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To the Members of CEN/TC250/SC3

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Eurocode 3: Design of Steel Structures

The Steel Construction Institute
Silwood Park
Ascot
Berkshire SL5 7QN
UK

Tel: +44 1344 636525

Fax: +44 1344 636570

FINAL VERSION
Corrigendum to EN 1993-1-8
Eurocode 3: Design of steel structures
-Part 1-8: Design of joints

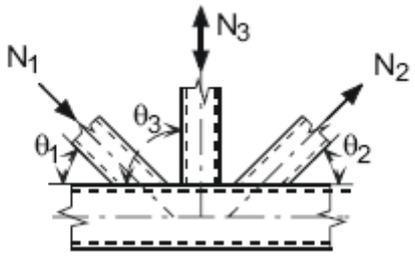
Version sent to CEN for publishing

27th November 2008**N1667E****FINALISED Corrigendum to:
EN1993-1- 8: Design of joints**

| Clause | Add or Change |
|-------------------------|--|
| 1.1(1) | change "..., S355 and S460" into "..., S355, S420, S450 and S460" |
| 1.5(3) | add to the list: " h_z is the distance between centres of gravity of the effective width parts of a rectangular section beam connected to a I or H section column" |
| 1.5(6) | add to the list: " $\lambda_{ov,lim}$ is the overlap for which shear between braces and chord face may become critical" |
| 3.4.2 Table 3.2 | for Category C in 2 nd column (criteria) 3 rd line: change " $F_{v,Ed} \leq N_{net,Rd}$ " into " $\sum F_{v,Ed} \leq N_{net,Rd}$ " |
| 3.5(1) Table 3.3 | change text of note 1) in Table 3.3: "...exposed members and;" into "...exposed members (the limiting values are given in the table) and;" change text of note 2) in Table 3.3: "...to prevent corrosion." into "...to prevent corrosion (the limiting values are given in the table)." |
| 3.6.1(1) Table 3.4 | 3 rd row 2 nd column, in the formula for $F_{b,Rd}$ change " a_b " into " α_b " change "for edge bolts k_1 is the smallest of $2,8 \frac{e_2}{d_o} - 1,7$ or $2,5$ " into "for edge bolts k_1 is the smallest of $2,8 \frac{e_2}{d_o} - 1,7$, $1,4 \frac{p_2}{d_o} - 1,7$ and $2,5$ " |
| 3.6.1(5) | change ".. is greater or equal .." into "... is less than or equal to ..." |
| 3.6.2.2(2) | change "... of the bolt as obtained..." into "...of the bolt or a group of bolts as obtained..." |
| 3.9.1(1) | change equation number "(3.6)" into (3.6a) and add an equation " $F_{s,Rd,ser} = \frac{k_s n \mu}{\gamma_{M3,ser}} F_{p,C}$ " with equation number "(3.6b)" |
| 3.9.1(1) | change "...the friction surfaces" into "...the friction planes" |
| 3.13.2(1) Table 3.10 | in the 6 th row of the table: change " f_y is the lower of the design strengths..." into " f_y is the lower of the yield strengths..." |
| 3.13.2(3) eqn (3.15) | change " $F_{Ed,ser}$ " into " $F_{b,Ed,ser}$ ", also in the explanation of the parameters |
| 3.13.2(3) eqn (3.16) | change " $f_{h,Ed}$ " into " $f_{h,Rd}$ " |
| 4.5.1(1) | change "The effective length of the fillet weld l ..." into "The effective length of the fillet weld l_{eff} ..." |
| 4.7.3(1) | change the reference to "Figure 4.6(a)" into "Figure 4.6" |
| 4.14 Table 4.2 | add a NOTE to the table: "NOTE: Cold formed hollow sections according to EN 10.219 which do not satisfy the limits given in Table 4.2 can be assumed to satisfy these limits if these sections have a thickness not exceeding 12,5 mm and are Al-killed with a quality J2H, K2H, MH, MLH, NH or NLH and further satisfy $C \leq 0,18\%$, $P \leq 0,020\%$ and $S \leq 0,012\%$. In other cases welding is only permitted within a distance of $5t$ from the corners if it can be shown by tests that welding is permitted for that particular application." |

