



New Zealand Certificate in

Flooring Surface Preparation

Level 4



Specifications

September 2020



v1.1

BCITO
building people

Foreword

Welcome to the *Specifications* that set out the technical content of the New Zealand Certificate in Flooring Surface Preparation (Level 4) with strands in Moisture Testing, Underlayment Systems, Mechanical Preparation with an optional strand in Topical Coatings and Concrete Polishing. [Ref:4299]

These *Specifications* are, collectively, a prescription for achieving the requirements of the qualification. Together they describe what a person must know and be capable of to become a qualified trade professional.

They are intended to support tertiary education organisations to develop programmes that detail how learning and assessment will occur.

Programmes must encompass these *Specifications* and support the development of the skills, knowledge and attributes that reflect the technical competence, self-management, professionalism and leadership.

Assessment related to these specifications

The individual skill sets included in these *Specifications* are designed to be read, interpreted and assessed together. This means that information contained in one skill set that is relevant to any other skill sets is stated only once, in the most appropriate place. However, the expectation is that assessment will look for links across skills sets. This avoids duplicating information and allows the candidate to be assessed holistically. Where the skills and knowledge included in one skill set are essential to achieving other skill sets, the candidate must be capable of applying them to the level, scope and complexity required.

The New Zealand Certificate in Flooring Surface Preparation (Level 4) with strands in Moisture Testing, Underlayment Systems, Mechanical Preparation with an optional strand in Topical Coatings and Concrete Polishing is achieved through completing the qualification core and specialising in at least one of the strands including:

- Moisture Testing
- Underlayment Systems
- Mechanical Preparation with an option in Topical Coatings
- Concrete Polishing

To achieve the New Zealand Certificate in Flooring Surface Preparation (Level 4) with strands in Moisture Testing, Underlayment Systems, Mechanical Preparation with an optional strand in Topical Coatings and Concrete Polishing (Level 4) a candidate must be capable of maintaining the professional standards of the trade and consistently performing the requirements of each skill set, and the specifications as a whole, to a commercially competent standard. Professional standards are reflected in:

- employment agreements, codes of conduct and standard operating procedures
- training and education agreements
- standards of ethics and professionalism produced by industry membership organisations
- best practice and technical guidance produced by suppliers, regulators, education and industry organisations

Commercial competence requires a candidate to be capable of consistently demonstrating the technical skills and knowledge of the trade:

- to current regulatory, industry and commercial standards
- within a commercially viable timeframe

Core Compulsory

Specification: Fundamentals		29 credits
Skill Sets:	Covering:	
Legislation	Relevant legislation as it applies to flooring surface preparation	
Tools and Equipment	Tools and equipment used in the flooring surface preparation industry	
Planning and Communication	Planning and communication in the flooring industry	
Specifications and Job Documentation	Workplace specifications and job documentation in the flooring surface preparation industry	
Measurement and Calculations	Measurement and calculations as they apply to the flooring surface preparation industry	
Flooring Surface Preparation Principles	Key principles and ideas relevant to flooring surface preparation	

Specification: Professional Standards		15 credits
Skill Set:	Covering:	
Commercial Competence and Professional Standards	Performance standard required of a trade professional	

Strands

Specification: Moisture Treatment Systems		20 credits
Skill Sets:	Covering:	
Moisture Treatment Systems	Applying moisture treatment systems to flooring substrates	

Specification: Underlayment Systems		55 credits
Skill Set:	Covering:	
Cementitious Underlayment Systems	Applying cementitious underlayment systems to substrates	
Board Underlayment systems	Fit board underlayments to flooring substrates	

Specification: Mechanical Preparation		30 credits
Skill Set:	Covering:	
Mechanical Preparation Systems	Preparing flooring surfaces mechanically to specification	
OPTION	10 credits	
Apply Topical Coatings	Apply topical coatings to meet specification requirements to flooring surfaces	

Specification: Concrete Polishing		50 credits
Skill Sets:	Covering:	
Concrete Polishing	Perform concrete polishing to specification on a range of concrete surfaces	

To achieve this fundamentals specification, you must understand the underpinning principles, and be able to apply them in practice to all areas of flooring operations.

