

Certification Requirements: Yarder Inspection

Issued under the Authority of the
Certification Board for Inspection Personnel (CBIP), New Zealand

1. Introduction	3
2. Scope.....	3
3. Certification Process	3
4. Pre-Requisites for Discipline Recognition	3
4.1 Qualifications.....	3
4.2 Training.....	4
4.3 Experience	4
4.4 Referee Statement	4
5. Competence Requirements for Certification.....	4
6. Examinations.....	7
6.1 Examination process.....	7
6.2 Technical content of examinations	8
6.3 Recertification examination	8
6.4 Examination references.....	8

1. Introduction

These Certification Requirements: Yarder Inspection (CR Yarder Inspection) must be read in conjunction with CBIP's Certification Requirements: General (CR General). Together, these documents define the requirements for the issue of discipline recognition in Yarder Inspection.

CBIP issues Competence Certificates as the WorkSafe NZ recognised Qualification Issuing Agency. CBIP's Competence Certificates are the certificate of competence required in accordance with Regulations made under the Health and Safety at Work Act 2015.

CBIP's requirements for a Competence Certificate are detailed in the CR General. A yarder inspector must hold a relevant discipline recognition before they can hold a Competence Certificate.

2. Scope

CR Yarder Inspection covers the qualifications, training, experience, and examination requirements for the issue of a discipline recognition to yarder inspectors performing inspections in service and of newly constructed, repaired or imported yarder.

3. Certification Process

Candidates seeking a discipline recognition must meet the requirements of the CR General and the CR Yarder Inspection.

4. Pre-Requisites for Discipline Recognition

Candidates will have qualifications, training and experience which demonstrates understanding of yarders including their design, maintenance, and operation.

Exceptions to the requirements of sections 4.1, 4.2 and/or 4.3 may be approved by CBIP's Board on a case-by-case basis.

For candidates whose background does not include the specified qualifications, training or experience outlined in sections 4.1, 4.2 and 4.3, a statement of experience and competence relevant to certification requirements for a yarder inspector may be acceptable to CBIP's Board.

4.1 Qualifications

Candidates will evidence of a relevant qualification or credential such as:

- a) A trade qualification in a relevant engineering or inspection discipline
- b) 1st Class Marine Engineer's Certificate
- c) Degree in engineering or a relevant technology or science
- d) AAVA New Zealand Certificate of Engineering (Mechanical) or an equivalent qualification, e.g. UK Higher National Certificate in Engineering (Mechanical), NZQA Diploma in Engineering Practice (Mechanical)
- e) Unit Standard 19722 *Inspect forest cable yarder and associated components*, Level 5, 20 credits.

4.2 Training

Candidates will provide evidence of training in Yarder Inspection sufficient for them to be knowledgeable in the competency and performance requirements of section 5. Training shall include:

- Knowledge requirements for inspection, including in-service inspection, and
- Practical inspection training on yarders.

Candidates must have current competency in the following Unit Standards, or be able to demonstrate equivalent competencies, to apply for certification:

1. Unit Standard 17769 *Demonstrate knowledge of general health, safety, and environmental requirements in forestry*, level 2, 5 credits, and
2. Unit Standards 6401 *Provide First Aid*, Level 2, 1 credit and 6402 *Provide basic life support*, Level 2, 2 credits.

4.3 Experience

Candidates will preferably have at least three years' experience in Yarder Inspection, fabrication, maintenance, operation, or similar experience in a related field. The experience will include in-service inspection as a competent person or under supervision, be on a range of yarders, and include documentation of results sufficient to demonstrate competence in the requirements of section 5.

4.4 Referee Statement

Candidates will provide a Referee Statement sourced from CBIP's Website and signed by a suitable referee to verify that their training and experience matches the requirements of this Standard.

5. Competence Requirements for Certification

Inspection is an important factor in the safe and reliable operation of any logging yarder to ensure mechanical and structural integrity, reliability, safety and fitness for purpose and service. It is therefore essential that inspectors who perform the inspection functions have the necessary knowledge to be competent in the inspections that they perform as identified in the relevant industry best practice guidelines or approved codes of practice.

To be certified as a Yarder Inspector, candidates must demonstrate the competency and performance requirements shown in Table 1.

