

Supplementary material
to the
Engineering Structures
manuscript entitled
“Serviceability Limits of Reinforced Concrete Hinges”
authored by

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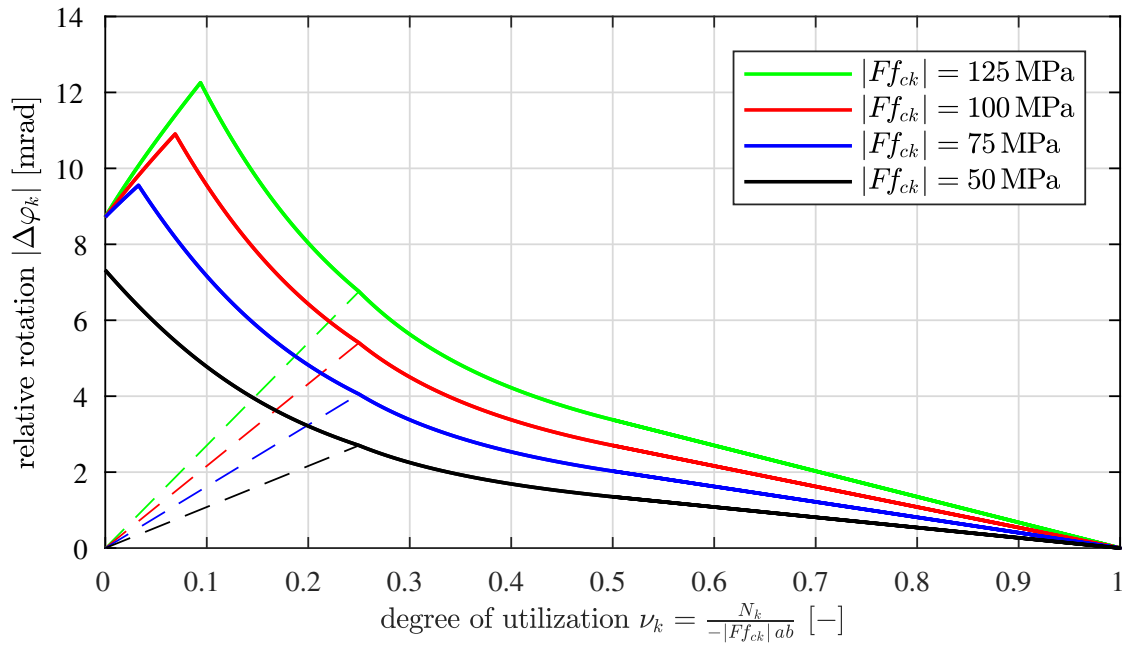
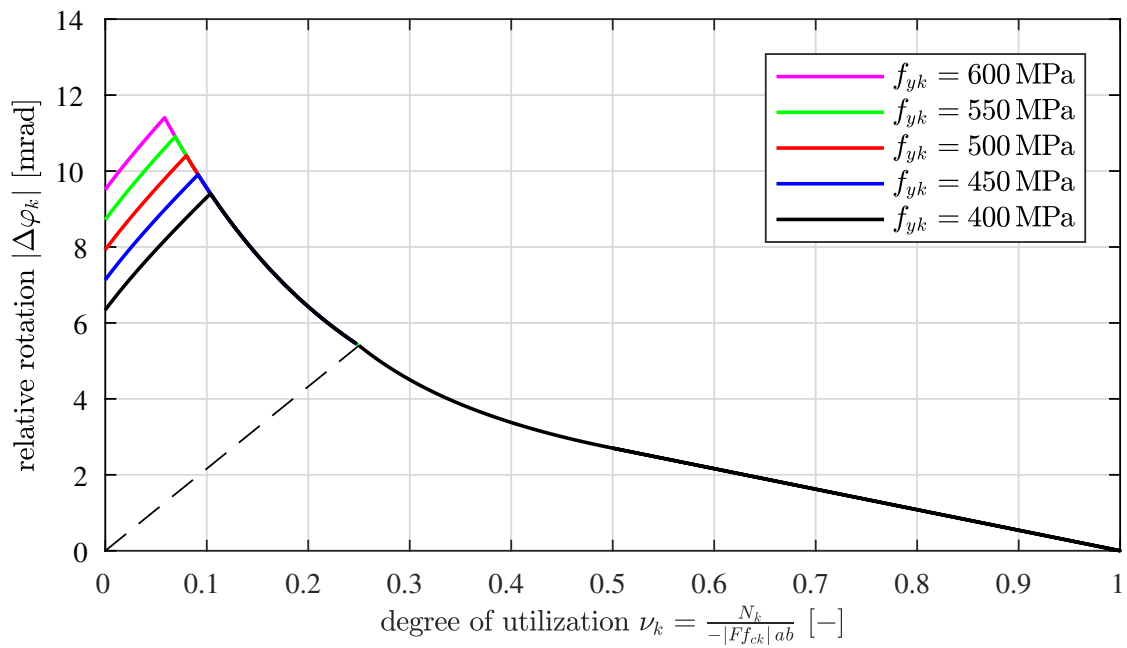
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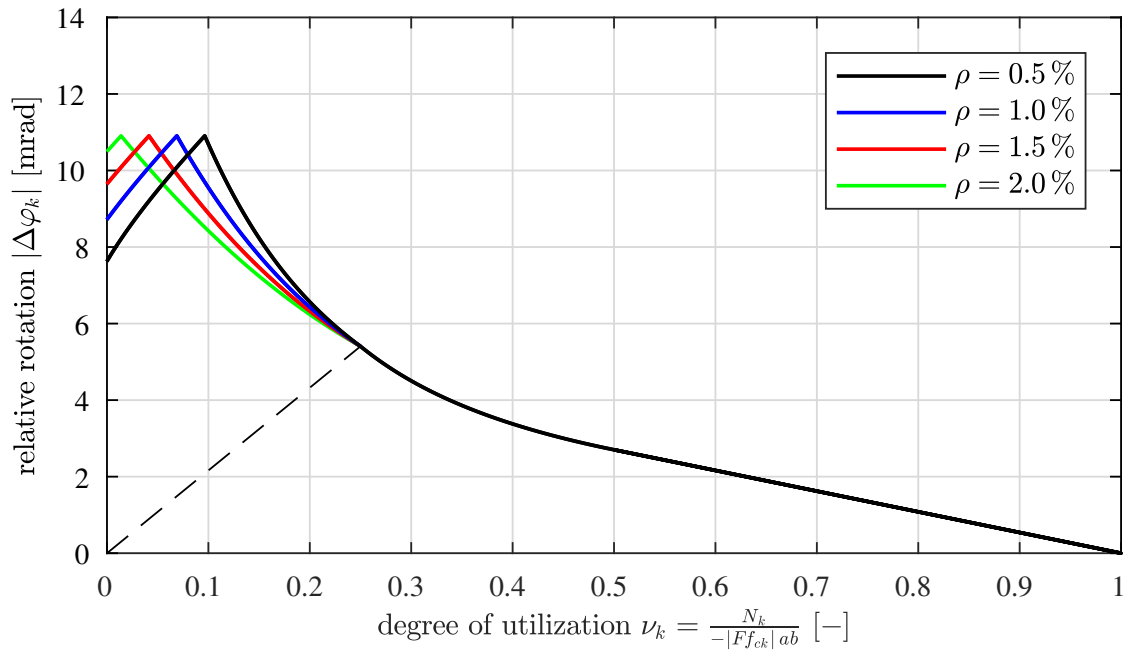
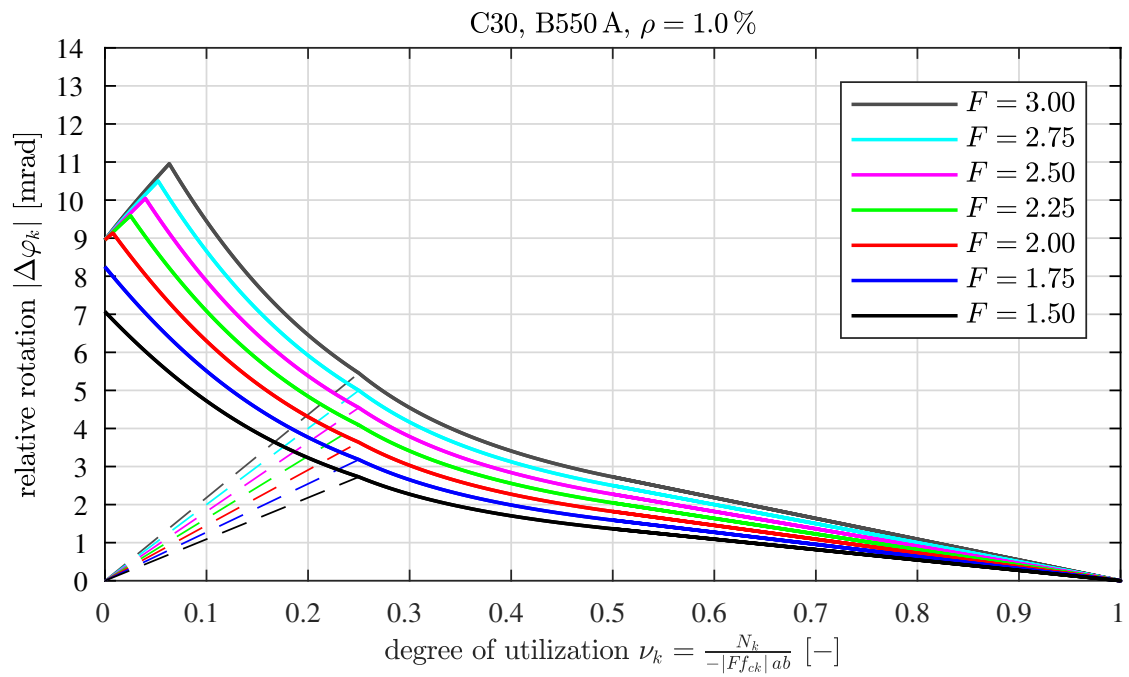
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This document contains figures illustrating the sensitivity of serviceability limit states of reinforced concrete hinges with respect to (i) material properties of steel and concrete, as well as (ii) structural properties of the concrete hinges. Unless otherwise stated, the design diagrams refer to the triaxial compressive strength of concrete $|Ff_{ck}| = 100$ MPa, Young’s modulus of concrete $E_{cm} = 37$ GPa, the yield stress of steel $f_{yk} = 550$ MPa, Young’s modulus of steel $E_{sm} = 200$ GPa, and the reinforcement ratio $\rho = 1.0\%$.