This specification contains the following 6 skill sets:

- Legislation
- Tools and Equipment
- Planning and Communication
- Measurement and Calculations
- Drawings, Specifications and Job Documentation
- Flooring Surface Preparation Principles

Each skill set comprises:

- **Know** - the theory that underpins the practical skills
 - **Do** - the practical skills you need to have
 - **Comments** - explanatory notes to clarify specific aspects of knowledge and skill
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Skill Set 1:	Legislation	5 Credits
Know:	The health and safety legislative framework as it applies to site assessing and carrying out surface preparation work	
	The environmental legislative framework as it applies to carrying out surface preparation work	
	The building legislative framework as it applies to carrying out surface preparation work	
	The client protection legislative framework as it applies to carrying out surface preparation work	
Do:	Apply the health and safety legislative framework in everyday contexts	
	Apply the environmental legislative framework in everyday contexts	
	Apply the legislative building framework in everyday contexts	
	Apply the client protection legislative framework in everyday contexts	
Comments:	Flooring surface preparation may include polishing concrete and applying protective finishes	
	The legislative framework refers to the hierarchy of Acts of Parliament, Regulations, Rules, Codes, Standards, approved codes of practice best/good practice guidelines	
	Knowledge of the health and safety legislative framework includes assessing the work site and environment and taking appropriate health and safety measures in everyday contexts	
	The level of legislative knowledge required is that of a flooring tradesperson rather than that of an expert with specialist knowledge	

Skill Set 2:	Tools and Equipment	6 Credits
Know:	The use and application of different hand tools, power tools and equipment used for flooring surface preparation work	
	The use and application of different accessories and consumables used for flooring surface preparation work and/or concrete polishing systems	
Do:	Use a range of hand tools	
	Use a range of power tools	
	Use a range of equipment	
	Use a range of accessories and consumables	
	Maintain tools and equipment	
Comments:	The different types of tools and equipment may vary depending on the substrate and substrate surface types	
	Hand tools are those which are appropriate in terms of safety and fit for purpose for the intended surface preparation work.	
	Power tools are those which are appropriate in terms of safety and fit for purpose for the intended surface preparation work.	
	Equipment refers to a set of tools and associated items that are needed to do a job	
	Consumables are items associated with a tool or piece of equipment that are consumed or degraded through use	

Skill Set 3: Planning and Communication	4 Credits
Know:	The roles and responsibilities of the parties to flooring operations How to plan and coordinate work to fit with a work programme and other parties
Do:	Establish work activities, priorities and deadlines Plan and coordinate flooring operations Work effectively including problem-solving with the parties to flooring operations Communicate effectively with own team and any other parties involved in flooring operations
Comments:	Parties to flooring operations may include the client, main contractor, subcontractors, manufacturers, suppliers, designers, and compliance bodies Working effectively involves: <ul style="list-style-type: none"> • the ability to discuss and reach conclusions about work requirements to progress activities on site • problem-solving relates to changes and challenges to work programmes, the environment in which flooring operations take place, and the use, application or installation of specified materials Communicating effectively involves written, oral, and electronic formats

Skill Set 4: Measurement and Calculations	5 Credits
Know:	The different units of measurement and how they are used The formulas for, and how to calculate area, and quantities How to use and apply percentages and ratios to calculations How to calculate labour
Do:	Undertake measurements and calculations in one, two and three dimensions Calculate material quantities and make the appropriate allowances Calculate labour and materials needed for a job including any extra work that may be required for pricing or invoicing
Comments:	Units of measurement include length, area, volume, time and distance Calculating labour means estimating time to do a job The level of measuring and calculation knowledge required is that of an employee rather than that of a business owner The level of pricing knowledge required is that of an employee rather than that of a business owner

