US418 Sketches and Calculation

Vessel Type 71

Figure 1 - Vessel type 71

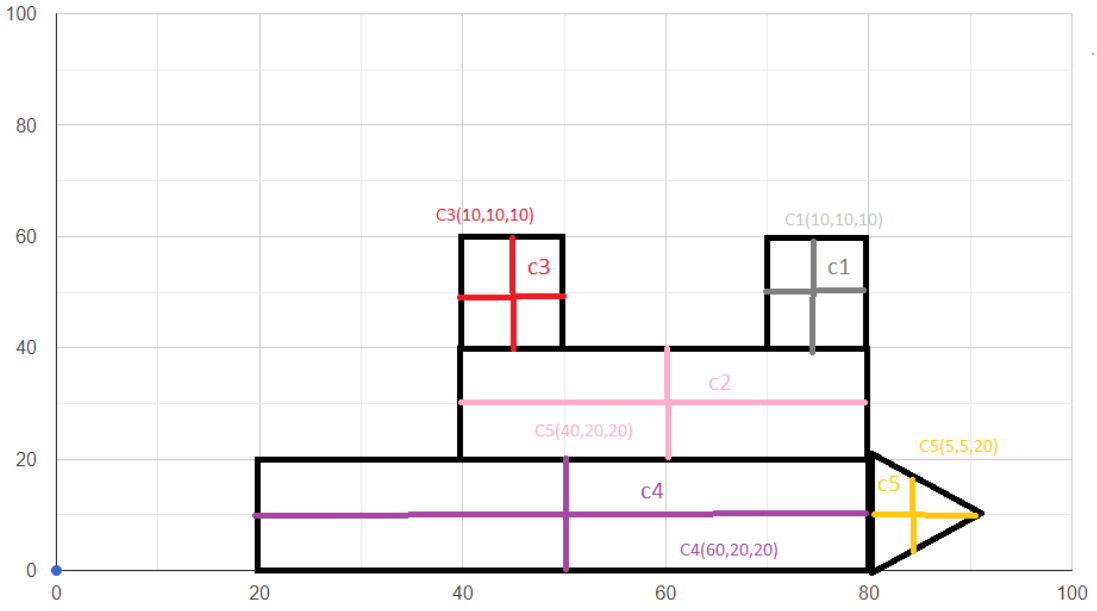

Figure 2 - Vessel type 71 sketch (side view)

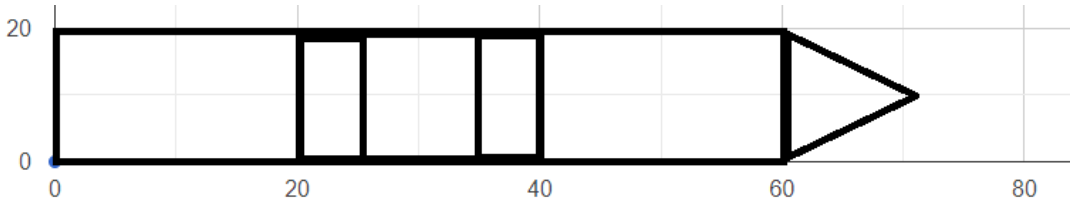

Figure 3 - Vessel type 71 sketch (upper view)

Dados:

C1(10, 10, 10)	m1 = 2 000 kg	**Massa total** = 18 000 kg
C2(40, 20, 20)	m2 = 5 000 kg	**Centro do barco** = (40,3; 16,9; 17,8)
C3(10, 10, 10)	m3 = 2 000 kg	
C4(60, 20, 20)	m4 = 8 000 kg	
C5(5, 5, 10)	m5 = 1 000 kg	

$$xc = \frac{2000 * 10 + 5000 * 40 + 2000 * 10 + 8000 * 60 + 5 * 1000}{18\,000} = \mathbf{40,3}$$

$$yc = \frac{2000 * 10 + 20 * 5000 + 10 * 2000 + 20 * 8000 + 1000 * 5}{18\,000} = \mathbf{16,9}$$

$$zc = \frac{2000 * 10 + 20 * 5000 + 10 * 2000 + 20 * 8000 + 1000 * 20}{18\,000} = \mathbf{17,8}$$

Vessel Type 72

Figure 4 - Vessel type 72

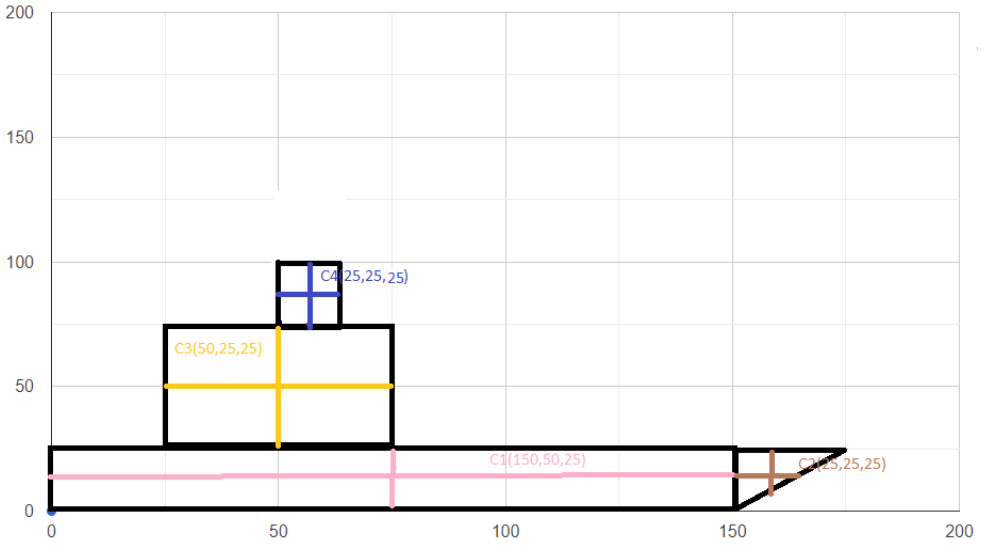

Figure 5 - Vessel type 72 sketch (side view)

