ACA BRANCH NEW ZEALAND BRANCH

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ACA NZ BRANCH AGM 2024

The AGM of the ACA NZ Branch was held at HERA House, Manukau, Auckland, on Thursday 21 March 2024. The meeting was chaired by Ry Collier, the outgoing NZ Branch President. Attendees present at the AGM were from Auckland, Taranaki, Wellington and Christchurch.

The Branch Officer reports presented to the meeting demonstrated that the NZ Branch was back in good heart again after several difficult years due to Covid.

The following people were elected as Branch Officers for 2024-25:

President: Grant Chamberlain (the VP is TBC)

Secretary: Mark Sigley

Treasurer: Willie Mandeno

Education: Matt Vercoe

Communications: Trish Shaw

Technical: Raed El Sarraf

Electrolysis: Grant Chamberlain

Membership: Hanieh Ghominejad

Other Representatives:

Branch Committee Members: Philip La Trobe, Rene Hill, Nicholas Zglobis and Ry Collier (Immediate Past-President).

Other Representatives:

ICC: Willie Mandeno, Trish Shaw

ACA Council Representatives: Grant Chamberlain, Willie Mandeno

YCG Representative: TBC

Bulletin Editor: Les Boulton

The main topic on the agenda was the Special Resolution to amalgamate the four existing NZ Divisions into a single ACA NZ Branch. The resolution was put to the meeting and it was passed unanimously.

The President's Report for 2023-24 will be published in the May Bulletin.

Willie Mandeno then presented a technical talk entitled: "AS-NZS 2312.3 Metal Spray Coatings". His talk outlined the history and present situation with publication of AS-NZS 2312 Part 3, which deals with the subject of Thermal Metal Spray (TMS) Coatings. The new standard on TMS is expected to be published in 2024.

Right: NZ Branch President Ry Collier (outgoing) and NZ Secretary Mark Sigley at the AGM

Below: Willie Mandeno presents his technical talk on TMS coatings after the AGM

ACANZ would like to gratefully acknowledge this month's sponsor…

Q & A CORNER

Older ACA NZ members have probably seen a number of situations that may never have made it to a textbook.

If you have a question you'd like clarification on, email it to the Editor at lesboultonrust@gmail.com. We'll pose it to our panel of experts who will answer it in another Bulletin, so everyone can improve their knowledge.

Q:

What units are used to describe the salinity or the likely corrosivity of salty water?

& A:

We can report the actual salt concentration level of the water, or measure its electrical conductivity to derive the salt concentration. This is important information for categorising immersion environments, as the more conductive an electrolyte is the faster corrosion will occur on the anode of the electrochemical cell. When washing metals before application of protective coatings it is important for the final rinse water to have a low concentration of dissolved salts.

Salt concentration units are weight/volume, e.g. µg/cm3 or mg/L, or can be given in parts per million (ppm). These may also be reported as Total Dissolved Solids (TDS) which is the sum of all ionic particles smaller than 2 microns.

The units for measuring conductivity are Siemens per metre (S/m) which is the reciprocal of resistivity units which are Ohms per metre (Ω /m). Water is usually reported in µS/cm or µmhos/cm.

Typical values for different liquids (waters) at 25°C are given below:

	Salt (chloride) concentration or	***Salinity***	***Conductivity***
Seawater	~35 mg/cm^3 (35 g/L)	35,000 ppm*	~50,000 µS/cm
Human blood	~9 gm/L	~9,000 ppm	10-20,000 µS/cm
Town water supply (ideal)	10 -250 µg/cm^3 (250 mg/L)	<250 ppm	0-200 µS/cm
San Pellegrino sparkling spring water	50 mg/L	50 ppm	1200 µS/cm
Distilled/De-ionised water	0	0	0.5 – 3 µS/cm
** Average, but can range between 31,000 and 38,000 ppm*			

For example, the conductivity of the fresh water in Lake Taupo is reported at 12 µS/cm.

The maximum conductivity for water pressure washing of live electricity transmission towers is 667 µS/cm.

Submitted by W L Mandeno

Corrosion hits new Navy supply ship

HMNZS Aotearoa

After only four years in service, HMNZS Aotearoa has struck troubled waters with an estimated $10M of damage to diesel fuel tanks on the cargo vessel. The Navy vessel is described as a purpose-built, technologically enhanced liquid-cargo asset.

The Navy stated that the 173metre, Korean-made warship also has other coating and corrosion issues. The culprit has been identified as “diesel bug” (www.conidia.com/diesel-bug/) a well known type of microbiological contamination that can cause corrosion damage to steel equipment and machinery in contact with wet diesel fuel. The presence of water in a diesel fuel tank provides the environment that causes growth of the microbial (fungal) contamination. Contaminated diesel fuel affects the performance of the ship engines and it also causes degradation of the anti-corrosive chemicals present in the diesel (F-76 military grade diesel fuel).

