

PROBLEMS ANALYSED

1

Coating thickness out of specification

CAUSES RAISED

12

5 still hypotheses

CONFIRMED ROOT CAUSES

2

none addressed yet

CAUSES ELIMINATED

2

10 still live

STRONGEST BONE

Method

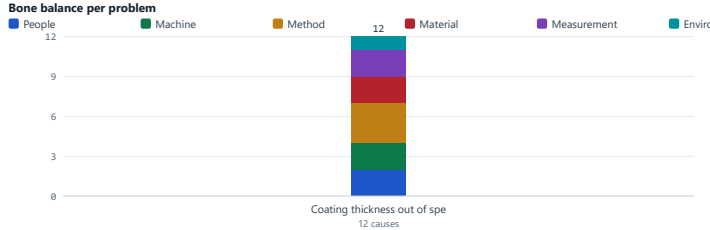
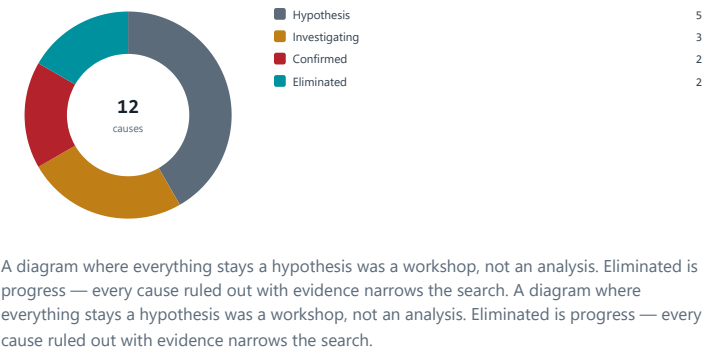
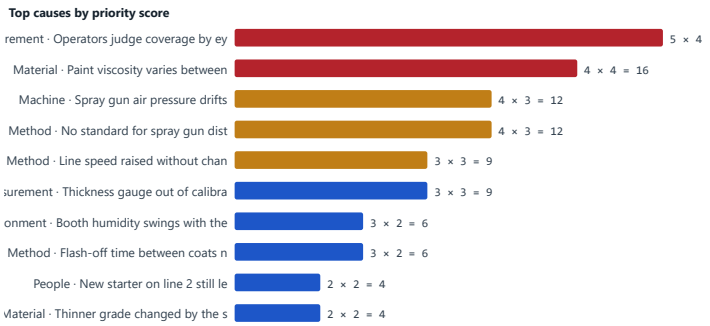
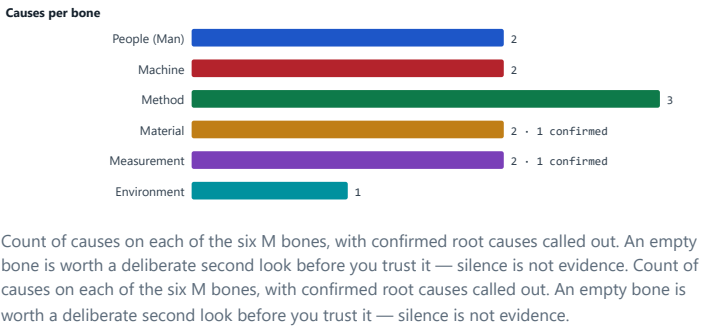
3 causes on this bone

ACTIONS OPEN

5

all have owners

12 of 12 record(s) included. All records. Amounts in USD.



Each bar is one problem, split by bone. A bar dominated by a single colour usually means the brainstorm followed its first idea instead of walking every bone — go back and ask the quiet categories their questions. Each bar is one problem, split by bone. A bar dominated by a single colour usually means the brainstorm followed its first idea instead of walking every bone — go back and ask the quiet categories their questions.