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|------------------------------|---|--------------|-----|----|----|------------------------------|
| 5.1.5(3) | add a third bullet "- the eccentricity is within the limits specified in 5.1.5(5)" | | | | | |
| 5.1.5(7) | in first sentence change "...and the compression chord members." into "...and the members." | | | | | |
| 5.1.5(9) Table 5.3 | <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <tr><td style="padding: 2px;">Eccentricity</td></tr> <tr><td style="padding: 2px;">Yes</td></tr> <tr><td style="padding: 2px;">No</td></tr> <tr><td style="padding: 2px;">No</td></tr> <tr><td style="padding: 2px;">Not if 5.1.5(5) is satisfied</td></tr> </table> <p>change in this part of the table the cells with "No" into "Not if 5.1.5(3) and (5) are satisfied" change in the lowest cell "...5.1.5(5)..." into "...5.1.5(3) and (5)..."</p> | Eccentricity | Yes | No | No | Not if 5.1.5(5) is satisfied |
| Eccentricity | | | | | | |
| Yes | | | | | | |
| No | | | | | | |
| No | | | | | | |
| Not if 5.1.5(5) is satisfied | | | | | | |
| 6.1.3(2) Table (6.1) | basic joint component of (10) Bolts in tension, the reference to "6.4.7" for the rotation capacity should be changed into "6.4.2) | | | | | |
| 6.2.2(5) | delete "either" in the 2 nd line; change "..., or,..." into "... and ..." in the 3 rd line; change "...see 6.2.2(7), is sufficient..." into "...see 6.2.2(7), added up is sufficient..." in the 4 th line. | | | | | |
| 6.2.2(7) eqn 6.2 | change " γ_{Mb} " into " γ_{M2} " change " α_b " into " α_{bc} " | | | | | |
| 6.2.2(8) | change "The design shear resistance $F_{v,Rd}$ of a column base plate..." into "The design shear resistance $F_{v,Rd}$ between a column base plate and a grout layer..." | | | | | |
| Table 6.2 | change the formula for L_b^* into " $L_b^* = \frac{8,8m^3 A_s n_b}{\sum l_{eff,1} t_f^3}$ " and add to the list "n _b is the number of bolt rows (with 2 bolts per row)" | | | | | |
| 6.2.5(2) NOTE | change "The effective length and the effective width..." into "The values for the effective length and the effective width..." change "...are notional lengths..." into "...are notional values for these lengths..." | | | | | |
| 6.2.6.1(1) | change "... $d/t_w \leq 69\varepsilon$ " into "... $d_c/t_w \leq 69\varepsilon$ " | | | | | |
| 6.2.6.4.1(2) Figure 6.8 | Change title of the Figure 6.8 into "Figure 6.8: Definitions of e, e ₁ , e _{min} , r _c and m" In Figure 6.8 and Figure 6.9 the parameter e ₁ needs to be indicated. | | | | | |
| 6.2.6.4.3 NOTE | change the reference to "...4.10(4) and 4.10(6)." into "...4.10." | | | | | |
| 6.2.6.11(2) | change "not be taken into consideration." into "...not be taken into consideration when determining the thickness of the base plate. Prying forces should be taken into account when determining the anchor bolts" | | | | | |
| 6.2.7.1(14) | change "...to transmit 25%..." into "...to transmit at least 25%..." | | | | | |
| 6.2.7.2(7) | 2 nd line: delete "given by 6.2.7.2(6)" | | | | | |
| 6.2.7.2(8) | 2 nd line: delete "given by 6.2.7.2(6)" | | | | | |
| 6.2.7.2(10) | The direction of the moments in the left hand side lower figure have to be changed to the same direction as in the right hand side the lower figure. | | | | | |

