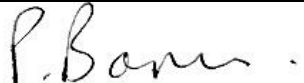


Laboratory Accreditation Programmes

Schedule to
CERTIFICATE OF ACCREDITATION

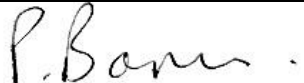
Laboratory	Southern QA Limited
Address	PO Box 15120, Aranui, Christchurch, 8643 19 Helanca Avenue, Wainoni, Christchurch, 8061
Telephone	03 381-1670
URL	www.sqal.co.nz
Authorised Representative	Mr Brendon Isherwood Director
Client No.	1644
Programme	Mechanical Testing Laboratory
Accreditation Number	400
Initial Accreditation Date	28 May 1990
Conformance Standard	ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories
Testing Services Summary	Christchurch, Hamilton, Invercargill 4.71 Coatings 4.75 Welder Qualification Tests 4.76 Metals and Metal Products 4.79 Metallographic Tests on Metals 4.81 Non Destructive Tests by Radiography 4.82 Non Destructive Tests by Ultrasonics 4.83 Non Destructive Tests by Visual Inspection 4.84 Non Destructive Tests by Dye Penetrant Methods 4.85 Non Destructive Tests by Magnetic Particle methods 4.86 Non Destructive Tests by Eddy Current 4.87 Non Destructive Tests by Specialised Techniques
Signatories	Christchurch, Hamilton, Invercargill Mr Dean Aldridge 4.75, 4.81, 4.83, 4.84, 4.85 Mr Matthew Andrews 4.81, 4.83, 4.85 Mr Casey Ayers 4.75, 4.76, 4.79, 4.81, 4.82, 4.83, 4.84, 4.85 Mr Michael Bell 4.75, 4.76, 4.79, 4.81, 4.83 Mr Albert Caldwell 4.82, 4.83, 4.84, 4.85 Mr Ian Crawford 4.83 Mr Rick Cummins 4.82 (thick-only), 4.83, 4.85 (yoke-only) Mr Kevin Gibson 4.76, 4.85 Mrs Hendrina (Rene) Hill 4.71 Mr Ryan Isherwood 4.82, 4.83, 4.85 Mr Brendon Isherwood 4.75, 4.79, 4.83, 4.84, 4.85

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CERTIFICATE OF ACCREDITATION

	Mr David Leech	4.75, 4.83, 4.85, 4.86
	Mr Rob Penney	4.75, 4.76, 4.79, 4.81, 4.82, 4.83, 4.84, 4.85, 4.87(d)
	Mr Grant Russell	4.75, 4.76, 4.79, 4.81, 4.83, 4.85, 4.87
	Mr Glen Shanks	4.75 (visual), 4.82 (a)(e), 4.83, 4.85
	Mr Greg Shea	4.75 (visual), 4.81, 4.82, 4.83
	Mr Paul Smith	4.81, 4.83, 4.84, 4.85
	Mr Dale Smith	4.82, 4.83, 4.84, 4.85
	Mr Lee Smith	4.82, 4.83, 4.84, 4.85
	Mr Rob Van Kampen	4.71, 4.75, 4.79, 4.82, 4.83, 4.85
	Mr Rob Van Loenhout	4.75, 4.79, 4.82 ((a)ii)(c)(e), 4.83, 4.85

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Christchurch, Hamilton, Invercargill

4.71 Coatings

The following tests in accordance with the listed or similar standards

- | | |
|------------|--|
| ASTM D3359 | Rating Adhesion by Tape Test |
| ASTM D4541 | Pull off strength of Coatings using Portable Adhesion Tester
Method E: Self Alignment |
| SSPC-PA2 | Conformance to dry coating thickness requirements – Electronic Gauge |
| AS3894.5 | Site testing of protective coatings – Determination of surface profile |
| ISO8501-1 | Preparation of steel substrates – Visual assessment of surface cleanliness |

4.75 Welder Qualification Tests

Visual, macro-examination, bend and break tests in accordance with the following standards

- API 1104
- AS 1554 parts 1 to 7
- AS 1665
- ASME IX
- AS/NZS 2205.2.1
- AS/NZS 2205.3.1
- AS/NZS 2205.4.1
- AS/NZS 2205.4.2
- AS/NZS 2980
- AS/NZS 9606-1
- BS EN ISO 15614
- BS EN ISO 9606-1