The diagram, bone by bone

PROBLEM	BONE	CAUSE	PRIORITY	EVIDENCE	STATUS
Coating thickness out of specification	People (Man)	New starter on line 2 still learning the spray pattern	4	Weak	Eliminated
Coating thickness out of specification	People (Man)	Fatigue on the night shift	2	None yet	Hypothesis
Coating thickness out of specification	Machine	Spray gun air pressure drifts during the shift	12	Moderate	Investigating
Coating thickness out of specification	Machine	Worn needle and nozzle on gun 3	3	None yet	Hypothesis
Coating thickness out of specification	Method	No standard for spray gun distance	12	Moderate	Investigating
Coating thickness out of specification	Method	Line speed raised without changing the spray recipe	9	Moderate	Investigating
Coating thickness out of specification	Method	Flash-off time between coats not defined	6	Weak	Hypothesis
Coating thickness out of specification	Material	Paint viscosity varies between batches ✓ root cause	16	Strong	Confirmed
Coating thickness out of specification	Material	Thinner grade changed by the supplier	4	Weak	Hypothesis
Coating thickness out of specification	Measurement	Operators judge coverage by eye between gauge checks ✓ root cause	20	Strong	Confirmed
Coating thickness out of specification	Measurement	Thickness gauge out of calibration	9	Moderate	Eliminated
Coating thickness out of specification	Environment	Booth humidity swings with the weather	6	Weak	Hypothesis

Confirmed root causes and actions

PROBLEM	ROOT CAUSE	EVIDENCE	ACTION	OWNER	STATUS
Coating thickness out of specification	Operators judge coverage by eye between gauge checks	Strong	Hourly wet-film gauge checks recorded on the run sheet; second gauge purchased so one is always at the booth.	Production supervisor	Confirmed
Coating thickness out of specification	Paint viscosity varies between batches	Strong	Add a flow-cup viscosity check to goods-in and a standard thinning ratio per batch certificate; supplier asked to tighten the shipped range.	Quality engineer	Confirmed

Cause register

PROBLEM	BONE	CAUSE	LIKELIHOOD	EVIDENCE	OWNER	RAISED	STATUS	PRIORITY
Coating thickness out of specification	Material	Paint viscosity varies between batches	4	Strong	Quality engineer	2026-07-14	Confirmed root cause	16
Coating thickness out of specification	Machine	Spray gun air pressure drifts during the shift	4	Moderate	Maintenance lead	2026-07-16	Investigating	12
Coating thickness out of specification	Measurement	Operators judge coverage by eye between gauge checks	5	Strong	Production supervisor	2026-07-17	Confirmed root cause	20
Coating thickness out of specification	Environment	Booth humidity swings with the weather	3	Weak	—	2026-07-18	Hypothesis — raised, not yet examined	6
Coating thickness out of specification	Method	No standard for spray gun distance	4	Moderate	Production supervisor	2026-07-20	Investigating	12
Coating thickness out of specification	People	New starter on line 2 still learning the spray pattern	2	Weak	—	2026-07-20	Eliminated — ruled out	4
Coating thickness out of specification	Machine	Worn needle and nozzle on gun 3	3	None	—	2026-07-22	Hypothesis — raised, not yet examined	3
Coating thickness out of specification	Material	Thinner grade changed by the supplier	2	Weak	—	2026-07-24	Hypothesis — raised, not yet examined	4
Coating thickness out of specification	Method	Line speed raised without changing the spray recipe	3	Moderate	Process engineer	2026-07-28	Investigating	9
Coating thickness out of specification	People	Fatigue on the night shift	2	None	—	2026-07-30	Hypothesis — raised, not yet examined	2
Coating thickness out of specification	Measurement	Thickness gauge out of calibration	3	Moderate	—	2026-08-01	Eliminated — ruled out	9
Coating thickness out of specification	Method	Flash-off time between coats not defined	3	Weak	—	2026-08-04	Hypothesis — raised, not yet examined	6

Notes

Sample analysis for a coating line — replace every problem, cause, score and action with your own before circulating or acting on it.

A fishbone diagram is a brainstorm structure, not a proof. The priority score multiplies the likelihood you judged by the strength of evidence you recorded — it ranks hypotheses for investigation, it does not demonstrate causation. A cause is only a root cause once it has been verified against data or a test, and this tool cannot do that verification for you. Treat confirmed causes as conclusions someone must be able to defend, not as outputs of the arithmetic.