SECTION 1 GENERAL

1 Definitions

1.1 Global loads

1.1.1 Global loads are made of forces and bending moment on the hull girder, resulting from application of local loads throughout the ship.

1.1.2 The different global loads (also named hull girder loads) are defined in Ch 4, Sec 2, [1.2].

1.2 Sign conventions of vertical bending moments and shear forces

1.2.1 The sign conventions of bending moments and shear forces at any ship transverse section are as shown in Fig 1, namely:

- the vertical bending moment M is positive when it induces tensile stresses in the strength deck (hogging bending moment); it is negative in the opposite case (sagging bending moment)
- the vertical shear force Q is positive in the case of downward resulting forces preceding and upward resulting forces following the ship transverse section under consideration ; it is negative in the opposite case.

1.2.2 The resulting forces correspond to the difference between the vertical sea pressure and the vertical forces applied to the hull.

1.3 Application

1.3.1 As a rule, the global loads are to be taken into consideration in the following situations:

- yacht with important length (superior to 40 m), or
- sailing yacht, of monohull or multihull type, having important compression force induced by the mast and important forces induced by standing rigging, or
- ship having large openings in decks or significant geometrical structure discontinuity at bottom or decks, or
- ship with transverse framing system, or
- ship with deck structure made of small plate thicknesses and large spacing of secondary stiffeners.

Figure 1 : Sign conventions for shear forces Q and bending moments M