



NOVEMBER 2025

2ND RCA AFRICA CONFERENCE 2026 10-11 MARCH - CAPE TOWN

WE BRING HIGH LEVEL TECHNOLOGY TO REAL LIFE PROBLEMS

SECURE YOUR SPOT TODAY!

**CTOD Test of the
Month**



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**WE HAVE AN
ANNOUNCEMENT!**



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INSURANCE INSIGHTS

From the Trenches to
the Frontline



PAGE 10

MATERIALIA

AFRICA ET AL. MONTHLY MAGAZINE



**REGISTER
NOW**

**New Consulting Services - Why attend the 2nd RCA
Corrosion Monitoring Africa Conference**

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SECURE YOUR SPOT TODAY!

ATTEND THE 2ND RCA AFRICA CONFERENCE

A Pan African event bringing together the unique ecosystem of decision makers in large industrialisation projects throughout Africa



10TH AND 11TH MARCH 2026
ASARA WINE ESTATE • CAPE TOWN

THE ECOSYSTEM OF PROGRESS

The Security of Africa's Industrialisation Strategy



MOTIVATION BY DR JANET COTTON PR.ENG

Big projects don't stand alone — they thrive within a buzzing network of minds: financiers, underwriters, insurers, loss adjusters, lawyers, and engineers.

At the centre lies materials engineering — the quiet powerhouse that connects every player.

Because everything we build, insure, and improve starts with what things are made of.

So why only talk when things go wrong?

This conference is about connecting before the crisis — building collaboration, understanding, and sustainable progress.



THE ECOSYSTEM AT WORK



Where Innovation Happens

This isn't a hierarchy — it's a loop: Financiers fund. Underwriters assess. Insurers protect. Adjusters learn. Lawyers uphold. Engineers build. Materials engineers connect. At every intersection — **innovation sparks**.



Root Cause Analysis
Conference Africa
2026

REGISTER
NOW

Join the Conversation

Lets talk before the crisis
Join the **2nd RCA Africa Conference** and help shape Africa's industrial future



Online Briefing: 5 Dec, 3pm
GMT+2

Register: [Click Here](#)

Financiers - The Vision Funders

You turn potential into progress. Materials engineers make sure it's strong, efficient, and sustainable.

Smart money meets smart materials.

Underwriters - The Balance Keepers

You weigh risk and reward. We show what's stable — before it becomes a claim.

Where stats and science align.

Insurance Professionals - The Safety Net

You manage risk, we build resilience. Together, we strengthen what's next.

Loss Adjusters - The Investigators

You uncover causes; we decode evidence.

Turning mystery into method.

Legal Professionals - The Truth Builders

You seek proof; we deliver facts — tested, trusted, and accredited.

Engineers - The Dream Makers

You design the future; we ensure it stands the test of time.

Materials Engineers – The Connectors

We bridge disciplines and bring high-level technology to real-world challenges.

We connect the ecosystem — one atom at a time.



METALLURGY • MATERIALS TESTING • MATERIALS ENGINEERING CONSULTING

Employee of the Month!

Marcelle de Waal | Senior Consulting Engineer

For over seven years, Marcelle de Waal has been a key part of One Eighty's engineering team — driven by curiosity, collaboration, and technical excellence.

From leading complex investigations to working aboard an FPSO in Senegal, his career reflects a passion for innovation and problem-solving. *“Being on the front line surrounded by global experts reminded me why I chose this profession,”* he says.

Now, Marcelle steps into a new challenge as the champion of One Eighty's Corrosion Monitoring service, developed in partnership with Global Energy Ventures. **“It's more than just a service — it's a legacy of reliability, precision, and innovation,”** he says.

His focus remains clear: to grow continually, stay curious, and never compromise on quality. For Marcelle, the greatest reward lies in knowledge — applying it to create smarter, more sustainable industries across Africa's rapidly developing oil and gas landscape.



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“Engineering challenges you and rewards you in equal measure. If you have that spark to build, understand, and innovate — follow it. The privilege of shaping the future through your ideas is extraordinary.”

