PARTE II RULES FOR THE CONSTRUCTION AND CLASSIFICATION OF SHIPS IDENTIFIED BY THEIR MISSIONS

TITLE 26 ROLL ON - ROLL OFF PASSENGER SHIP

SECTION 2 STRUCTURE

CHAPTERS

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CHAPTER A
SCOPE

100. Application

101. The present Title 15 applies to roll on – roll off cargo ships as defined in Part I, Title 01, Section 1, Table T.B3.101.1.

CHAPTER F
DIMENSIONINGS PER SYSTEMS OF THE STRUCTURE

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F4. DECK

100. Deck thickness at the ends
- See Part II. Title 11, Section 2

200. Strength deck thickness amidships
- See Part II. Title 11, Section 2

300. Wheeled loads

301. The thickness for the wheeled load is given by the equation

$$e = \left(4{,}3 + 0{,}04 \times \sqrt{E}\right) \times \sqrt{P}$$

where:

P = 0,50 QE for single wheel in t

P = 0,35 QE for double wheel in t

where:

QE: axle load in tons
P : single or double wheel load
E : spacing of the stiffeners of the panel, in mm

302. The dynamic loads introduced by the ship's motions given in Part II, Title 11, Section 2, Chapter C, Subchapter C2 are to be taken into account. Cargo load due to static and dynamic forces shall be based on a roll angle of 30 degrees and a period of 10 seconds.

303. Special attention shall be given to the lashing points welded to the structure and the local loads introduced by them. Vehicle decks are to have a sufficient number of lashing points that are to be supported by the deck structure or specially arranged headers. The loads on the lashing points are to be not less than the rated breaking strength of the lashing point fitting but not less than 200 kN.

400. Deck transverses and beams

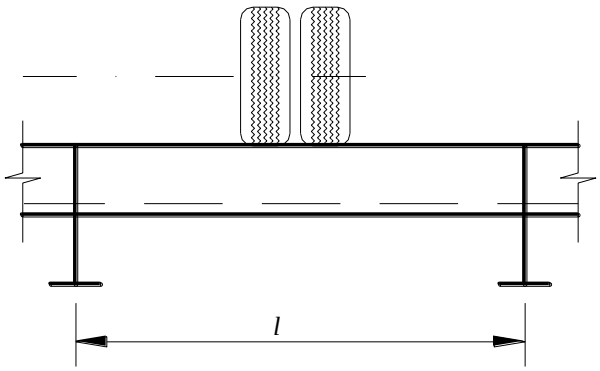
401. The strength module for a wheeled load is to be checked so that the stresses are smaller than:

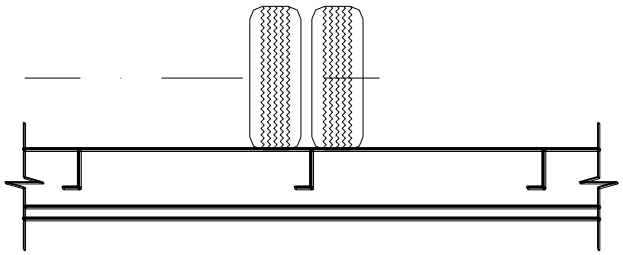
In bending: $\sigma \leq 14$ kgf/mm² (13,7 daN/mm²);

In shearing: $\tau \leq 8$ kgf/mm² (7,8 daN/mm²);

Combined: $\sigma = \sqrt{\sigma^2 + 3 \times \tau^2} \leq 18$ kgf/mm² (17,7 daN/mm²).

