- 4-digit code	02.01	Elevated positions of building - fixed (stairs)
Material Agent- 8-digit code (*)	02.01.01.00	Stairs
Deviation	61	Walking on a sharp object
Material Agent- 4-digit code	01.02	Surfaces, circulation areas - ground indoors, outdoors
Material Agent- 8-digit code (*)	01.02.01.04	Plank with nails in it
Contact — Mode of Injury	52	Contact with pointed Material Agent (nail, sharp tool)
Material Agent- 4-digit code	14.04	Assembly components
Material Agent- 8-digit code (*)	14.04.02.00	Nails

2) In a hospital, a nurse injures her thumb disposing of a syringe in a waste-box by inadvertently pricking herself on another needle sticking out of the box.

Variable	Code	Label (summarised)
Working Environment	051	Health establishment, clinic, hospital
Working Process	41	Service, care, assistance to people
Specific Physical Activity	46	Pouring, pouring into, replenishing, emptying
Material Agent- 4-digit code	11.09	Miscellaneous package, small and medium, mobile
Material Agent- 8-digit code (*)	11.09.06.00	Dustbin, rubbish container
Deviation	64	Spurious actions
Material Agent- 4-digit code	06.14	Hand-held non-motorised tools – medical - sharp
Material Agent- 8-digit code (*)	06.14.01.00	Syringe, needle
Contact — Mode of Injury	52	Contact with pointed Material Agent (nail, sharp tool)
Material Agent- 4-digit code	06.14	Hand-held non-motorised tools – medical - sharp
Material Agent- 8-digit code (*)	06.14.01.00	Syringe, needle

3) A hook breaks off, causing a painter to fall to the ground from the mobile ladder he was climbing to repaint an office ceiling.

Variable	Code	Label (summarised)
Working Environment	041	Office, meeting room, library
Working Process	24	Remodelling, repairing, building maintenance
Specific Physical Activity	64	Crawling, climbing
Material Agent- 4-digit code	02.03	Constructions, elevated areas - mobile
Material Agent- 8-digit code (*)	02.03.01.00	Mobile ladder, stepladder
Deviation	31	Breakage of material
Material Agent- 4-digit code	11.05	Hoisting, strapping, gripping devices
Material Agent- 8-digit code (*)	11.05.03.00	Hooks
Contact — Mode of Injury	31	Vertical motion, crash on or against
Material Agent- 4-digit code	01.02	Surfaces, circulation areas - ground indoors, outdoors
Material Agent- 8-digit code (*)	01.02.01.00	Surface areas in general

4) A rope holding a suspended load breaks, causing the load to swing through the loading zone and hit a worker.

Variable	Code	Label (summarised)
Working Environment	013	Area where the main activity is storage, loading
Working Process	61	Movement
Specific Physical Activity	70	Presence
Material Agent- 4-digit code	01.02	Surfaces, circulation areas - ground indoors, outdoors
Material Agent- 8-digit code (*)	01.02.01.00	Surface areas in general
Deviation	31	Breakage of material
Material Agent- 4-digit code	11.05	Hoisting, strapping, gripping devices
Material Agent- 8-digit code (*)	11.05.06.00	Ropes
Contact — Mode of Injury	43	Struck - by swinging object
Material Agent- 4-digit code	14.11.	Load - suspended from hoisting device, a crane
Material Agent- 8-digit code (*)	14.11.00.00	Load - suspended from a hoisting device or crane

5) In a sawmill, an unskilled labourer feeding a motorised saw is injured on the head by a flying fragment of wood thrown back at him by the saw blade as the wood is fed in.

Variable	Code	Label (summarised)
Working Environment	011	Production area, factory, workshop
Working Process	11	Production, manufacture, processing
Specific Physical Activity	12	Feeding the machine
Material Agent- 4-digit code	10.11	Machines tools - for sawing
Material Agent- 8-digit code (*)	10.11.00.00	Machine tools (for sawing)
Deviation	44	Loss of control (total or partial) - of an object
Material Agent- 4-digit code	14.03	Workpieces or parts/machine tools
Material Agent- 8-digit code (*)	14.03.01.00	Workpieces
Contact — Mode of Injury	41	Struck - by flying object
Material Agent- 4-digit code	14.05	Particles, dust
Material Agent- 8-digit code (*)	14.05.01.00	Fragment, projectile, splinter

6) A slaughterhouse worker carving cutlets in the cutting department of a slaughterhouse knocks his knife on the edge of the table and wounds his thumb.