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|---|--|---|----------------------------|---|--------|---------|---|-------------|---|--------|---------|-------------------|-------------|--------------|---------|--|--|-----|--|--------------------|
| 6.2.8.1(5) | change "- Frictional design resistance at the joint between the base plate and its support. - The design shear resistance of the anchor bolts." into "- Frictional design resistance at the joint between the base plate and its support added up with the design shear resistance of the anchor bolts." | | | | | | | | | | | | | | | | | | | |
| 6.3.4(1) | change "...the sum of the stiffness coefficients..." into "...the inverse of the sum of the inverses..." 2x | | | | | | | | | | | | | | | | | | | |
| 6.4.2(1) | change "... $d/t_w \leq 69\varepsilon$." into "... $d_{wc}/t_w \leq 69\varepsilon$." | | | | | | | | | | | | | | | | | | | |
| 6.4.2(2) | add to the clarification of the parameters in eqn. (6.32): " d is the nominal diameter of the bolt f_{ub} is the ultimate tensile strength of the bolt material" | | | | | | | | | | | | | | | | | | | |
| 7.1.2(2) | change "...for the condition of pure bending." into "...for the condition of axial compression." | | | | | | | | | | | | | | | | | | | |
| 7.1.2(6) | add to the text: "If the overlap exceeds $\lambda_{ov,lim.}=60\%$ in case the hidden seam of the overlapped brace is not welded or $\lambda_{ov,lim.}=80\%$ in case the hidden seam of the overlapped brace is welded or if the braces are rectangular sections with $h_i < b_i$ and/or $h_j < b_j$, the connection between the braces and the chord face should be checked for shear." | | | | | | | | | | | | | | | | | | | |
| 7.4.1(3) | change "...all the criteria given in..." into "...all the failure modes given in..." | | | | | | | | | | | | | | | | | | | |
| 7.4.2 eqn. (7.3) | eqn. (7.3) should read: $\frac{N_{i,Ed}}{N_{i,Rd}} + \left[\frac{M_{ip,i,Ed}}{M_{ip,i,Rd}} \right]^2 + \frac{ M_{op,i,Ed} }{M_{op,i,Rd}} \leq 1,0$ | | | | | | | | | | | | | | | | | | | |
| Table 7.1 | change the table into: <table border="1" style="margin-left: 20px; border-collapse: collapse; width: 80%;"> <tr> <td colspan="2">Diameter ratio</td> <td>$0.2 \leq d_i/d_0 \leq 1,0$</td> </tr> <tr> <td rowspan="2">Chords</td> <td>tension</td> <td>$10 \leq d_0/t_0 \leq 50$ (generally), but: $10 \leq d_0/t_0 \leq 40$ (for X joints)</td> </tr> <tr> <td>compression</td> <td>Class 1 or 2 and $10 \leq d_0/t_0 \leq 50$ (generally), but: $10 \leq d_0/t_0 \leq 40$ (for X joints)</td> </tr> <tr> <td rowspan="2">Braces</td> <td>tension</td> <td>$d_i/t_i \leq 50$</td> </tr> <tr> <td>compression</td> <td>Class 1 or 2</td> </tr> <tr> <td colspan="2">Overlap</td> <td>$25\% \leq \lambda_{ov} \leq \lambda_{ov,lim.}$, see 7.1.2 (6)</td> </tr> <tr> <td colspan="2">Gap</td> <td>$g \geq t_1 + t_2$</td> </tr> </table> | Diameter ratio | | $0.2 \leq d_i/d_0 \leq 1,0$ | Chords | tension | $10 \leq d_0/t_0 \leq 50$ (generally), but: $10 \leq d_0/t_0 \leq 40$ (for X joints) | compression | Class 1 or 2 and $10 \leq d_0/t_0 \leq 50$ (generally), but: $10 \leq d_0/t_0 \leq 40$ (for X joints) | Braces | tension | $d_i/t_i \leq 50$ | compression | Class 1 or 2 | Overlap | | $25\% \leq \lambda_{ov} \leq \lambda_{ov,lim.}$, see 7.1.2 (6) | Gap | | $g \geq t_1 + t_2$ |
| Diameter ratio | | $0.2 \leq d_i/d_0 \leq 1,0$ | | | | | | | | | | | | | | | | | | |
| Chords | tension | $10 \leq d_0/t_0 \leq 50$ (generally), but: $10 \leq d_0/t_0 \leq 40$ (for X joints) | | | | | | | | | | | | | | | | | | |
| | compression | Class 1 or 2 and $10 \leq d_0/t_0 \leq 50$ (generally), but: $10 \leq d_0/t_0 \leq 40$ (for X joints) | | | | | | | | | | | | | | | | | | |
| Braces | tension | $d_i/t_i \leq 50$ | | | | | | | | | | | | | | | | | | |
| | compression | Class 1 or 2 | | | | | | | | | | | | | | | | | | |
| Overlap | | $25\% \leq \lambda_{ov} \leq \lambda_{ov,lim.}$, see 7.1.2 (6) | | | | | | | | | | | | | | | | | | |
| Gap | | $g \geq t_1 + t_2$ | | | | | | | | | | | | | | | | | | |
| Table 7.2 | <table border="1" style="margin-left: 20px; border-collapse: collapse; width: 80%;"> <tr> <td style="padding: 5px;">Punching shear failure -K, N and KT gap joints and all T, Y and X joints</td> <td style="text-align: right; padding: 5px;">$[i = 1, 2 \text{ or } 3]$</td> </tr> </table> <p>change "...-K,..." into "...for K,..." and change "...all T,..." into "...T,..." resulting in the following text:</p> <table border="1" style="margin-left: 20px; border-collapse: collapse; width: 80%;"> <tr> <td style="padding: 5px;">Punching shear failure for K, N and KT gap joints and T, Y and X joints $[i=1,2 \text{ or } 3]$</td> </tr> </table> | Punching shear failure -K, N and KT gap joints and all T, Y and X joints | $[i = 1, 2 \text{ or } 3]$ | Punching shear failure for K, N and KT gap joints and T, Y and X joints $[i=1,2 \text{ or } 3]$ | | | | | | | | | | | | | | | | |
| Punching shear failure -K, N and KT gap joints and all T, Y and X joints | $[i = 1, 2 \text{ or } 3]$ | | | | | | | | | | | | | | | | | | | |
| Punching shear failure for K, N and KT gap joints and T, Y and X joints $[i=1,2 \text{ or } 3]$ | | | | | | | | | | | | | | | | | | | | |
| Table 7.3 | change index "i" into "1" in entire table | | | | | | | | | | | | | | | | | | | |