Figure 1: Sensitivity with respect to the triaxial compressive strength of concrete $|Ff_{ck}|$ Figure 2: Sensitivity with respect to the yield stress of steel f_{yk}

Figure 3: Sensitivity with respect to the reinforcement ratio ρ Figure 4: Sensitivity with respect to F , the ratio of triaxial-to-uniaxial compressive strength, for the strength class C30: $|f_{ck}| = 30$ MPa, $E_{cm} = 33$ GPa

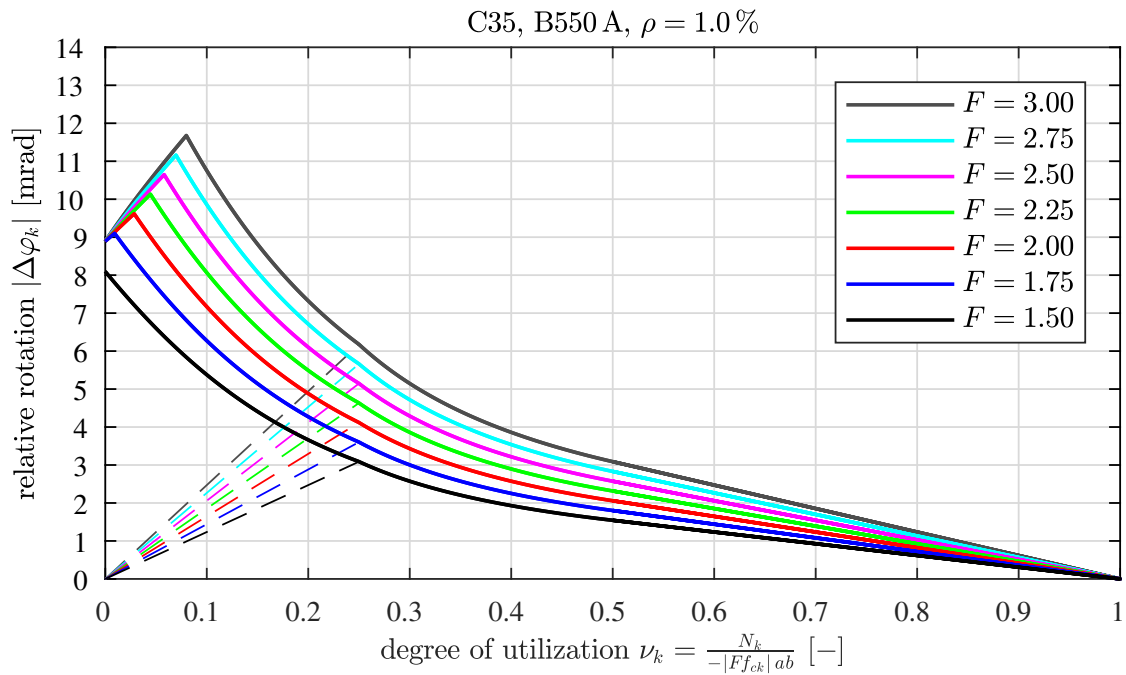


Figure 5: Sensitivity with respect to F , the ratio of triaxial-to-uniaxial compressive strength, for the strength class C35: $|f_{ck}| = 35$ MPa, $E_{cm} = 34$ GPa