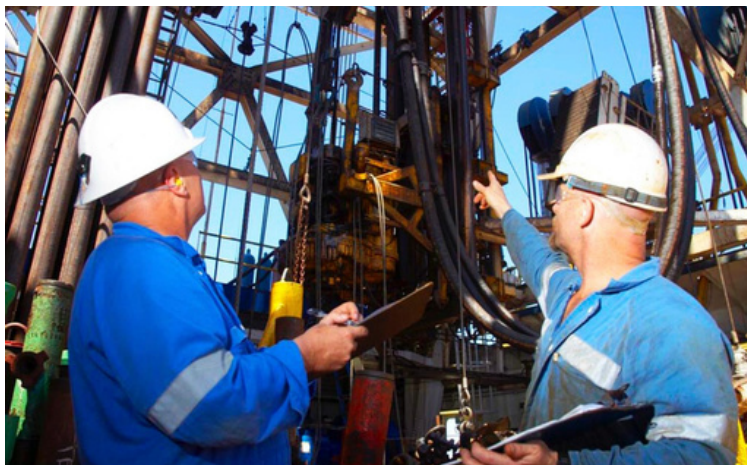




ANNOUNCEMENT!

Global Energy Ventures (GEV) & One Eighty Materials Engineering Solutions

New Corrosion Monitoring Partnership



Operating in harsh marine environments demands innovation and precision. This partnership combines GEV's offshore expertise with One Eighty's data-driven engineering insight — offering smarter, real-time monitoring that enhances asset protection, improves operational efficiency, and supports sustainable maintenance strategies.



Building on the successful mobilisation of Marcelle de Waal to an offshore asset in Senegal, One Eighty is proud to announce a new partnership with Global Energy Ventures to deliver specialised Corrosion Monitoring Services for offshore vessels and platforms



Together, we're setting a new standard for offshore reliability and integrity across Africa's growing oil and gas sector.



Pioneering Corrosion Monitoring for Offshore Vessels

A STRATEGIC PARTNERSHIP BETWEEN GLOBAL ENERGY VENTURES & ONE EIGHTY DEGREES



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WHAT'S THE COST OF GETTING IT WRONG?



**2nd RCA Africa
Conference
2026**

**FINANCIERS, UNDERWRITERS,
LOSS ADJUSTERS, LEGAL
PROFESSIONALS, ASSET CARE
MANAGERS & ENGINEERS**

**A UNIQUE ECOSYSTEM
WHERE MATERIALS ENGINEERING
PLAYS A KEY ROLE IN
RISK MITIGATION**

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Insurance Insights of the Month

Loss Adjusting Memoirs - From the Trenches to the Frontline

By Andrew Harvard, Senior Loss Adjuster at Chedza International

From police stations to claim sites, Andrew Harvard's journey through nearly three decades of loss adjusting paints a vivid picture of how the industry has transformed — and what has stayed the same.

After serving in the South African Police's Vehicle Theft Unit, Andrew entered the world of adjusting in the mid-90s, swapping police procedure for office life — a change that came with its own learning curve. Offices then were filled with typewriters, film cameras, filing cabinets, and Friday afternoon drinks, where lessons were learned through experience, not KPIs.

Today's world is faster, digital, and data-driven — but Andrew believes the essentials remain unchanged: curiosity, empathy, and integrity.

“Curiosity, patience, and empathy are still at the heart of adjusting,” Andrew says. “It’s about people first — helping them rebuild after loss.”



Now a Senior Loss Adjuster at Chedza International, Andrew manages complex claims and mentors emerging adjusters. Outside of work, he's a dedicated photographer and powerlifter.

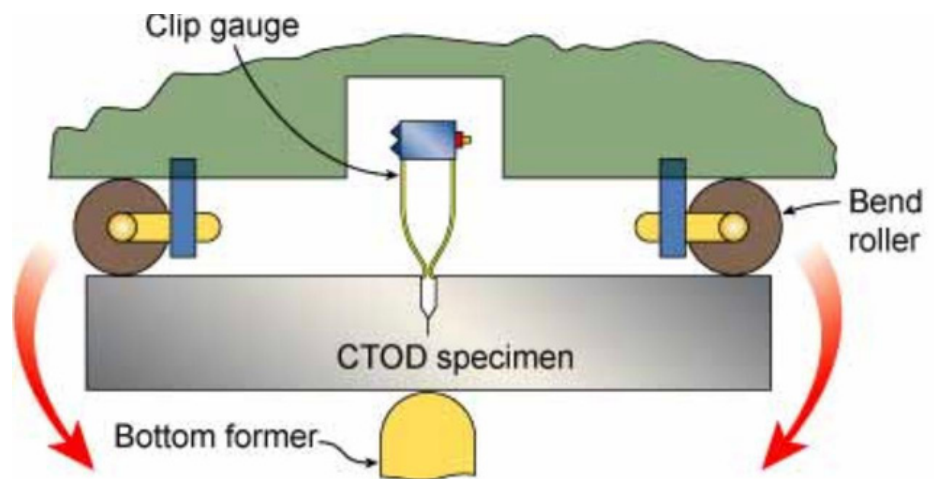
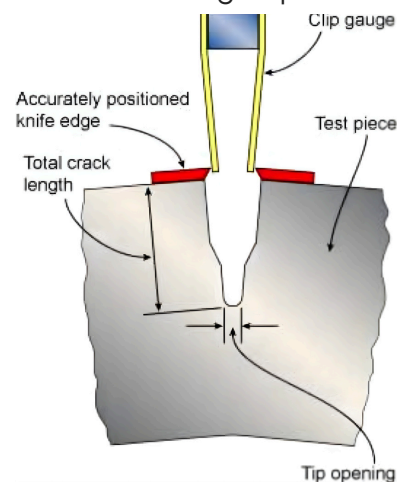
His story proves that while tools evolve, character and curiosity remain the true measure of a good adjuster.

