



Corrosion

Over time, the process of corrosion can significantly undermine the structural integrity of components, systems and structures (CSSs) through the loss of material and the formation of cracks. As a result, the proper inspection and control of systems susceptible to corrosion is essential for continuous safe operation.

Whether it's in the design process or through regular in-service inspection, EASL's highly trained team of engineers have decades of experience assessing a wide range of components, systems and structures.

With this strong knowledge base, EASL can provide support to identification, inspection and assessment of corrosion. From civil nuclear to defence applications, EASL have the expertise and resources you need for the appropriate management and control of your corrosion.

What is Corrosion?

Corrosion is the deterioration of a material, usually a metal, which results from a reaction with its environment. It is a time-dependent process which over time can cause significant damage to materials if not properly controlled.

There are eight recognised forms of corrosion:

- General corrosion or 'uniform attack'
- Galvanic corrosion
- Crevice corrosion
- Pitting
- Intergranular corrosion
- Selective leaching
- Erosion corrosion (or flow accelerated corrosion)
- Stress-corrosion cracking

The dangers and risks of corrosion are dependent upon its specific form, with potential consequences being both commercial and industrial. For uniform attack, an example consequence could be the collapse of a bridge following a loss of material in its structural members. For stress-corrosion cracking, example consequences could be the failure of a buried pipeline or of a safety critical component in a nuclear application.

It is important to properly identify the form of corrosion that is active on your components, systems or structures in order to properly identify suitable control measures.

EASL's Corrosion Services

At EASL we take pride in taking ownership of our client's problems and delivering timely and appropriate advice that will reduce risk and provide peace of mind.

EASL often are consulted by clients seeking support and advice for their corrosion issues. For each client, our team will identify the form of corrosion, investigate its causes, and then assess how it can be reduced, or even eliminated through preventative measures.

The advice we issue to our clients will detail:

- the current state of the structural integrity of the affected structures;
- any remedial action requirements for repair or replacement;
- a method for managing the environmental conditions which are causing the corrosion; and
- a future inspection strategy to ensure a safe operating life.

Using our extensive operating experience, EASL ensure that the advice we deliver is appropriate and suitable for a client's specific corrosion issues. With a broad knowledge base and a long standing team of specialists, we can provide a comprehensive and trustworthy corrosion assessment service.



Whether it's at design or an in service inspection, our services can help client's save money and productivity by providing a clear and cost-effective insight. To find out more about our corrosion and related services, take a look at our case studies and solutions below, or to discuss your specific requirements, get in touch on our contact section.

Related Services

- Pipe Stress Analysis
- Computational Fluid Dynamics (CFD)
- Creep Rupture