Figure 6 - Vessel type 72 sketch (upper view)

Dados:

C1(150, 50, 25)	m1 = 10 000 kg	**Massa total** = 22 000 kg
C2(25, 25, 25)	m2 = 2 000 kg	**Centro do barco** = (91; 36,4; 27,3)
C3(50, 25, 25)	m3 = 8 000 kg	
C4(25, 25, 50)	m4 = 2 000 kg	

$$xc = \frac{10\,000 * 150 + 2000 * 25 + 8000 * 50 + 2000 * 25}{22000} = \mathbf{91}$$

$$yc = \frac{10\,000 * 50 + 2000 * 25 + 8000 * 25 + 2000 * 25}{22\,000} = \mathbf{36,4}$$

$$zc = \frac{10\,000 * 25 + 2000 * 25 + 8000 * 25 + 2000 * 50}{22\,000} = \mathbf{27,3}$$

Vessel Type 74

Figure 7 - Vessel type 74

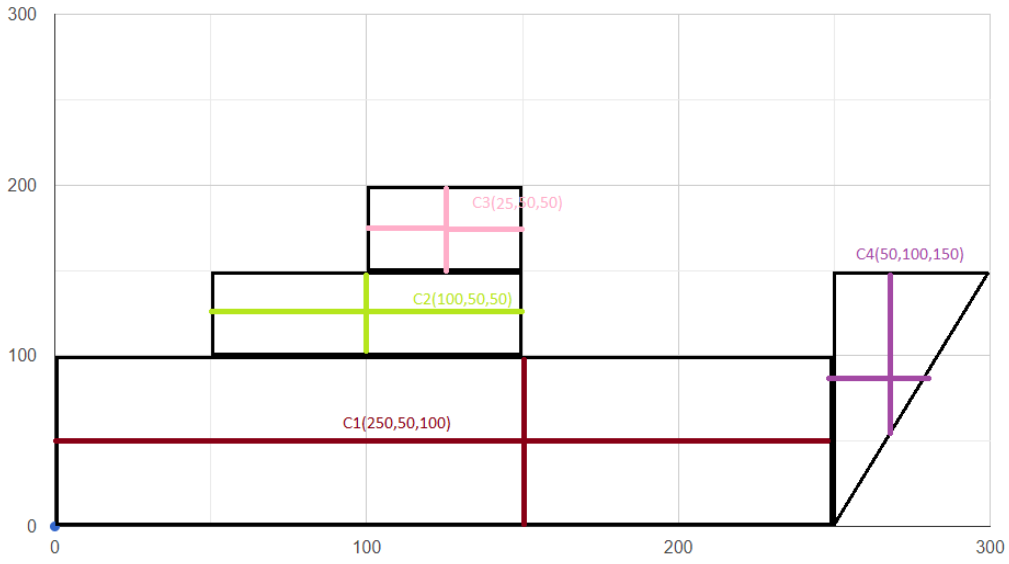

Figure 8 - Vessel type 74 sketch (side view)

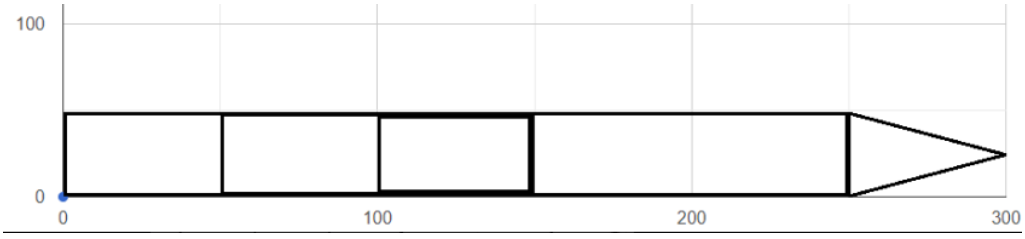

Figure 9 - Vessel type 74 sketch (upper view)

Dados:

C1(250, 50, 100)	m1 = 12 000 kg	**Massa total** = 27 000 kg
C2(100, 50, 50)	m2 = 5 000 kg	**Centro do barco** = (146.3, 64.8, 101.8)
C3(25, 50, 50)	m3 = 2 000 kg	
C4(50, 100, 150)	m4 = 8 000 kg	

$$xc = \frac{12\,000 * 250 + 5\,000 * 100 + 2\,000 * 25 + 8\,000 * 50}{27\,000} = \mathbf{146,3}$$

$$yc = \frac{12\,000 * 50 + 5\,000 * 50 + 2\,000 * 50 + 8\,000 * 100}{27\,000} = \mathbf{64,8}$$

$$zc = \frac{12\,000 * 100 + 5\,000 * 50 + 2\,000 * 50 + 8\,000 * 150}{27\,000} = \mathbf{101,8}$$