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| <p>Table 7.4</p> | <p>I or H sections: $\sigma_{\max} t_1 = (N_{Ed} / A + M_{Ed} / W_d) t_1 \leq 2 t_0 (f_{y0} / \sqrt{3}) / \gamma_{M5}$ RHS sections: $\sigma_{\max} t_1 = (N_{Ed} / A + M_{Ed} / W_d) t_1 \leq t_0 (f_{y0} / \sqrt{3}) / \gamma_{M5}$</p> | |
| <p>Table 7.4</p> | <p>change the content of the box into "I or H sections with $\eta > 2$ (for axial compression and out-of-plane bending) and RHS sections: $\sigma_{\max} t_1 = (N_{Ed} / A + M_{Ed} / W_{el}) t_1 \leq t_0 (f_{y0} / \sqrt{3}) / \gamma_{M5}$ All other cases: $\sigma_{\max} t_1 = (N_{Ed} / A + M_{Ed} / W_{el}) t_1 \leq 2 t_0 (f_{y0} / \sqrt{3}) / \gamma_{M5}$"</p> | |
| <p>Table 7.4</p> | <p>change in the formulae for punching shear: "N_{Ed}, A, M_{ed} and W_{el}" into "$N_{Ed,1}$, A_1, $M_{Ed,1}$ and $W_{el,1}$"</p> | |
| <p>Table 7.4</p> | <p>Add in the 7th row: "where t_1 is the flange or wall thickness of the transverse I-, H-, or RHS section"</p> | |
| <p>7.5.1(3)</p> | <p>change "...all the criteria given in..." into "...all the failure modes given in..."</p> | |
| <p>Table 7.6</p> | <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p>Member 1 is always in compression and member 2 is always in tension.</p>  </div> <p>change "Member 1 is always..." into "Members 1 and 3 are here..." change "member 2 is always..." into "member 2 is here" change arrow for N_3 to express compression</p> | |
| <p>Table 7.7</p> | <p>in the top right hand side figure and in the bottom right hand side figure change "ϕ" into "φ"</p> | |
| <p>Table 7.8</p> | <p>change "class 2" into "class 1 or 2"</p> | |
| <p>Table 7.8</p> | <p>change in note 1) "$g / b_0 > t_1 + t_2$" into "$g > t_1 + t_2$"</p> | |
| <p>Table 7.8</p> | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>$\lambda_{ov} \geq 25\%$ but $\lambda_{ov} \leq 100\%$ ²⁾ and $b_i / b_j \geq 0,75$</p> </div> <p>change 1st line into: "$25\% \leq \lambda_{ov} \leq \lambda_{ov,lim.}$ ²⁾" delete 2nd line change 3rd line into "$b_i / b_j \leq 0.75$"</p> | |
| <p>Table 7.8</p> | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>¹⁾ If $g / b_0 > 1,5(1 - \beta)$ and $g / b_0 > t_1 + t_2$ treat the joint as two separate T or Y joints. ²⁾ The overlap may be increased to enable the toe of the overlapped brace to be welded to the chord.</p> </div> <p>replace the text of ²⁾ into "$\lambda_{ov,lim.} = 60\%$ if the hidden seam is not welded and 80% if the hidden seam is welded. If the overlap exceeds $\lambda_{ov,lim.}$ or if the braces are rectangular sections with $h_i < b_i$ and/or $h_j < b_j$, the connection between the braces and chord face has to be checked for shear."</p> | |

