

- Response to feedback from industry and moderation regarding assessment
- Wide ranging consultation with industry experts and providers to ensure the appropriateness of the changes made
- Separating knowledge and skills elements into separate unit standards where the knowledge is to be assessed prior to or apart from demonstrating the related skill
- Facilitating appropriate assessment (off-job or on-job)
- Meeting the requirements of performance-based contracting
- Amending existing unit standards and developing new ones to aid vertical and horizontal progression from one qualification to another
- Filling some gaps in specific skill sets as a result of increasing skill requirements and the complexity of the industry
- Removing unnecessary prerequisites to simplify the progression through unit standards in the three *Pavement Surfacing* domains.

Main changes resulting from the review

- Unit standards 1495, 1496, 1499, 1500, 1503, 13512, 13513, 13516, and 17673 have been replaced by unit standards 20449, 20450, 21664, 20444, 20453, 20445, 20446, 21665, and 21666 respectively.
- Unit standard 1501 in the *Bitumen Surfacing* domain has been replaced by unit standard 20443 in the *Asphalt Surfacing* domain.
- Unit standards 1497, 1498, and 14664 in the *Bitumen Surfacing* domain have been replaced by unit standards 20451 and 20461, 20452, and 20454 respectively in the *Chipseal Surfacing* domain.
- Unit standards 1499, 1505, 1507, 8021, 13517, 13520, 17670, and 17671 have moved from *Bitumen Surfacing* to the *Chipseal Surfacing* domain.
- Unit standards 1506, 1511, 17674, and 17675 will expire as they are no longer required by industry.
- Titles of unit standards 1502, 1505, 1507, 1509, 1510, 1512, 13513-13521, and 17670-17673 have been changed to reflect skills covered or for consistency of style.
- The level of unit standard 13519 has increased from 3 to 4.
- The credits of unit standards 1502, 1505, 1509, 1510, 13516, and 13518-13520 have been amended to reflect time required to meet outcomes.
- Prerequisites have been removed from unit standards 1502, 1509, 1510, 8021, 13515, 17670, 17672, and 17673 as they were not critical to health and safety and prerequisites have been updated for unit standards 1505, 1507, 1512, 13514, 13517-13520, and 21664.
- The prerequisite for unit standard 1508 has been replaced with three recommended unit standards.
- In the special notes, references, legislation, specifications, and definitions have been updated and assessment guidance has been added to all unit standards.
- Editorial changes have been made to unit standards to meet current technical criteria.
- Nine new unit standards have been developed setting out skills and knowledge required by the industry: 20447, 20448, 20455, 20456, 20458-20460, 20462, and 20463.
- The traffic control element has been removed from unit standard 13517.

Unit standards categorised as category C or D expire at the end of December 2006.

Impact on existing provider accreditations

Current Accreditation for			Accreditation extended to		
Nature of accreditation	Classification or Id	Level	Nature of accreditation	Classification or Id	Level
Domain	Bitumen Surfacing	2	Domain	Chipseal Surfacing	2
			Standard	20449	3
Domain	Bitumen Surfacing	5	Domain	Chipseal Surfacing	5

Impact on existing qualifications

Qualifications that contain the reviewed standards or classifications are tabled below. Unit standards that affect the qualifications are shown in **bold**.

Affected	The qualification lists a reviewed classification (domain or subfield) in an elective set The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard
Not materially affected	The qualification lists a standard that has a new title The qualification lists a standard that has a new classification

The following InfraTrain qualifications are affected by the outcome of this review and will be revised/reviewed to take account of the changes in June 2005.

Qualification Title	Id
National Certificate in Pavement Surfacing (Application) with strands in Asphalt, and Chipseal [Ref: 0465]	1495, 13517, 13518
National Certificate in Pavement Surfacing (Asphalt Paving Supervision) with optional strands in High Capacity Highways and Polymers [Ref: 0193]	1495, 1502, 1509-1512, 13515, 13516, 13521, 17672
National Certificate in Pavement Surfacing (Asphalt Production Plant Operation) with an optional strand in Polymers [Ref: 0466]	1495, 1500, 1501, 1509, 1510, 13512, 13515, 13516, 13521, 16158, 17672
National Certificate in Pavement Surfacing (Bitumen Sprayer Operation) with an optional strand in High Capacity Roads [Ref: 0195]	1495-1498
National Certificate in Pavement Surfacing (Chipseal Design) with optional strands in Emulsions, and Polymers [Ref: 0196]	1495, 1496, 1499, 8021, 14664, 17670, 17671, 17674, 17675
National Certificate in Pavement Surfacing (Chipseal Supervision) with optional strands in High Capacity Roads, Emulsions, and Polymers [Ref: 0197]	1495-1497, 1502, 1503, 1505, 1506, 1507, 8021, 14664, 17670, 17674
National Certificate in Pavement Surfacing (Hot-Mix Asphalt Design) with an optional strand in Polymers [Ref: 0467]	1495, 1509, 1510, 13512, 13513, 13514, 13515, 13516, 13521, 17672, 17673
National Certificate in Pavement Surfacing (Plant Operation) with strands in Asphalt Paving, and Chipseal [Ref: 0468]	1495, 13519, 13520, 13521, 16158
National Certificate in Roadmarking (Assistant) with optional strands in Level 2 and 3 Roads, Line Removal, and Raised Pavement Markers [Ref: 0616]	1495