Variable	Code	Label (summarised)
Working Environment	011	Production area, factory, workshop
Working Process	11	Production, manufacture, processing
Specific Physical Activity	21	Working with hand-held tools
Material Agent- 4-digit code	06.02	Hand-held non-motorised tools - for cutting, separating
Material Agent- 8-digit code (*)	06.02.02.00	Knife, large knife, craft knife
Deviation	43	Loss of control (total or partial) - of hand-held tool
Material Agent- 4-digit code	06.02	Hand-held non-motorised tools - for cutting, separating
Material Agent- 8-digit code (*)	06.02.02.00	Knife, large knife, craft knife
Contact — Mode of Injury	51	Contact with sharp Material Agent (knife or blade)
Material Agent- 4-digit code	06.02	Hand-held non-motorised tools - for cutting, separating
Material Agent- 8-digit code (*)	06.02.02.00	Knife, large knife, craft knife

7) On a construction site, an apprentice was unbolting a bolt on a boiler using a spanner. The screw broke and with the sudden wrench the apprentice's hand hit the boiler violently.

Variable	Code	Label (summarised)
Working Environment	021	Construction site - building under construction
Working Process	51	Disassembling, dismantling
Specific Physical Activity	21	Working with hand-held tools - manual
Material Agent- 4-digit code	06.05	Hand-held non-motorised tools - for screwing
Material Agent- 8-digit code (*)	06.05.01.00	Wrench
Deviation	31	Breakage of material
Material Agent- 4-digit code	06.05	Hand-held non-motorised tools - for screwing
Material Agent- 8-digit code (*)	06.05.01.00	Wrench
Contact — Mode of Injury	53	Contact with a hard or rough Material Agent
Material Agent- 4-digit code	10.04	Machines for transforming materials - using heat
Material Agent- 8-digit code (*)	10.04.02.05	Boiler, water heater, cauldron

8) In a warehouse, a fire extinguisher being inspected was accidentally put under pressure, causing the top to be blown off. The handle of the fire extinguisher hit the employee who was inspecting it - a fire extinguisher salesman - in the lower part of the face, injuring him in the mouth.

Variable	Code	Label (summarised)
Working Environment	013	Area used principally for storage
Working Process	52	Maintenance
Specific Physical Activity	40	Handling an object - Not specified
Material Agent- 4-digit code	11.09	Miscellaneous packaging, small/medium, mobile
Material Agent- 8-digit code (*)	11.09.03.00	Gas bottle, spray, fire extinguisher
Deviation	32	Breakage, bursting, producing splinters
Material Agent- 4-digit code	11.09	Miscellaneous packaging, small/medium, mobile
Material Agent- 8-digit code (*)	11.09.03.00	Gas bottle, spray, fire extinguisher
Contact — Mode of Injury	41	Struck - by flying object
Material Agent- 4-digit code	14.03	Workpieces or parts/machine tools
Material Agent- 8-digit code (*)	14.03.99.00	Other related agents, workpieces, tools

9) An electrician walking through a construction site hears a strange noise coming from the crane and sees some scrap metal falling from it; despite flattening himself against a wall the scrap metal hits him, causing bruising and scratches to his right shoulder and back.

Variable	Code	Label (summarised)
Working Environment	021	Construction site - building under construction
Working Process	61	Movement
Specific Physical Activity	70	Presence
Material Agent- 4-digit code	01.02	Surfaces, circulation areas - ground indoors, outdoors
Material Agent- 8-digit code (*)	01.02.01.00	Surface areas in general
Deviation	33	Slip, fall, collapse of Material Agent - from above
Material Agent- 4-digit code	14.11	Load - suspended from a hoisting device, crane
Material Agent- 8-digit code (*)	14.11.00.00	Load suspended from a hoisting device, crane
Contact — Mode of Injury	42	Struck - by a falling object
Material Agent- 4-digit code	14.11	Load -suspended from a hoisting device, crane
Material Agent- 8-digit code (*)	14.11.00.00	Load suspended from a hoisting device, crane

10) A cleaner walking on the roof of a block of flats to make some checks trips on a tile and falls from the roof onto a balcony two floors below.

Variable	Code	Label (summarised)
Working Environment	091	Elevated - on a fixed level (roof, terrace, ...)
Working Process	55	Monitoring, inspection
Specific Physical Activity	61	Walking
Material Agent- 4-digit code	02.01	Elevated parts of building - fixed
Material Agent- 8-digit code (*)	02.01.02.00	Roof, terrace, glass roof, frame, structure
Deviation	51	Fall of person - from a height
Material Agent- 4-digit code	02.01	Elevated parts of building - fixed
Material Agent- 8-digit code (*)	02.01.02.00	Roof, terrace, glass roof, frame, structure
Contact — Mode of Injury	31	Vertical motion, crash on or against
Material Agent- 4-digit code	02.01	Elevated parts of building - fixed
Material Agent- 8-digit code (*)	02.01.99.00	Other elevated parts of a building

11) A worker undertaking lift maintenance in a private block of flats climbs on to the top of the lift cabin. He starts the lift and is crushed against the ceiling.