Skill Set 5: Specifications and Job Documentation**5 Credits**

Know:	<p>The function and use of plans, specifications and job documentation used for flooring surface preparation work</p> <hr/> <p>How to understand and interpret a plan, specifications and job documentation for flooring surface preparation work</p> <hr/>
Do:	<p>Understand and interpret specifications and job documentation including any plans for the intended flooring surface preparation work</p> <hr/> <p>Complete job documentation</p> <hr/>
Comments:	<p>A specification is a scope of work</p> <hr/> <p>Job documentation includes checklists, records, specifications and instructions related to flooring surface preparation work.</p> <hr/> <p>Plans, specifications and job documentation can either be in hard copy or electronic form</p> <hr/> <p>Plans may be drawings or sketches</p> <hr/> <p>Understanding specifications includes where to find specifications or information on any associated products, accessories or equipment related to the preparation work</p> <hr/> <p>Surface preparation work can include concrete polishing to an appropriate finish for any applied protective finishes</p> <hr/> <p>The minimum level to which plans, specifications and job documentation need to be understood and interpreted is to allow flooring surface preparation operations to be undertaken as documented</p> <hr/>

Skill Set 6: Flooring Surface Preparation Principles**4 Credits****Know:**

Substrate types

Existing floor surfaces and covering types

The principles behind acceptable flooring surface preparation

How to determine the acceptable level of finish for the prepared surface

The types and functions of;

- Moisture treatment systems
- Underlayment systems
- Mechanical preparation systems and topical coatings as required
- Concrete polishing systems

Comments:

Flooring surfaces are the face of the substrate flooring material

The principles of clean, flat, smooth, sound and dry and pH levels are used to determine an acceptable level of surface preparation

Underlayment systems refers to board products and cementitious compounds applied to flooring surfaces

Mechanical systems are abrading methods and may include grinding, sanding, stripping, shot blasting, scarifying, chase cutting equipment and associated accessories.

Topical coatings refers to finishing coatings

Moisture treatment systems refers to products and materials used to suppress or control the transfer of moisture from the substrate to the floor covering

Concrete polishing systems refers to the methods used to prepare a concrete surface to a required finish to receive of an applied protective finish

This specification reflects the performance standard required of a commercially competent flooring surface preparation tradesperson. It contains the following skill set:

- Professional standards

Candidates must be capable of demonstrating the knowledge and skills included in this skill set to be awarded the New Zealand Certificate in Flooring Surface Preparation (Level 4) with strands in Moisture Testing, Underlayment Systems, Mechanical Preparation with an optional strand in Topical Coatings & Concrete Polishing. Ref4299

Each skill set comprises:

- **Know** - the theory that underpins the practical skills
 - **Do** - the practical skills you need to have
 - **Comments** - explanatory notes to clarify specific aspects of knowledge and skill
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Skill set 1: Professional Standards**15 credits**

Know:	<p>The knowledge and practical skills involved in the flooring surface preparation trade</p> <p>The ways in which professional standards contribute to the sustainability of the relevant strands in the flooring surface preparation trade</p> <p>How to locate and interpret industry professional standards</p>
Do:	<p>Perform all aspects of the relevant strand(s) in the flooring surface preparation trade to a commercially competent standard</p> <p>Behave professionally on a day-to-day basis</p> <p>Fulfil responsibilities in the workplace to meet commercial contracts, employment and education agreements</p> <p>Self-manage ongoing learning and development</p> <p>Keep up to date with the industry's professional standards in the relevant strand(s) of the flooring surface preparation industry</p> <p>Support the learning and development of others in training</p> <p>Lead and coordinate the everyday on-site operations in the relevant strand(s) of the flooring surface preparation trade</p>
Comments:	<p>A commercially competent standard means completing work to a commercial standard in a commercial environment without direct supervision</p> <p>Demonstrating professional behaviour on a day-to-day basis is likely to include working constructively with clients, suppliers and people involved in the candidate's learning programme, being consistently reliable, responsible and accountable, acting with integrity, making and keeping commitments, and showing respect and consideration for people, property and the environment</p> <p>Industry sustainability refers to the economic, environmental and social practices that contribute to the sustainability and improvement of the building and construction industry</p>

Flooring Surface Preparation Strands

To achieve this surface preparation *specification*, you must understand and use appropriate equipment and materials to undertake all aspects of surface preparation for a finished floor covering surface or an applied protective finish.

