CANADIAN ASSOCIATION OF ENERGY CONTRACTORS

Recommended Practice 12.0

INSPECTION OF CATWALKS

A Recommended Practice for the Canadian Land-Based Drilling Industry

Developed by the Canadian Association of Energy Contractors
Engineering & Technical Committee

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This edition supersedes all prior
editions of this recommended practice

Purpose

This document contains practical recommended operating practices for catwalk equipment used in the Canadian land-based drilling industry.

Disclaimer

The recommendations contained in this document should be considered in conjunction with the requirements of the original equipment manufacturers (OEM). Companies should operate and maintain the equipment within the operating limitations defined by the OEM. If the OEM stipulates levels of inspection or accelerated inspection/certification cycles beyond those outlined in this recommended practice, the contractor must follow the OEM guidelines unless granted approval to follow this CAOEC recommended practice by a professional engineer.

The CAOEC produced this recommended practice based on industry experience. However, this document should be considered in conjunction with requirements of the local jurisdictional regulator.

This document should not be construed as a legal opinion and users are advised to seek legal counsel to address their specific facts and circumstances.

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Revisions

CAOEC recommended practices are reviewed and revised, reaffirmed or withdrawn at least every three years. A one-time extension of up to two years may be added to this review cycle. Email any comments or items of concern to rpfeedback@caoec.ca. Edition history can be found in Appendix 1.

Range of Obligation

Throughout this recommended practice the terms 'must', 'shall', 'should', 'may' and 'can' are used as follows:

- **Must** A specific or general regulatory and/or legal requirement that must be followed.
- **Shall** An accepted industry practice or provision that the reader is obliged to satisfy to comply with this recommended practice.
- **Should** A recommendation or action that is advised.
- **May** An option or action that is permissible within the limits of the recommended practice.
- **Can** Possibility or capability.

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1. Scope

This recommended practice (RP) describes the inspection schedule for catwalk equipment currently used in the Canadian land-based drilling industry and is intended to ensure safe and reliable operation by emphasizing training, inspection, handling and repairs.

2. Equipment

Catwalks can be powered or non-powered.

For purposes of this RP, catwalk components a drilling rig include:

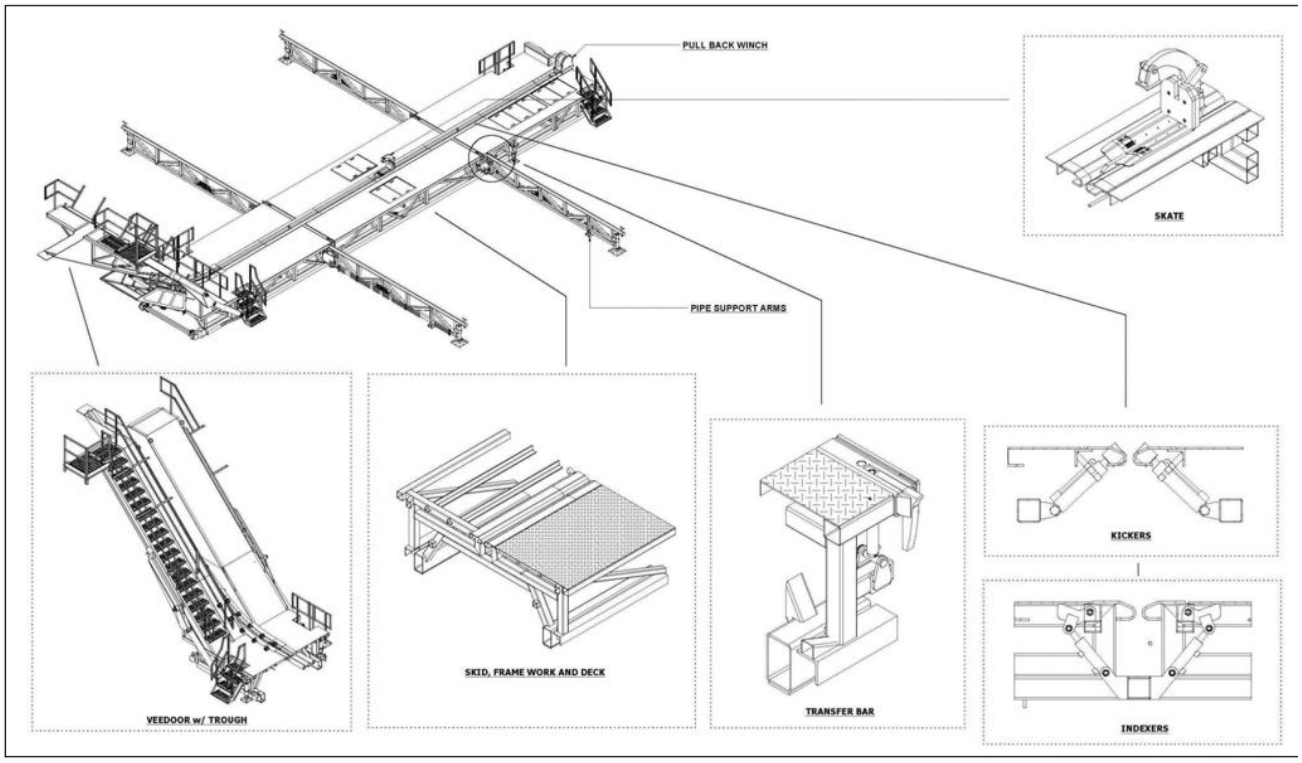
- Catwalk skid, spreaders and framework under the deck
- Integral V-Doors, including pivot points and attached equipment
- Pipe transport mechanism(s) (e.g., skates, troughs)
- Pipe loading mechanism(s) (e.g., kickers, indexers, gull wings)
- Casing/drill pipe support arms
- Decking materials
- Deck equipment (e.g., tie back posts, pull back winches)

