

RISK CONTROL: Bleacher Safety Best Practices

This guide shares best practices for reducing injury risks posed by bleachers, which must receive regular, documented inspections and maintenance.

Like any equipment, bleachers can rust, corrode, and deteriorate over time. They are also at high risk of vandalism. Yet both indoor and outdoor bleachers often are overlooked when it comes to inspections and maintenance.

Common Bleacher Types

- **Portable bleachers** are smaller, measuring about 20 feet wide and four to five rows deep. Portable bleachers can be moved to accommodate different activities.
- **Permanent bleachers** are large structures typically used alongside football or baseball fields.
- **Telescopic bleachers** typically are used in gymnasiums and can be closed to allow access to the entire gym.



Bleacher System Hazards

Bleacher-related injuries are typically caused by falls between the seats and floorboards, between guardrails, or from collapsed bleacher sections. Scheduled inspections, repairs, and the use of nonskid surfaces on floorboards, stairs and walkways can help reduce slips and falls.

Fall Risk

Most injuries are associated with one of the following:

- Missing or defective guardrails on the sides, the back, or the front (if elevated)
- Large openings between components, typically between the seating and the guardrails or between seats and floorboards, that are big enough for a child or adult to pass through
- Excessive guardrail space (e.g., between the bottom rail and the mid-rail)
- Unprotected spaces between guardrails (open areas neither fenced nor provided with vertical rails)
- Access steps to seating: missing or no handrails for support
- Structural collapse or tipping of the structure, caused by a failure to properly install or anchor the system
- Incomplete work that creates hazardous areas not protected or secured between work shifts

Structural Collapse Risk

Misinformation can lead to design flaws. When choosing bleacher systems, take into consideration their planned use, including where they will be used, the age of users, maintenance, and snow- and ice-loading conditions.

Bleacher sections and entire bleacher systems can collapse because of:

- Design flaws
- Manufacturing and installation flaws
- Missing fasteners
- Deterioration or corrosion
- Sabotage
- Natural disasters
- Damage by vehicle (forklift or truck)
- Excessive loading or misuse (see static and dynamic loads below)

Static and Dynamic Loads

Check with the manufacturer and local building inspector or fire department to determine your bleachers' occupancy limits.



Static loads:

Each bleacher system is designed to hold a certain amount of weight; i.e., a static load. If overloaded, bleachers can fail or tip over.

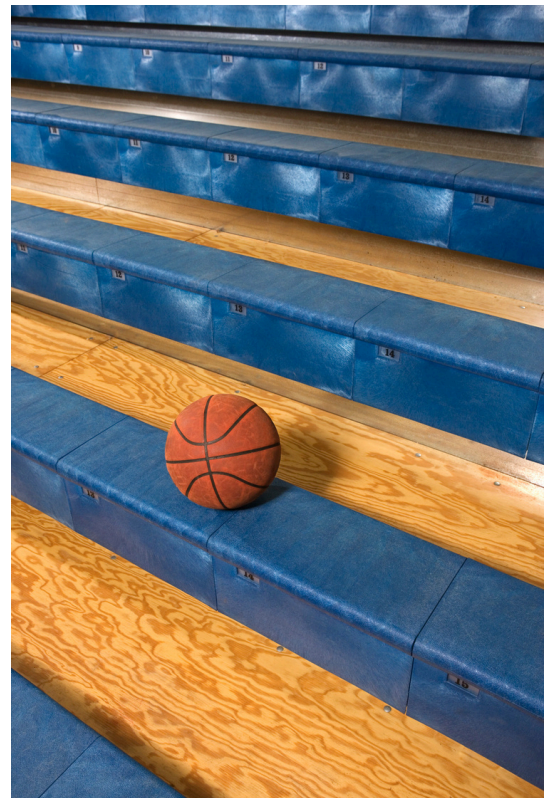


Dynamic (live) loads:

When people stamp their feet or jump in bleachers, the system experiences a tremendous live, or dynamic, load. Nuts, bolts and welds can loosen or crack over time from live loads. Bleacher system inspections are recommended on at least a quarterly basis because of the stress caused by dynamic loading.

Reduce Injury Risk When Retrofitting Bleachers

- To help reduce injury risks, follow the Consumer Product Safety Commission (CPSC) guidelines available online at www.cpsc.gov/s3fs-public/330.pdf.
- CPSC recommends consulting a licensed professional to help assess your bleachers and design a custom retrofit solution. The type of retrofit needed will depend on a number of factors such as material type, weight, how they are anchored, age, local codes, and condition.
- In addition, a professional engineer, architect, or manufacturer's representative should inspect bleachers every two years according to the CPSC.
- Be wary of free bleacher "gifts" from other schools or recreation departments as they may not meet current codes and CPSC-recommended guidelines. Typically these sorts of gifts cost more to retrofit and maintain than new bleachers.



Inspections and Maintenance

Wood and aluminum bleachers should be inspected by the school or other public entity every quarter, and repairs should be made immediately.

The inspection should identify structural damage to or deterioration in:

- Supports
- Bracing
- Seating boards
- Steps
- Railings
- Fencing
- Mechanical fasteners (check torque)
- Welds (check for cracking or rust)

Documenting Inspections and Repairs

Document all inspections and repairs. Include:

- The date of the inspection
- The signature of the person conducting each inspection

The bleachers will eventually need to be replaced. Strictly follow the manufacturer's guidelines regarding useful life maintenance of bleacher systems.

National Codes

Before purchasing a bleacher system, check with the local building inspector to confirm applicable building codes and requirements for bleacher system design, materials, placement, maintenance, and safety controls (e.g., securing or anchoring the structure against tipping, capacity loadings, and inspections). When retrofitting or purchasing new bleachers, use a reputable company that is familiar with the appropriate building codes and CPSC standards.



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Risk Control: Quarterly Bleacher Maintenance Inspection Checklist

BLEACHER TYPE:	NAME OF INSPECTOR:			
BLEACHER LOCATION:	SIGNATURE OF INSPECTOR:			
DATE:				
Inspection Item	Yes	No	N/A	
Are stairways, ramps, and aisles dry and free of debris?				
Are wooden seats splintering or missing screws or hardware?				
Are metal seats capped properly?				
Do metal seats have exposed sharp edges that could cause a cut?				
Are safety rails on the back of the bleachers properly secured, with all connection points checked?				
Are all handrails properly secured?				
Are seats and footboards securely fastened?				
Is any bowing present in floorboards or seats?				
Are there signs of corrosion or rot on structural supports, floorboards or seating?				
Are fasteners made of corrosion-resistant materials?				
Do fasteners show signs of rust or damage?				
Are all welds intact, with no cracking?				
Are any cross braces damaged or loose?				
Are aisles clearly marked and accessible?				
Do aisles have nonskid surfaces secured, with no peeling?				
Are footings intact with no signs of rust or settling?				
Is lighting adequate and working properly?				
Does all electrical wiring appear to be in good condition?				
Is an electrician needed to check or repair wiring?				
Are wheelchair access areas in good condition, and do they meet ADA requirements?				

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