

Keeping your plastic production fantastic

Some of the biggest risks in plastic manufacturing include exposure to heated materials, and the use of flammables and other hazardous substances – and loss of production from fire can be catastrophic. Establishing and carrying out simple routine maintenance and housekeeping controls can reduce the risk.



Dealing with hazardous substances



Storage and mitigation of environmental impacts.

Best practice

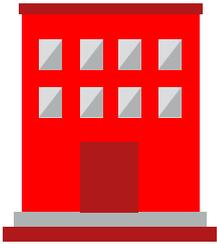
- Take particular caution when storing bulk plastic granules and pellets. High stacking piles and product combustibility can be a significant fire and impact damage risk.

Must haves

- ✓ Chain gas cylinders securely in place.
- ✓ Check if the quantity of LPG used on site needs certification and make sure you stick to any safety precautions, requirements under this certification.

- ✓ Separate non-compatible substances, limit quantities to a minimum when you can, and check if HSNO certification is required.
- ✓ Handle hazardous substances appropriately and safely. While you can keep small quantities in dangerous goods cabinets, larger quantities must go into a dangerous goods store or separate area in the building.
- ✓ Store raw materials away from your operating plant and equipment – noting that bulk liquids like lubricants, fuels and cleaning fluids should be in a bunded area to prevent offsite leaks.
- ✓ Make spill kits readily available to ensure spills are cleaned and removed from the site immediately.

Building and machinery maintenance



Routine controls to minimise fire, damage and security risks.

Machinery and tools

Must haves

- ✓ Use seismic strengthening on storage racking systems, containers, vessels, overhead machinery and extraction plants.
- ✓ Conduct checks and maintenance on critical machinery and tools – and don't forget to check thermostats where they're fitted.
- ✓ Take stock of critical spare parts and keep them well secured.

Electrical and lighting

Must haves

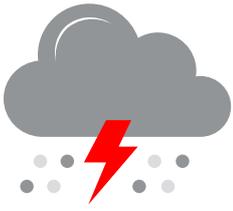
- ✓ Do annual thermal imaging of electrical switchboards and associated equipment.
- ✓ Tag and test portable equipment.
- ✓ Limit the use of multi-plug electrical adapters (they're easily overloaded and can cause fire), likewise extension leads and power boards (never use if damaged).

Outside the building

Must haves

- ✓ Doors and windows (plus locks, latches and hinges) must be sound and tightly secured to the building.
- ✓ Secure roller doors after hours. For motorised doors, lock the electric open/close switch with a PIN. For manual doors, padlock a chain to the building or door frame.
- ✓ Clear and clean external building cladding (including roof, stormwater guttering and surfaces), and repair impact-damaged or corroded surfaces.
- ✓ Clear obstructions in yard areas around stormwater drains and run-off points.
- ✓ Clean out collection separator sumps/tanks.
- ✓ Keep fences in good condition to prevent unauthorised site access.

Weather watch outs



While you can't control wild weather, you can reduce the risks that come with it.

Best practice

- Be aware of what weather or flood events are likely to affect your building or business. This can help you plan what needs to be done.
- Keep trees and shrubbery well-trimmed, and remove diseased or damaged limbs. Ask a professional arborist to assess and strategically remove branches to allow wind to blow through the trees.
- Protect water and other pipes from freezing using insulation, or install heat tape.

- Remove snow and hail from gutters as soon as it's safe to do so. This will reduce the possibility of subsequent rain overflowing gutters.

Must haves

- ✓ Ensure the building is well maintained, that walls and roof are watertight. Make sure doors and windows are close fitting.
- ✓ Make sure gutters and down pipes are not blocked by leaves or rubbish. Check before the winter season, or more frequently if needed.
- ✓ Inspect channel drains, yard storm water outlets and sumps and make sure they are all free-flowing and that curb side gutters are not blocked by leaves and rubbish.

Cleaning operations



Clearing away the combustible and other safety essentials.

Must haves

- ✓ Clear pathways and create spaces so forklifts can move around machinery and storage facilities.

- ✓ Keep fire exit doors clear.
- ✓ Clear combustibles from heating facilities and surfaces.
- ✓ Follow standard procedures (and manufacturer's instructions) when operating and cleaning plants and machinery.

Forkhoists and goods-handling equipment



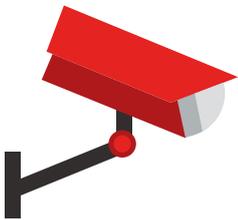
Moving with safety and what to store where.