Test of the Month

CTOD Testing – The Critical Path of Gas Field Development

Crack Tip Opening Displacement (**CTOD**) testing is a fracture mechanics method used to measure a material's resistance to crack initiation and propagation — its toughness. It has become a critical qualification requirement for weld procedure testing in LNG, LPG, and hydrogen fabrication, where a single failure could mean catastrophic explosion.

With Africa's expanding gas fields and growing investment in LNG infrastructure, **CTOD** testing is moving to the forefront of material qualification and project readiness. One Eighty Materials Engineering Solutions is ideally positioned to deliver this capability locally, reducing delays and costs traditionally caused by offshore testing dependencies.



WHY IT MATTERS

Subsea gas-field structures operate in cold, high-pressure environments where metals lose ductility and become brittle. CTOD testing ensures materials can withstand these conditions by verifying:

Weld and HAZ fracture toughness
Resistance to hydrogen embrittlement (H_2 , H_2S)

Fitness-for-service under operational stress
Hundreds of welds in subsea components — pipelines, risers, manifolds — make this testing vital. Standards such as DNV-OS-F101 and ISO 27306 require CTOD data for Engineering Critical Assessments (ECA) that define allowable defect sizes and ensure flaw-tolerant design.

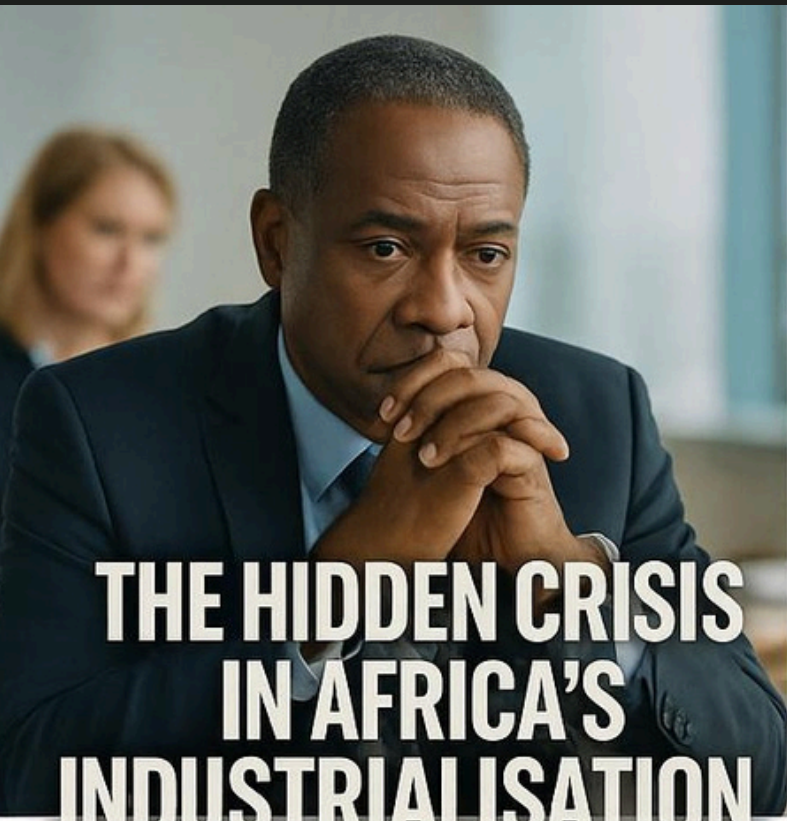
HOW CTOD TESTING WORKS

CTOD measures how a pre-cracked specimen behaves under stress to determine its fracture toughness. Tests follow international standards such as ASTM E399, ASTM E1820, ISO 12135, and BS 7448, using specimens like:

- **Single Edge Bend (SEB)**
- **Compact Tension (CT)**
- **Middle Tension (MT)**

Test range: $-196\text{ }^{\circ}\text{C}$ to $+900\text{ }^{\circ}\text{C}$, under air, nitrogen, or hydrogen environments — essential for cryogenic and hydrogen embrittlement studies.