402. Where only a single or a double wheel will rest on the deck transverse, and the wheel axle is parallel or perpendicular to the deck transverse, as in the examples of the figures below, the following equations shall be used:





- for double wheels:

$$\sigma = 59 \times \frac{QE \times l}{W} \qquad \text{da N/mm}^2$$

$$\tau = 296 \times \frac{QE}{S} \quad \text{daN/mm}^2$$

- for single wheel:

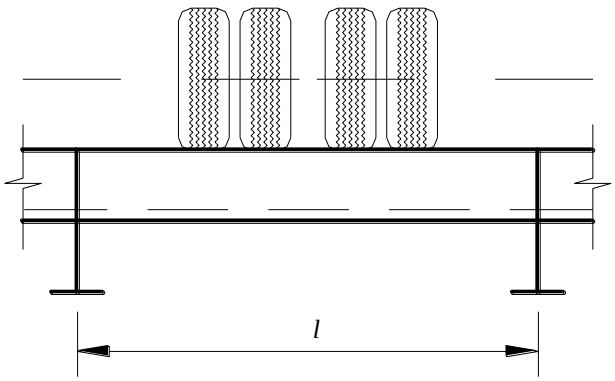
$$\sigma = 67 \times \frac{QE \times l}{W} \qquad \text{da N/mm}^2$$

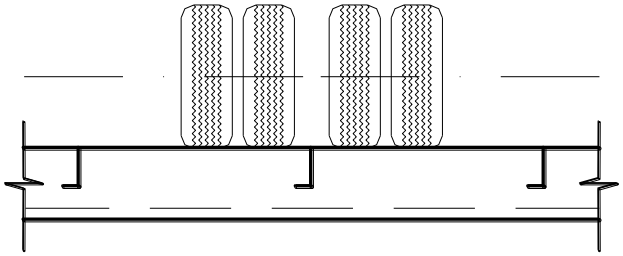
$$\tau = 333 \times \frac{QE}{S} \quad \text{da N/mm}^2$$

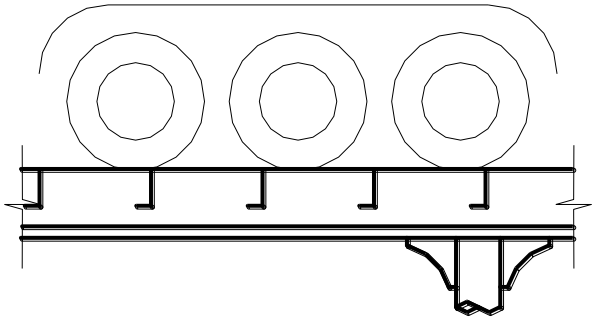
where:

QE: axle load, in tons (see Note in item 04, Section H
l : beam span, in m;
W : beam section modulus, in cm³;
S : beam web section area, in mm

405 In all other cases, i.e., when the two wheels of two adjacent vehicles may be side by side or when two or three axle wheels rest on the same deck transverse, as in the examples of the following figures, a schematic drawing of the loads shall be and calculate the stresses.







500. Longitudinals and deck girders
See Part II, Title 11, Section 2 and 400 and topic 400 above.

600. Hatch Coaming
See Part II, Title 11, Section 2

700. Pillars
-See Part II, Title 11, Section 2

CHAPTER G
PRINCIPLES OF HULL GIRDER DESIGN

CHAPTER CONTENTS

G1. SCOPE

100. Application

101. The longitudinal strength is calculated for vessels that fit in the following cases:

a. when the loading cannot be considered evenly distributed;

b. for type B ships, when loading of the cargo along of the hold is made in only one pass or in a particular way;

c. for length L ≥ 90 meters; and

d. when AB ≥ 500.

Note: definitions of Type A and Type B ships according Rule 27 of ILLC.

G2. CONFIGURATION OF THE GLOBAL STRUCTURE

See Part II, Title 11, Section 2.

G3 LOADING OF THE GLOBAL STRUCTURE

100. Still Water Bending Moment and Shear Force

101. Still water bending moment and shear force calculations in compliance with Part II, Title 11, Section 2, Chapter G, Subchapter G3 are to be submitted. These calculations are to be carried out for all anticipated loaded and ballast conditions. The distribution of lightship weight is also to be shown.