KC#476 Technical background

The proposed answer by BV relies onto the ILLC regulations 15(6) and 16(5) that are to be fully applied. The excerpts of ILLC are added herein.

Pontoon covers

The proposed interpretation is:

> If hatch covers are considered weathertight by using tarpaulins and battening devices, the allowable stresses to be used are those corresponding to the line "Pontoon hatch cover" in the Tab 2, i.e. 0.68ReH for sigma. This is in line with ILLC Reg.15(6)

This regulation ILLC 15(6) is:

> *(6)*. Where pontoon covers used in place of portable beams and covers are made of mild steel, the strength shall be calculated in accordance with the requirement of regulation 16 (2) to (4) and the product of the maximum stress thus calculated and the factor 1.47 shall not exceed the minimum upper yield point strength of the material. They shall be so designed as to limit the deflection to not more than 0.0044 times the span. Mild steel plating forming the tops of covers shall be not less in thickness than 1% of the spacing of stiffeners or 6 mm if that be greater.

Hatch cover minimum design loads

The proposed interpretation is:

> If hatch covers are considered weathertight by construction, and without
> the need of tarpaulins and battening devices, the allowable stresses to be used are those corresponding to the line "Weathertight hatch cover" in the Tab 2, i.e. 0.8ReH for sigma. This is in line with ILLC Reg.16(5).

The regulation ILLC 16(5) is:

> *(5)*. All hatch covers shall be designed such that:
> *(a)*. the product of the maximum stress determined in accordance with the above loads and the factor of 1.25 does not exceed the minimum upper yield point strength of the material in tension and the critical buckling strength in compression;
> *(b)*. the deflection is limited to not more than 0.0056 times the span;
> *(c)*. steel plating forming the tops of covers is not less in thickness than 1% of the spacing of stiffeners or 6 mm if that be greater; and
> *(d)*. an appropriate corrosion margin is incorporated.