

International Hazard Datasheets on Occupation



Mason


Who is a mason?






A mason is a building construction worker engaged in the construction and maintenance of buildings, including foundations, floors, beams, columns, etc., made of stone, blocks, bricks, etc.; may be engaged in performing a variety of tasks in private and public buildings under the supervision of a foreman, a technician or a building engineer.



What is dangerous about this job?



- Falls from elevated surfaces, and/or slips, trips and falls on the level
- Injuries resulting from a collapse/cave in of an excavation or a wall of an auxiliary structure or equipment; collapse of a component of the structure that is being built; collapse of a sand pile, etc.
- Hazard of being hit by falling objects
- Stepping on sharp objects; colliding/striking sharp or protruding objects; etc.
- Hazard of being hit by motorized heavy mechanical engineering equipment at the work site
- Hernia or rupture of a disk vertebra, as a result of excessive stress or of a sudden physical manoeuvre
- Eye injury caused by stone and metal particles/ricochets which are produced throughout drilling, cutting and demolishing operations
- Dermatitis and development of chronic obstructive pulmonary disease, resulting from inhalation/contact with cement and building dust
- Injury of the musculoskeletal system and back pain as a result of posture problems in the course of work, and due to the lifting of heavy loads, repetitive effort and too much pressure applied to joints

Hazards related to this job

Specific preventive measures can be seen by clicking on the respective  in the third column of the table.

<p>Accident hazards</p> 	<ul style="list-style-type: none"> • Falls from an elevated surface/level (high floor, scaffolds, veranda/surface without guard-rail, roof, ladders...); falls into a cellar, pit, shaft, trench, or open ditch 	
	<ul style="list-style-type: none"> • Slips, trips and falls on the level, in particular during the transporting/carrying of building materials 	
	<ul style="list-style-type: none"> • Injuries resulting from a collapse/cave-in of an excavation or of a wall of an auxiliary structure or equipment; collapse of a component of the structure that is being built; collapse of a pile of materials or of stored construction-equipment; etc. 	
	<ul style="list-style-type: none"> • Injuries caused by falling heavy objects (bricks, hammers, work tools, wooden boards, etc.), in the course of construction or demolition of structures 	

	Hazard of being hit by motorized heavy mechanical engineering equipment at the worksite	
	<ul style="list-style-type: none"> Stepping on sharp objects (such as a plank with nails in it, building tools, wire netting, chisels, etc.); being injured by sharp or protruding objects; etc. 	4 5
	<ul style="list-style-type: none"> Crashing, as a result of being caught in or between objects 	
	<ul style="list-style-type: none"> Hernia or a rupture of a vertebra disc, as a result of excessive stress or of a sudden physical manoeuvre 	6
	<ul style="list-style-type: none"> Contact/exposure to extreme temperatures (while working outdoors, at extreme temperatures); skin burns and scalds (throughout sealing process, in which gas burners are being used); or frost bites. 	7
	<ul style="list-style-type: none"> Electrical shock from faulty or improperly grounded equipment, or due to faulty insulation 	8
	<ul style="list-style-type: none"> Eye injury caused by stone and metal particles/ricochets which are during throughout drilling, cutting and demolishing operations 	4
	<ul style="list-style-type: none"> Poisoning, as a result of exposure (mostly by inhalation or ingestion) to dangerous/noxious chemicals which are being used during construction 	
Physical hazards 	<ul style="list-style-type: none"> Over-exposure to solar radiation while engaged in construction work outdoors, without wearing appropriate work clothes 	7
	<ul style="list-style-type: none"> Danger of catching a cold, because of exposure to raining and/or windy weather 	7
	<ul style="list-style-type: none"> Injury of joints and skeleton as a result of prolonged work with pneumatic hammers, saws, drills, etc., and because of the vibrations are produced during this work (mostly in the palms and hands) when drilling, sawing or demolition work Ear injury due to prolonged work with pneumatic hammers, saws, drills, demolition works, etc. 	
Chemical hazards 	<ul style="list-style-type: none"> Irritation of the eyes (inc. conjunctivitis and alkaline burns) and the respiratory system, resulting from over-exposure to suspended building dust, especially during drilling and demolition operations 	
	<ul style="list-style-type: none"> Skin inflammation (dermatitis and eczema) and allergic reactions resulting from direct contact with cement or cement dust (there are proven cases of sensitization to chromium, cobalt, nickel, calcium chloride and other additives contained in cement) 	9
	<ul style="list-style-type: none"> Development of chronic-obstructive pulmonary disease (COPD) due to the inhalation of the cement dust; as well as development of chronic bronchitis, excessive coughing, sputum and other respiratory diseases (Note 3) 	
	<ul style="list-style-type: none"> Exposure to asphalt and bitumen, while carrying-out sealing operations (roofs and cellars) 	4 10

