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Resilience Solutions

An in-depth guide to hot works safety

How to identify and address the key
challenges organisations could face





An introduction to hot works

Hot works describes any process that involves the use of open flames or the local application of heat and friction. One thing that all hot works processes – from welding and soldering to grinding and torch cutting – have in common is the potential to create serious fire risk.

Many types of construction or maintenance projects may involve hot works, with roofing one of the most common examples. Whenever hot works take place, the potential risks to people and property are numerous, particularly when this activity occurs outside of an area designated specifically for the purpose of carrying out such works.

These risks could include:

- Fire damage
- Explosions, if sparks come into contact with combustible dusts or flammable gases
- Inhalation of fumes, especially when hot works take place in a confined space
- Burns

There are also additional risks that could be a consequence of a hot works incident, such as business interruption and reputational damage. Statistics show that hot works is one of the biggest fire risks property owners can face.

Zurich's claims data reveals that 15% of all fires in commercial and industrial properties are caused by hot works. Whilst all activities classed as hot works inherently carry a degree of risk, the dangers are often exacerbated by poor practices and processes.

These can include a failure to:

- Fully understand the nature of the works taking place and the specific risks they pose
- Select the right contractor to carry out hot works and to ensure safe systems of work are followed
- Remove all combustible materials from the site vicinity
- Ensuring fire watches are maintained for breaks and following completion of the work
- Establish proper procedures for dealing with an emergency

In this white paper, we discuss the best ways for organisations to manage risks associated with hot works – from the initial process of selecting a contractor right through to the project's final stages. We also introduce Zurich's Smart Permit, which provides an efficient web-based permit to improve Hot Work Management.

Please note, if your building has a sprinkler system, then hot work must always be avoided whenever your system has been isolated.





What to do before hot works begin?

Before a contractor has even been chosen, there are a range of simple checks that organisations can undertake to reduce some of the most common hot works risks.

Are hot works essential?

Whilst this white paper aims to help organisations manage risks associated with hot works, it is always worth considering whether there are any safer alternatives before embarking on any construction or maintenance project.

Depending on the complexity of the project, it may be possible to avoid processes that generate significant heat or sparks, and which could subsequently create a fire risk.

For example, it may be possible to complete certain cutting tasks using hand or electric saws, or pipe cutters, while hand filing may be an alternative to grinding. For roofing work, cold adhesive-applied roofing systems are available for both whole roof replacement and patch repairs.

It is also a good idea for organisations to ensure that policies and procedures make it clear to employees and contractors that alternative methods to hot works should be used wherever possible. If it is not possible for alternative methods to be used, organisations should ask their contractors to explain the reasons why.

Recently, Zurich's Major Loss Team handled a multi-million pound loss involving hot works. Investigations suggested the contractor involved had been recommended to use cold works where appropriate, but decided to proceed with hot works, without giving an explanation.

Choosing a contractor

It is extremely important to carefully vet any contractors being considered for a hot works project.

Stewart Powell, Major Loss Team, Property, Zurich, says: "Any organisation choosing a contractor needs to think about much more than just price. They need to carry out checks and exercise due diligence to find out the level of expertise that contractor has in relation to the work they are being engaged to undertake.

"Employers should also be aware that, if third-party property is damaged as a result of a hot works incident, they could potentially find themselves vicariously liable for any losses, if they had made insufficient enquiries to satisfy themselves that the contractor was competent to carry out the works."

The boxout on the right lists some of the most important questions to consider when choosing a contractor.

Before selecting a contractor

- Does the proposed contractor have adequate public liability insurance, and checked the terms of any hot work warranty which may have been applied?
- Have insurance certificates and test certificates for their equipment been checked?
- Have examples or references of previous work been requested?
- Has evidence of membership of the National Federation of Roofing Contractors (NFRC) or LRWA or SPRA?
- Is it clear if, and how, subcontractors will be used?
- If so, have assurances been received about how subcontractors will be approved and managed, and similar checks for their PL insurance and any hot work warranty?

After selecting a contractor

- Have the name and contact details of the individual who will be responsible for safety been logged?
- Have contractors been given full details of safety arrangements on site?
- Has a site specific work area risk assessment been completed, within 10m (35 feet) of the work area?
- Have procedures for regular monitoring of work been established?
- Have named fire watchers been provided to cover both breaks during the day and the final fire watch period?
- For torch applied roofing work: has an assessment been completed in accordance with the Safe2Torch scheme run by the NFRC?



Hot works insurance considerations

Organisations should be aware that the way a hot works project is managed could have important insurance implications in the event of a loss.

