|  |  |
| --- | --- |
|  | Potential consequence / severity of outcome |
| 1 | 2 | 3 | 4 | 5 |
| Likelihood of harm occurring / frequency of occurrence | Noneno injury or adverse effects | Minorfirst aid injury | Moderatelost time injury | Majorhospital treatment | Catastrophicdisabling injury or death |
| Could happen, but probably never will. | 1 - Rare | 1 | 2 | 3 | 4 | 5 |
| Not likely to occur in normal circumstances. | 2 - Unlikely | 2 | 4 | 6 | 8 | 10 |
| May occur at some time. | 3 - Possible | 3 | 6 | 9 | 12 | 15 |
| Expected to occur at some time. | 4 - Likely | 4 | 8 | 12 | 16 | 20 |
| Likely to occur on many occasions. | 5 – Almost certain | 5 | 10 | 15 | 20 | 25 |

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| Total | Level of risk | Timescale / action |
| 1 to 5 | Low | No additional physical control measures are required however monitoring is necessary to ensure controls are maintained. |
| 6 to 10 | Medium | 3-6 months - efforts should be made to reduce the risk to an acceptable level.  |
| 12 to 25 | High, or stop | Immediate - work should not be started until the risk has been reduced to an acceptable level. Where the risk involves work in progress, urgent action should be taken. If it is not possible to reduce risk even with unlimited resources, work will have to be stopped. |

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| **Step 1**What are the hazards? | **Step 2**Who might be harmed and how? | **Raw risk rating** | **Step 3**What do you have in place? | **Step 4**Is anything further needed?Yes / No | **Step 5**Action and review | **Residual risk rating** |
| Spot hazards by:* Walking around your workplace.
* Asking those doing the task what they think.
* Checking manufacturers’ instructions.
* Considering health hazards.
 | Identify groups of people: * employees
* lone workers
* pupils
* service users
* temporary / agency staff
* contractors
* volunteers
* members of the public
* children (including work experience).
 | When there are no control measures are in place.State total score.  | List what is already in place to reduce the likelihood of harm or make any harm less serious, examples include: * guarding
* training
* procedures, safe systems of work
* personal protective equipment (PPE).
 | You need to make sure that you have reduced risks ‘so far as is reasonably practicable’. An easy way of doing this is to compare what you are already doing with good practice. If there is a difference, indicate ‘yes’ and list what needs to be undertaken in the action column. | Remember to prioritise hazards that are high-risk and have serious consequences first:* List the actions required and who needs to complete and by when.
* Check actions are correctly completed.
* Check controls remain in place.
* Review the risk assessment annually, or earlier if there is an incident or if the work activity changes.
 | Level of risk when all control measures are in place.State total score. |

**See the list of suggested guidance, actions and control measures required for the hazards identified – below the risk assessment template.**

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| --- |
| **Activity / operation/ event:**  |
| **Establishment:**  | **Assessment date:**  |
| **Assessor name / position:**  | **Review date:**  |

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| --- | --- | --- | --- | --- | --- |
| **Step 1**Identify the hazards | **Step 2**Who might be harmed and how? | **Raw risk rating** | **Step 3**What do you have in place? | **Step 4**Anything furtherneeded?**Yes / No** | **Step 5**Action and review |
| state total score | **Action required** | **Residual risk rating**state total score | **Responsible****person** | **Date completed** |
| Unauthorised access to kilns.*Only trained staff can operate kilns.* | Staff or members of the public including students.Fire or injury/harm (burns, electric shock, inhalation of fumes, eye damage) from unauthorised access.  |  |  |  |  |  |  |  |
| Incorrect use of the kiln. | Glass and Pottery, Technicians, Tutors.Fire, injury, or harm caused by incorrect operating of kiln. |  |  |  |  |  |  |  |
| Kiln not serviced annually. | Glass and Pottery Technicians, Tutors.Injury or harm caused by using a faulty kiln e.g. burns, fire. |  |  |  |  |  |  |  |
| Collection of glassware and pottery items. | Glass and Pottery Technicians, Tutors. |  |  |  |  |  |  |  |
| Kiln faults/issues not reported. | Glass and Pottery Technicians,Tutors.Injury or harm e.g. electric shock, fire caused by faulty equipment. |  |  |  |  |  |  |  |
| Incorrect disposal of an old kiln. | Staff, contractors,members of the public.Exposure to asbestos fibres causing ill-health or harm. |  |  |  |  |  |  |  |
| Radiant heat. | Glass and Pottery Technicians, Tutors.Possible eye damage through directly viewing the inside of a hot kiln. |  |  |  |  |  |  |  |
| No smoke or heat detection in the room. | Employees, and 3rd parties including students, members of the public.Stress, injury or harm caused by smoke inhalation and fire. |  |  |  |  |  |  |  |
| Burns.Although the temperature of the exterior of a kiln is much lower than the interior, it can reach 160 °C and possibly more.  | Glass and Pottery Technicians, Tutors.Injury through touching hot surfaces and ware. |  |  |  |  |  |  |  |
| Fire. | Employees and 3rd parties including Students, members of the public.Stress, and Injury or harm through smoke inhalation or burns caused by fire and damage to property. |  |  |  |  |  |  |  |
| Electric shock. | Glass and Pottery Technicians, Tutors.Injury/harm through electric shock. |  |  |  |  |  |  |  |
| Inhalation of fumes. | Glass and Pottery Technicians, Tutors.Harm caused by inhalation of hazardous fumes. |  |  |  |  |  |  |  |
| Inhalation of insulating fibres. | Glass and Pottery Technicians, Tutors,maintenance contractors. Risk of harm if unaware kiln contains damaged asbestos fibres. |  |  |  |  |  |  |  |
| Kilns and shelving not kept clean, and batts not checked. | Glass and Pottery Technicians, Tutors.Harm caused by inhalation, ingestion or skin contact with a hazardous substance. |  |  |  |  |  |  |  |

