

Dear Sir or Madam,

I have some questions about CSR for bulk carrier in Chapter 4 section 6 Internal Pressures and Forces

The dry bulk cargo pressure in still water P_{CS} is given by

$$p_{CS} = \rho_C g K_C (h_C + h_{DB} - z)$$

Where

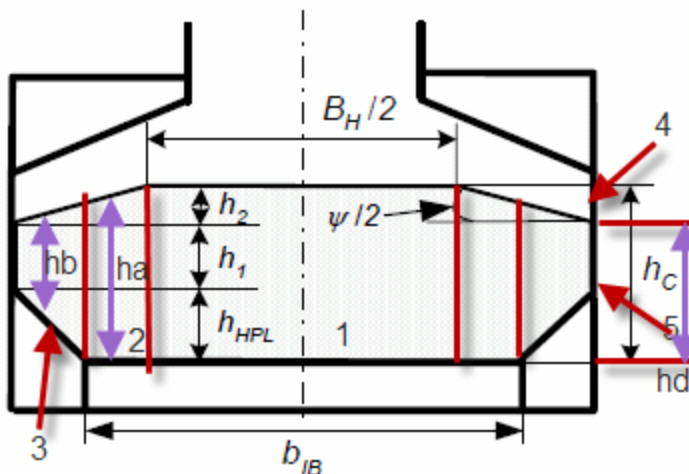
$$K_C = \cos 2\alpha + (1 - \sin \psi) \sin 2\alpha$$

α : Angle, in deg, between panel considered and the horizontal plane

ψ : Assumed angle of repose, in deg, of bulk cargo (considered drained and removed); in the absence of more precise evaluation, the following values may be taken:

Question 1

For loading condition where the cargo hold is not loaded to the upper deck (Chapter 4, Section 6, 1.1.2)



As shown in the figure above,

a. Whether the cargo pressures in the still water for inner bottom region 1 and 2 are the same or not since it seems that the cargo heights are different for these two areas? If not, the cargo pressure for inner bottom 2 should be $p_{CS} = \rho_C g K_C (h_a + h_{DB} - z)$ or not?

b. Whether the P_{CS} for the side area 4 is zero although this area is below h_c ?

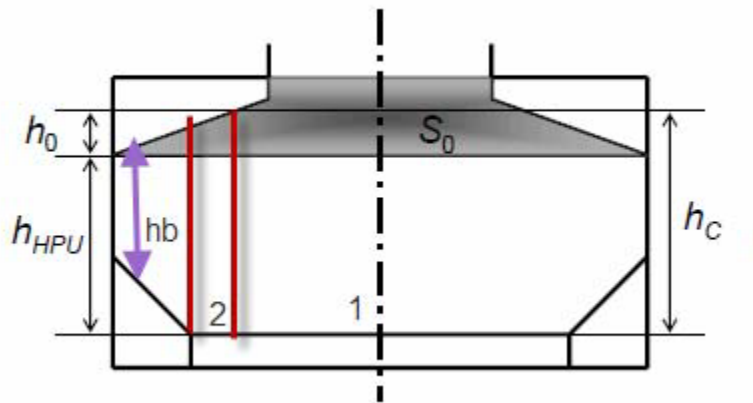
c. When calculating the still cargo pressures on the hopper tank plate, should I use

$$p_{CS} = \rho_C g K_C (h_c + h_{DB} - z) \text{ or } p_{CS} = \rho_C g K_C (h_b + h_{DB} - z)$$

d. For the cargo pressures on the side, should I use h_d instead of h_c ?

Question 2

For loading condition where the cargo hold is loaded to the upper deck (Chapter 4, Section 6, 1.1.1)



- In this case, what is the value of ψ ? 0° or the angle between top side tank plate and the horizontal plane?
- Whether the cargo pressures in the still water for the inner bottom region 1 and 2 are the same or not?
- For the hopper tank plate, should I use h_b instead of h_c ?