



What is a Corrosion audit and why is it important?

What is corrosion?

The word corrode is derived from the Latin "corrodere", which means "to gnaw to pieces." The general definition of corroding is to eat into or wear away gradually, as if by gnawing. It is a natural process that converts a refined metal into a more chemically stable form such as oxide, hydroxide, or sulphide. It is the gradual destruction of materials by chemical and/or electrochemical reaction with their environment.

Why take corrosion seriously?

Every year lakhs of crores of Rupees are lost because of corrosion, wear and tear. The Ministry of Statistics and Programme Implementation (MOSPI) prepares the estimates of consumption of fixed capital (CFC) which also includes the effect of wear and tear, on capital goods.

It is estimated that around 4.2 Lakh crore of loss in manufacturing and IT industries occurs due to CFC. It is of paramount importance to computing these losses as it helps to calculate depreciation and affects tax assessment and business accounting.

India's GDP is also calculated by taking into account the consumption of fixed capital. The gross domestic product is the CFC subtracted from the net domestic product. Every year the respective industries generate a new need for capital investments. Thus making a dent in their businesses.

Corrosion audits

Corrosion auditing is a systematic approach in investigating the worthiness of corrosion control techniques and suggested suitable economic method to control corrosion. It is inspecting the corrosion sites, analysing the reasons for corrosion, suggesting methods of prevention, doing a cost analysis of prevention and losses due to corrosion.

Recognizing corrosion's economic and safety impact, organizations such as NACE (National Association of Corrosion Engineers) are working towards moving to legislation for mandatory corrosion audits in India. ISA (International Society for



Automation) has set up classification guidelines (ISA 71.04-2013) to determine the corrosive potential of an environment towards electronics.

How to perform a corrosion audit?

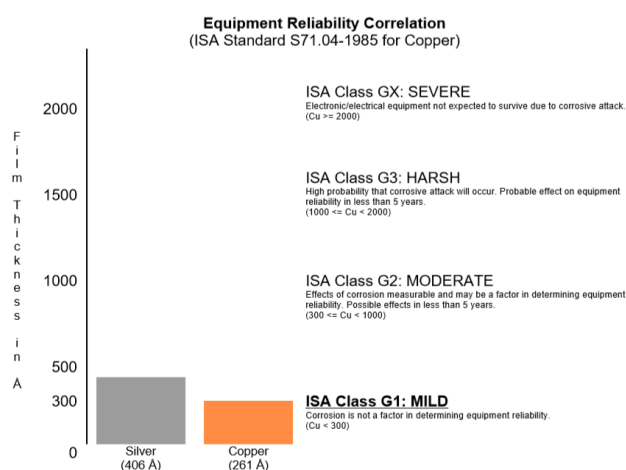
Although corrosion audits are quite expensive since consultants follow a detailed approach and covers a broader area, there are simpler ways to perform a corrosion audit in critical areas such as data centres, control rooms, server rooms and so on.



Purafil's CCC ([Corrosion Classification Coupons](#)) can be used to get a comprehensive corrosivity report of your facility which will identify the contaminant class in the air and also the environmental classification (G1, G2, G3 or Gx) as per ISA 71.04-2013. All it takes is to expose the coupons to the Data centre and/or Control centre area for 30 days. The India partner Ripple Effect, helps the client deliver these

PURAFIL CCC # P68740 Analysis Results

Corrosion Film Composition				Gold Coupon - Magnified 20x
	Projections			
	<u>30 Days</u>	<u>1 Year</u>	<u>5 Year</u>	
Copper Films				
Cu ₂ S	0 Å	0 Å	0 Å	
Cu ₂ O	261 Å	353 Å	461 Å	
Unknowns	0 Å	0 Å	0 Å	
Totals	261 Å	353 Å	461 Å	
Silver Films				
AgCl	0 Å	0 Å	0 Å	
Ag ₂ S	406 Å	4942 Å	24711 Å	
Unknowns	0 Å	0 Å	0 Å	
Totals	406 Å	4942 Å	24711 Å	
Gold Pore Corrosion:				
Note: 1000 Å = 0.1 micron				



coupons to [Purafil](#) lab for a detailed investigation on the contaminant class.

An example of the corrosion film composition and the projections of corrosion (in Angstroms) is given below.

Appropriate solutions such as chemical media and filter from Purafil are suggested to mitigate such issues and render the severity level of the facility to G1. A simple corrosion coupon study can help industries save the cost of

millions. [Follow us](#) for more interesting facts.