Must haves

- ✓ Store battery chargers away from the main storage area, ideally in a fire rated room. The area around chargers should be clear of combustibles.

- ✓ Ensure operators of forkhoists and goods-handling equipment are properly trained and certified if required.

Site and perimeter security



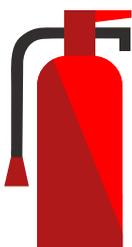
Control access to the site and key areas within it.

Must haves

- ✓ Install a monitored alarm system with a security patrol response. Maintain it annually.
- ✓ Put CCTV inside and out – think motion sensing and infrared to cover stock stored in yards and for image clarity in low light.
- ✓ Keep intruder alarm sensors clear of obstructions.

- ✓ Consider random security patrols after hours.
- ✓ Install a well-secured perimeter fence around your site and good quality padlocks on the gates.
- ✓ Check fenced yards regularly for breaks.
- ✓ Keep stock, wooden pallets and anything intruders can climb onto at least 1m clear of the fence line.

Getting the fire risk down



Stopping fires early to prevent significant loss and damage.

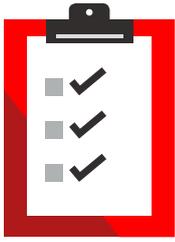
Best practice

- Have the right amount, type and size of fire extinguishers in easily accessible positions.
- Train staff in the use of fire equipment and have a tested fire evacuation system in place.
- Have a fire extinguisher on hand so you can get small fires under control quickly. It can also buy you more time to evacuate everyone safely.

Must haves

- ✓ Install a fire sprinkler system throughout (compliant to the industry standard – NZS 4541) or a monitored fire detection system equipped with smoke or heat detectors (compliant to NZS 4512) or alternatively linked to an existing monitored intruder alarm.

Good management controls



With suitable controls in place activities that could result in a fire or loss can be managed. These include:

Best practice

- Before leaving at the end of the day, take a look around all of the areas to see that everything's as it should be.
- Training staff, occupants, etc. to use and operate plant and equipment according to the manufacturer's guidelines.
- Maintaining the building, building systems, plant and equipment regularly.

Must haves

- ✓ Ensuring housekeeping standards are maintained both internally and externally
- ✓ Ensuring there is a robust self-inspection routine in place – a simple look around all areas to see that everything is as it should be.
- ✓ Enforcing hot work and safety lock-out controls – for example where cutting, welding or grinding, or when machinery or the plant is inoperative for maintenance.
- ✓ Having a proper procedure in place if fire systems – like sprinklers – are out of action for more than a few hours.
- ✓ Limiting any smoking to a designated area that's free of any waste bins and equipped with proper bins for throwing away cigarette butts.

Watching out for water damage



With routine checks and a proper plan, the risks can be seriously reduced.

Best practice

- Plumb washing machine and dishwasher outlets into the wastewater pipe, not simply with the waste pipe hooked over a sink.

Must haves

- ✓ Know where the water shut off valve(s) are for the water supply. Where possible, shut off the water supply during extended shutdowns or when not needed e.g. over the summer holidays or in an unoccupied building.
- ✓ Ensure flexi-hoses are checked regularly and replaced if showing signs of damage – or every 10 years otherwise.
- ✓ Check shower enclosures for signs of deterioration, especially to the wall boards/tiling.
- ✓ Inspect plumbing, water pipes and waste lines for leaks, damage or corrosion. Check that all basins, tanks, etc have overflow facilities. Process tanks should be banded.
- ✓ Check and clean the roof regularly. This is important before the winter season and after storms. Pay attention to membrane-style roof coverings as these have a limited life and can be affected by environmental exposures.
- ✓ Check flashings where the walls and roof meet, and also pipes and skylights where they penetrate the roof covering.

Keep business going smoothly



Managing through change and interruptions.

Best practice

- Have an independent professional evaluation of the vulnerability of your cyber-security, especially if you're maintaining confidential records such as a customer contact and bank account information, or you connect to external providers via the internet (e.g. customers, graphic design studios).
- Develop a Business Continuity Plan – this could include the replacement of key plant/machinery/raw materials/storage facilities, or the setting out of production contingencies.

Must haves

- ✓ Back up critical data including digital records at least weekly and have them stored off site (e.g. cloud services).
- ✓ Install and regularly update computer antivirus protection.
- ✓ Keep important paper records in a fireproof box or cabinet.
- ✓ Make critical spare parts of plant and equipment easily available and identifiable to make sure there's a continued workflow in the factory.

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