The strand specifications contain the following skill sets:

- **Moisture Treatment Systems**
- **Underlayment Systems**
- **Mechanical Preparation Systems with option in Topical Coatings**
- **Concrete polishing**

Each skill set comprises:

- **Know** - the theory that underpins the practical skills
 - **Do** - the practical skills you need to have
 - **Comments** - explanatory notes to clarify specific aspects of knowledge and skill
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Strand: MOISTURE TREATMENT SYSTEMS

Skill Set 1 : Moisture Treatment Systems

20 Credits

Know:

The types, functions and properties of moisture treatment systems used in conjunction with floor coverings and products

The substrate type, surface type, environment and worksite conditions at the time of a moisture test

How to protect other surfaces in the vicinity of the moisture treatment site

Moisture testing methods and how they relate to New Zealand Industry Standards

How to perform moisture tests on timber, concrete and moisture barriers

How to interpret a moisture test

Do:

Perform and record moisture tests on timber, concrete and moisture barriers

Isolate the area to protect the finished work

Apply moisture treatment systems to manufacturer's specifications

On job completion clean down the job site and equipment

Comments:

Appropriate health and safety measures for this work are included under the legislation specification

Any methods, tools, accessories and equipment used must be appropriate and fit for purpose

Moisture tests and methods are appropriately aligned to NZ Flooring Standards

Interpretation of the tests are in relation to moisture content for timber and relative humidity for concrete

Environment as in room temperature, time of close in of a new building, concrete slab thickness, age of building, are all variables that could affect moisture test results

Strand: UNDERLAYMENT SYSTEMS

Skill Set 1 : Cementitious Underlayment Systems

45 Credits

Know:	<p>The specifications for the finished surface</p> <p>The types, functions and properties of applied underlayments.</p> <p>The properties of the surface and substrate onto which finished flooring products/coverings are to be installed</p> <p>To protect other surfaces in the vicinity to the preparation work</p> <p>Assess a surface for any irregularities and how to remedy them before applying or fitting an underlayment system</p> <p>Reassess surfaces after any repairs have been carried-out</p> <p>Set levels, falls or change of plane</p> <p>How to set up a mixing station</p> <p>How to apply specified primers or sealers prior to underlayment application</p> <p>How to mix and apply an underlayment to the manufacturer's specifications</p>
Do:	<p>Assess a surface for any irregularities and remedy them before applying or fitting an underlayment system</p> <p>Set any levels, falls or change of plane to meet job specifications and documentation</p> <p>Set up a mixing station</p> <p>Apply specified primers or sealers</p> <p>Mix and apply underlayments to manufacturer's specifications</p> <p>On job completion clean down the job site and equipment</p>
Comments:	<p>Appropriate health and safety measures for this work are included under the legislation specification</p> <p>The types, functions and properties of applied underlayments includes associated repairing, self-levelling and fine finishing products</p> <p>Any methods, tools, accessories and equipment chosen for the work must be appropriate and fit for purpose to the situation</p> <p>Setting levels and falls meets job specifications</p> <p>Repair and remediate the substrate or organise for specialists to carry-out repairs or removal including concrete crack repair</p> <p>While underlayment systems refer to cementitious in type, other applied types of underlayment that provides the same function may be included</p>

