



Risk Management Considerations for Outdoor Entertainment Stages

Outdoor festivals are popular events during warm months. They draw in large number of people and are a lot of fun to attend. In the last decade, at least six outdoor entertainment stages have collapsed during an event.

For the most part, stage construction/assembly and weather play a large part in how safe the stage is. A sudden storm or a weak frame can have tragic results. In order to keep large stages manageable and easy to transport, they are constructed in pieces and sections vs. small stages that are raised using hydraulics. This means that they are more susceptible to falling apart should wind speeds pick up.

One of the large stage collapses occurred when strong, straight line winds resulting from microbursts ripped through the area. Microbursts are usually accompanied by rain or hail. In this particular instance, Environment Canada issued a weather warning, but the event organizers didn't have enough time to react by taking down the wall fabric. This resulted in numerous injuries.

Later it was learned that wind velocities exceeded the design parameters of the stage. It is important to note that building codes do not adequately address the area of outdoor stage construction.

If you are hosting an event where a stage is needed, consider the following criteria to help reduce your exposure to a stage collapse:

- Do a background check on the supplier from whom you are renting the stage.
- Ask the supplier about their safety history and policies and procedures.
- Installers should have adequate training and experience erecting stages.
- A qualified person should inspect and sign off on the installation prior to use.
- The installation and inspection of the bracing is crucial to the stability of the stage.
- The welded structural members should be inspected for weld cracking on a regular basis.
- Ensure that manufacturers have individual component certifications (ULC, CSA, CWB, NFPA).
- Stages are constructed and disassembled frequently. This can result in potential damage to structural members.
- Inspection during teardown and assembly should be supervised.
- Check that the hold down concrete block elements that resist uplift are in the correct location.

- The director and organizer of the event should be aware of the design criteria of the stage.
- Be aware of the maximum weight load capacity of the stage. This load can quickly be exceeded when crowd members are invited on, or decide to climb on, the stage. Someone should monitor this and be prepared to take the appropriate actions.
- Have decision making criteria in effect based on weather warnings issued by Environment Canada.
- Have a qualified engineer inspect and give final approval.
- Don't forget to ensure that all wires running across the ground are secured and protected.

Choosing the Stage Site

- Is the stage site adequately drained? If the site is liable to flooding, this could cause either the load bearing capacity of the ground to be reduced or wash away the ground under the supports. This is especially important if you are hosting a multiple day event.
- Is the stage site flat or can it be made flat? Where the ground is uneven, the stage needs to be modified.
- Are overhead power cables near the stage?
- Does the proximity of surrounding buildings and/or structures create a risk in relation to the possible spread of fire?

Risk Mitigation

In addition to implementing the above noted criteria, you should also ensure that your contract contains a hold harmless/indemnification clause which transfers responsibility back to the stage supplier. It is also important to validate proper and adequate insurance coverage when signing the contract.

Emergency Plan

Remember to create and communicate an Emergency Plan to your staff and volunteers. If a stage collapse, or other emergency occur, what steps need to be taken to ensure that everyone remains safe? Have an escape route planned and post signage in highly visible locations (around concessions, washrooms, first aid station, entrances and exits) about what to do in case of an emergency.

Lessons Learned

Since these stage collapses have occurred, promoters have strengthened their stages and improved how they gather and distribute weather information. They now look for advanced information so they know if a storm is tracking towards the festival/event. They try to get as much information to the fans through the use of jumbotron advertisements, PA stage announcements and through a texting system.