The scope of this RP does not include:

- Hydraulic/electric drive motors and pumps
- Manifold buildings and their contents (other than their structural attachment to the catwalk)
- Manifold lines, tee blocks or other blowout preventer related equipment
- Steam lines
- Hydraulic pipe tubs/tables
- Alarm and control systems
- Fall arrest systems
- Moving systems

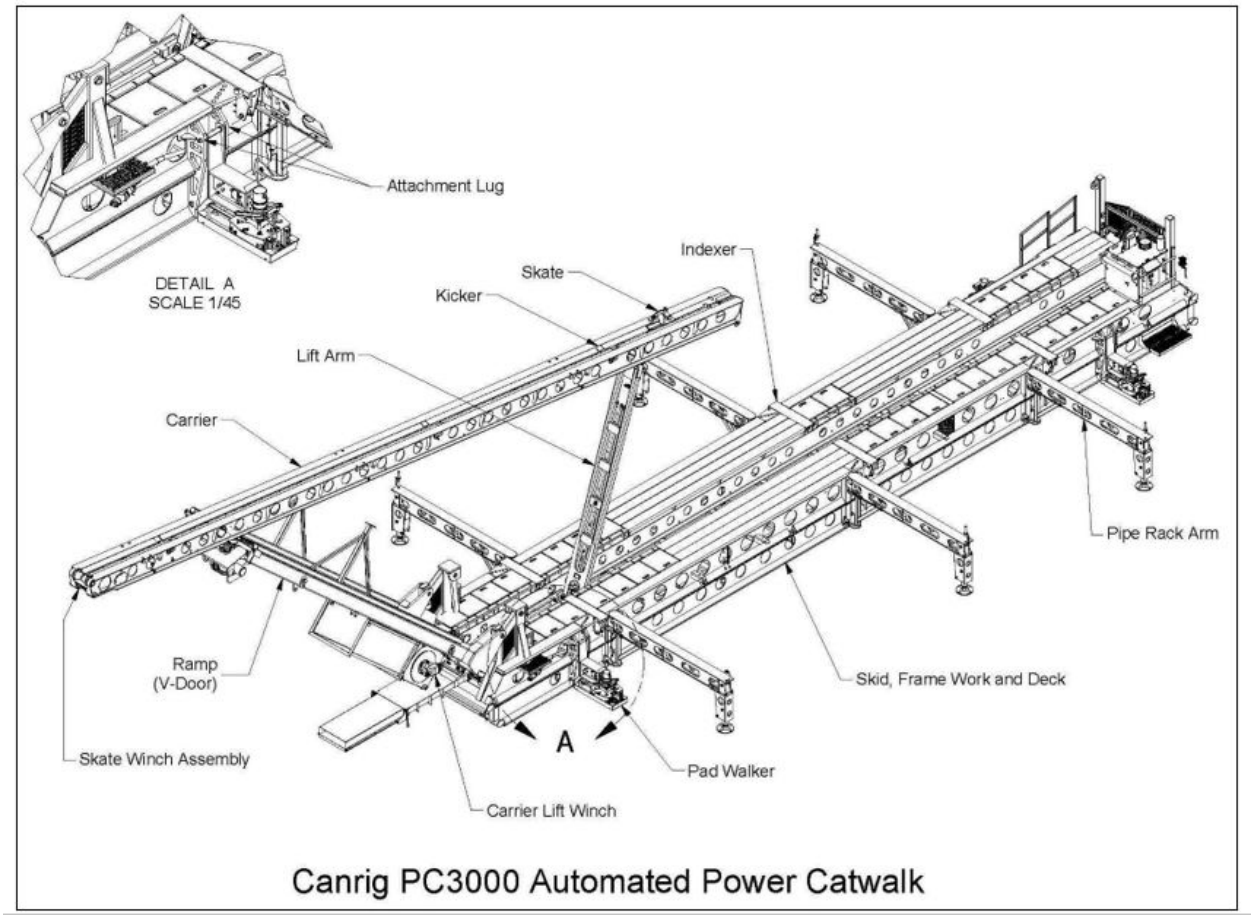
The following figures show skate-style and pipe-launcher style catwalks

Figure 1. Skate Style Catwalk[1]



[1] Courtesy of Ja-co Welding and Consulting Ltd.