Variable	Code	Label (summarised)
Working Environment	091	Elevated - on a fixed level (roof, terrace, ...)
Working Process	52	Maintenance/repair, tuning, adjustment
Specific Physical Activity	64	Crawling, climbing
Material Agent- 4-digit code	11.02	Elevators, lifts, hoisting devices
Material Agent- 8-digit code (*)	11.02.01.00	Lift, hoist
Deviation	42	Loss of control (total or partial) - of handling equipment
Material Agent- 4-digit code	11.02	Elevators, lifts, hoisting devices
Material Agent- 8-digit code (*)	11.02.01.00	Lift, hoist
Contact — Mode of Injury	63	Trapped, crushed - between
Material Agent- 4-digit code	11.02	Elevators, lifts, hoisting devices
Material Agent- 8-digit code (*)	11.02.01.00	Lift, hoist

12) A worker carrying out maintenance on a boiler located in the boiler-room of a block of flats stands on the gas supply line (fixed to the ground). He slips and sprains his left ankle without falling.

Variable	Code	Label (summarised)
Working Environment	072	Private home – communal parts
Working Process	52	Maintenance/repair, tuning, adjustment
Specific Physical Activity	61	Walking
Material Agent- 4-digit code	01.02	Surfaces, circulation areas – ground indoors, outdoors
Material Agent- 8-digit code (*)	01.02.01.00	Surface areas in general
Deviation	75	Slipping without falling
Material Agent- 4-digit code	04.01	Pipe networks – fixed
Material Agent- 8-digit code (*)	04.01.01.00	Pipe networks – fixed – for gas
Contact — Mode of Injury	71	Physical stress
Material Agent- 4-digit code	00.01	No material agent
Material Agent- 8-digit code (*)	00.01.00.00	No material agent

13) While polishing an item of vehicle bodywork using a brushing machine, the victim tilts the item too far, causing it to be caught in the brush and knocked back into his face.

Variable	Code	Label (summarised)
Working Environment	011	Production area, factory, workshop
Working Process	11	Production, manufacturing, processing
Specific Physical Activity	41	Holding
Material Agent- 4-digit code	14.02	Vehicle component
Material Agent- 8-digit code (*)	14.02.00.99	Other vehicle component known but not listed
Deviation	44	Loss of control (total or partial) of object
Material Agent- 4-digit code	14.02	Vehicle component
Material Agent- 8-digit code (*)	14.02.00.99	Other vehicle component known but not listed
Contact — Mode of Injury	41	Struck by flying object
Material Agent- 4-digit code	14.02	Vehicle component
Material Agent- 8-digit code (*)	14.02.00.99	Other vehicle component known but not listed

14) The victim switches on a cutting tool and the metal item rotates too quickly under the cutting axes. The lathe jams, the tool breaks and the cutting edge is thrown out and hits the victim on the forehead.

Variable	Code	Label (summarised)
Working Environment	011	Production area, factory, workshop
Working Process	11	Production, manufacturing, processing
Specific Physical Activity	13	Operating the machine
Material Agent- 4-digit code	10.10	Machine tool for turning
Material Agent- 8-digit code (*)	10.10.09.00	Centre lathe
Deviation	32	Breakage, bursting, producing splinters
Material Agent- 4-digit code	14.03	Machine tool
Material Agent- 8-digit code (*)	14.03.02.00	Tool, part of tool of machine
Contact — Mode of Injury	41	Struck by flying object
Material Agent- 4-digit code	14.03	Machine tool
Material Agent- 8-digit code (*)	14.03.02.02	Splinter, part of tool

15) The victim, who is driving his tractor and spreading weed killer on his vines, is intoxicated by gas vapours as a result of the wind turning.

Variable	Code	Label (summarised)
Working Environment	033	Farming area – tree crop
Working Process	32	Agricultural type work
Specific Physical Activity	31	Driving a means of transport
Material Agent- 4-digit code	09.02	Portable or mobile machine – farming
Material Agent- 8-digit code (*)	09.02.05.00	Agricultural equipment for treating crops
Deviation	99	Other deviation
Material Agent- 4-digit code	20.02	Wind
Material Agent- 8-digit code (*)	20.02.00.00	Wind
Contact — Mode of Injury	15	Contact with hazardous substances
Material Agent- 4-digit code	15.02	Substances – harmful, toxic – gaseous
Material Agent- 8-digit code (*)	15.02.00.00	Substances – harmful, toxic – gaseous

16) In a restaurant kitchen, a worker injures a hand on a broken cup while washing up.

Variable	Code	Label (summarised)
Working Environment	044	Restaurant
Working Process	53	Cleaning (manual)
Specific Physical Activity	49	Other handling of object
Material Agent- 4-digit code	17.08	Domestic-type equipment
Material Agent- 8-digit code (*)	17.08.00.00	Domestic-type equipment
Deviation	64	Spurious action
Material Agent- 4-digit code	00.01	No material agent
Material Agent- 8-digit code (*)	00.01.00.00	No material agent
Contact — Mode of Injury	51	Contact with sharp material agent
Material Agent- 4-digit code	14.05	Splinters, other debris
Material Agent- 8-digit code (*)	14.05.01.00	Splinters, broken glass

(*) If the detailed classification is used (see in CIRCA).

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