	<ul style="list-style-type: none"> Exposure to various solvents, inc. aromatic hydrocarbons 	9
	<ul style="list-style-type: none"> Exposure to radon gas, while working in cellars for prolonged periods 	
	<ul style="list-style-type: none"> Exposure to allergenic wood dust produced during work with wooden materials 	10
Biological hazards 	<ul style="list-style-type: none"> Exposure to microorganisms (esp. bacteria, fungi and viruses) and their toxic byproducts (Note 4) 	
	<ul style="list-style-type: none"> Exposure to poisonous or allergenic plants (esp. at sites where the land has not been properly cleared of vegetation) 	
	<ul style="list-style-type: none"> Exposure to parasites, such as insects and spiders, which may lead to allergic or anaphylactic phenomena (Note 5) 	
Ergonomic, psychosocial and organizational factors 	<ul style="list-style-type: none"> Injury of the musculoskeletal system and development of back pains as a result of posture problems in the course of work; of moving, lifting or carrying heavy or bulky loads; of repetitive efforts; of prolonged excessive pressure on body joints; etc. 	9
	<ul style="list-style-type: none"> Musculoskeletal injuries related to awkward and harmful working postures while hanging heavy objects over cleaning and galvanic baths 	
	<ul style="list-style-type: none"> Vibrations effecting specific body organs (such as injury of the hand joints or of the spinal column while carrying out demolition operations, and/or when using heavy hammers, vibrators, etc.) 	
	<ul style="list-style-type: none"> Psychological/social factors due to interpersonal problems, shift-work and similar problems. 	

Preventive measures

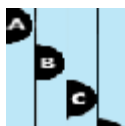
- 1 All work surfaces should be installed in such a manner that they will not collapse/break, and be safe so that no person or object may fall from them; they should be fenced securely by strong, upper, middle and lower wood planks, and if necessary by additional fencing; all the openings and cavities must be fenced; safe positioning of ladders should be ascertained in order to prevent their slipping or folding (double-ladder)
 - 2 Safety shoes with special anti skid soles must be worn; it is also possible to roughen the work surfaces (using various techniques)
 - 3 Every possible means against injuries should be taken, prior to the beginning of the excavation and all along, as well as before beginning demolition operations
 - 4 Personal protection equipment appropriate for complete body protection should be used, incl. safety helmets, shoes and goggles
 - 5 Work surfaces, passageways and floors should be kept clear of protruding nails, free wires and other obstacles
 - 6 Workers should be instructed to avoid manual lifting of heavy loads and to use mechanical lifting equipment
- Work clothes should be compatible with weather conditions; it is essential to verify that workers drink

- 7** enough water to avoid dehydration; gloves and safety outfits must be worn whenever the worker handles hot materials (e.g. during the heating of bitumen sheets)
- 8** Avoid using portable electric work tools that are defective or that have improper isolation
- 9** Contact with harmful materials should be minimized; use products that protect skin and wash hands thoroughly at the end of the work shift; use gloves (coated cotton gloves are better than leather ones) when necessary
- 10** Respiratory protection equipment (respirators, air masks, etc) compatible with the specific type of air pollutant should be used.
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Specialized information

Synonyms Brick/block layer; building worker; concrete worker; stone builder; stone layer.

