Safe Material Handling on Busy Worksites



Busy worksites depend on the constant movement of materials, equipment, supplies, and waste. Whether the setting is a construction site, warehouse, manufacturing facility, municipal yard, landscaping operation, or utility project, material handling is one of the most common sources of workplace injuries. For OHS directors and worksite managers, safe material handling requires more than telling workers to "lift properly." It means planning how materials are delivered, stored, moved, accessed, and removed so workers are not exposed to unnecessary strain, struck-by hazards, crushing risks, slips, trips, falls, or hazardous substances.

Common Materials Handled on Worksites

The materials handled on a worksite vary by industry, but many share similar risks. On construction sites, workers frequently handle lumber, drywall, concrete forms, rebar, piping, bricks, blocks, insulation, roofing materials, glass, fasteners, tools, and temporary barriers. These items may be heavy, awkward, sharp-edged, unstable, or difficult to grip, especially in wet, muddy, or congested areas.

In manufacturing and industrial settings, employees may move raw materials, metal stock, pallets, machine parts, containers, drums, chemicals, packaging, and finished goods.

These materials can create ergonomic hazards, pinch points, exposure risks, and serious injuries if loads shift or equipment fails.

Warehouses and distribution centres often involve frequent handling of boxes, pallets, shrink-wrapped loads, racking components, and powered mobile equipment. The fast pace of these environments can increase the risk of overexertion, collisions, falling objects, and musculoskeletal injuries.

Agricultural, landscaping, and municipal worksites may involve soil, stone, sod, fencing, fuel containers, tools, plants, waste bins, traffic control devices, and maintenance supplies. These materials can expose workers to uneven terrain, repetitive lifting, biological hazards, sharp objects, and weather-related challenges.

Key Threats from Poor Material Handling

Improper material handling can lead to both immediate injuries and long-term health problems. Back strains, shoulder injuries, sprains, and repetitive strain injuries are common when workers lift loads that are too heavy, awkward, or frequently repeated. Even relatively light materials can cause injury when workers twist, reach, carry items over long distances, or work without adequate rest.

Struck-by and caught-between incidents are also major concerns. Stacked materials can collapse, suspended loads can swing, and moving equipment can strike workers in congested areas. Poorly secured materials may roll, slide, fall from height, or shift during transport.

Some materials also pose chemical, respiratory, or skin exposure risks. Dust from concrete, drywall, wood, or insulation can irritate the lungs or contribute to long-term

respiratory illness. Chemicals, fuels, adhesives, paints, and solvents may expose workers to toxic vapours, burns, fire hazards, or environmental contamination if they are not stored and handled correctly.

Controls for Safer Material Handling

Effective material handling starts before materials arrive on site. Managers should coordinate deliveries to prevent overcrowding, designate safe unloading zones, and ensure materials are placed as close as practical to where they will be used. This reduces unnecessary carrying and keeps walkways, emergency routes, and equipment paths clear.

Mechanical aids should be used whenever possible. Forklifts, pallet jacks, dollies, hoists, cranes, carts, conveyors, and lift-assist devices can reduce physical strain and lower the risk of injury. Workers must be trained and authorized to operate equipment, and equipment should be inspected before use.

Storage practices are equally important. Materials should be stacked on stable surfaces, secured against tipping or rolling, and organized by weight, size, and frequency of use. Heavier items should be stored at waist height when practical, while sharp, hazardous, or unstable materials should be clearly labelled and isolated.

Worksite managers should also reinforce safe lifting techniques, team lifting procedures, and load assessment. Workers should be encouraged to stop and ask for help when a load is too heavy, awkward, or obstructed. Good housekeeping, clear communication, traffic control, and appropriate PPE—such as gloves, safety footwear, eye protection, high-visibility clothing, and respiratory protection—are essential parts of the program.

Building Material Handling into Site Planning

Safe material handling should be built into the daily work plan, not treated as an afterthought. OHS directors and supervisors should review handling risks during pre-job planning, toolbox talks, inspections, and incident reviews. By controlling how materials move through busy worksites, employers can reduce injuries, improve productivity, and create a safer, more organized workplace.