Know:	<p>The specifications for the finished surface</p> <p>The types, functions and properties of board underlayments</p> <p>How to protect other surfaces in the vicinity to the preparation work</p> <p>The substrate properties of which the finished flooring products/coverings are installed</p> <p>Assess a surface for any irregularities and how to remedy them prior to applying or fitting a board underlayment</p> <p>The appropriate tools, materials and equipment used to cut and fit board underlayment</p> <p>Reassess surfaces after any repairs have been carried-out</p> <p>How to fit board underlayment</p>
Do:	<p>Confirm that instructions for the work and area of work are accurate</p> <p>Assess the surface for any irregularities and remedy them prior to applying or fitting a board underlayment or organise for specialists to carry-out repairs or removal</p> <p>Reassess surfaces after any repairs have been carried-out</p> <p>Assess the surface and job environment to enable the appropriate selection of tools, accessories and equipment to fit and finish board underlayment</p> <p>Fit board underlayment to the manufacturer's specifications</p> <p>Clean down job site and machinery after work is completed</p>
Comments:	<p>Appropriate health and safety measures for this work are included under the legislation specification</p> <p>Any methods, tools, accessories and equipment chosen for the work must be appropriate and fit for purpose to the situation</p> <p>Choosing the accessories for the machinery or work may include grinding cup types and/or abrasive paper type, filters, disc adhesives, dust suppressants</p> <p>Board underlayment type is flooring specific</p>

Strand: MECHANICAL PREPARATION SYSTEMS

Skill Set 1: Mechanical Preparation Systems

30 Credits

Know:	<p>Types of mechanical equipment used to grind, sand, abrade or mechanically key a flooring surface</p> <hr/> <p>How to protect other surfaces in the vicinity to the preparation work</p> <hr/> <p>How to remove existing floor coverings, coatings and contaminants from surfaces</p> <hr/> <p>The tools, equipment and materials to assist in removing existing floor coverings, coatings and contaminants from surfaces</p> <hr/> <p>How to assess new or existing surfaces then select the mechanical equipment, accessories and methods to prepare the surface including any dust control and dust removal equipment</p> <hr/> <p>How to carry out mechanical preparation of a range of surfaces to specification</p> <hr/> <p>The equipment and materials used to clean down the job site on completion</p>
Do:	<p>Confirm that instructions for the work and area of work are accurate</p> <hr/> <p>Assess the surface and job environment to enable the selection of mechanical equipment, accessories and methods to prepare the surface including any dust control and dust removal equipment</p> <hr/> <p>Remove any existing floor coverings or loose debris before any mechanical preparation work begins</p> <hr/> <p>Mechanically prepare the flooring surface to specification</p> <hr/> <p>Clean down job site and machinery after work is completed</p>
Comments:	<p>Appropriate health and safety measures for this work are included under the legislation</p> <hr/> <p>Any methods, tools, accessories and equipment chosen for the work are cleaned on completion must be appropriate and fit for purpose to the situation</p> <hr/> <p>Choosing the accessories for the machinery or work may include grinding cup types and/or abrasive paper type, chase cutting attachments, filters, disc adhesives and dust suppressants</p> <hr/> <p>Mechanical preparation of a surface is carried out so an underlayment, covering or topical coating can be applied</p>

Mechanical Preparation option

Skill Set: Apply Topical Coatings

10 Credits

Know: The handling and application requirements associated with different topical coatings

The requirements for surface preparation for different topical coatings

How to apply different topical coatings

Maintenance requirements for different topical coatings

Do: Select the appropriate topical coating

Select the method of application

Handle and store topical coatings

Apply topical coating to flooring surfaces

Perform remedial work on topical coatings

Comments: Topical coatings include protective and decorative paint coatings, sealers, polishes, waxes and other topical finishes. It does not include waterproofing systems, resin coatings, underlayment or cementitious systems.

Requirements are codes, standards or manufacturer and system specifications.

