



SOFTWARE EXPERTISE

E²G's proprietary software is built by industry experts and used by our consulting engineers on fitness-for-service (FFS), damage mechanism reviews, RBI assessments and other asset life-cycle management projects. E²G software is updated frequently to meet the latest API and ASME codes and standards.

380+

years of combined industry experience

Pioneered development of

FFS & RBI

Primary authors on

WRC 528 & 562

Lead investigators on

API 579 & 571

INDUSTRIES



Ammonia/Fertilizer



Biofuels & Renewables



Chemical & Specialty Chemicals



Oil & Gas



Petrochemicals

ANSWERS. OPTIONS. CHOOSE SAFETY.

Knowing when, where, and how to inspect assets will improve the overall safety and reliability of your facility. You can remove uncertainty by evaluating your equipment and refocusing inspection efforts to the highest-risk items.

With API RBI software, the industry's only fully compliant API 581 calculator, you will plan maintenance strategies efficiently and accurately, and systematically factor risk into your decision-making process. Optimize your inspection plan with API RBI.



Remove uncertainty



Optimize inspection schedules



Make informed decisions



Improve operational safety and reliability

API RBI software supports successful quantitative risk-based inspection (RBI) studies by providing guidance for each component to account for applicable damage mechanisms and recommending an inspection plan, based on risk.

QUANTITATIVE APPROACH (API 581)

API RP 581 uses a quantitative approach to implementing RBI, accounting for the probability of failure (POF) and the consequence of failure (COF) for each piece of equipment in a process unit.

QUALITATIVE APPROACH

API RP 580 is a risk-based inspection (RBI) document that identifies the basic elements for developing, implementing, and maintaining an RBI program

Recommended Inspection Plan		Inspection Plan Targets		Inspection Plan Dates	
Thinning	---	Damage Factor	1000.0	RBI Date	1/1/2022
Cracking	A	Area Risk (ft ² /yr)	35.0	Plan Date	1/1/2030
External	C	Minimum Thickness (in)	0.625		

RBI Date	1/1/2022		Target Date		1/1/2022		Plan Date		1/1/2030		Plan Date with Inspection		1/1/2030	
	Risk (ft ² /year)	Damage Factor	Risk (ft ² /year)	Damage Factor	Risk (ft ² /year)	Damage Factor	Risk (ft ² /year)	Damage Factor	Risk (ft ² /year)	Damage Factor	Risk (ft ² /year)	Damage Factor		
Thinning/Lining	2.74764	6.95872	2.74764	6.95872	8.21954	20.817	8.21954	20.817	8.21954	20.817	8.21954	20.817		
Cracking	1974.2	5000.0	1974.2	5000.0	1974.2	5000.0	194.45	492.46	194.45	492.46	194.45	492.46		
External Damage	3.04265	7.70589	3.04265	7.70589	10.918	27.65	7.00663	17.745	7.00663	17.745	7.00663	17.745		
HTHA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Brittle Fracture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Mechanical Fatigue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Creep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total	1980.0	5014.7	1980.0	5014.7	1993.4	5048.5	209.67	531.02	209.67	531.02	209.67	531.02		
Risk Category	High	D5	High	D5	High	D5	Medium-High	D4	Medium-High	D4	Medium-High	D4		

TOP FEATURES

SUMMARY REPORT SHEETS

Quickly and easily develop custom inspection reports to share information with other members of your team.

- Create or update reports to include custom content using Microsoft® Excel® templates
- Dynamically update and configure all the existing summaries in Excel
- Include custom content with the PlantManager keywords report sheets
- Configure all labels, design, and formatting in MS Excel and utilize all the formatting options and macros

RiskBI – DATA VISUALIZATION

Gain greater insight into your operations and performance and quickly identify trends and problem areas. RiskBI, using Microsoft® PowerBI, dynamically updates to help unit inspectors and corporate executives visualize inspections to support faster and more informed decision-making.

- Compare RBI assessments across several units in a facility to understand the differences and similarities between each unit
- Compare facilities' corrosion rates and how they fall on the risk matrix,
- Identify when multiple equipment is due for inspection, which components are overdue, when equipment will hit minimum thickness, and how to reduce risk with inspections

DAMAGE MECHANISM SCREENING TOOL

Estimate the susceptibility of the most common damage mechanisms in the refinery industry using the damage mechanism screening tool. This feature uses the damage solver, which is based on API 571, to:

- Filter potential damage mechanism based on process unit, material of construction, temperature, damage source, and morphology
- Implement a damage screening assessment without relying on in-house materials and corrosion experts
- Assign corrosion rates and cracking susceptibilities based on the judgement of industry experts

INSPECTION PLANNING

The inspection intervals methodology identifies the high- and low-risk equipment at a facility, allowing you to focus future inspections on the highest risk equipment to reduce costs and overall risk.

- Set a maximum interval and recommends re-evaluation of the RBI study at a minimum of every 10 years
- Calculations are not limited by or based on half-life calculations or prescriptive interval approaches
- Choose from multiple options for inspection effectiveness, including how much each option will reduce risk and effect on future target dates
- Select inspection target dates for each damage mechanism rather than the superposition method to calculate target dates.

API RBI SOFTWARE TRAINING

Learn how to use API RBI software, including developing skills in navigation and use. The course helps you understand API RP 581 technology, interpret its calculated results to help develop an effective RBI program. This training course can be offered virtually or in-person and may be customized to meet your corporate objectives.

To learn more about the benefits of API RBI, **HERE'S HOW TO GET STARTED**

VISIT

CLICK HERE

SCHEDULE A DEMO

with an E²G API RBI expert