

Design hydrostatics report.

Designer

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Comment

Filename Kiwi35-18ton.fbm

Design length	10.690 (m)	Midship location	5.345 (m)
Length over all	10.690 (m)	Relative water density	1.025
Design beam	2.540 (m)	Mean shell thickness	0.0000 (m)
Beam over all	4.415 (m)	Appendage coefficient	1.0000
Design draft	0.230 (m)		

Volume properties		Waterplane properties	
Moulded volume	1.775 (m ³)	Length on waterline	9.934 (m)
Displaced volume	1.775 (m ³)	Beam on waterline	1.981 (m)
Displacement	1.820 (tonnes)	Entrance angle	4.872 (Degr.)
Block coefficient	0.2842	Waterplane area	13.868 (m ²)
Prismatic coefficient	0.4031	Waterplane coefficient	0.5108
Vert. prismatic coefficient	0.5565	Waterplane center of floatation	4.787 (m)
Wetted surface area	18.559 (m ²)	Transverse moment of inertia	3.354 (m ⁴)
Longitudinal center of buoyancy	5.068 (m)	Longitudinal moment of inertia	70.457 (m ⁴)
Longitudinal center of buoyancy	-2.791 %		
Vertical center of buoyancy	0.029 (m)		

Midship properties		Initial stability	
Midship section area	0.412 (m ²)	Transverse metacentric height	1.918 (m)
Midship coefficient	0.7052	Longitudinal metacentric height	39.720 (m)

Lateral plane	
Lateral area	2.957 (m ²)
Longitudinal center of effort	5.397 (m)
Vertical center of effort	-0.472 (m)

The following layer properties are calculated for both sides of the ship

Layer	Area (m ²)	Thickness	Weight (tonnes)	VCG (m)	LCG (m)	TCG (m)
casco	43.238	0.010	0.590	0.550	5.026	0.000 (CL)
cubierta	36.825	0.010	0.503	1.150	4.409	0.000 (CL)
Quilla_NACA0012	2.646	0.014	0.282	-0.922	5.704	0.000 (CL)
timon	1.496	0.012	0.023	-0.540	0.858	0.000 (CL)
Bulbo_NACA0020	1.574	0.020	0.353	-1.783	5.402	0.000 (CL)
palo	5.329	0.020	0.037	7.234	6.347	0.000 (CL)
mayor	29.260	0.001	0.020	6.641	4.815	0.000 (CL)
genoa1	25.584	0.001	0.018	5.259	7.250	0.000 (CL)
Total	145.95		1.827	0.274	5.027	0.000 (CL)

Sectional areas									
Location (m)	Area (m ²)	Location (m)	Area (m ²)	Location (m)	Area (m ²)	Location (m)	Area (m ²)	Location (m)	Area (m ²)
0.050	0.000	2.138	0.146	4.500	0.287	6.948	0.233	9.621	0.003
0.100	0.000	2.672	0.190	4.810	0.294	7.483	0.185	10.000	0.000
0.535	0.009	3.207	0.228	5.345	0.309	8.017	0.131		
1.069	0.045	3.741	0.257	5.879	0.411	8.552	0.078		
1.603	0.097	4.276	0.279	6.414	0.269	9.086	0.033		



Sectional area curve

NOTE 1: Draft (and all other vertical heights) is measured above base Z=0.00!
NOTE 2: All calculated coefficients based on project length, draft and beam.