Advanced monitoring systems, including laser extensometers and digital image correlation (DIC), provide high-precision tracking of crack growth



THE HIDDEN CRISIS IN AFRICA'S INDUSTRIALISATION



ROOT CAUSE ANALYSIS & MATERIALS ENGINEERING



PROJECTS ARE FAILING



THE MATERIALS ENGINEERING DEFICIT

APPLICATIONS

CTOD testing supports:

- Weld qualification and heat-affected zone analysis
- Structural integrity assessments for pipelines and offshore platforms
- Cryogenic material qualification for LNG systems
- Design and maintenance planning for fracture-critical assets

Failures in subsea systems can lead to gas leaks, environmental harm, and multimillion-dollar losses. **CTOD** testing directly strengthens:

- **Design reliability**
- **Regulatory compliance (API, DNV, ISO)**
- **Long-term service life**

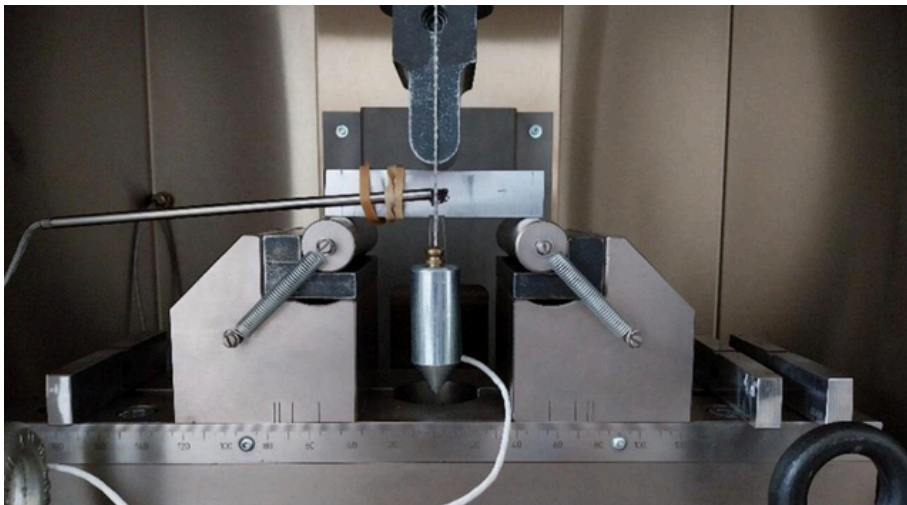
ON THE CRITICAL PATH

In modern gas-field projects, fabrication cannot start until **CTOD** validation is complete.

CTOD results govern material approvals, ECA flaw assessments, and weld procedure qualifications.

Delays in testing have caused **6–8 week** holdups in projects such as North Sea pipelines and Qatar Gas expansions, where re-testing under specific low temperatures or sour-service conditions was required.

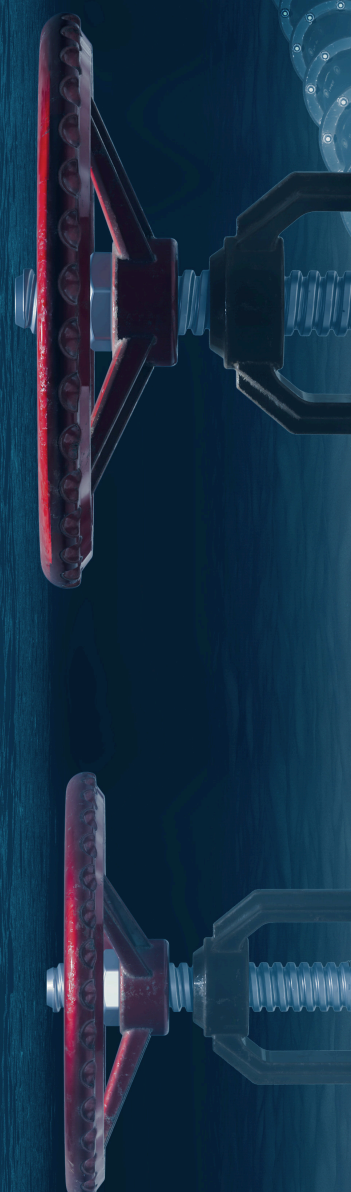
By partnering early with One Eighty, African operators can plan CTOD testing in advance — avoiding costly schedule bottlenecks and ensuring compliance with evolving global standards.



