

The following are the technical updates applicable to the Nov 2009 revision of *Concrete Buildings Scheme Design Manual*.

Location	Original	Amendment
Page 46, section 3.6	 3. 310/a_s, where a_s = tensile steel stress at mid-span (or support for cantilevers) under the design load at SLS. The stress in the steel at SLS can be estimated from Figure 3.3. This assumes that the area of steel has not been enhanced to control deflection and the stress can be further reduced by A_{streq}/A_{sprov} when this is the case (A_{streq} = 1.5 A_{sprov}). 	3. A _{s,prov} /A _{s,req'd} ≤ 1.5 (UK National Annex)
Page 47, Figure 3.3		This is figure is no longer required (but it may be useful)
Page 60, top of page	Insert new text	At the basic control perimeter check $v_{Ed} \le 2v_{Rd,c}$
Page 29, Figure 6, box 5.	Determine Factor 3 (F3) F3 = $310/\sigma_s$ Where σ_s = Stress in reinforcement at serviceability limit state (see Figure 4) σ_s may be assumed to be 310 MPa (i.e. F3 = 1.0) Note: As,prov \leq 1.5 As,req'd (UK National Annex)	Determine Factor 3 (F3) F3 = $A_{s,prov}/A_{s,req'd} \le 1.5$ (UK National Annex)
Page 62, WE 4, punchin g shear	Length of perimeter = 4 x 350 + 2π x 500 = 4542 mm Radial spacing sr = 0.75 x 250 = 188 mm Asw = (vEd - 0.75 vRd,c)sr u1/(1.5 fywd,ef) = (1.15 x 1238 x 10 ³ /(4542 x 250))- 0.75 × 0.75) x 188 x 4542 /(1.5 x 313) = 1257 mm2/perimeter	Length of perimeter = $4 \times 350 + 2\pi \times 500 = 4542 \text{ mm}$ $V_{Ed} = 1.15 \times 1238 \times 10^3 / (4542 \times 250) = 1.25 \le 2 \times 0.75 \therefore OK$ Radial spacing sr = $0.75 \times 250 = 188 \text{ mm}$ $A_{SW} = (v_{Ed} - 0.75 \vee Rd,c)sr u1 / (1.5 f_{yWd,ef})$ = $(1.25 - 0.75 \times 0.75) \times 188 \times 4542 / (1.5 \times 313)$ = $1257 \text{ mm}/perimeter$
Page 63, WE 4, deflecti on	Increase area of steel to reduce steel stress, assume H20 @ 225 ctrs (1400 mm2) Approximate steel stress at SLS = 236 MPa Therefore approximate steel stress, σ_s , when $A_{s,prov}$ = 1400 mm2 σ_s = 236 x 1243/1400 = 210 MPa Increased basic l/d = 24.4 x 310/210 = 36 > 34.6 \therefore OK \therefore Use H20 @ 225 ctrs $A_{s,prov}$ = 1400 mm2	Increase area of steel to reduce steel stress: As,prov = As,req x (actual l/d)/(basic l/d) = 1243 x 34.6/24.4 = 1763 mm ² ∴Use H20 @ 175 ctrs As,prov = 1800 mm2

\\tccdata\tcc\users\obrooker\Small tasks\Changes due to Amd 1 of UK NA\CBSDM corrections due to Amd 1 of UK NA.docRevision 1/5 March 2010
Page 1 of 1

All advice or information from The Concrete Centre is intended for those who will evaluate the significance and limitations of its contents and take responsibility for its use and application. No liability (including that for negligence) for any loss resulting from such advise or information is accepted by The Concrete Centre or their subcontractors, suppliers or advisors.