

Plant Health Audit

Harbourside Galvanizing Works (fictional) · report date 01 Oct 2026

SAMPLE REPORT for a fictional plant. Every figure is invented to show the format.

Scorecard

KPI	Plant	Months	Reference band	Status
Zinc used, % of steel	7.12 % of steel	12	5.2-5.5 % of steel AGA, 2019 Process Survey Report, p.17 (typical, from the 2003 and 2007 surveys)	above
Zinc used	71.24 kg/t	12	20-200 kg/t EC EIPPCB, FMP BREF, December 2001, Table C.3-7, p.350	within
Zinc ash generated	12.57 kg/t	12	4-25 kg/t EC EIPPCB, FMP BREF, December 2001, Table C.3-7, p.350	within
Dross generated	5.87 kg/t	12	5-30 kg/t EC EIPPCB, FMP BREF, December 2001, Table C.3-7, p.350	within
Ash + dross, % of zinc used	25.89 % of zinc	12	no published reference range	-
Zinc left on steel (used - ash - dross), % of steel	5.28 % of steel	12	no published reference range	-
Binding wire	3.85 kg/t	12	3.4-4.2 kg/t Practitioner data, 61 plant-months 2022-2026: middle half (average 3.93 kg/t)	within
HCl as supplied	23.58 kg/t	12	no published reference range	-
HCl as 100 % acid	7.54 kg/t	12	no published reference range	-
HCl as 28 wt-% acid	26.94 kg/t	12	13-30 kg/t EU Commission Implementing Decision 2022/2110 (FMP BAT conclusions), BAT 14, Table 1.5: hydrochloric acid 28 wt-%, 3-year average; up to 50 kg/t for mainly thin products or regalvanising	within
Flux salt (ZAC)	1.20 kg/t	12	no published reference range	-
Rework	1.22 % of production	12	no published reference range	-

Pickling baths on the Kleingarn diagram

HCl system at 20 degC. Curves from the HDG Community Pickling Optimizer / HCl Converter.

Month	Free HCl g/L	Fe g/L	Zone
M1	120	60	Ideal pickling zone
M2	105	80	Ideal pickling zone
M3	90	100	Ideal pickling zone
M4	80	115	Ideal pickling zone
M5	70	170	High iron

M6	150	40	Ideal pickling zone
M7	130	55	Ideal pickling zone
M8	110	75	Ideal pickling zone
M9	95	95	Ideal pickling zone
M10	40	200	High iron
M11	160	15	Low iron / excess acid
M12	125	60	Ideal pickling zone

What to fix first

1. Zinc used, % of steel is 7.12 % of steel, above the reference band 5.2-5.5 % of steel (AGA). Excess per year = $(7.12 - 5.5) \% \text{ of steel} \times \text{your tonnage}$; value it at your price.
2. Pickling baths were outside the ideal Kleingarn zone in 3 of 12 rated months (most often: High iron).
Review top-up and discard timing bath by bath.
3. Rework is 1.22 % of production; trace the top defect to its stage.

Method: each KPI = total over the months where both of its figures were supplied (the Months column) / black steel tonnage of the same months. Reference ranges are published figures, each named with its source in the scorecard; a KPI without a published range is shown as a value only.