In many projects involving hot works, it is common for contracts to stipulate that insurance is taken out jointly in the name of the employer and the contractor.

Whilst joint-name policies can have benefits for both parties – such as keeping costs down and reducing the administrative burden – they also have important implications for how potential negligence claims are handled.

Powell says: “If we are insuring on a joint-names basis, we may be precluded from pursuing a claim against the contractor for damage to property if the loss occurs as a result of their negligence.

“This could affect an organisation’s claims experience. Imagine, for example, there was a fire at a school, leading to losses totalling £5 million. If it was not possible to recover any of those costs from the contractor’s insurer, then the school’s insurer would have to settle the claim in full.

“This would negatively affect the school’s claims history and could increase the size of their future premiums.”

If offered a contract that includes reference to joint names, organisations should seek legal advice to understand the implications concerning rights of recovery and insurance arrangements prior to any agreement being reached.

If contractors are arranging insurance independently, organisations should seek to establish whether there are any conditions that must be met in order for that policy to respond.

For example, many public liability policies include a Hot Works Warranty, setting out certain minimum requirements that must be adhered to, such as the provision of fire extinguishers and fire detection equipment.

Zurich is aware of instances in which liability insurers have refused to provide an indemnity to contractors after discovering a breach in the Hot Works Warranty.

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Establishing a hot works permit system

Developing and adhering to a hot works permit system is the best way to minimise risks associated with hot works. Careful management of contractors is key to ensuring the permit system functions as it is supposed to.

After deciding to proceed with a construction or maintenance project involving hot works, and choosing a contractor, the next step is for the appointed Responsible Person to put in place procedures to manage and supervise the contractor to ensure the work is managed safely. Establishing a hot works permit system is an essential part of this process.

A Hot Work Permit should provide details of:

- Who will be carrying out the work (staff or contractors)
- What the work will involve
- Hazards identified and actions taken to remove them (e.g. flammable liquids, combustible materials, and the presence of voids or other openings)
- Fire watch procedures
- Site inspection procedures
- Emergency procedures
- Identify safe working procedures for the type of work e.g. compliance with the Safe2Torch guidance for torch applied roofing

Zurich have created a specific Hot Works Permit which is available as part of the Zurich Smart Permit web application. [Click here](#) to find out more information and to request access.

A Hot Work Permit should also include a general site risk assessment, to help ensure hot work is only carried out in safe and appropriate locations. Each part of the site should be categorised as follows:

- Designated area – a permanent place specifically designed and intended for hot works
- Non-designated area – a place not designed for hot works, where a written permit is required
- Prohibited area – a place where hot works should never be permitted, for example, due to the presence of, or proximity to, combustible materials that cannot reasonably be removed.

Organisations should also consider what measures they have in place to protect their premises from unwanted intrusion. Fire risk assessments should identify any weaknesses in site security that could leave property (including equipment for detecting and fighting fires) vulnerable to accidental or malicious damage – for example gaps in perimeter fencing or faulty security lights.

Why is a Hot Work Permit system essential?

- It is required in most property insurance policies
- It helps organisations meet legal and regulatory requirements
- It ensures organisations and contractors understand exactly what the work will involve, and when and where hot works can take place
- It ensures that organisations/contractors consider possible alternatives to hot works
- It ensures that organisations/contractors are aware of the full range of risks, e.g. presence of flammable materials in surrounding buildings
- It ensures essential safety procedures are observed – e.g. provision of firefighting equipment, and the provision of named fire watchers to monitor the area for hot spots or the signs of fire





Monitoring ongoing hot works

It is important that organisations have robust procedures for ensuring the Hot Works Permit is adhered to, even if the contractor is managing the permit directly.

Zurich's Major Loss Team have handled a number of claims relating to hotworks fires at schools, with losses of between £5.75m and £18.5m. At least three scenarios involved a failure to adhere to a Hot Work Permit. In one, there was no permit in place at all, while in the other two, the permit was being managed by the contractor without proper oversight

Powell says: "Hot Work Permits stipulate that when the work involves torch-applied roofing, a 120 minute fire watch is advised. In one claim we are handling, we believe the contractor left before 60 minutes had elapsed; had they stayed, the damage could have been reduced significantly.

"In another case, we discovered that the person signing off the permit was the same person who had issued it, which raises obvious questions about the oversight of that permit."

Organisations face a number of challenges to ensure contractors adhere to the Hot Work Permit system. The first is that by employing a contractor in the first place, an organisation is acknowledging this third party has greater skills,

expertise and knowledge in relation to hot works and the associated risks than it does. This is why robust contractor checks (as discussed earlier) are so important.