A number of coating and corrosion issues have also been identified on Aotearoa since the ship was commissioned in 2020. The Navy is systematically remediating the corrosion issues during planned maintenance periods in 2024. Meanwhile, an investigation is underway to ascertain the cause of the diesel fuel contamination and to identify any further remediation work required on the ship.

Source: NZ Herald Sunday 3rd March 2024

CALL FOR ABSTRACTS FOR CORROSION & PREVENTION 2024

The Australasian Corrosion Association Corrosion & Prevention conference will be held in Cairns in November 2024.

Corrosion & Prevention 2024 will feature a full program of peer-reviewed papers and case studies, technical forums, research symposium, networking and more. The call for abstracts is now open.

We are seeking technical papers and case studies on all subjects related to corrosion and its control, including asset management and research findings. We welcome papers from university, government, private enterprises, asset owners, consultants, contractors and manufacturers to share the latest developments and information in our industry.

Please note that the ACA’s dedicated conference software is still in development, and we will be once again using the Paper Trail software from our sister association AMPP for the duration of the abstract and paper submission process.

As in 2023, authors and co-authors will need to create an AMPP login to gain access to the system for paper and abstract submissions, reviews and final uploads.

How different constituents in water affect corrosion

The concentrations of various substances present in waters (i.e. dissolved, colloidal or suspended matter) can have a significant effect on how metals and alloys in contact with the water will corrode. The corrosivity of the water is related to whether it is a raw natural water, treated fresh water, distilled water, de-ionised water, brackish water or sea water.

Each of these water types has a different corrosivity which can play an important role in the likelihood of corrosion occurring on metals in contact with the water. Assessment of the water chemistry is therefore an important part of the decision making process, when selecting a metal for structures immersed in water during service.

In some applications the presence of very small concentrations of impurities can have a significant effect on the water corrosivity, and such impurities are measured in small units such as parts per million (ppm). Water analysis for drinking water (potable water) is concerned mainly with toxins, pollutants and bacteriological tests. For industrial water supplies, a mineral analysis is of more interest from a corrosion standpoint.

The important constituents in water that affect the corrosivity are classified as follows:

o Dissolved gases, such as oxygen, carbon dioxide, ammonia, and sulphur compounds

o Mineral constituents, including hardness (calcium and magnesium salts), chlorides, sulphates, nitrates, bicarbonate, heavy metals and silica.

o Organic matter, of animal and vegetable origin, waste oil, trade waste, agricultural constituents, and detergents.

o Microbiological forms, including algae, fungi, slime-forming bacteria and other micro-organisms.

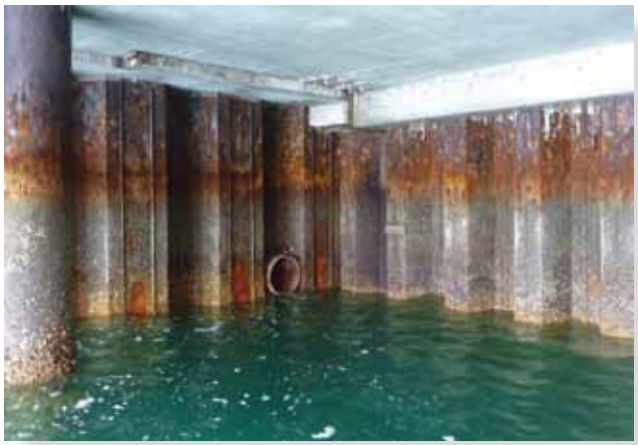
The pH of treated natural water is rarely outside the range of 4.5 to 8.5. In more acidic waters (low pH) slight corrosion occurs on metals such as copper and its alloys, as well as steel which are commonly used metals in water handling.

From a corrosion standpoint, the most significant "contaminant" in waters is dissolved oxygen gas (DO) from the air. Oxygen (O2) is a cathodic depolariser which reacts with and removes protective films on a cathode surface during electrochemical corrosion - this permits corrosion of a metal anode to continue. In a closed vessel such as a hot water system or a boiler, corrosion rates increase with temperature, hence the importance of removing DO from hot water systems.

Other constituents that can contribute to corrosion in waters are chlorides (Cl), carbon dioxide (CO2), calcium salts (Ca), sulphides (S), and ammonia (NH3) from industrial or natural sources. To counteract corrosion and biocorrosion, the water is often treated with corrosion-inhibiting chemicals and biocides.

Scales precipitated onto metal surfaces can provide protection to the substrate, but can accentuate localised corrosion (e.g. pitting) at pores, cracks or other voids in the film. Thus the development and control of scale formation on metal surfaces in water systems is an important consideration.

A water index for scale formation that has gained acceptance by the corrosion community is called the Langelier Saturation Index (LSI). The Langelier Index is a useful guide designed to indicate the tendency of a given water to deposit a protective scale (e.g. calcium carbonate) on metal substrates in the water, but it does not predict any absolute corrosivity of the specific water under investigation.



