

$$b) F_u = \frac{M_{b1}}{r_1} = \frac{50,44}{125/2} = 0,807 \text{ kN} = 807 \text{ N}$$

$$\left. \begin{aligned} F_1 - F_2 &= F_u = 807 \text{ N} \quad \text{--- ①} \\ \frac{F_1}{F_2} &\leq e^{\mu \beta_1} = e^{0,6 \cdot 2,94} = 5,84 \quad \text{--- ②} \end{aligned} \right\} \Rightarrow \begin{aligned} F_1 &\approx 974 \text{ N} \\ F_2 &= 167 \text{ N} \end{aligned}$$

$$F_u = \sqrt{(974)^2 + (167)^2 - 2 \cdot 974 \cdot 167 \cdot \cos(168,5^\circ)} \approx 1138 \text{ N}$$

c) statik kontrol: (σ_{m1} : ihmal ed.) $\left[\sigma_{top} \leq \sigma_{em} \text{ olmalı} \right]$

$$\sigma_1 = \frac{F_1}{A} = \frac{984}{90 \cdot 2,7} = 4,05 \text{ N/mm}^2 \quad \left. \vphantom{\sigma_1} \right\} \sigma_{top} = 7,29 \text{ N/mm}^2$$

$$\sigma_{e1} = \frac{s}{d_1} \cdot E_0 = \frac{2,7}{125} \cdot 110 = 3,24 \quad "$$

Tip-14 (80LT) için: $\sigma_{em} = 7 \text{ N/mm}^2 \rightarrow \text{EMNITEETSI2}$

Sonuç: Genişlik $b = 100 \text{ mm}$ alınmalı ($6,88 < 7$ emli olur.)

Dinamik Kontrol: $\left[f_e \leq f_{em} \text{ olmalı} \right]$

$$f_e = z_{k05} \cdot \frac{v}{L} = 2 \cdot \frac{9,3}{2,6} = 7,2 \frac{1}{s} < f_{em} = 100 \frac{1}{s}$$

Sonuç $\Rightarrow$ Din. bakımdan kayış EM.lidir.

d) Aynı şart. da kull. "V" kayış hesabı:

$$\left. \begin{aligned} n_1 &= 1420 \text{ d/d} \\ K_{is} \cdot P &= 1,4 \cdot 7,5 = 10,5 \text{ kW} \end{aligned} \right\} \Rightarrow \text{SPZ tipi seçilir} \quad \left\{ \begin{array}{l} \text{SPA da} \\ \text{yakın} \\ \text{bölgede} \end{array} \right\}$$

$$d_{e1} \approx \frac{d_{emax}}{8} = \frac{710}{8} = 89 \text{ mm} \xrightarrow{\text{st. R20}} d_{e1} = 90 \text{ mm}$$

$$d_{e2} \approx i \cdot d_{e1} = 2,5 \cdot 90 = 225 \text{ mm} \xrightarrow{\text{st. R20}} d_{e2} = 224 \text{ mm}$$

$$L_e = 2 \cdot 950 + \frac{\pi}{2} (90 + 224) + \frac{1}{4 \cdot 950} (224 - 90)^2 = 2398 \text{ mm} \xrightarrow{\text{st. R20}} L_e = 2500 \text{ mm}$$

$$\left[a_{yeri} \approx 950 + 51 = 1001 \text{ mm} \right] \quad \left[\Delta a = \frac{2500 - 2398}{2} = 51 \text{ mm} \right]$$

$$\left. \begin{aligned} z &\geq \frac{K_{is}}{K_R \cdot K_L} \cdot \frac{P}{P_R} \\ z &\geq \frac{1,4}{0,98 \cdot 1,08} \cdot \frac{7,5}{1,9} \\ z &\geq 5,22 \Rightarrow z = 6 \end{aligned} \right\} \left\{ \begin{aligned} \cos(\beta/2) &= \frac{224 - 90}{2 \cdot 1001} = 0,067 \rightarrow \beta_1 = 172^\circ \rightarrow K_R = 0,98 \\ \text{SPZ ; } L &= 2,5 \text{ m.} \Rightarrow K_L = 1,08 \\ \text{" ; } d_{e1} &= 90 \text{ mm} \Rightarrow P_R = 1,9 \text{ kW} \end{aligned} \right\}$$

$$B_v = 2f + (z-1) \cdot e = 2 \cdot 8 + (6-1) \cdot 12 = 76 \text{ mm}$$