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|--|---|--|--|--|---|--|
| 7.5.2.1(4) | delete the reference to Table 7.10 | | | | | |
| Table 7.10 | In the drawing for the K and N overlap joints *) the indices "i" and "j" need to be switched. The overlapping brace should have index "i" and the overlapped brace should have index "j" to be consistent with the remark *) | | | | | |
| Table 7.10 | Add to the text under *) after the last sentence: "See also Table 7.8." | | | | | |
| Table 7.10 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; border: 1px solid black; padding: 2px;">K and N overlap joints *)</td> <td style="border: 1px solid black; padding: 2px;">Brace failure $25\% \leq \lambda_{ov} < 50\%$</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">Member i or member j may be either tension or compression but one should be tension and the other compression.</td> <td style="border: 1px solid black; padding: 2px;">$N_{i,Rd} = f_{yt} t_i \left(b_{eff} + b_{e,ov} + \frac{\lambda_{ov}}{50} (2h_i - 4t_i) \right) / \gamma_{M5}$</td> </tr> </table> | K and N overlap joints *) | Brace failure $25\% \leq \lambda_{ov} < 50\%$ | Member i or member j may be either tension or compression but one should be tension and the other compression. | $N_{i,Rd} = f_{yt} t_i \left(b_{eff} + b_{e,ov} + \frac{\lambda_{ov}}{50} (2h_i - 4t_i) \right) / \gamma_{M5}$ | |
| K and N overlap joints *) | Brace failure $25\% \leq \lambda_{ov} < 50\%$ | | | | | |
| Member i or member j may be either tension or compression but one should be tension and the other compression. | $N_{i,Rd} = f_{yt} t_i \left(b_{eff} + b_{e,ov} + \frac{\lambda_{ov}}{50} (2h_i - 4t_i) \right) / \gamma_{M5}$ | | | | | |
| | in the formula change " $+ \frac{\lambda_{ov}}{50} (2h_i - 4t_i)$ " into " $2h_i \frac{\lambda_{ov}}{50} - 4t_i$ " | | | | | |
| Table 7.11 | change index "i" into "1" in entire table | | | | | |
| Table 7.11 | change " $b_{e,p} = \frac{10}{b_0 t_0}$ " into " $b_{e,p} = \frac{10}{b_0 / t_0} b_i$ " | | | | | |
| Table 7.11 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; border: 1px solid black; padding: 2px;">Chord side wall buckling ¹⁾</td> <td style="border: 1px solid black; padding: 2px;">$\beta = 1,0$ ²⁾</td> </tr> <tr> <td colspan="2" style="border: 1px solid black; padding: 2px;">$N_{i,Rd} = \frac{f_b t_0}{\sin \theta_i} \left(\frac{2h_i}{\sin \theta_1} + 10t_0 \right) / \gamma_{M5}$</td> </tr> </table> | Chord side wall buckling ¹⁾ | $\beta = 1,0$ ²⁾ | $N_{i,Rd} = \frac{f_b t_0}{\sin \theta_i} \left(\frac{2h_i}{\sin \theta_1} + 10t_0 \right) / \gamma_{M5}$ | | |
| Chord side wall buckling ¹⁾ | $\beta = 1,0$ ²⁾ | | | | | |
| $N_{i,Rd} = \frac{f_b t_0}{\sin \theta_i} \left(\frac{2h_i}{\sin \theta_1} + 10t_0 \right) / \gamma_{M5}$ | | | | | | |
| | change in the formula " $f_b t_0$ " into " $k_n f_b t_0$ " | | | | | |
| Table 7.11 | <p>¹⁾ For X joints with $\theta < 90^\circ$ use the smaller of this value and the design shear resistance of the chord side walls given for K and N gap joints in Table 7.12.</p> | | | | | |
| | change in the 1 st line of ¹⁾ "For X joints with $\theta < 90^\circ$ use the..." into "For X joints with $\cos \theta_1 > h_1/h_0$ use the..." | | | | | |
| Table 7.12 | change " $b_{e,p} = \frac{10}{b_0 t_0}$ " into " $b_{e,p} = \frac{10}{b_0 / t_0} b_i$ " | | | | | |
| Table 7.12 | <p>$A_v = (2h_0 + \alpha b_0) t_0$</p> <p>For a square or rectangular brace member:</p> $\alpha = \sqrt{1 + \frac{4g^2}{3t_0^2}}$ <p>where g is the gap, see Figure 1.3(a).</p> <p>For a circular brace member: $\alpha = 0$</p> | | | | | |
| | in the last line change "For circular brace member: $\alpha = 0$ " into "For circular brace members: $\alpha = 0$ " | | | | | |
| Table 7.12 | <p>For circular braces, multiply the above resistances by $\pi/4$, replace b_1 and h_1 by d_1 and replace b_2 and h_2 by d_2.</p> | | | | | |
| | change "...h2 by d2." into "...h2 by d2, except for chord shear." | | | | | |