**Suggested guidance, actions / control measures for some of the hazards identified (this list is not exhaustive):**

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| --- | --- |
| Hazards: | Suggested guidance, actions / control measures (this list is not exhaustive): |
| Unauthorised access to kilns. | * Only trained staff can use electric kilns i.e. Pottery or Glass Technicians, Tutors.
* Students or other persons must not operate kilns.
* Ideally kilns should be in a separate room and secured, to which access can be restricted.
* If in teaching rooms, put kilns within a lockable cage, which can be opened from the inside.
* Ensure training records of Glass and Pottery Technicians, and Tutors are up to date i.e. when was this undertaken and who facilitated the training?
* Each kiln should have a log of all firing processes, this log must be retained for subsequent audits/inspections.
 |
| Incorrect use of the kiln. | Display operating instructions clearly in all kiln rooms including procedures for:* start-up
* operating
* shut down
* ventilation
* fault and issues
* emergencies.
 |
| Collection of glassware and pottery items | * Students and other 3rd parties must not remove any items from the kiln, these should be removed by the Technician or Tutor and placed in a drying area well away from the kiln.
* Technicians and Tutors must only open the kiln when the temperature has dropped to below 30 degrees centigrade.
 |
| Kiln faults/issues not reported. | * Technicians and Tutors must understand the procedure for reporting faults/issues and a record must be kept on file.
* Any issues identified must be fixed by a competent contractor and a record kept.
* Attach a sign ‘do not use’ to faulty kilns.
 |
| Incorrect disposal of an old kiln. | * Identify if there are any unused or faulty kilns which need to be disposed.
* The Asbestos Survey must be checked for the presence of asbestos containing materials in the kiln and if any found contact kenthelpdesk@skanska.co.uk
 |
| Radiant heat. | A warning sign should be visible when the kiln is firing either:* Kiln in use signage on the door.
* Or a double bulb bulkhead light above the kiln or kiln room door, fitted with red bulbs and wired into the firing circuit, so that the light is automatically on when the kiln is on.
 |
| Burns. | * Where possible, a heat lock should be fitted to kiln doors, so that they cannot be opened until the temperature falls to a safe level.
* The Technician or Tutor must only open the kiln when the temperature has dropped to below 30 degrees centigrade. The kiln must be sufficiently cooled before opening the kiln and removing any items.
* Tutors and Technicians operating kilns must be made aware of the action to be taken for any burns or electric shock and the poster ‘action to be taken for kiln burns or electric shock’ below must be displayed clearly in the kiln room.
* Protective gloves giving suitable thermal protection for the handling of hot ware after firing should be worn.
* Complete the KCC accident, incident or near miss reporting form if there is an incident.
 |
| Fire. | * The risk will depend on the siting of the kiln, especially the proximity to combustible materials, walls, and ceilings. Kiln rooms should have high ceilings and/or a heat shield and that adjacent floors, walls, ceilings, and shelves are made of (or covered with) non-combustible materials.
* Extractor fans, ceilings and floors above the kiln, or combustible materials carelessly stored near to it, may get sufficiently hot to char or ignite. Many kiln fires start at night.
* Remove any combustible materials or other items stored next to or near kilns.
* Place a carbon dioxide fire extinguisher just outside the kiln room or cage.
* Emergency procedures must be in place and followed should an incident occur.
* Complete the KCC accident, incident or near miss reporting form if there is an incident.
 |
| Electric shock. | * Opening the kiln door when it is switched on presents a high risk of electric shock, as does use of supply cables with insulation not able to withstand the high temperatures expected.
* The high operating temperature may lead to damage of the supply cables.
* Ensure all kilns have a convenient means of isolation from the electrical supply and is protected from over-loads and short circuit. Clearly label the main power switch.
* Ensure kiln doors are fitted with a fail-safe inter-locking device which turns off the power if the door is opened.
* All staff operating kilns must be made aware of the action to be taken for any burns or electric shock and the poster ‘action to be taken for kiln burns or electric shock’ below must be displayed clearly in the kiln room or nearby.
