

Glass breakage management guidelines for best practice in greenhouses

Introduction

Whilst modern glasshouses built since around 2015 have safety glass and all replacement panes are now fitted with safety glass, more than 80% of glasshouses in New Zealand were built before 2015. Thus, the greenhouse industry recognises the potential for injury from fallen glass to workers as well as the potential for pieces of glass to end up in crops going to market. This best practice guideline has been developed to share good practice ideas with the wider industry with input from NZHH, T&G, Southern Paprika, NZG, Grower2Grower, TomatoesNZ and Vegetables NZ.

Scope

This document provides information on current practices being used in New Zealand greenhouses and is provided as a guide only. Any practices undertaken by a grower will need to be adapted to best fit a site's operational requirements.

Site best practice

In a sudden event:

- If a sudden event with potential to cause glass breakage (e.g. earthquake; high wind/tornado, hail, vent gearbox failure) occurs, staff in the glasshouse should seek protection by putting a plastic crate overhead, or under shelter of sun covers (such as on a high trolley or shade cloth).
- If shade cloth is used over pathways or in the middle of a glasshouse, staff should move to seek protection in this area. [NB: Shade cloth should be clear in colour]

Strong winds:

- Strong winds (wind level measured at 10+ metres per sec) should be actively monitored and evacuation of the greenhouse considered by the person in charge.
- For older greenhouses, if the wind level is above 12-13 m/s evacuation is recommended based on site procedures. For newer greenhouses, 20m/sec would trigger an evacuation.
- Wind direction should be accounted for and monitored with a windsock or other visible means on site.

Maintenance:

- Ventilation system gearboxes should be replaced at scheduled intervals, as per manufacturers recommendations. Annual inspection of gearboxes to check for wear & tear is recommended, and this should be added to the site hazard register as practicable.
- Regular checks of the framing and signs of glass damage should be conducted on a monthly basis, and after events that may have caused damage, by a trained person. This should include checking the glass pane arms/push rods to ensure the pins holding onto the frame are intact. If a pin has fallen out a process of checking all the arms/pins is required.
- Refer Roof washing management document – recommended glass checks are part of the site internal washing procedures.

After a weather event:

- Isolate the area with the glass damage.
- If a glass pane is broken use a specialist glass contractor (e.g., Apex, CMS) to replace the glass if one is available otherwise see below.
- Prior to a contractor doing this repairs, a Job Safety Analysis (JSA) must be completed.
- During the job a spotter should be used who can stop further work if a hazard/potential is incident noted.
- If site trollies are being used by a contractor, training will be required prior to use.
- Contractors and any staff handling glass should wear correct Personal Protective Equipment (PPE) such as chainmail or similar glass resistant jackets, leather gloves, hard hats etc. Check contractors Health & Safety procedures before they start the work.
- For a glass crack, growers may make a temporary repair (e.g. with silicone) themselves, while waiting for a glazier to replace the pane, or they may even complete the replacement themselves.
- A JSA and correct processes need to be followed as above (PPE, having a spotter etc) and the safety glass should be used as a replacement.

Site contamination policy:

- Consider having a site contamination policy for glass breakage with an isolation component. This should involve having a containment area from where the last piece of broken glass is found and then going 1.5mtr beyond that point; all fruit in this area should be deemed contaminated and entry restriction put in place whilst it's managed and the fruit (2mm and bigger) is removed.

For further information:

See the Worksafe website <https://worksafe.govt.nz/> and specifically the section on Horticulture here: <https://www.worksafe.govt.nz/topic-and-industry/horticulture/keep-safe-keep-growing-how-to-be-healthy-and-safe-in-horticulture> which includes JSA templates and other guidance.

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