

Asset Criticality Ranking

How-to guide: what the workbook does, how to use it and what every number means.

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Asset Criticality Ranking

Score every asset on safety, environment, production, quality and repair cost and on likelihood of failure, then rank them into A, B and C classes to focus maintenance.

For: Reliability and maintenance engineers, maintenance managers, asset owners and plant managers.

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Quick start

1. On Setup, agree the ranking rules with your team: consequence method, criterion weights, class thresholds and the safety and environment rule.
2. Rewrite the example scoring scale in words for your site, and replace the example areas.
3. On Asset Register, add one row per asset and score it 1 to 5 on each consequence and on likelihood; add failure history and costs if you have them.
4. Read the Check column: anything other than OK names the problem in words.
5. Open the Dashboard: work the class A list first and use the risk map to see where the register sits.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Your plant, currency, targets and the dropdown lists.
Asset Register	One row per asset: consequence and likelihood scores, class, rank and the downtime cost at stake.
Dashboard	Which assets matter most: the ranked list, the classes by area, the risk map and the downtime cost at stake.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Consequence	Weighted average method: (safety x weight + environment x weight + production x weight + quality x weight + repair cost x weight) / sum of weights, rounded to 0.1. Highest score method: the largest of the five scores.	1-5
Criticality score	Consequence x likelihood, rounded to 0.1.	1-25

Quantity	How it is calculated	Units
Class	A when the score is at or above the class A threshold, or (if the Setup rule is Yes) when safety or environment is scored 5; otherwise B at or above the class B threshold; otherwise C.	-
Rank	1 + the number of assets with a higher score + the number with the same score and an alphabetically earlier asset ID, so every scored asset has a unique rank.	-
Cost per failure (est.)	Hours per failure x lost output per hour + repair cost per failure.	currency
Annual downtime cost (est.)	Failures per year x cost per failure: the money at stake if the asset keeps failing as it has.	currency/yr
Top 15 list	The assets ranked 1 to 15, found with INDEX/MATCH on the Rank column.	-
Risk map	Assets counted by likelihood and by consequence rounded to the nearest whole score; each cell is shaded by the class its own score (row x column) would get from the thresholds. The safety and environment rule is not shown by the shading.	assets
Roll-ups	COUNTIFS and SUMIFS over the register by class and by area; shares of cost are sums divided by the register total.	-

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Harbour Chemicals, a fictional business.

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Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

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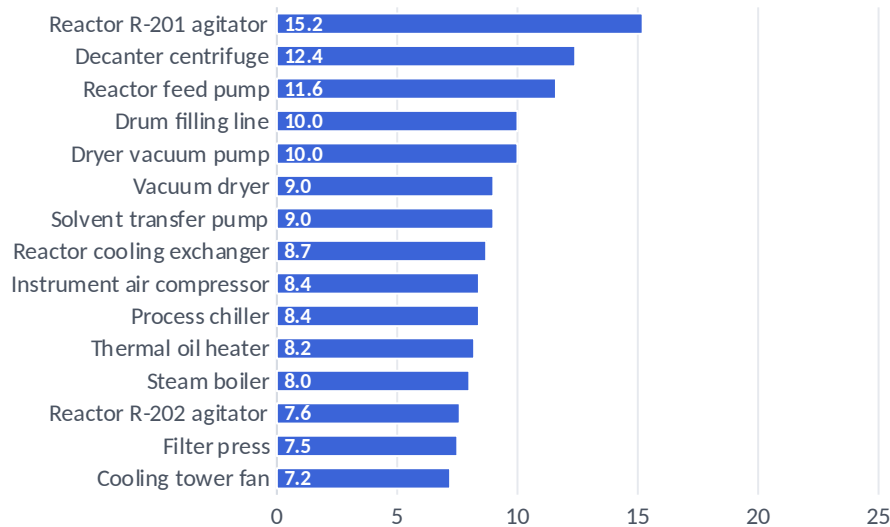
Which assets matter most: the ranked list, the classes by area, the risk map and the downtime cost at stake.

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Harbour Chemicals (example): 29 of 29 assets scored. Class A from a score of 12, class B from 6; consequence by weighted average. Money in EUR.

ASSETS RANKED	CLASS A ASSETS	HIGHEST-RANKED ASSET	CLASS A DOWNTIME COST (EUR/YR)
29	5	Reactor R-201 agitator	313,100
Scored on all six criteria	Highest maintenance priority	Rank 1 by criticality score	Estimate: failures/yr x cost per failure

Top 15 assets by criticality score (1-25)



Assets by class and area