The following qualification is also affected by the outcome of this review. The standard setting body has been advised that it requires revision.

Qualification Title	Standard in the qualification	SSB Name
National Certificate in Commercial Road Transport (Goods Service) with strands in Heavy Rigid Vehicle Driver, and Heavy Combination Vehicle Driver, and optional strands in Dairy Industry Transport, Log Transport, Overdimension and Overweight Load Transport, Bulk Flammable Liquids Transport, Bulk Gases Transport, Bulk Liquefied Petroleum Gas Transport, and Civil Construction Transport [Ref: 0680]	1495	NZ Road Transport and Logistics ITO

Summary of main changes to standards' Ids, classification, titles, levels, and credits

The following summary shows the changes made to the standards as a result of the review. All changes are in **bold**.

Key to review category	
A	Dates changed, but no other changes are made - the replacement standard carries the same Id and a new version number
B	Changes made, but the overall outcome remains the same - the replacement standard carries the same Id and a new version number
C	Major changes that necessitate the registration of a replacement standard with a new Id
D	Standard will expire and not be replaced

Subfield Civil Plant Operation and Management
Domain Civil Plant Operation

Id	Title	Level	Credit	Review Category
16158	Operate wheeled loader in asphalt production, pavement surfacing or extractive industry environment Operate wheeled loader in asphalt production, pavement surfacing, or extractive industry environment	3	12	B

Subfield Pavement Surfacing
Domain Asphalt Surfacing

Id	Title	Level	Credit	Review Category
1500 20444	Operate asphalt production plant Operate an asphalt production plant	4 4	30 25	C
1508	Plan and organise asphalt paving construction	5	15	B
1509	Demonstrate knowledge of materials used in asphalt paving construction Demonstrate knowledge of materials used in asphalt production and construction	4	15 10	B
1510	Demonstrate knowledge of practical application of asphalt mixes Demonstrate knowledge of asphalt mixes and achieving construction specification requirements	4	15 12	B
1511	Perform pre-construction checks and supervise repairs prior to asphalt paving operations	4	20	D

Id	Title	Level	Credit	Review Category
1512	Supervise site activities for asphalt paving construction Supervise activities for asphalt paving construction	5	20 18	B
13512 20445	Demonstrate knowledge of operating processes of asphalt production plants Demonstrate knowledge of asphalt production plants	3 4	6 10	C
13513 20446	Demonstrate knowledge of hot-mix asphalt design methods and specifications for pavement surfacing Demonstrate knowledge of asphalt mix design methods and specifications	4 5	18 20	C
13514	Design hot-mix asphalt Design hot mix asphalt using the Marshall method	5	35	B
13515	Demonstrate knowledge of construction operation and acceptance testing for asphalt paving Carry out acceptance testing for asphalt paving	4	10	B
13516 21665	Demonstrate knowledge of the types of hot-mix asphalt used in pavement surfacing Demonstrate knowledge of materials and mixes for hot mix asphalt designs	4 5	10 15	C
13518	Demonstrate handwork, sweeping and traffic control skills associated with hot-mix asphalt work Demonstrate sweeping, placing, compacting, and associated handwork skills for asphalt surfacing	2	18 20	B
13519	Operate hot-mix asphalt paving machine Operate an asphalt paving machine	3 4	20 25	B
13521	Demonstrate knowledge of the compaction of hot-mix asphalt Demonstrate knowledge of the compaction of hot mix asphalt	3	5	B
17672	Demonstrate knowledge of the use of polymer modifiers in hot-mix asphalt production and construction Demonstrate knowledge of the use of polymer modifiers in hot mix asphalt production and construction	4	5	B
17673 21666	Demonstrate knowledge of the use of polymers in hot-mix asphalt design Explain the properties, selection, and effects of polymer-modified binders in hot mix asphalt	5 5	5 8	C

