

COATING TECHNOLOGY AND INSPECTION

CAPABILITY STATEMENT

CTI CONSULTANTS PTY LTD

ABN 56 003 824 815

JANUARY 2009

INTRODUCTION

CTI Consultants Pty Ltd is one of Australia's leading consultancies in protective and heavy duty coatings, and has been active in this field since its formation in 1989.

CTI is NATA-accredited for coating inspection to AS/NZS ISO/IEC 17020, Type A Inspection Body.

The directors and associates of CTI Consultants hold qualifications relevant to coatings technology and have extensive experience in this subject.

Fred Salome is a qualified chemist and corrosion technologist with 30 years experience in the coatings industry, having worked for coating manufacturers before becoming a founding director of CTI. Fred is a NACE International Certified Coating Inspector (Level 3 and Marine), a NACE Protective Coatings Specialist and is an Instructor for the NACE CIP Program.

Don Bartlett who runs the Victorian branch of CTI has an impressive background in the paint industry, and has vast experience in use of protective coatings for mitigation of corrosion. Don is the former executive officer of the Australian Paint Approvals Scheme and has been a long-standing member of Standards Australia committees for protective coatings, paint and related materials.

Bill McEwan is one of Australia's foremost metallurgists with vast knowledge of and practical experience with protective coatings, formerly being the chief scientist for the Hydro-Electric Corporation with technical responsibility for corrosion and coating matters. Since 1995, Bill has been part of CTI's team involved in coating specification and inspection.

All CTI directors and associates are also experienced and qualified in lead paint management issues. CTI's support staff, Senior Consultant **Dr. David Stitt**, and Coating Inspectors **Robert Sutcliffe and Todd Fotheringham**, have completed specialist training in lead paint management. Robert and Todd are both also NACE International Certified Coating Inspectors – Level 3.

Fred Salome also holds (or has held) the following positions within the industry

- President, Australasian Corrosion Association (2007)
- NSW Branch of the Australasian Corrosion Association; Secretary 1997 – 2001, President 2001 - 2003.
- Protective Coatings Technical Group of the Australasian Corrosion Association, Secretary (1996/97); Chairman, (1998/9).
- ACA representative on the board of Blast Cleaning & Coating Association Australia Ltd (BCCA-A, 1998 to 2005).
- President and Public Officer, The LEAD Group Inc. (1996 to 2005)
- Committee Member, BCCA-of NSW Inc (1998, 2001).
- Standards Australia Committees CH-003, Paint and related materials, and MT-014, Corrosion of metals.
- Standards Australia Sub-Committees CH003/11, Lead Paint Management (Chairman), CH003/10 Site Testing of Protective Coatings, MT-09/5 Metal Finishing, Surface Preparation and CH/14/2 Corrosion Protection of Steelwork.
- Instructor, NACE International Coating Inspection Program

COATING INSPECTION EQUIPMENT

CTI possesses a range of specialised equipment for use in assessing and inspecting coatings, including:-

- **Dry Film Thickness Gauges**

Elcometer 456 (Ferrous, 0 – 5000 μm) and Elcometer 345 (Ferrous and Non-Ferrous, 0 - 1200 μm), plus certified calibration standards. Elcometer 211 magnetic Type 1 dft gauge (for Radio Frequency or hazardous work). Positector 200 Ultra Sonic gauge for timber and concrete. Tooke paint inspection gauge for dft measurement over masonry and timber surfaces.

- **Wet Film Thickness**

Sheen Wet Film Thickness Wheel Gauge (0 to 1000 μm). Comb gauges.

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- **Pull-Off Adhesion Testers**

Positector AT-CM hydraulic adhesion tester
Elcometer Model 106 pull-off testers, 0-3.5 MPa
and 0-15 MPa.

- **Ambient (Environmental) Conditions**

Surface thermometers, Infra-red thermometer,
sliding psychrometers, Dew Pt & RH calculators.

- **Surface Profile Measurement**

Testex tape and digital dial gauge micrometer
Kean-Tator profile comparator (Grit)

- **Pictorial Standards for Surface Preparation**

ISO 8501-1 and NACE/SSPC standards for visual
assessment of surface cleanliness.
ICRI Visual Standards for Concrete Surface
Roughness

- **Holiday Detection Equipment**

PCWI Compact DC Porosity Detector, 0-30kV.
PCWI Compact Wet Sponge Porosity Detector
(9V, 67.5V and 90V selectable)

- **Digital Cameras**

High resolution digital cameras for accurate
recording of survey locations and paint defects
and condition. Photographs presented on CD, by
email or on colour-laser print-outs.