Appropriate health and safety measures for this work are included under the legislation specification

Any methods, tools, accessories and equipment chosen for this work must be appropriate and fit for purpose to the situation

Strand: CONCRETE POLISHING

Skill Set 1: Concrete Polishing

50 Credits

Know:	The finishing requirements of the client
	The properties of the concrete to be polished
	Common issues associated with concrete and how to remedy them before and during the polishing process
	The process for achieving the desired polishing finish
	Sheen and exposure level required and how this is achieved
	How to leave the site clear of generated waste and protect the finished polished floor from damage from other subcontractors on site
	How to protect other surfaces adjacent to the polished concrete
	Appropriate handover procedures
Do:	Communicate with concrete placer to confirm the finish required of the concrete to meet the client's specifications
	Confirm that instructions for the work and area of work are accurate
	Assess the properties of the concrete to be polished
	Select and inspect appropriate tools and equipment for the task
	Carry out preparation work as required
	Carry out the concrete polishing process to specification
	Complete site pack-up and waste removal procedures
	Carry-out appropriate handover procedures
Comments:	Appropriate health and safety measures for this work are included under the legislation specification
	Finishing requirements includes the correct selection and use of chemical densifiers and sealers.
	Concrete requirements include different grades of surface profile (ICRI 10 Concrete Surface Profiles)
	Physical and technical requirements include levels, falls, thickness, structural support, moisture content, surface finish, integrity, stability and cleanliness
	Preparation includes mechanically keying surfaces, cutting and forming in-floor requirements, reinforcing required areas, fitting accessories, sealing, priming and crack repair application
	Polishing concrete processes may include applied protective finishes

References

The following is a list of nationally applicable legislation, standards and best practice guidance information relevant to the learning and assessment included in this *Specification* at the time of this publication.

This is not intended to be an exhaustive list. Programme developers are expected and encouraged to develop programmes that also reflect the requirements of their region, learners and industry stakeholders.

It is the responsibility of TEOs offering programmes leading to the qualification to ensure learning and assessment reflect current local and national legislative, regulatory and industry standards.

Acts of Parliament available from www.legislation.govt.nz

Building Act 2004

Construction Contracts Act 2002

Health and Safety at Work Act 2015

Fair Trading Act 1986

Fire and Emergency New Zealand Act 2017

Hazardous Substances and New Organisms Act 1996

Heritage New Zealand Pouhere Taonga Act 2014

Resource Management Act 1991

Regulations available from www.legislation.govt.nz

Building (Definition of Restricted Building Work) Order 2011

Building (Residential Consumer Rights and Remedies) Regulations 2014

Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005

Health and Safety at Work (Asbestos) Regulations 2016

Health and Safety at Work (General Risk and Workplace Management) Regulations 2016

Health and Safety at Work (Worker Engagement, Participation and Representation) Regulations 2016

Health and Safety at Work (Hazardous Substances) Regulations 2017

Codes available from www.building.govt.nz

The New Zealand Building Code

Standards available from www.standards.co.nz

AS/NZS 2455.1:1:2007 Textile floor coverings – Installation practice - General

AS/NZS 2455.1:1:2007 Textile floor coverings – Installation practice – Carpet tiles

NZS AS 1884:2013 Floor coverings – Resilient sheet and tiles – Installation practices

AS/NZS 1385:2007 Textile floor coverings – Metric units and commercial tolerances for measurement

AS/NZS 2111.0:1996 Textile floor coverings – Tests and measurements – Introduction and list of methods

ISO 6347:2017 Textile floor coverings – Consumer information

ISO 10874:2009 Resilient, textile and laminate floor coverings - Classification

AS/NZS 2914:2007 Textile floor coverings – Informative labelling

Guidelines and Approved Codes of Practice available from www.worksafe.govt.nz
for the following topics:

Code of practice for manual handling

Powder-actuated hand-held fastening tools – Approved Code of Practice

Management and removal of asbestos – Approved Code of Practice

General risk and workplace management – Interpretive guidelines

The absolutely essential health and safety toolkit for small construction sites

Best practice and good practice guidelines

Various BRANZ publications available at www.branz.co.nz

The Absolutely Essential Health and Safety Toolkit for Small Construction Sites and other Worksafe NZ publications available from www.worksafe.govt.nz

Various *Floor NZ* publications available from <https://floornz.org.nz>