Id	Domain	Title	Level	Credit	Review Category
1495	Bitumen Surfacing	Demonstrate knowledge of the dangers of bitumen handling and the need for safety	2	20	C
20449		Demonstrate knowledge of the dangers of handling bituminous materials and the need for safety	3	20	
1496	Bitumen Surfacing	Demonstrate knowledge of bitumen materials, their modification and handling on chipsealing works	4	20	C
20450		Describe safe heating, blending, modification, and transfer of bulk bituminous liquids	4	20	
1497	Bitumen Surfacing	Operate bitumen sprayer plant and equipment	4	30	C
20451	Chipseal Surfacing	Operate a gangbar sprayer and equipment for chipseal surfacing	4	20	
20461	Chipseal Surfacing	Demonstrate knowledge of bitumen gangbar sprayers	4	10	
1498	Bitumen Surfacing	Spray bitumen on road surfaces	4	30	C
20452	Chipseal Surfacing	Spray bitumen for chipseal surfacing using a gangbar sprayer	4	30	
1499	Bitumen Surfacing	Design chipseal surfacings	5	35	C
21664	Chipseal Surfacing	Design chipseal surfacings and pretreatments	5	40	
1501	Bitumen Surfacing	Operate bitumen supply and support facilities and equipment	4	20	C
20443	Asphalt Surfacing	Operate bitumen storage and heating equipment at an asphalt plant	4	12	
1502	Bitumen Surfacing	Demonstrate supervisors' knowledge of bitumen surfacing contract documents	4	20	B
		Demonstrate knowledge of contract documents required for bitumen surfacing supervision		15	
1503	Bitumen Surfacing	Plan and organise site activities for chipseal construction	5	15	C
20453	Chipseal Surfacing	Plan and organise activities for chipseal construction sites	5	15	
1505	Bitumen Surfacing	Demonstrate knowledge of practical aspects of chipseal design processes	4	20	B
	Chipseal Surfacing	Demonstrate knowledge of the impact of site requirements on the chipseal design process		15	

Id	Domain	Title	Level	Credit	Review Category
1506	Bitumen Surfacing	Perform pre-construction checks and supervise repairs prior to chipseal operations	4	20	D
1507	Bitumen Surfacing Chipseal Surfacing	Supervise site activities for chipseal construction Demonstrate knowledge of, and undertake duties for, chipseal construction supervision	5	20	B
8021	Bitumen Surfacing Chipseal Surfacing	Demonstrate knowledge of plant used in chipsealing construction Demonstrate knowledge of chipseal construction plant	3	5	B
13517	Bitumen Surfacing Chipseal Surfacing	Demonstrate handwork, sweeping, and traffic-control skills associated with chipsealing Demonstrate sweeping, chip-spreading, and associated handwork skills for chipseal surfacing	2	14 15	B
13520	Bitumen Surfacing Chipseal Surfacing	Operate truck-mounted roller-spreader on chipsealing works Operate a truck-mounted roller-spreader on chipsealing works	3	5 10	B
14664 20454	Bitumen Surfacing Chipseal Surfacing	Demonstrate knowledge of sealing chip used in bitumen surfacing Demonstrate knowledge of materials used in chipseal surfacing	3 4	6 6	C
17670	Bitumen Surfacing Chipseal Surfacing	Demonstrate knowledge of the use of polymer modifiers in chipseal construction Demonstrate knowledge of hot polymer-modified binders and their use in chipseal construction	4	5	B
17671	Bitumen Surfacing Chipseal Surfacing	Demonstrate knowledge of the use of polymer modifiers in chipseal design Design chipseal surfacings using polymer-modified binders	5	5	B
17674	Bitumen Surfacing	Demonstrate knowledge of the use of bituminous emulsions in chipseal construction	4	10	D
17675	Bitumen Surfacing	Demonstrate knowledge of the use of bituminous emulsions in chipseal design	5	5	D

New Unit Standards

Domain Asphalt Surfacing

Id	Title	Level	Credit
20447	Demonstrate knowledge of the care and operation of an asphalt paving machine	4	15
20448	Operate a self-propelled roller for asphalt surfacing	3	15

Domain Bitumen Surfacing

Id	Title	Level	Credit
20455	Demonstrate basic knowledge of safety relating to bituminous materials	2	5
20456	Demonstrate first aid relating to liquid bitumen and bitumen additives	2	1
20458	Describe placarding requirements and produce documentation for transporting bituminous materials	2	3
20459	Transport bulk bituminous liquids by road and assist with loading and unloading	3	8
20460	Operate a bitumen tank wagon	4	15
20463	Determine and document bitumen blends	3	5

Domain Chipseal Surfacing

Id	Title	Level	Credit
20462	Operate a self-propelled roller for chipseal surfacing	3	8