



Other preparations to consider include:

Written engineering survey – every structure being considered for demolition should be surveyed to determine the condition of the framing, floors and walls, and to determine the possibility of any unplanned collapse. Any damaged structures that employees must enter need to have the walls and floors braced or shored. Otherwise, inspect and maintain all stairs, passageways, and ladders, and maintain adequate lighting throughout.

Cut off service lines – all electric, gas, water, steam, sewer, etc., lines should be disconnected through communication with the appropriate utility companies. Any essential utilities should be relocated and protected.

Demolition work involves many of the same hazards associated with construction work. However, demolition also poses additional hazards due to unknown factors such as:

- deviations from the structure's original design,
- approved or unapproved modifications that altered the original design,
- materials hidden within structural members, and
- unknown strengths or weaknesses of damaged materials

To counter these unknowns, all personnel involved in a demolition project need to be fully aware of these types of hazards and the safety precautions available to control these hazards.



Preparation

Before starting a demolition, the persons in charge must adequately prepare for the task with regard to the health and safety of the workers. These preparatory operations involve the overall planning of the demolition job, including the methods to be used to bring the structure down, the equipment necessary to do the job, and the measures to be taken to perform the work safely. Before doing demolition work, inspect available personal protective equipment (PPE), and select, wear and use the PPE appropriate for the task.

Hazards present – test pipes, tanks, or other equipment on the property that has been used with any hazardous chemicals, gases, explosives, and/or flammable materials, and purge those hazards. Also check for any other hazardous materials throughout the building, such as asbestos.



Openings – any wall opening should be guarded up to at least 3.5 feet. Floor openings should be covered and secured with a material that won't break if stepped on. If floor openings are being used for disposal of material, the opening shouldn't be any larger than 25% of the total floor area. Any holes used to drop debris, without the use of chutes, should be completely enclosed with barricades. If chutes are used, they should have gates at the end and be constructed to withstand the loads likely to be imposed.

Source: Texas Department of Insurance, Division of Workers' Compensation

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Signage – at every level, signs should be posted to warn of the hazard of falling materials. Entrances to multi-story structures should be protected by sidewalk sheds or canopies. Sheds or canopies should ideally be at least 8 feet long and 2 feet wider than the entrance, and they should be able to hold at least 150 pounds per square foot, in case falling material lands on top.

Removing Walls and Masonry Sections

When demolishing exterior walls and floors, always begin at the top of the structure and move downward. The engineering survey completed should provide the safe carrying capacities of the floors – when demolishing masonry walls, they shouldn't be allowed to fall in masses that would exceed that capacity. This will help to prevent floors caving in.

Unless a wall was originally designed and constructed to stand without lateral support, none should be permitted to stand alone without lateral bracing. At the end of each work shift, all walls should be in stable condition.

No structural or load-supporting bracing should be removed until all stories above the floor it's on have been removed. For "skeleton-steel" constructed buildings, the steel framing can remain in place while masonry is removed. Once masonry is removed, steel construction can be dismantled column length by column length, and tier by tier.

While demolition is taking place, walkways or ladders should be provided to enable workers to safely reach or leave any scaffold or wall. Walls meant to serve as retaining walls to support earth or adjoining structures shouldn't be demolished until the supporting earth has been properly braced or until the adjoining structures have been properly underpinned. Walls meant to serve as retaining walls for storing debris shouldn't be used unless they can hold the imposed load.

Mechanical Demolition

Workers should never be permitted in an area where a crane's headache ball or clamshell is being used to remove debris. Only those necessary to perform such operations should be permitted. Use the shortest possible crane boom and loadline and ensure the ball is attached to the loadline with a swivel-type connection to prevent twisting. There should be no way for the ball to become accidentally disconnected.

When pulling over walls or removing portions thereof, all steel members affected must have been previously cut free (if applicable) and all roof cornices or other stonework should have been previously removed. Throughout demolition, a competent person should be continuing inspections to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

For more information on other construction and work safety topics see the Service Lloyds website. In Risk Control's Training Materials section, we have additional resources including:

- Excavation Safety
- Asphalt Safety
- Industrial Hygiene
- Hurry Up Can Hurt – Toolbox Talk

Remember to practice Safety; don't learn it by accident.

*For additional assistance, please contact
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Source: Texas Department of Insurance, Division of Workers' Compensation

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