Reference: www.lenntech.com/calculators/langelier/index/langelier.htm

AMPP CIP1 AND CIP2 RETURNING TO NEW ZEALAND

Are you looking into getting a coatings certification this year?

Our AMPP Coating Inspector Program Level 1 and Level 2 are back in New Zealand and still have spots remaining for this July

Venue for all courses is Mount Richmond Hotel and Conference Centre (Corner of Mt Wellington Highway and New Brighton Rd) with the Level 1 'Prac Day' to be conducted at the Metspray factory in East Tamaki.

Note that it is possible to attend the Level 1 and Level 2 classes consecutively, provided the Level 1 practical exam is passed in the weekend prior to starting Level 2.

CIP1 | NZ 8-13 July

- Located in Mount Richmond Hotel and Conference Centre (Corner of Mt. Wellington Highway and New Brighton Rd) with the Level 1 'Prac Day' to be conducted at the Metspray factory in East Tamaki.
- 6-day course.

Practical day includes visit to a local blast yard.

To register: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/ampp-coating-inspector-program-level-1-or-nz-or-8-13-jul-2024-4a2ZI71VUy/overview

CIP1 | NZ | 22-27 July

- Located in Auckland, as above.
- 6-day course.

Practical days include visit to a local blast yard.

To register: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/ampp-coating-inspector-program-level-1-or-nz-or-22-27-jul-2024- 4a2ZI71VV8/overview

Course highlights:

- Curing Mechanisms
- Role of the Inspector
- Environmental Test Instruments
- Inspection Procedures
- …and more!

Who should attend?

Although specifically designed for Coating Inspector Trainees, this program also benefits anyone interested in gaining a better understanding of coatings and inspection, including project managers, engineers, maintenance and quality assurance/control personnel, contractors and specification writers, and coating applicators.

Prerequisites: None

CIP2 | NZ | 15-20 July

- Located in Auckland.
- 5-day course.

Perform and document destructive and non-destructive inspections

To register: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/ampp-coating-inspector-program-level-2-or-nz-or-15-20-jul-2024-4a2ZI71VVw/overview

Course highlights

- De-humidification and centrifugal blast cleaning
- Coating types and inspection criteria
- Water jetting
- Hot dip galvanizing
- Spray metalizing and pipeline coatings
- Concrete and cementitious surfaces
- .. and more!

Who should attend?

Level 1 Coatings Inspectors seeking advancement in their certification. This makes them responsible for performing and documenting for destructive/non-destructive inspections under the supervision of a Senior Certified Coatings Inspector.

Pre-requisites:

CIP Level 1 certificate and three years coatings-related work experience.

Advertorial

Unlocking the Power of Corrosion Management with NZ Corrosion Services

NZ CORROSION SERVICES
Protective Coating Consultants & Certified Inspectors

Since its inception in May 2004, NZ Corrosion Services has been a pioneering force in the field of corrosion assessment and inspection. What began as a modest endeavour has now evolved into a dynamic, multi-faceted company boasting a diverse team of corrosion control experts dedicated to safeguarding assets across New Zealand.

The company's growth trajectory has been marked by a commitment to expertise and expansion. Partnering with UK-based Corrodere, NZ Corrosion Services offers exclusive training programs, including the Train the Painter qualification and ICorr training, ensuring unparalleled proficiency in corrosion management.

Emphasizing the importance of qualifications and experience, the team pursues a variety of certifications such as AMPP Coating Inspection, SSPC Passive Fire Protection Inspections, and Corrodere diplomas. This dedication to staying ahead of industry standards allows NZ Corrosion Services to provide comprehensive solutions tailored to each client's needs.

Innovation remains a cornerstone as the company broadens its engineering capabilities to include Risk-Based Inspection, corrosion engineering, metallurgy, and cathodic protection. This adaptability ensures we can address a spectrum of challenges across different industries.

While initially serving the NZ Oil & Gas sector, NZ Corrosion Services has diversified its portfolio to encompass condition assessments and damage evaluations in various industries. From post-fire assessments to responding to natural disasters, the company maintains a resilient approach to asset protection.

Whether you're seeking expert inspections, cutting-edge training, or tailored engineering solutions, NZ Corrosion Services is your trusted partner. Join us in our mission to combat corrosion and preserve the integrity of vital assets across New Zealand. Contact us today to learn more about how we can support your corrosion management needs.

ACA NZ BRANCH COMMITTEE & OFFICERS 2024-25

President:	Grant Chamberlain	Membership:	Hanieh Ghominejad
Vice President:	TBC	Technical:	Raed El Sarraf
Secretary:	Mark Sigley	Electrolysis:	Grant Chamberlain
Treasurer:	Willie Mandeno	Editor:	Les Boulton
Education:	Matt Vercoe	Members:	Philip La Trobe, Rene Hill, Nicholas Zglobis and Ry Collier
Communications:	Trish Shaw		

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