



MACS3 FOR NAVIGATION IN POLAR WATERS

Ship operations in polar waters face various hazards, such as experiencing topside icing with the potential for reduction of stability. The **MACS3 PolarCodeBasic** module eases stability calculations in compliance with IMO Code for Ships Operating in Polar Waters (Polar Code) with just one click.

IMO has recognized the growth of shipping activities in the harsh environments of the polar areas. By introducing the Polar Code, the IMO set new standards in order to protect ships, people aboard and the environment.

With regard to stability, the IMO Polar Code requires that all ships operating in polar waters have sufficient stability when ice accretion is likely to occur; therefore the intact stability calculations must take into account an icing allowance. So far, this has resulted in tedious manual calculations for the crew.

With the MACS3 PolarCodeBasic module those stability calculations under ice conditions can be made with just one click. The software takes the ship design, on deck equipment and cargo structure into consideration to calculate all vertical and horizontal areas in accordance with the IMO Polar Code.

BACKGROUND

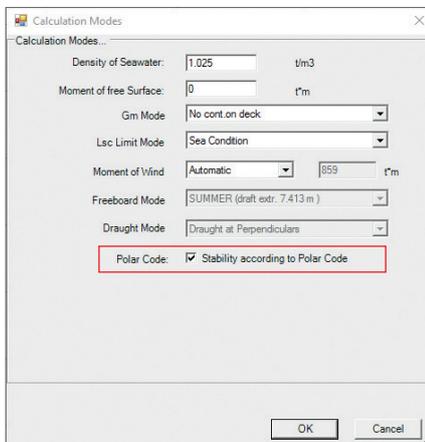
- IMO has adopted the International Code for Ships Operating in Polar Waters (Polar Code), making it mandatory under SOLAS and MARPOL
- The Polar Code came into force on 1 January 2017 for new ships (built on or after 1 January 2017)
- Existing ships (built before 1 January 2017) must comply with Part I safety requirements as well as manning and training requirements by their first intermediate or renewal survey after 1 January 2018

FEATURES

MACS3 PolarCodeBasic module is available as an additional function in the calculation modes of MACS3.

By checking off the "Polar Code" box, the software calculates the icing allowance for the ship's design according to IMO PolarCode part I-A § 4.3.1 considering:

- exposed weather decks and gangways
- projected lateral area of each side of the vessel above the water plane
- the projected lateral area of discontinuous surfaces



In addition, MACS3 PolarCodeBasic module takes into account the ice accretion on deck stowed cargo like containers, general cargo or logs.

The result of the total calculated ice load with weight and center of gravity will be displayed in the "Loading Condition total". Stability and stress are calculated automatically taking into account the ice load. The results are available as report for further documentation and sharing with relevant stakeholders.

For operators with the need to measure the actual ice accretion, it is planned to introduce an additional module, MACS3 PolarCodePlus. For more information please email us at loadingcomputer@navis.com.

	Weight tons	LCG m.fr.AP	VCG m.a.BL	TCG m.fr.CL	Fs m't	Cont TEU
Constants	0.0	0.00	0.00	0.00		
Tanks	0.0	0.00	0.00	0.00	0	
Holds	0.0	0.00	0.00	0.00	0	
Container	0.0	0.00	0.00	0.00		0
Ice	17.4	57.97	7.13	4.75		
Deadweight	17.4	57.97	7.13	4.75	0	
Light Ship	4489.0	51.85	9.27	-0.61		
Displacement	4506.4	51.87	9.26	-0.59		
Deadw. Reserve	8143.7	SUMMER Freeboard				

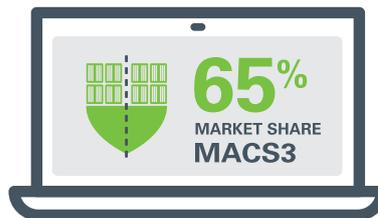
MACS3 PolarCodeBasic module is available for all MACS3 vessel versions.

REFERENCES

The onboard loading computer MACS3 is in use on a wide range of container vessels, multipurpose vessels and bulk carriers as well as on tanker vessels, ro-ro vessels and passenger vessels.

Established in 1994, the ship library includes more than 4,500 ship profiles. For the container vessel segment, MACS3 holds a share of approximately 65%.

In addition, maritime colleges and universities worldwide teach future nautical officers with the MACS3 loading computer.



If you have any enquiries or would like to set up an appointment with one of our sales representatives, please phone or e-mail us:

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