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| Table 7.13 | <p style="text-align: center;">Brace failure [$i = 1$]</p> <hr/> $N_{1,Rd} = f_{y1} t_1 b_{eff} / \gamma_{M5} \quad *)$ |
| | <p>change "Brace failure [$i=1$]" into "Chord face failure $\beta \leq 0,85$"</p> <p>change formula for $N_{1,Rd}$ into "$N_{1,Rd} = k_n f_{y0} t_0^2 \frac{2 + 2,8\beta}{\sqrt{1 - 0,9\beta}} / \gamma_{M5}$"</p> |
| Table 7.13 | <p style="text-align: center;">Chord side wall crushing when $b_1 \geq b_0 - 2t_0$</p> <hr/> $N_{1,Rd} = f_{y0} t_0 (2t_1 + 10t_0) / \gamma_{M5}$ |
| | <p>change in the formula "$f_{y0} t_0$" into "$k_n f_{y0} t_0$"</p> |
| Table 7.13 | <p style="text-align: center;">Chord face failure</p> <hr/> $N_{1,Rd} = \frac{k_m f_{y0} t_0^2}{1 - t_1 / b_0} (2h_1 / b_0 + 4\sqrt{1 - t_1 / b_0}) / \gamma_{M5}$ |
| | <p>Delete term "$(1-t_1/b_0)$" in the denominator of the formula</p> |
| Table 7.13 | <p>As a conservative approximation, if $\eta \geq 2\sqrt{1 - \beta}$, $N_{1,Rd}$ for an I or H section may be assumed to be equal to the design resistance of two transverse plates of similar dimensions to the flanges of the I or H section, determined as specified above.</p> <p>If $\eta < 2\sqrt{1 - \beta}$, a linear interpolation between one and two plates should be made.</p> <hr/> $M_{ip,1,Rd} = N_{1,Rd} (h_1 - t_1)$ |
| | <p>Add after last equation: "$N_{1,Rd}$ is the capacity of one flange; β is the ratio of the width of the flange of the I or H brace section and the width of the RHS chord"</p> |
| Table 7.14 | <p>change in the Moment Resistance in case of brace failure:"</p> $M_{ip,1,Rd} = f_{y1} (W_{pl,1} - (1 - b_{eff} / b_1) b_1 h_1 t_1) / \gamma_{M5}$ <p>into:</p> $M_{ip,1,Rd} = f_{y1} (W_{pl,1} - (1 - b_{eff} / b_1) b_1 (h_1 - t_1) t_1) / \gamma_{M5}$ |
| Table 7.14 | <p>change in rows 4, 6, 10, 14, the limits "$0,85 \leq \beta \leq 1,0$" into "$0,85 < \beta \leq 1,0$"</p> |
| 7.6(2) | <p>change "...the design criteria covered in..." into "...the failure modes covered in..."</p> |
| 7.6(3) | <p>change "...all the criteria given in..." into</p> |

