

Pareto Analysis

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

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Pareto Analysis

Tally defects or problems by category and see the Pareto by count and by cost, the vital few and defects per unit update as you type.

For: Quality engineers, continuous-improvement leads, supervisors and plant managers choosing which problem to attack first.

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Quick start

1. On Setup, type your plant name, currency and Pareto cut-off, then replace the example areas and categories (with a cost per occurrence for each).
2. On Defect Log, add one row per category per area per day (or per shift) with the count.
3. On Daily Output, add the units inspected each day so the Dashboard can show defects per unit.
4. Read the Check columns, then open the Dashboard. Use the area and date filters to look at one area or one week.

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.
Defect Log	One row per category per area per day (or per shift) with the number found. Cost comes from the Categories list.
Daily Output	Units inspected per day, plant total. The Dashboard divides defects by these units for DPU.
Dashboard	Pareto by count and by cost, the vital few and defects per unit, for the area and dates you choose.
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
Cost per occurrence	Looked up from the Categories list on Setup (INDEX/MATCH). An estimate in your currency.	currency/defect
Cost	Count x cost per occurrence (est.).	currency
Pareto value	SUMIFS of count (or cost) per category over the rows inside the filters.	defects, currency

Quantity	How it is calculated	Units
Pareto order	Largest first by COUNTIF ranks, ties in Setup list order. Helper columns AO:AQ (count) and AS:AU (cost) on the Dashboard (hidden) hold the unsorted values and ranks.	-
Share and cumulative share	Category value / total; running sum of the ranked values / total.	%
Vital few	The number of ranked categories needed for the cumulative share to reach the cut-off on Setup (80% by default).	categories
DPU	Defects in view / units inspected on the Daily Output rows inside the date filters.	defects/unit
Weekly and by-area roll-ups	SUMIFS over the rows inside the filters; shares are sums over sums, never averages of percentages.	-

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 Linden Plastics, 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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Area

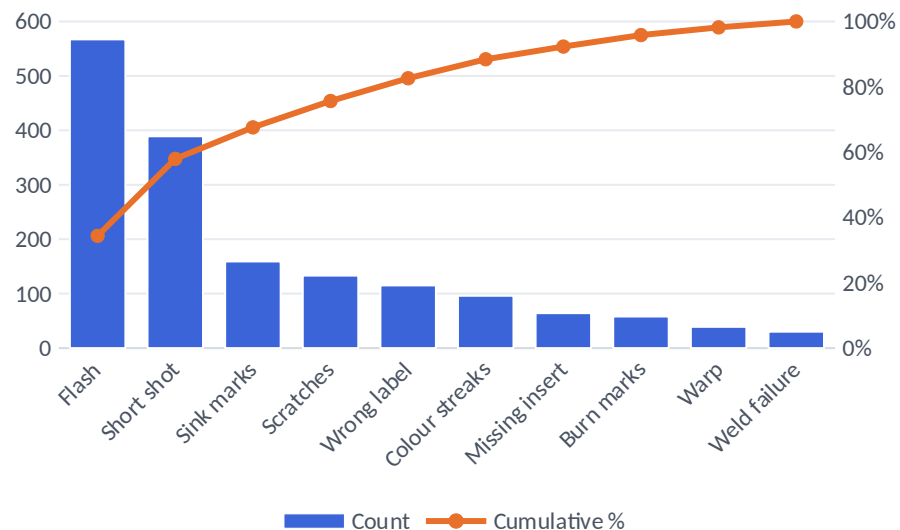
From

To

Showing 259 tally rows at Linden Plastics (example). Leave the filters blank to include everything; dates are inclusive.

DEFECTS LOGGED	DEFECT COST (USD, EST.)	VITAL FEW BY COUNT	BIGGEST BY COUNT BY COST
1,650	1,929	5	Flash Missing insert
DPU 0.030 defects per unit inspected	Count x cost per occurrence	categories reach 80% of defects	Attack the cost leader if they differ

Pareto by count



Pareto by cost (estimate)