Keeping an eye on things

Secondly, an organisation can only have oversight of the Hot Work Permit system if it has somebody physically on site.

Powell says: "It's easy to see why this can be a challenge for organisations, especially if the work is taking place at weekends or at other times when somebody would not ordinarily be on site.

"You can understand why organisations might be reluctant to send somebody along at 6.30am on a Sunday to sign off a Hot Work Permit, and then have them wait around all day so they can monitor the work and sign off the permit again at the end of the day.

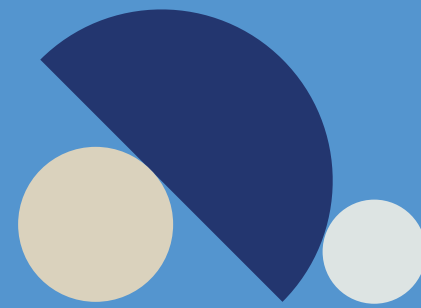
"However, as an insurer we know that if an organisation does have somebody on site the risks are reduced considerably. And it's always worth remembering that the value of the works taking place bears no relation to the potential damage that could be caused if a fire breaks out. You could have £60,000 worth of works taking place, but if a fire takes hold and spreads quickly, you could be left with several million pound's worth of damage."

The final challenge is to identify the right person within an organisation to monitor the performance of the hot works permit system.

Powell says: "It has to be somebody who can be on site every day and who has detailed knowledge of the buildings and site layout. Organisations should also consider whether this individual needs any additional training or guidance to carry out this role."

There may also be a need to consider additional support or guidance for contractors, such as site induction training to familiarise them with the layout of the premises and its evacuation points and procedures.

Paper permits are often the root cause of some of the issues mentioned here, Zurich's Smart Permit solution provides a more efficient and accountable process for managing hot works. More information on this tool is available on the next page.





Zurich Smart Permit

Zurich Smart Permit was co-created with customers and contractors and is a web-based solution for managing permits associated with construction and maintenance work, removing the need for paper permits, and providing a reliable audit trail.

- » By simply scanning a QR code and digitally answering permit questions, the contractor can quickly send a comprehensive permit to the site manager for approval from their mobile or tablet
- » The online dashboard conveniently stores all the permit information for site managers, offering a one stop shop to approve, deny, view and report on permits across multiple permit types and site locations
- » Smart Permit provides a real-time view of all work taking place including work status updates, permit extensions, and photos of the work
- » Intelligent SMS and email notifications are used to keep all parties up-to-date
- » The Smart Permit application has been designed by experts in risk management and will help organisations manage any works with their contracted suppliers in a seamless, easy, and auditable manner.

Smart Permit is currently available free of charge to customers with properties insured by Zurich.

Eligible customers can register for Smart Permit by completing this short form:

<https://www.zurich.co.uk/business/our-expertise/risk-engineering/smart-permit/registration>

Once you've registered, you will receive an email from Okta prompting you to create a password for your account. You can then log-in and start using Smart Permit.

For more information, you can [visit our website](#)

If you have any question or require any assistance, please get in touch via smartpermit@uk.zurich.com.





Preparing for an emergency

If a fire should occur, it is important to understand what action to take to minimise losses and reduce the risk to property and life.

Incidents can also lead to significant business interruption, reputational damage and/or regulatory action.

Whilst the guidance outlined here aims to help reduce the risk of any such incident occurring, preparations should be made for a possible fire or other emergency resulting from hot works.

A Hot Work Permit should list some of the initial actions to take in the event of an emergency. However, emergency procedures should also address the following questions:

- Will there be a fire watch supervisor on site with fire-fighting equipment at all times whilst work is carried out (including breaks and shift changes)?
- Clear instructions in place for calling the Emergency Services
- Have those people responsible for using fire-fighting equipment been given sufficient training/instructions on its use?
- Is this fire-fighting equipment inspected/tested regularly?
- What fire detection/alarm systems are in place, and how regularly are these tested/inspected?
- Have you ensured that only detectors/alarms in the immediate vicinity of hot works are isolated whilst these works are taking place, and that all other detection equipment remains switched on?
- Is there a clear exit/evacuation strategy?
- Are measures in place to ensure emergency exit routes remain clear at all times?

How we can help

If you are undergoing a programme of hot works, please contact us to let us know of any planned developments, and forward this whitepaper to any of your colleagues who are responsible for managing contractor relationships when works are in progress.

[Visit our Smart Permit web page](#) to find out more about that solution and to complete the easy sign up process.





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For more information please visit: <http://www.zurich.com/riskengineering>

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