



Safety First: Formwork

Formwork is constructed on a construction site to create a temporary or permanent mold for concrete or similar material to be poured into. There are three main stages of formwork operations: assembly and erection, concrete placement, and stripping and dismantling. All large formwork installations in Ontario must be designed by a professional engineer. But there are always small smaller jobs of moderate height or depth - footings, stairs - that may include formwork designed and constructed on the site.

The following are some hazards to watch for when constructing formwork:

- 1) **Falls** - cramped work areas, inadequate access, failure to install guardrails, failure to use fall arrest systems, tools or material left underfoot and surfaces slippery from form oil can all lead to falls.
- 2) **Materials Handling** - improper or excessive materials handling can result in sprains, strains, and overexertion in shoulders, arms and back, as well as bruises, abrasions and crushed fingers. This is the activity most frequently connected with injury.
- 3) **Struck against** - common because formworkwork operations are constantly changing and involve the movement of heavy, awkward and pointed components.
- 4) **Struck by** - rebar, formwork, panels, concrete buckets, and other material hoisted overhead can strike workers.
- 5) **Electrical Contact** - power tools, extension cords, and temporary supply and wiring systems used under less than idea conditions - mud, ground water, wet excavations, fresh concrete - can lead to ground faults, short circuits and shock hazards.
- 6) **Collapses** - even with proper precautions in place there is always the risk that formwork, slab-forms, wall forms and other large components can come loose, slip out of place, or fall over.
- 7) **Health Hazards** - the spraying of form oils and curing compounds can irritate the lungs and skin.
- 8) **Environmental Conditions** - ice, snow and rain can cause slippery conditions. Wind can also create dangerous conditions - extra bracing may be required.
- 9) **Dust and Concrete** - blowing dust and flying concrete particles during the chipping or cleaning of formwork can injure unprotected eyes.
- 10) **Access Equipment** - ladders not tied off, workers carrying materials while climbing, ladders obstructed at top or bottom, scaffolds not completely decked in, and scaffolds erected or dismantled without fall protection.



Formwork that was constructed for a concrete base for specialized equipment.

Planning is the first and most important step in reducing hazards and preventing injuries. It's a must for fall protection, work platforms, material staging areas, housekeeping and material handling and movement. Planning should take place at every level from project manager through supervisor through worker.

Courtesy of Construction Health and Safety Manual

Coffee Talk

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with Chevron Construction Services Ltd.

Industrial Construction



Second expansion at Dico Electronics.



Loading dock at 3M.



Mezanine in new 1000 bluish Remtek building.

Construction in industrial environments require highly specialized expertise in planning, design and construction. Whether you are growing, moving, or converting your facilities, it's important to choose the right contractor. The industry is very unique and special attention is necessary.

The most important goal for most industrial clients is that the construction is performed as efficiently as possible. Highly competitive industrial manufacturing and process environments makes operational efficiency essential. Chevron Construction understands that clients depend on expert scheduling, quality control, risk management, and established health and safety programs. It is also important that the construction is performed on time, within budget and safely.

Check out the photos to the left to see some different types of industrial construction.



Concrete pad for specialized equipment at plant.



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