Hull Surface Area

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

Hull Surface Area

Estimate every hull's wetted surface area from its main dimensions and block coefficient, and the barrier coat and antifouling each job needs.

For: Boatbuilders, yard estimators, paint shops and naval architects quoting and ordering bottom coatings.

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Quick start

1. On Setup, type your yard and currency, the allowance above the waterline and the application loss, and list your coatings with their coverage per coat and price per litre.
2. On Jobs, give each job a row: model, LWL, BWL, draft, block coefficient, hulls, and the barrier coat and antifouling with their coats.
3. Fix anything the Check column names.
4. Open the Dashboard: wetted area by hull, and the coating and cost each job needs.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Yard, currency, the allowance above the waterline and the application loss, and the bottom coatings.
Jobs	One row per job: hull dimensions, hulls and coating system in; wetted area, litres and cost out.
Dashboard	Wetted surface area of every hull, and the barrier coat and antifouling each job needs.
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
Side term	1.7 x LWL x draft.	m^2
Bottom term	LWL x BWL x block coefficient.	m^2
Wetted area	Side term + bottom term, per hull.	m^2
Area to coat	Wetted area x (1 + allowance above the waterline).	m^2

Quantity	How it is calculated	Units
Litres	Area to coat x coats / coverage per coat / (1 - application loss) x hulls, for each coating.	L
Coating cost and per hull	Litres x price per litre for both coatings; / hulls.	currency

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 Fairhaven Boatworks, 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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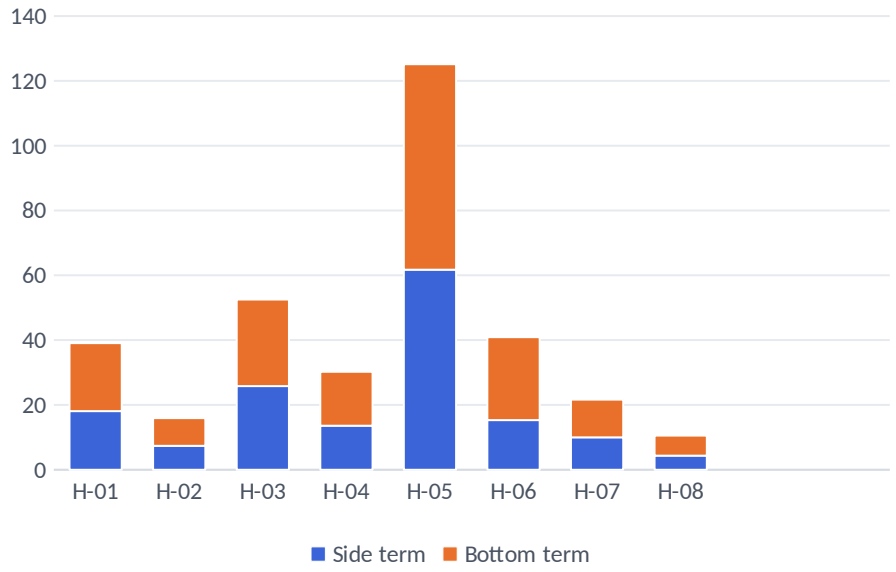
Wetted surface area of every hull, and the barrier coat and antifouling each job needs.

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Fairhaven Boatworks (example): 8 jobs, 21 hulls. Allowance above the waterline 5%, application loss 20%. Amounts in USD.

HULLS	WETTED AREA (M²)	COATING TO BUY (L)	COATING COST
21	**598**	**470**	**20,661**
All jobs	All hulls, before the allowance	Barrier + antifouling	Litres x price per litre

Wetted area per hull (m²)



Coating to buy by job (L)