* Kilns must be serviced at intervals as specified by the manufacturer’s guidelines and maintenance undertaken when necessary.
* Complete the KCC accident, incident or near miss reporting form if there is an incident.
 |
| Inhalation of fumes. | * Electric kilns produce little by way of fumes, but hazardous fumes may be given off by some glazes, especially if firing is not at the correct temperature.
* Natural ventilation e.g. opening windows may be sufficient but is susceptible to outdoor conditions. A canopy hood above the kiln will more effectively remove fumes and heat but it may be necessary to ensure there is sufficient replacement air e.g. through grills in the room door or an outside wall.
* Kilns should have free air movement all around them (including above the kiln) and good access for servicing.
* Technicians or Tutors to wear appropriate PPE/RPE when using kilns.
* Technicians or Tutors to review the operating instructions to ensure the correct temperature is used.
* Ventilation/extraction fans to be switched on before starting work.
* For LEV systems a service and maintenance contract must be in place which is undertaken every 14 months. Records must be kept, and any actions/issues identified must be completed.
* Complete the KCC accident, incident or near miss reporting form if there is an incident.
 |
| Inhalation of insulating fibres. | * Some old kilns used asbestos fibre for insulation. Even low levels are carcinogenic and prolonged exposure may damage health in other ways. More modern kilns contain manmade mineral fibres, for which there is only limited evidence of a possible carcinogenic effect.
* There would be minimal risk during routine operation of the kiln, but exposure to the fibres might occur if the kiln were being dismantled or disposed of. The presence of asbestos fibres should have been identified by the asbestos survey.
* Check the asbestos survey to see if any asbestos containing materials have been identified in kilns being used.
* If any kiln contains asbestos, service/maintenance contractors to be advised before they commence work and must sign the asbestos survey to acknowledge this.
 |
| Kilns and shelving not kept clean, and batts not checked. | * The kiln must be serviced, inspected and cleaned regularly and kept properly maintained.
* Kilns must be serviced regularly by a suitably qualified contractor, in accordance with the supplier’s instructions.
* An RPE FFP3 mask, goggles and gloves should be used when sanding down kiln shelves.
* The kiln should be cleaned inside regularly. Grit and dust must be removed by an industrial vacuum cleaner fitted with a filter suitable for trapping silica dust and an RPE FFP3 mask, goggles, and gloves should be worn.
* Sanding down kiln shelves must be undertaken outside of the premises in an area well-away from pedestrian walkways and open windows/doors. Suitable sanding equipment should be used and RPE FFP3 mask, goggles, gloves, and disposable full protective overalls must be worn.
* Technicians or Tutors to visually check the kiln furniture, brick work and framework to ensure they are in good condition.
* Technicians or Tutors to check kiln batts are clean and in a good state of repair prior to loading. Surfaces to be kept clean to prevent settled dust becoming airborne.
* Keep records of inspections and any service and maintenance records on file.
 |

**Action to take for burns or electric shock.**

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| --- | --- |
| Burns to the skin. | Cool the affected area under a running cold tap for 20 minutes. |
| If serious burns to the skin occur. | Send for an ambulance. Cool the affected area under a running cold tap for 20 minutes. Watch for difficulty in breathing or faintness. Gently remove jewellery or watches which might be difficult to remove later if the limb swells. |
| Electric shock. | Send for a first aider immediately. Taking care for your own safety, break contact by switching off (or, if there is one, pulling out the plug).If it is necessary to move the casualty without switching off the supply, use a broom handle or wooden window pole or wear rubber gloves.If the casualty is unconscious and not breathing, check that the airways are clear and begin artificial ventilation. Send for an ambulance. If a trained first aider does not arrive quickly and the pulse is absent, consider carrying out cardio-pulmonary resuscitation. |

Contact your line manager and complete [KCC’s online accident/incident reporting and investigation form](https://kentcc-self.achieveservice.com/en/AchieveForms/?form_uri=sandbox-publish://AF-Process-e6a99e70-6315-489f-9ac6-4ee4886fcef6/AF-Stagec4d2c58f-628f-4fc6-8186-85339a2086cc/definition.json&redirectlink=/en&cancelRedirectLink=/en&consentMessage=yes) when possible.