

Demolition and Damaged Structures

Demolition involves the dismantling or tearing down of buildings and structures. It can range from small-scale renovations to large-scale demolitions of multi-storey buildings. While modern demolition relies heavily on mechanical methods, manual tasks are still required, exposing workers to hazards such as musculoskeletal disorders (MSDs), falling structures, dust, asbestos, lead, noise, and falls from heights.

Regulatory and Safety Standards

In Saudi Arabia, demolition work must comply with relevant regulations and industry best practices. These regulations require:

- Pre-demolition surveys to identify hazards such as asbestos, lead, and other designated substances.
- Safe work procedures to protect workers and the public.
- Proper disposal of waste materials in accordance with environmental regulations.

Responsibilities of NCC T&D Project Leaders

NCC T&D Project Leaders are responsible for ensuring the safety of workers during demolition activities. This includes:

- Conducting hazard assessments before starting work.
- Providing designated substance reports to contractors, including the location of asbestos and other hazardous materials.
- Implementing safeguards to prevent injuries from falling structures or materials.
- Ensuring compliance with local bylaws and environmental regulations.

Pre-Demolition Preparations

Before starting demolition, the following steps must be taken:

Identify Hazards:

- Determine if asbestos, lead, or other hazardous materials are present.
- Prepare a list of designated substances and their locations.

Shut Off Services:

- Disconnect gas, electrical, and other services to prevent accidents.

Remove Hazardous Materials:

- Safely remove toxic, flammable, or explosive substances from the site.

Install Safeguards:

- Brace and shore damaged structures to prevent collapse.
- Install barriers to keep unauthorized personnel away from the demolition site.

Demolition Procedures

Mechanical Demolition:

- Use cranes, bulldozers, or other mechanical devices from a safe distance.
- Ensure swinging weights (e.g., wrecking balls) are restrained to avoid hitting other structures.

Manual Demolition:

- Begin at the highest point of the structure and work downward, unless this poses a risk.
- Remove masonry and loose materials systematically from top to bottom.

Structural Stability:

- Ensure floors and supports are stable before working on higher levels.
- Provide temporary support for trusses, girders, or other structural elements before disconnecting them.



Glass and Masonry Removal:

- Remove or protect glass on exterior walls to prevent breakage.
- Remove masonry walls in level courses to maintain stability.

Housekeeping and Waste Disposal**Daily Cleanup:**

- Remove waste and reusable materials from the site daily to maintain a safe work environment.

Chutes and Containers:

- Use enclosed chutes to lower waste materials into designated containers.
- Ensure chutes are securely fastened and have gates to control material flow.

Designated Areas:

- Create enclosed or fenced areas for waste disposal to prevent access by unauthorized personnel.

Safeguards for Damaged Structures**Bracing and Shoring:**

- Stabilize damaged structures to prevent collapse.
- Install safeguards progressively, starting from the safest areas.

Access Restrictions:

- Only workers involved in demolition activities are allowed near the structure.
- Barriers must be in place to prevent unauthorized access.

Worker Safety**Personal Protective Equipment (PPE):**

- Provide workers with appropriate PPE, including helmets, gloves, safety boots, and respiratory protection.

Training:

- Train workers on safe demolition practices, hazard identification, and emergency procedures.

Monitoring:

- Regularly inspect the site to ensure compliance with safety procedures.

Environmental Considerations**Waste Management:**

- Sort and recycle materials where possible.
- Dispose of hazardous waste in accordance with Saudi Arabian environmental regulations.

Dust Control:

- Use water sprays or other methods to suppress dust during demolition.

Emergency Procedures**Evacuation Plans:**

- Develop and communicate evacuation plans in case of structural collapse or other emergencies.

First Aid:

- Ensure first aid kits and trained personnel are available on-site.

For more information, refer to NCC T&D's relevant IMS procedures or consult our HSE Department for expert guidance and training resources aligned with Saudi Arabian regulatory requirements.