Figure 2. Pipe Launcher Style Catwalk[2]



[2] Courtesy of Canrig Drilling Technology Ltd.

3. Personnel Descriptions and Training

It is the responsibility of equipment owners to ensure that individuals involved in the inspection, repair and certification of drilling rig catwalk equipment are properly qualified, trained and competent in their respective roles based on documented education, training or experience. The personnel referenced in this RP are defined below.

3.1 Professional Engineers

Professional engineers (P.Eng) shall have:

- Previous experience and training in structural and/or mechanical analysis
- A practical working knowledge of equipment referenced in this RP
- Previous experience and training in the repair of the equipment referenced in this RP
- Experience with general quality control standards
- Professional status in Canada

3.2 OEM and OEM Agent

The original equipment manufacturer (OEM) is the company who built the piece of equipment to be inspected.

An OEM agent is a designate of the OEM that has practical working knowledge of the specific equipment to be inspected.

3.3 Inspection Personnel

Inspection personnel are designated by the company and typically have:

- Knowledge of working principles of the equipment referenced in this RP
- Mechanical competency in the disassembly and reassembly of the equipment type and model
- Experience and knowledge in drilling rig maintenance

Examples of inspection personnel include:

- Professional engineers
- OEM agents
- Mechanical and/or maintenance managers
- Senior operations personnel such as:
    - Rig managers
    - Field superintendents
    - Technologists
    - Rig-up superintendents
    - Shop foremen
    - Operations managers

3.4 Operating Personnel

Operating personnel are typically members of the rig crew and have:

- Knowledge of working principles of the equipment referenced in this RP
- Experience and knowledge in drilling rig maintenance

3.5 NDT Technicians

At a minimum, non-destructive testing (NDT) technicians must have Level II Canadian Government Standards Board (CGSB) certification or other approved certification/training at the discretion of the inspecting party.

3.6 Welders

Welders must hold a valid Journeyman Welder certificate and have experience in drilling rig maintenance.

3.7 Training

Inspection and operating personnel shall be adequately trained to conduct inspections (including visual inspections) in accordance with this RP in order to satisfy provincial regulations and ensure that equipment will operate in the manner for which it was designed.

At a minimum, training should outline the inspection criteria for all components outlined in this RP.

Companies shall have a process in place to document and retain all training administered to company designated personnel referenced in this RP. Documentation should include the date of training and the attendees.

4. Inspection Types

All catwalk components used during drilling should be subject to an inspection and certification program to ensure all equipment is properly maintained and operable. Four levels of inspection should be performed:

- Level I inspection
- Level II inspection
- Level III inspection
- Level IV inspection

All repairs shall be in performed following the requirements outlined in section 6 – Repairs, Maintenance and Documentation.

4.1 Inspection Frequency

At minimum, the inspection frequency for catwalks shall be in accordance with the schedule below. Inspections may be conducted more frequently if deemed necessary (e.g., by the OEM or site/personnel specific experience).

Note: One operating day = 24 accumulated operating hours from spud to rig release.

Table 1. Inspection Frequency for Catwalks

Documentation	Inspection Frequency			
	Daily	Weekly	250 Days	1250 Days
Tour Sheet	I	II		
Mast and Overhead Equipment Log Book			III	IV

4.2 Level I Inspections

A Level I inspection is a visual observation of the equipment before operations begin, during operations or during routine maintenance. This should include, but is not limited to, inspection for mechanical defects and proper operating condition of:

- All hydraulic cylinder attachment points
- All pipe supporting arms, both at the connection to the catwalk and at the connection to the ground support rod
- All observable load bearing areas (e.g., trough supports, mounts)
- Ground support for jacks
- Decking materials, equipment mounts and retainers
    - Replace worn and/or damaged boards
    - Ensure there are no open holes
    - Ensure all inspection plates are in place
- Transportation securement (e.g., pins, retainers)

Level I inspections shall be performed by operating personnel and should be included as part of the daily rig walk around carried out by the driller or rig manager.

Level I inspections shall be recorded on the tour sheet.