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| | "...all the failure modes given in..." |
| Table 7.17 | change index "i" into "1" in entire table |
| Table 7.17 | <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> $\epsilon_p \geq \frac{h_i}{\sin \theta_i} + \sqrt{b_p(b_p - b_i)}$ $\geq 1,5h_i / \sin \theta_i$ <p>and</p> $b_p \geq b_0 - 2t_0$ $N_{i,Rd} = \frac{f_{yp} t_p^2}{(1 - b_i / b_p) \sin \theta_i} \dots$ $\dots \left(\frac{2h_i / b_p}{\sin \theta_i} + 4\sqrt{1 - b_i / b_p} \right) / \gamma_{Ms}$ </div> <p>above "and" delete "$\geq 1,5h_i / \sin \theta_i$"</p> <p>below "</p> <p>and</p> $b_p \geq b_0 - 2t_0 \text{ ,,}$ <p>add "$t_p \geq 2t_1$"</p> |
| Table 7.17 | <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> $\epsilon_p \geq \frac{h_i}{\sin \theta_i} + \sqrt{b_p(b_p - b_i)}$ $\geq 1,5h_i / \sin \theta_i$ <p>and</p> $b_p \geq b_0 - 2t_0$ <p>Take $N_{i,Rd}$ as the value of $N_{i,Rd}$ for a T, X or Y joint from Table 7.11, but with $k_u = 1,0$ and t_0 replaced by t_p for chord face failure, brace failure and punching shear only.</p> </div> <p>above "and" delete "$\geq 1,5h_i / \sin \theta_i$"</p> <p>below "</p> <p>and</p> $b_p \geq b_0 - 2t_0 \text{ ,,}$ <p>add "$t_p \geq 2t_1$"</p> |