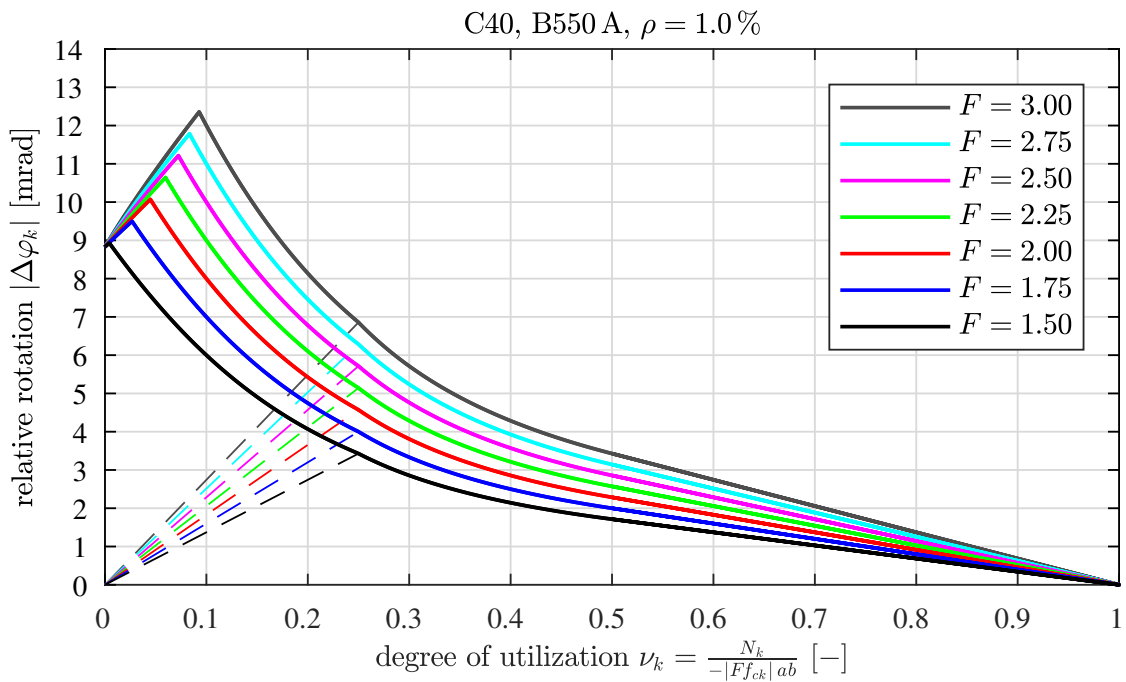


Figure 6: Sensitivity with respect to F , the ratio of triaxial-to-uniaxial compressive strength, for the strength class C40: $|f_{ck}| = 40$ MPa, $E_{cm} = 35$ GPa