4.76 Metals and Metal Products

(e) Tests in accordance with the following standards

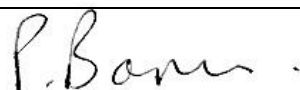
- | | |
|-----------|---|
| ASTM A956 | Leeb Hardness Testing of Steel Products |
|-----------|---|

4.79 Metallographic Tests on Metals

Test methods in accordance with the following standard

- | | |
|-------------|--|
| AS 2205.5.1 | |
| Method 5.1 | Macro Test – Cross – section examination |

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4.81 Non Destructive Tests by Radiography

- (a) Radiographic examination of metals
 - ii) Welded Joints Al, Fe, SS
 - iii) Castings Fe, SS

4.82 Non Destructive Tests by Ultrasonics

- (a) Ultrasonic examination of metals
 - (i) Single wall or rolled product - thickness measurements - corrosion pitting Al, Cu, Fe, Ni, Mg, Zn
 - (ii) Welded joints Al, Cu, Fe, Ni, Mg, Zn
 - (iii) Castings Al, Cu, Fe, Ni, Mg, Zn
 - (iv) Forgings Al, Cu, Fe, Ni, Mg, Zn
 - (v) Extruded Product Al, Cu, Fe, Ni, Mg, Zn
- (c) Ultrasonic examination of components and assemblies
 - (ii) Bonded assemblies
 - (iv) Thickness measurements
- (e) Manual Phased Array
 - (i) Single wall or rolled product - thickness measurements - corrosion pitting Al, Cu, Fe, Ni, Mg, Zn
 - (ii) Welded Joints Al, Cu, Fe, Ni, Mg, Zn
 - (iii) Castings Al, Cu, Fe, Ni, Mg, Zn
 - (iv) Forgings Al, Cu, Fe, Ni, Mg, Zn
 - (v) Extruded products Al, Cu, Fe, Ni, Mg, Zn

4.83 Non Destructive Tests by Visual Inspection

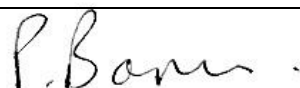
- (a) Visual inspection of metals
 - (i) Flat or rolled product Al, Fe, SS
 - (ii) Welded joints Al, Fe, SS
 - (iii) Castings Al, Fe, SS
 - (iv) Forgings Al, Fe, SS

4.84 Non Destructive Tests by Dye Penetrant Methods

Penetrant Testing in accordance with the following standards

- (i) Visible dye
 - Water washable Al, Cu, Fe, Ni, Mg, Zn, SS
 - Solvent removable method Al, Cu, Fe, Ni, Mg, Zn, SS
 - Post emulsifiable method Al, Cu, Fe, Ni, Mg, Zn, SS

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- | | | |
|------|---|--|
| (ii) | Fluorescent dye
- Water washable
- Solvent removable method
- Post emulsifiable method | Al, Cu, Fe, Ni, Mg, Zn, SS
Al, Cu, Fe, Ni, Mg, Zn, SS
Al, Cu, Fe, Ni, Mg, Zn, SS |
|------|---|--|

4.85 Non Destructive Tests by Magnetic Particle methods

Magnetic Particle Testing in accordance with the following standards

- | | | |
|-------|---|-------------------|
| (i) | Magnetic flow method
- Welded joints
- Forgings
- Castings
- Machined parts | |
| (ii) | Current flow method
- Welded joints
- Forgings
- Castings
- Machined parts | Amps AC/DC 1000 A |
| (iii) | Coil method
- Welded joints
- Forgings
- Castings
- Machined parts | Amps AC/DC |

4.86 Non Destructive Tests by Eddy Current

- | | | |
|-----|--|------------|
| (a) | Surface flaw detection | All metals |
| (b) | Metallic Coating thickness measurement | All metals |
| (c) | Sorting of materials and components | All metals |
| (d) | Sub-surface flaw detection | All metals |
| (e) | Weld testing | All metals |

4.87 Non Destructive Tests by Specialised Techniques

- | | |
|-----|---|
| (d) | Automatic Phased Array (Thickness only) |
|-----|---|

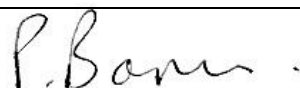
BRANCH LABORATORIES

Christchurch
 19 Helanca Drive
 Wainoni, Christchurch 8061

Invercargill
 37 River Street, Prestonville
 Invercargill 9810

Hamilton
 51 Riverlea Road
 Hamilton 3216

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 General Manager



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