- **Lead-Paint Management Equipment**

Niton XL309 Portable XRF Lead Analyser, Dupont
Model P2500 personal air pumps; Ecotech 2000
high volume air samplers for TSP lead and dust to
AS 2724.3.

- **Miscellaneous**

Wide range of standards, text books, manuals and
ancillary testing and inspection tools. Optical and
metallurgical microscopes. Chemicals and
equipment for testing of residual contaminants.

COATING CAPABILITIES

CTI personnel are qualified and experienced in
carrying out a wide range of coating
investigations, inspection and related services,
including:-

- **Coating Assessments and Inspection**

On-site surveys for condition of paints, extent of
corrosion, failure diagnosis and assessment of
exposure environments. Independent third party
inspection of coating application (CTI personnel
are confined space certified).

- **Specifications**

Preparation of specifications for new or
maintenance work, including coating selection.
CTI can also recommend appropriate contractors
or suppliers and provide contract supervision and
administration.

- **Environmental and Occupational Services**
Risk assessments, recommendations and
guidelines. Monitoring for occupational exposure
and environmental emissions.

- **Lead Paint Management**

Full lead paint management services including
surveys for lead, maintenance recommendations,
containment, environmental controls, OH&S
programmes, training and inductions. Provision of
environmental monitoring services.

COATING EXPERIENCE (Selected Projects)

- Novotel Hotel, Darling Harbour; Supervision
and inspection of coating application to pre-
cast GRC panels (for Citicorp) 1991/1992
- Sydney Harbour Bridge, Grafton Bridge,
Harwood Bridge, Bridges in Southern Region;
coating condition surveys for RTA Bridge
Branch (1993 to present)
- Newcastle Council Queens Wharf Tower,
assessment, specification and supervision of
refurbishment (1996 to 1999)
- National Transmission Agency, Inspection and
specifications, maintenance coating of
broadcast towers in Qld, NSW, SA and
Tasmania (1997 to 1999)
- Darling Harbour Authority (Sydney Harbour
Foreshore Authority), Exhibition Centre re-
painting (1998/99, 2000 and 2001, 2002)
- Docklands Stadium Coatings Inspection (for
International Coatings at Transfield, NSW,
1999 with Incospec)
- Olympic velodrome coating inspection (for
Concrete Constructions, 1999)
- Northpower Stadium, Gosford; coating
inspection (for Abigroup, 1999)
- Steel reservoirs, inspection of maintenance
painting, Eurobodella Council (for Lozmont
P/L) (1999-2005)
- Specification for maintenance painting of steel
piles on Port Vila International Wharf (for
SMEC - 1998)
- Coating specifications, structural steelwork in
marine environments, Waterway
Constructions P/L (1997 to present)
- Telstra/NDC, Inspection and specifications,
maintenance coating of telecommunication
towers in Qld, NSW and Tasmania (1998-03)