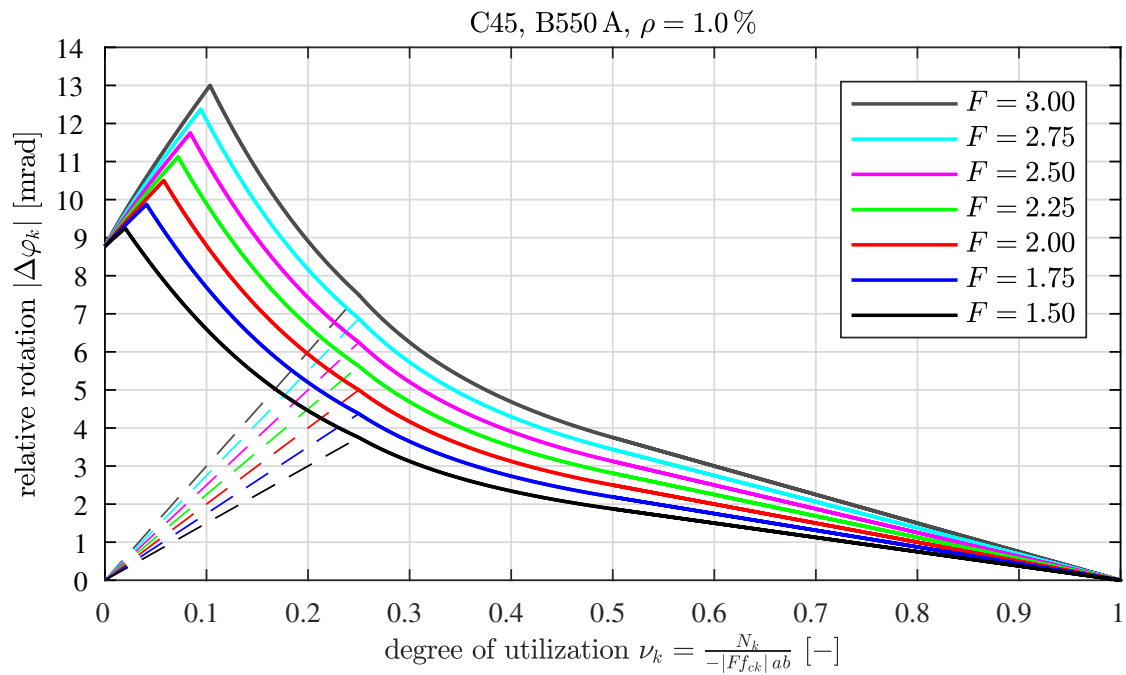


Figure 7: Sensitivity with respect to F , the ratio of triaxial-to-uniaxial compressive strength, for the strength class C45: $|f_{ck}| = 45$ MPa, $E_{cm} = 36$ GPa

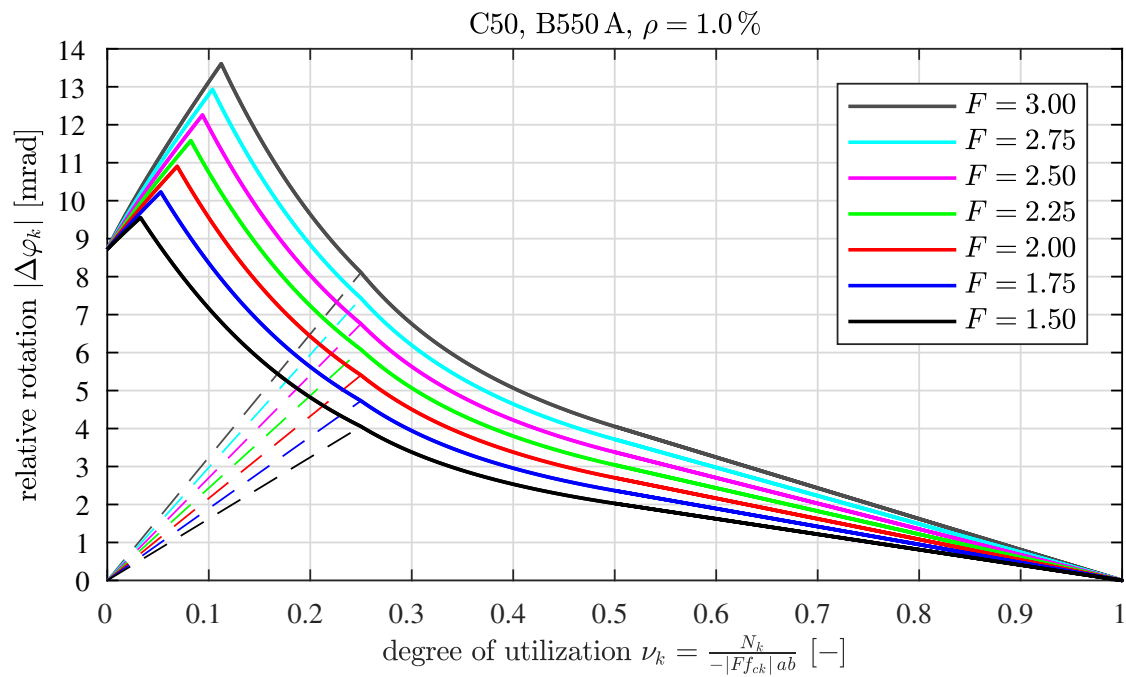


Figure 8: Sensitivity with respect to F , the ratio of triaxial-to-uniaxial compressive strength, for the strength class C50: $|f_{ck}| = 50$ MPa, $E_{cm} = 37$ GPa