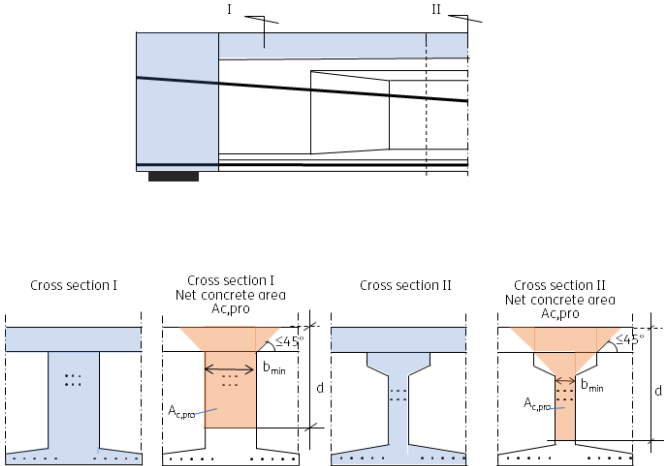


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Onderwerp RBK additions for shear on FprEN1992-1-1:2023
(date 2023-04)

Datum
1 februari 2024
Onze referentie
2024.M10204

	Addition RBK for shear on FprEN 1992-1-1:2023, date 2023-04 (SC2 N2078)
5.2.2 (3) ROK	This article does not apply for assessment of existing structures.
8.2.1 (3)	Add the next text: For member not requiring design shear reinforcement (8.2.2) and cross sections with a variable width, b_w in 8.2.1 (3) and 8.2.2 (2) may be replaced with b_{wa}. Where b_{wa} is the average width in mm, given by: $b_{wa} = A_{c,pro} / d \leq 1,25b_{min}$ where $A_{c,pro}$ is the net concrete area in mm² over the effective depth d. In the case of a cross section with variable width, the increasing gradient in width that can be taken into account when estimating $A_{c,pro}$ may not exceed 45° (see also the figure below). Recesses of the cross section should be deducted when determining $A_{c,pro}$, according to 8.2.3 (10). b_{min} is the smallest width in mm over the effective depth whereby presence of prestressing ducts may be neglected.  Figure 1 RBK – definition of net concrete area
8.2.1 (4) ROK	Equation (8.20 ROK) should be replaced by:

	$\tau_{Rdc,min} = \frac{9}{\gamma_v} \sqrt{\frac{f_{ck}}{f_{yk}} \cdot \frac{d_{dg}}{k_b \cdot d}} \quad (8.20 \text{ RBK})$ where $k_b = 1,2$ for smooth reinforcement $= 1,0$ all other cases
8.2.1 (4)	<i>Add the next text:</i> For members built before 1995, $D_{lower} = 32$ mm may be assumed unless in design the reinforcement layout would have required a smaller aggregate size to be applied. For elements built after 1995, a value of $D_{lower} = 16$ mm should be assumed unless self-compacting concrete has been used, for which $D_{lower} = 8$ mm should be assumed. If a higher value of D_{lower} can be demonstrated from original design data or concrete cores extracted from the structure, this may be applied.
8.2.2 (2)	For linear and planar members equation (8.27 ROK) should be replaced by: $\tau_{Rd,c} = k_{vd} \cdot k_{cap} \frac{0,66}{\gamma_v} \left(100 \rho_l \cdot f_{ck} \frac{d_{dg}}{k_b \cdot d} \right)^{\frac{1}{3}} \geq \tau_{Rdc,min} \quad (8.27a \text{ RBK})$ where $k_{cap} = 1,2$ for monolithic solid parts of planar members with line-supports. It might be assumed that a planar member has line-support if following two conditions are fulfilled: - the centre to centre distance between supports does not exceed $5d_l$ (where d_l can be the effective depth of the planar member or of the transverse beam); - if a transverse beam is present, the longitudinal reinforcement at the bottom of the planar member is placed above the longitudinal reinforcement in the transverse beam. $= 1,0$ in all other cases including “volstortliggers”; All other parameters according to ROK and 8.2.1 (4) RBK. NOTE b_w may be replaced by b_{wa} (see 8.2.1 (3))
8.2.2 (8)	<i>Add the next text:</i> The design value of the acting shear force V_{Ed} in the control section may be reduced by ΔV_{Ed}, where ΔV_{Ed} determined as the sum of the radial pressure of the prestress (which is also active on the tensioned side of the element) acting at a distance d from the control section (Figure 8.8 and Figure 1 ROK). A reduction with ΔV_{Ed} determined as the sum of the self weight acting at a distance $0.5d$ from the control section (Figure 8.8 and Figure 1 ROK) may only be taken into account for a negative (hogging) moment, for positive (sagging) moments V_{Ed} must be increased by the own weight acting at $0.5d$ from the control section.
8.2.2 (12) ROK	<i>Replace the text of the ROK article by:</i> For prestressed members distinction should be made between regions uncracked in bending and regions cracked in bending. Regions uncracked in bending are areas where the flexural tensile stress for the persistent and transient design situation, including

	effects of imposed deformations is smaller than $f_{ctk,0,05}/\gamma_c$. For the determination of the flexural tensile stress V_{Ed} with coexistent M_{Ed} should be applied. In the regions uncracked in bending the shear resistance should be checked by verification of the principal stress according to 13.5.5 (2).
I 8.3.1.	The articles (1), (2) and (3) may not be applied. NOTE Article I.8.3.1 (3) is already included in ROK additions to article 8.2.2 (2).