Table 1: Competencies and performance criteria for Yarder Inspectors

1. General
<p>An Inspector will be able to:</p> <ul style="list-style-type: none"> a) Demonstrate an understanding of the principles, applicability and limitations of the various processes, requirements and methods used for inspection, e.g., NDT and welding, b) Converse with specialists, c) Report inspections in plain English, and d) Measure and appraise the results of examinations completed by themselves or others.
2. Operation and degradation mechanism
<p>An Inspector will understand the:</p> <ul style="list-style-type: none"> a) Logging cable yarder equipment’s operational conditions and the fundamentals of log harvesting using such machinery, b) Underlying reasons that dictate materials selection and longevity of critical components to determine where to give attention during the inspection, and c) Operating fundamentals to check the correct functioning of safety-critical devices such as brakes, clutches, winches, gauges, controls, tower raising/lowering and structural locking devices.
3. Welding
<p>Welding knowledge is taken as a limited knowledge requirement whereby an Inspector will:</p> <ul style="list-style-type: none"> a) be able to identify welding processes, and b) understand welding and welder-approval procedures. <p>As a minimum, an Inspector will understand:</p> <ul style="list-style-type: none"> c) the various forms of common welding techniques, and d) procedures and welder approvals that apply to the common welding processes i.e., MMAW, GMAW, FCAW, GTAW, SAW. <p>The Welding Supervisor qualification (AS 2214) and CBIP Certified Welding Inspector (CWI) are acceptable means of demonstrating this level of knowledge.</p>

4. Electrical, hydraulic and pneumatics

Electrical, hydraulic, and pneumatic knowledge is taken as a limited knowledge requirement whereby an Inspector will:

- a) be able to understand basic principles, and
- b) understand factors that may influence the operation of yarders.

As a minimum, the Inspector will understand:

- c) various forms of deterioration that may occur,
- d) visual recognition of deterioration, wear, and damage to electrical, hydraulic, and pneumatic systems,
- e) safety aspects for inspecting electrical, hydraulic and pneumatic systems, e.g. fuses, interlocks, dangers associated with leaking high pressure fluids etc., and
- f) electrical, hydraulic, and pneumatic safety devices that should be present either from the manufacturer or retrofitted to meet current machine safety requirements.

5. Inspection techniques and NDT

An Inspector will understand the applicability, safety and accuracy of various methods and inspection techniques (invasive and non-invasive) used to detect defects or degradation mechanisms in Yarders.

Appropriate techniques used and commonly applied inspection methods include visual and NDT techniques.

6. Maintenance

An Inspector will:

- a) be aware of the purpose, tasks, and roles of the maintenance function,
- b) have a clear understanding of routine and non-routine activities,
- c) sound knowledge and experience in the use of the applicable codes and standards covering design, manufacturing, repair, and maintenance with the applicable types of yarders,
- d) understand the fundamental principles within the standards, and
- e) be fully aware of the requirements for the implementation of inspection procedures.

7. Inspection options

An Inspector will:

- a) be aware of the various options available to determine “fitness for purpose” of equipment,
- b) recognise the limitations of the various inspection methods used, and
- c) take this into account when deciding on the values of the methods and techniques employed.

Note: It may be necessary to supplement the method used with another one to increase confidence.

8. Record keeping and report writing

An Inspector will prepare and maintain accurate inspection records and reports to:

- a) generate historical data to maintain the reliability of the equipment, and
- b) meet statutory and standards-based requirements.

6. Examinations

6.1 Examination process

Examination of competence consists of:

1. Written examination comprised of a mix of multi-choice and short answer questions, and
2. Practical examination based on an assessment of the candidate’s inspection of two different yarder types in a work-place setting. The types of yarder used in the practical assessment will:
 - be arranged by the candidate and approved by the assessor prior to the assessment taking place, and
 - include a swing yarder and at least one example of an independent or leaning tower type.

6.2 Technical content of examinations

Examiners may assess candidates on the application of industry standards and use photographs and samples illustrating operation and maintenance problems pertinent to in-service inspection of yarders.

Examinations will assess candidate's ability to demonstrate competencies relating to knowledge of :

- a) legislation and the responsibilities of inspectors,
- b) operation of equipment,
- c) inspection methods and procedures,
- d) safe working during inspection,
- e) materials used for yarder construction,
- f) type and causes of deterioration and defects,
- g) planning and documenting inspections, interpreting, evaluating, and reporting of inspection results (including approval of inspection and test plans) and preparation/approval of any specific inspection procedures required,
- h) maintenance of inspection records,
- i) assessing and editing operating and maintenance records,
- j) welding processes, including use of approved welding procedures,
- k) NDT methods,
- l) review and implementation of repair procedures, and
- m) fitness of equipment for service.

6.3 Recertification examination

Recertification requires the certified inspector to pass a written examination.

6.4 Examination references

The list of allowable examination reference material for the Yarder Inspection written examination will be published on CBIP's Website.