4.3 Level II Inspections

A Level II inspection is a Level I inspection with a more thorough inspection of the equipment for:

- Proper lubrication Obvious external cracks or paint chips
- Damage, distortion and/or premature wear or deterioration (including cables and chains)
- Missing parts or guards

Level II inspections should be performed by the driller, rig manager or designate.

Level II inspections shall be recorded on the tour sheet.

4.4 Level III Inspections

A Level III inspection is a thorough visual inspection of the all load-bearing components, welds and pick-up points to determine the operability of the equipment. It is performed in the field. It may, at the discretion of the inspector, include or require:

- NDT techniques on critical areas and load bearing components
- Some disassembly
- Outside technical assistance

If a Level III inspection shows that routine rig operations have resulted in, or may result in, regular significant contact with the catwalk, suitable equipment or procedures must be put in place to prevent further damage.

Level III inspections should be performed by inspection personnel.

Level III inspections must be documented in the CAOEC Mast and Overhead Equipment Log Book (or suitable equivalent).

4.5 Level IV Inspection

A Level IV inspection and certification is a complete inspection of the entire catwalk. Disassembly may be required.

If a Level IV inspection shows that routine rig operations have resulted in, or may result in, regular significant contact with the catwalk, suitable equipment or procedures must be put in place to prevent further damage.

The following procedure shall, at minimum, be followed for the inspection:

- Clean the carrier to a state that allows the inspection to be performed (e.g., remove built up mud or snow).
- Inspect pipe transport system (including cables, chains, sprockets, drums).
- Inspect structural condition and verify intended use of all lug and attachment points.
- Ensure pipe and casing support arms have been load rated by either the OEM or a professional engineer or, if the support arms are already load rated, confirm ratings (at the discretion of the owner).

Level IV inspections shall be performed by inspection personnel.

Inspection documentation is to be provided by the inspecting party and should include the following:

- Document author
- Date of inspection
- Catwalk serial number (if available)
- Name of manufacturer (if available)
- Date of manufacture (if available)
- Pipe and casing support arm load ratings (if applicable)

Note: It is owner's responsibility to verify whether the rack load ratings apply per rack or per set.

- Results of the Level IV inspection
- Description of the repair and where on the equipment the repair took place
- Location where repairs were completed (e.g., facility, on site, shop).

Level IV inspections must be documented in the CAOEC Mast and Overhead Equipment Log Book (or suitable equivalent) and signed by the inspecting party.

5. Equipment Transportation

It is important to prevent damage to the catwalk during transportation. To prevent damage during transportation:

- Proper handling procedures must be observed.
- Affected personnel must be trained accordingly.
- A pre-move safety meeting must take place that includes discussion about any handling issues unique to the catwalk.

6. Repairs, Maintenance and Documentation

Repairs and/or maintenance may be required after any Level III or Level IV inspection to retain the operating integrity of the catwalk.

6.1 Repair Category

Any damage that requires repair shall be categorized as minor or major.

A professional engineer or an OEM agent must be consulted if there is any question as to whether the damage is minor or major.

All major damage must be repaired.

6.2 Repairs for Minor Damage

Repairs for minor damage include repairs to correct damage or distortion to secondary equipment or non-critical structure damage (e.g., cosmetic damage to diagonal girts, handrails, decking).

The rig manager (or higher authority) can determine the personnel to complete minor repairs.

Minor repairs do not require repair certification.

6.3 Repairs for Major Damage

Repairs for major damage include, but are not limited to, the following:

- Repairs due to geometrical distortion
- Repair of structural damage
- Repair of damage to critical structures such as:
    - Load bearing components
    - V-door cylinder attachment points
    - Elevated trough structure

NDT inspection must be performed after the repair of major damage.

Repairs may be completed in a field environment provided they can be performed adequately and are accessible for NDT inspection.

Major repairs shall be overseen by a professional engineer or an OEM agent.

6.4 Repair and Maintenance Documentation

All repairs and maintenance shall be documented in the CAOEC Mast and Overhead Equipment Log Book (or a suitable equivalent) and include the following information:

- Date of repairs and/or maintenance
- Description of repairs and/or maintenance completed
- For minor repairs, the personnel that completed the repair and/or maintenance and signoff by the repair supervisor
- For major repairs, the name and signature of the professional engineer or OEM agent consulted for the repair

Appendix 1: Revision History

Table 2. RP 1.0 Revision History

Edition	Date	Revision Details
3	September 2026	Content reviewed as part of regular review cycle and no changes were required.
3	March 2022	Revised • For reformat to new style
2	October 2021	Revised • For logo and name change • Removal of 100-day extension. • Updated Inspection Frequencies
1	October 2016	New RP sanctioned