- Circular Quay Passenger Terminal, Inspection of maintenance repainting (2000)
- Sydney Aquarium OC2, Specification and inspection of coatings for structural steel (2002); specification and inspection; 2003.
- Snowy Mountains Hydro Scheme, Specification and inspection of pipeline refurbishment, (2001/2002 & 2004).
- Sydney Catchment Authority – Inspection of Pipelines; Warragamba (Ext.) and Kangaroo (Int.), 2002.
- Sydney Catchment Authority – Assessment and Specifications for Lead Paint Management, Warragamba Valve House and Woronora Pipeline, 2002.
- Waterway Constructions – Coating inspection for Jack-Up pile system, Walsh Bay Wharf 2/3, 2002 – 2003. Walsh Bay Wharf 2/3 Ferry Pontoon, 2005 – 2006
- Bantry Bay munitions stores refurbishment – NSW NP&WS, Coating specification and coating inspection; 2003-2004.
- Sydney Aquarium OC2 development – Refurbishment of Olympic Statues – Coating specification and coating inspection; 2003.
- Esso Bream Gas Cap Project – Coating inspection for HP Separator (Int and Ext), for Incospec & Associates; 2003.
- Azerbaijan International Operating Company; Thermal Spray Aluminium to Crane Booms – Coating inspection 2003 - 2006.
- Illawarra Wastewater Strategy – Coating inspection (Walter Construction) 2003 - 2004.
- Sydney Catchment Authority – Development of 10-year maintenance strategy, Warragamba Pipeline; 2003.
- Icon Apartments – Mirvac, coating inspection of structural steel pergolas and frames; 2003.
- Kings Wharf Site 6 - Multiplex, coating inspection of structural steel frames; 2003.
- Sydney Catchment Authority – Assessment and Specifications for Warragamba Dam Gates and Lifting Bridges, 2004.
- Pyrmont Bridge central swing span, maintenance painting (Sydney Harbour Foreshore Authority) – coating specification and coating inspection, 2004.
- Goldsbrough Apartment Maintenance Painting – coating inspection, 2004-2005.
- Royal Agricultural Society Showground Maintenance – (Programmed Maintenance Services) Coating inspection, 2003 & 2004.
- Maroubra Hotel Development – Multiplex; Preparation of Coating Specification Coating Inspection, 2004.
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- 126 Phillip St – Bovis Lend-Lease; Coating specifications, and inspection of coating application to structural steel of the Architectural Roof Feature (2004/2005).
- XPT Refurbishment Program, NSW Railcorp, Coatings inspection (2005)
- Sydney Catchment Authority – Specification for Re-Lining Bendeela Pipeline, 2005.
- Manly Ferry Wharf refurbishment, NSW Maritime (2006/07)
- Port Waratah Coal Services Kooragang island Expansion – Coating Inspection; 2008 – ongoing.



RELATED INDUSTRY INVOLVEMENT

ENVIRONMENTAL MONITORING OF INDUSTRIAL LEAD PAINT MANAGEMENT

Survey background levels of lead in the environment; design and/or implementation of environmental monitoring programs for lead paint removal works, for a range of clients, including the Roads and Traffic Authority of NSW, NSW State Rail, Sydney Water, Queensland Rail and Tasmanian Dept. of Transport.

LEAD PAINT MANAGEMENT POLICY DEVELOPMENT

Provide advice and training, and assist in policy development for lead paint management. Develop and review specifications for lead paint projects.

LEAD SURVEYS (DOMESTIC & PUBLIC BUILDINGS)

Carry out surveys for lead in paint, soil and dust for private residents. Conduct surveys of public buildings for lead in paint, soil and dust. Ambient air monitoring at child care centres (Strathfield and Blacktown).

CONTAMINATED SITE INVESTIGATIONS

Conduct site sampling programs, arrange analysis, reporting of results and interpretation, for contaminated sites or sediment.

OCCUPATIONAL HEALTH AND SAFETY

Monitoring for occupational exposure on lead paint management projects.

OH&S Training in lead awareness and site specific safety and hygiene procedures for workers carrying out hazardous paint management tasks.

PAINT RELATED OH&S

Carol Bodle, a Director of CTI, is a qualified Industrial Hygienist with a wealth of experience in paint application, surface preparation and related processes.

Carol has performed surveys for hazards associated with painting activities including lead, zinc chromate and organic solvents, and she manages CTI's activities in environmental and occupational monitoring of lead paint projects.

CTI has the resources and experience to conduct risk assessments of activities related to the coatings industry, and has made presentations on this subject at a number of industry seminars and forums.

STANDARD INSPECTION PROCEDURES

All coating inspection procedures are based on relevant Australian Standards or other industry standards, including:-

- AS 3894 Site testing of Protective Coatings (part 1 to 14)
- AS 1580 Paint and related materials, Methods of test
- NACE, ASTM and SSPC Standards

AUDIT INSPECTION PROCEDURES

Where CTI is requested to perform an audit role, site visits will include a review of the applicator's QA records as well as limited inspection of the work and conditions.

Pre-commencement Audits are intended to review the Applicator's QA system, including

- Project specification and a review of intended procedures, equipment and materials for compliance,
- Currency of QA Accreditation and completeness of QA manual for the project
- Project and QA Personnel, details of training, experience and authority as required under the specification.

Routine Audit Inspections to review the applicator's continuous records, with random confirmatory testing by CTI.

CTI Consultants Pty Ltd

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