



**CORROSION UNDER INSULATION**  
**A NEW RISK-BASED APPROACH TO**  
**ASSET INTEGRITY MANAGEMENT**

**SGS**



Corrosion costs businesses over USD 2,505 billion a year, 3.4% of global GDP. Corrosion Under Insulation (CUI) also risks the lives of workers, and endangers the environment and production.

The petrochemical industry has seen a number of deaths attributed to CUI, with millions of man-hours invested trying to deal with CUI. It is estimated that 40-60% of piping costs can be attributed to CUI.

#### **WHAT IS THE CUI PROBLEM?**

CUI is invariably an invisible process and this leaves industry with a problem. Current industry practices rely upon audits and inspections. Components are assessed before installation and undergo routine visual inspections during their working life. CUI inspections are often conducted on a volumetric and semi-targeted basis, leaving large gaps for CUI to develop undetected.

Neither assessment process considers relevant data identifying the root cause of CUI, leaving a higher probability of CUI occurrence and further reducing the probability of inclusion in a targeted inspection process.

By their very nature, inspection and maintenance are reactive processes, focussing on assets which are about to fail. A more cost efficient approach is to

be proactive and focus on prevention, allowing greater safety in the workplace and longer asset lifetime.

CUI is the consequence of multiple points of failure in the life cycle of an insulated product. Insulation helps reduce production costs and environmental impact but, when insulation integrity is compromised, it reduces effectiveness and allows the issue of CUI to develop.

Damaged insulation allows external factors, specifically moisture, to penetrate the product, creating the ideal environment for corrosion.

#### **THE SOLUTION: SGS' CUSTOMISED RISK-BASED APPROACH TO CUI**

SGS understands that CUI is manageable – safeguarding the lives of employees, increasing production efficiency and improving an asset's ROI. CUI need not

be a perennial issue for industry, but it does require a new approach to the problem – one which focuses on risk reduction.

SGS has created a unique approach to the problem of CUI. Its scalable risk-based system is ideal for companies of all sizes: from small companies looking to ensure compliance, to large multi-nationals aiming to create a unified system which reduces costs and environmental impact and improves efficiency and safety.

SGS' risk-based approach to CUI fills the gaps left by other NDT firms. Its process still identifies areas requiring remediation but, by using the most up-to-date technology available and focussing on important process information, SGS can also help identify potential future CUI issues, something normally ignored by traditional inspection and audit methodologies.



### Partnering with SGS will allow your company to:

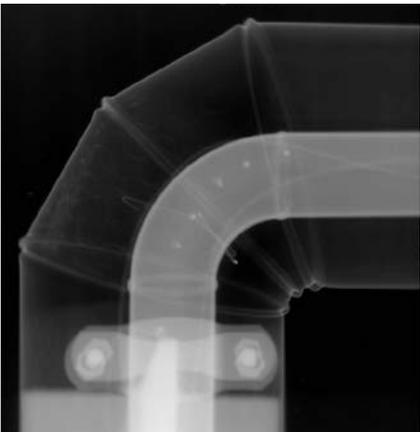
- Identify areas requiring remediation using the most up-to-date technology, including:
  - Guided Wave
  - Radiographic Examination
  - Pulse Eddy Current (PEC)
  - VT with partial removal of insulation
  - Neutron Backscatter
  - Thermal/Infrared Imaging

- Highlight potential future CUI issues by analysing important process information
- Understand the true cost of thermal loss from damaged insulation
- Identify threats and address the issues of insulation damage before they become CUI
- Correctly diagnose the source of CUI

- Ensure safety and welfare of employees
- Lessen the risk of facility failure from corroded assets
- Reduce the costs associated with unplanned maintenance work

SGS is the world's leading inspection, verification, testing and certification company. Recognised as the global benchmark for quality and integrity, we employ over 85,000 people and operate a network of more than 1,800 offices and laboratories around the world. We are constantly looking beyond customers' and society's expectations in order to deliver market leading services wherever they are needed.

### DIGITAL RADIOGRAPHY SHOWING PIPING UNDER INSULATION



#### THE BENEFITS OF PARTNERING WITH SGS

Our risk-based approach to CUI is the first an all-inclusive solution available to companies around the world. SGS experts can help your company fully understand the causes and costs of CUI, empowering you to make the correct decisions in order to ensure employee welfare and asset efficiency.

#### By employing SGS's risk-based approach to CUI, your company can:

- Reduce the risk of CUI
- Improve ROI on thermal insulation by reducing thermal loss
- Improve sustainability and reduce environmental impact

#### CONTACT US

For further information contact your local SGS Industrial team, visit [www.sgs.com](http://www.sgs.com) or email [industrial.global@sgs.com](mailto:industrial.global@sgs.com)

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WHEN YOU NEED TO BE SURE

**SGS**