GLOBAL LESSONS FOR AFRICA

- Ichthys LNG (Australia): welding delays due to CTOD re-tests at -10°C .
- Qatar North Field: months-long fabrication hold awaiting additional CTOD testing under H_2S .
- Snøhvit (Norway): subsea pipeline spooling delayed until CTOD data validated at -30°C .

These examples underscore a single truth: CTOD testing is no longer optional — it is essential for safety, compliance, and project continuity.



AFRICA INDUSTRIAL DREAMS NEED SOLID FOUNDATION

LEGALLY AND LITERALLY

LEGAL



Africa is building fast — but without materials-engineering capital, even ambition can collapse.

BY DR JANET COTTON PR.ENG



Every major industrial asset is a legal instrument — its contracts, warranties, and guarantees all hinge on how materials perform.

A ruptured pipeline isn't just an engineering issue; it's a regulatory breach and an arbitration waiting to happen.

In developed regions, accredited labs resolve such issues quickly. Across much of Africa, limited testing and forensic capacity make that process slower, costlier, and riskier.

THE HIDDEN LEGAL RISK: A MATERIALS-ENGINEERING DEFICIT

Due to Africa's overpopulation and shortage of engineers, the imbalance leads to:

- **Costly delays**
- **Reliance on foreign experts**
- **Weak enforcement**
- **High dispute rates**



MATERIALS GAPS = LEGAL EXPOSURE

If your project's samples must be shipped overseas for testing, your arbitration clock just got **longer**.
If contracts **cite API or ASME standards but your workforce isn't trained to them, you've built risk in from day one.**
If courts can't access credible local forensic experts, truth itself becomes **negotiable**.

2040: LAW AND INDUSTRY MUST GROW TOGETHER

By **2040**, Africa plans to **expand** its **manufacturing and energy sectors**. Without stronger technical infrastructure, the weight of failure will fall on lawyers, insurers, and regulators.
Building Materials-Engineering Capital is more than an engineering goal — it's the foundation of credibility and risk control.

**We bring
high level technology
to real life problems**

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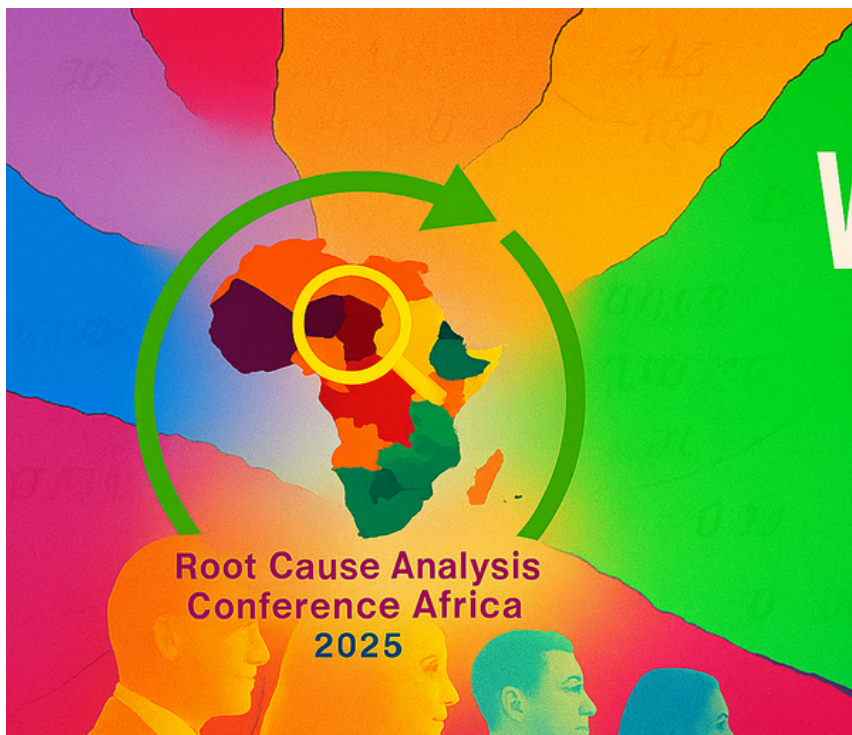


ONE CLEAR MESSAGE..

Africa's industrial future will not be secured by financial capital alone — it will be secured by Materials Engineering Capital:

Engineers, labs, standards, and forensic expertise.

That's how we build contracts that last, infrastructure that endures, and a continent that no longer has to outsource its proof.



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**WHAT'S THE
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 **Online Briefing: 5 Dec, 3pm GMT +2**

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ONE EIGHTY JOINS THE



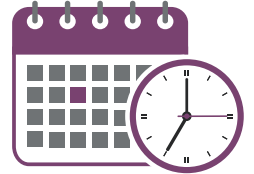
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