

For Immediate Release.

February 28, 2024

PropCad 2024: Sneak Peek

Planned and In Development

Program Update Notification

Having access to the most recent licensed build can be helpful to employ the newest features or resolve issues. A new module will periodically check the availability of a new licensed update, and notify you with a download link via a notification popup and a Help menu item.

New! Russian Maritime Register of Ships (RMRS) Class Thickness Rules

PropCad users rely on PropCad for blade thickness compliance reports for many different classification societies. In addition to the yearly rules updates, PropCad 2024 now introduces the Russian rules for steel ships, including rules for ice class, arctic class, and icebreaker class propellers. Having access to PropCad 2024 ensures your designs meet the latest published rule sets and that you can quickly document the calculations needed for approval.

RMRs Thickness Calculation

Date: 2/14/2024
 File name: RMRsClass.hpc

Project ID: PC26240214
 Description: RU Class Example
 Class: RU Class Example
 Prepared by: HydroComp, Inc.

Classification
 Society: Russian Maritime Register of Shipping Edition 2017
 Reference: For the Classification & Construction of Sea-Going Ships
 Section: Part 7 Ch.6 Sec. 2 Blade Thickness
 Rule: Fixed-pitch propellers

Principal Characteristics

Propeller type:	Fixed-pitch	Rotation:	Right
Blades [B]:	5	Expanded area ratio [a]:	0.9700
Diameter [D]:	72.000 in	Rate of GL at [P%]:	-5.000 °
Pitch:	68.000 in	Tip rake [P]:	-1.476 in
		Stem angle [Theta]:	19.60 °

Material Parameters

Type:	Ni-Al bronze (Cu3)	Yield strength [Y]:	35534.25 lbf/in ²
Density:	0.271 lb/in ³	Tensile strength [S]:	85572.27 lbf/in ²

Design Loading

Power [P]:	1190 hp	Shaft RPM [R]:	332 RPM
Prop location:	Off centerline	Propeller hub rR:	0.18
Ice Class Designation:	Icebreaker	Design Allowable Stress [Sigma] [29.0MPa]	

Note: Table 6.2.1 includes 3 additional notations. These notations have not been considered in this calculation.

Thickness Calculation

Calculated factor [K]:	44.649	PID @ 0.25rR [dC]:	0.944
Calc. factor @ 0.25rR [K]:	118.558	Chord @ 0.25 rR [d]:	18.775 in
Calculated factor [K]:	0.513	Chord @ 0.60 rR [d60]:	26.203 in
Total rake [m]:	-1.476 in	PID @ 0.60 rR [d60]:	0.944
Calc. factor @ 0.60 rR [K60]:	118.558		

Section Properties at 0.25 rR

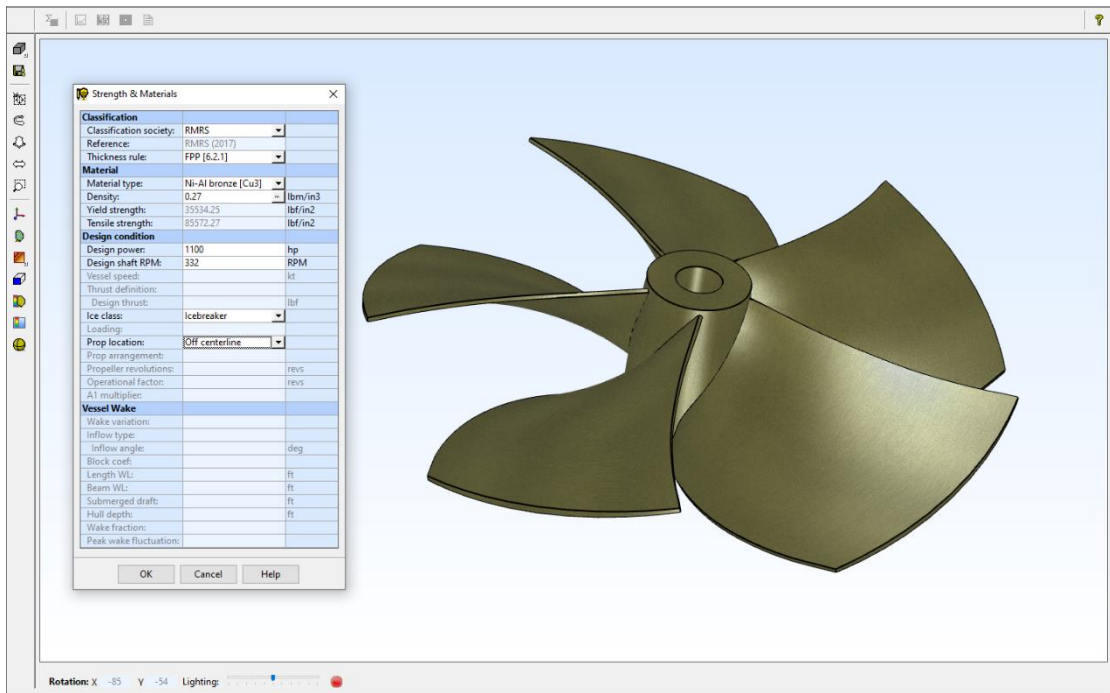
Pitch-diameter ratio [P25]:	0.944	Moment of inertia [I]:	106.1904 in ⁴
Chord length [C]:	18.775 in	Neutral axis to face [L]:	2.130 in
Sectional area [A]:	66.905 in ²		
Maximum thickness:	5.605 in [C60]	Required thickness:	5.004 in

Section Properties at 0.60 rR

Pitch-diameter ratio [P60]:	0.944	Moment of inertia [I]:	6.8252 in ⁴
Chord length [C]:	26.203 in	Neutral axis to face [L]:	0.7982 in

Blade Distributions

rR	Chord	Thickness	Skew Angle	Skew GL	Pitch	Pitch Angle	Rake RL	Rake GL	Camber	LE	TE	Back	Face	Back	Face	dCup	dThick	dChord	dStack	Total sweep	Total drop	LE arc sweep	TE arc s	
0.2000	17.595	5.560	-19.81	-2.453	68.000	56.365	0.000	-0.680	1.130	0.43200	0.43200	0.00000	0.00000	0.00000	0.00000	0.000	0.000	0.000	0.000	0.000	9.746	14.650	6.231	-3.515
0.1320	15.628	6.448	-11.12	-2.274	68.000	67.423	0.000	-0.394	0.758	0.43200	0.43200	0.00000	0.30000	0.00000	0.00000	0.000	0.000	0.000	0.000	0.000	8.077	14.615	3.912	-2.186



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