Zinc Coating: Thickness ↔ Mass per Area and Life

Convert a zinc (or other metal) coating between thickness and mass per square metre, with the zinc on a part and the life at a given corrosion rate.

Method: Mass per area = thickness × density; life = thickness/corrosion rate

Input parameters

Unit system: SI

Parameter	Value	Unit
Value given	Thickness	
Coating thickness	85.000	µm
Coating mass per area (one side) g/m²	610.00	
Coating density Zinc about 7140 kg/m³.	7,140.0	kg/m³
Coated area	12.000	m²
Coating corrosion rate in service From your atmosphere's corrosivity data.	2.0000	µm/a

Calculated results

Parameter	Value	Unit
Thickness	85.000	µm
Mass per area	606.90	g/m²
Coating on the part	7.2828	kg
Life to first maintenance	42.500	a

Formula and method

$$m'' = \delta\rho, \quad t_L = \frac{\delta}{CR}$$

Variables

given	Value given	-
δ	Coating thickness	m
m''	Coating mass per area (one side)	-
ρ	Coating density	kg/m³
A	Coated area	m²
CR	Coating corrosion rate in service	m/s
m	Coating on the part	kg
t_L	Life to first maintenance	s

Method and standards

Definitions.

Assumptions and limits

- Uniform coating and corrosion. With a zero corrosion rate the life is not shown.
- The mass per area input is in g/m² as a plain number; the output mass per area can be shown in other units.

References

- Mass per area = thickness × density; life = thickness/corrosion rate

Report details

Report reference	FCC-HJCB-PDQF (the same inputs always give the same reference)
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Calculator	Zinc Coating: Thickness ↔ Mass per Area and Life
Method last reviewed	12 November 2026
Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/materials/corrosion/galvanising-coating-mass

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.