



Maxsurf Version 15 Probabilistic Damage Stability & Compartmentation Management

One of the drivers for our software development process is to keep pace with the ever changing portfolio of design rules applicable to the wide range of vessels that are designed using Maxsurf each year.

In the version 15 release our focus has been on the new probabilistic methods for assessing damage stability. To this end we have added a new version of Hydromax to our Maxsurf suite. Hydromax Ultimate is the most capable version of that module and includes all of the capabilities of Hydromax Pro, plus the new probabilistic damage stability functions. Hydromax Ultimate is available for purchase by existing Hydromax owners by paying the difference in price between the two versions.

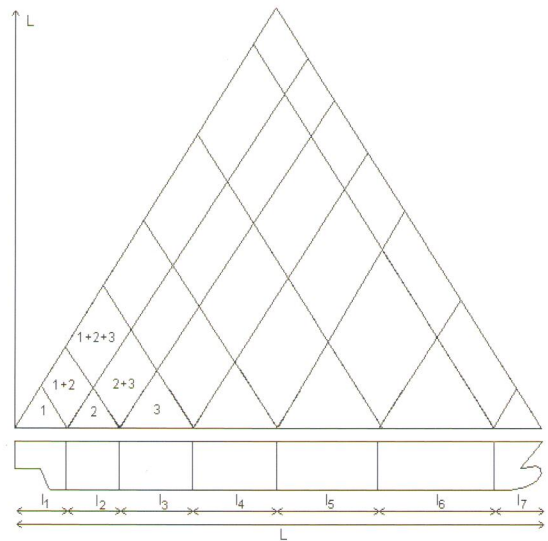
As well as adding Hydromax Ultimate, we have also upgraded many of the Maxsurf modules with new capabilities. The details of those changes follow below. All members of the Maxsurf subscription program will be sent Maxsurf version 15 over the coming weeks. Contact your local distributor or FormSys directly for a price quotation to add Hydromax Ultimate to your suite of software.

Probabilistic Damage Stability

Hydromax Ultimate supports checking probabilistic damage requirements as defined in IMO Resolution MSC.216(82) as well as the older formulation of MSC.19(58). MSC.216(82) applies to all cargo ships of 80m or more in length and to all passenger ships regardless of length, built from 1 January 2009 onwards.

The International Maritime Organisation (IMO) summarises the probabilistic approach to damage stability as follows:

“The probabilistic concept was originally developed in 1973 through study of data relating to collisions collected by IMO and adopted by resolution A.265 (VIII). This showed a pattern in accidents which could be used in improving the design of ships.



Single and multiple zones of damage in the aft end of the vessel

Most damage, for example, is sustained in the forward part of ships and it seemed logical, therefore, to improve the standard of subdivision there rather than towards the stern. The probabilistic concept is based on statistical evidence concerning what actually happens when ships collide, in terms of sea state and weather conditions; extent and location of damage; speed and course of ship; and whether the ship survived or sank.

Therefore, the probabilistic concept is believed to be far more realistic than the earlier “deterministic” method, in which ships’ subdivision is based on theoretical principles.

The probabilistic concept was introduced into SOLAS regulations for passenger ships in 1978 in the 1978 SOLAS Protocol. The probabilistic concept was introduced into SOLAS for cargo ships in 1990, applicable to cargo ships of 100 metres or more in length built on or after 1 February 1992; and in 1996 to cargo ships between 80 metres and 100 metres.”