Definitions and/or description



Masons build and renovate foundations, walls and other structures built of bricks, blocks, stone and similar materials. They lay stones, bricks, hollow blocks and other ones and construct walls, partitions, shafts, ovens and similar structures; using reinforced-concrete they build various parts of buildings, such as foundations, beams, columns, reinforced-concrete surfaces, door and window frames, protective mantles for drillings, supporting-walls, etc., inc. finishing works and casting of floors; also, they may perform various specific building tasks, such as plastering, forming, laying tiles, creating mosaics, iron-bending, concrete-roof casting, etc. [Acc. To ISCO].

Related and specific occupations

Borings-worker; building-carpenter; building-contractor; building-electrician; building-engineer; building-inspector; building-painter; building-supervisor; building-technician; foreman (building); iron-bender; molder; plasterer; renovation worker; tile and pavement worker; tinsmith; water and sewage pipe-installer.

Tasks

Building; casting; chiseling; climbing (ladders,...); coating (pitch/tar); constructing; cutting; demolishing; drilling; excavating; forming; hammering; isolating; laying (bricks, floors, tiles,...); lifting/lowering; loading & unloading; marking; measuring; mixing (concrete aggregates); molding; painting; plastering; polishing; reading (blueprints); renovating; sawing; scrubbing (mortar); sealing; spraying; stone cutting; straightening & smoothing (surfaces); strengthening; transporting (building materials); tying.

Primary equipment used

Connecting & joining gadgets; sawing tools; digging & excavating tools; hammers; iron rods, wires, wire-nets,...; ladders; lifting-equipment; portable electric tools (e.g. -drill, screwing machine, pipes; pneumatic hammer, portable cutting electric saw, polishing machine,...); scaffolding; wheelbarrow; wrenches; etc.

Workplaces where the occupation is common

Building contractors; building & housing corporations; large public institutions; private & public buildings.

Notes

1. Masons may be engaged in a wide range of activities, in addition to the building activity as such: excavation, demolition, sealing, drilling, cutting stone and iron, working in confined spaces, etc.; the hazards faced by masons may also be relevant to a wide range of building professionals, such as plasterers, tile-layers, molders, iron-benders, building-electricians, painters, etc.



2. Masons engaged in the construction of ovens, made of bricks having a high silica content, may develop silicosis if they are exposed to silica dust in confined spaces.
3. There is a possibility of developing asbestosis or silicosis, due to inhalation of dust containing free silica or asbestos, created during the demolition of houses containing these materials; similar cases of silicosis have been found among sand-cleaning workers, tunnel builders and rock drillers; it is desirable to conduct periodical lung function tests, in order to get early identification of cases of chronic obstructive pulmonary disease (COPD); asbestosis (and other diseases caused by asbestos) were found among demolition workers, building isolation workers and workers engaged in isolation of steam pipelines.
4. Masons working in tunnels, mines and underground trenches, may contract leptospirosis; they may also contract tetanus when a deep bruise or cut is exposed to soil infected with the bacterium that causes the disease. It is desirable to instruct workers in such environments concerning prevention, and they should also be inoculated against tetanus.
5. Exposure to pests may occur during the renovation of old buildings, attics and cellars, where such pests may be present; for example there maybe a hazard of flea bites when working in attics and cellars, where cats, rats and birds may have been present.
6. When a mason also does painting work he may be subject to disturbances of the nervous system, stemming from exposure to organic solvents and lead.
7. Pneumatic hammer operators may suffer from Raynaud's Syndrome (white finger).

References



1. Encyclopaedia of Occupational Health and Safety, 4th Ed., ILO, Geneva, 1998.
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4. Greenberg, M.I. (Ed.) : Concrete Workers and Masons, in "Occupational, Industrial, and Environmental Toxicology, Mosby publications, 1997.
5. King, R.W. and Hudson, R.: Construction Hazard and Safety Handbook, Butterworth Pub., London, 1985.