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| Table 7.17 | $t_p \geq 1,5h_i / \sin \theta_i$ <p>Take $N_{i,Rd}$ as the value of $N_{i,Rd}$ for a T, X or Y joint from Table 7.11, but with t_0 replaced by $(t_0 + t_p)$ for chord side wall buckling failure and chord side wall shear failure only.</p> | |
| | below " $t_p \geq 1,5h_i / \sin \theta_i$ " add " $t_p \geq 2t_1$ " | |
| Table 7.18 | The 3rd box for the design of K, N joints reinforced with a pair of side plates, change " t_0 " into " t_p " change also " b_0 " into " b_p " and " f_{y0} " by " f_{yp} " | |
| Table 7.19 | change " ϕ " into " φ " in two figures | |
| Table 7.19 | change in the right hand side figure for XX joints " N_i " into " N_1 " | |
| Table 7.20 | change "class 2" into "class 1 or 2" | |
| Table 7.20 | change everywhere except in 2nd column for X: "Class 1" into: "Class 1 or 2" Add for overlap joints: " $25\% \leq \lambda_{ov} \leq \lambda_{ov,lim.}^{1)}$ " with note: " ¹⁾ $\lambda_{ov,lim.} = 60\%$ if the hidden seam is not welded and 80% if the hidden seam is welded. If the overlap exceeds $\lambda_{ov,lim.}$ or if the braces are rectangular sections with $h_i < b_i$ and/or $h_j < b_j$, the connection between the braces and chord face has to be checked for shear." | |
| Table 7.21 | change in the 6th box on the right hand side " $0.75 < b_1/b_2 < 1.33$ " into " $0,75 \leq b_1/b_2 \leq 1,33$ " | |
| Table 7.21 | change in the formulae for brace failure in K and N overlap joints " $h_i - 2t_i$ " in the 1 st equation into " $2h_i \frac{\lambda_{ov}}{50} - 4t_i$ " and in the 2nd equation into " $2h_i - 4t_i$ " | |
| Table 7.21 | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $p_{eff} = t_w + 2r + 7t_f f_{y0} / f_{yi}$ but $p_{eff} \leq b_i + h_i - 2t_i$ for T, Y, X joints and K and N gap joints and $b_{eff} \leq b_i + h_i - 2t_i$ for K and N overlap joints. </div> change the whole box into " <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $p_{eff} = t_w + 2r + 7t_f f_{y0} / f_{yi}$ but for T, Y, X joints and for K and N gap joints: $p_{eff} \leq b_i + h_i - 2t_i$ </div> but for K and N overlap joints: $p_{eff} \leq b_i$ " | |

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| Table 7.21 | change in 7th box from above (2nd column) " $\sin \theta_i$ " into " $\sin \theta_1$ " and change " $N_{i,Rd}$ " into " $N_{1,Rd}$ " | | | | |
| Table 7.21 | change in the 8 th box on the left hand side of the table in the formula for α in case of RHS brace: " $\alpha = \sqrt{\frac{1}{(1 + 4g^2 / (3t_f^2))}}$ " | | | | |
| Table 7.21 | 6th row from above on the right hand side change "Chord web stability" into "Chord web yielding" | | | | |
| Table 7.21 | For CHS braces multiply the above resistances for brace failure by $\pi/4$ and replace both b_1 and h_1 by d_1 and both b_2 and h_2 by d_2 . change "...h2 by d2." into "...h2 by d2, except for chord shear." | | | | |
| Table 7.21 | Add to the text under *) after the last sentence: "See also Table 7.20." | | | | |
| 7.6(8) | change "...design bracing failure..." into "...design brace failure..." | | | | |
| Table 7.22 | Change " b_{eff} " into " p_{eff} " (4x) and change " $b_{eff} \leq b_1$ " into " $p_{eff} \leq b_1 + h_1 - 2t_1$ " | | | | |
| Table 7.22 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Chord web yielding</td> <td style="width: 50%;"></td> </tr> <tr> <td style="padding: 10px; text-align: center;">$M_{p,1,Rd} = 0,5 f_{y0} t_w b_w h_1 / \gamma_{M5}$</td> <td></td> </tr> </table> <p>change "h_1" into "$(h_1 - t_1)$"</p> | Chord web yielding | | $M_{p,1,Rd} = 0,5 f_{y0} t_w b_w h_1 / \gamma_{M5}$ | |
| Chord web yielding | | | | | |
| $M_{p,1,Rd} = 0,5 f_{y0} t_w b_w h_1 / \gamma_{M5}$ | | | | | |
| Table 7.22 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Brace failure</td> <td style="width: 50%;"></td> </tr> <tr> <td style="padding: 10px; text-align: center;">$M_{ip,1,Rd} = f_{y1} t_1 b_{eff} (h_1 - t_1) / \gamma_{M5}$</td> <td></td> </tr> </table> <p>change "$(h_1 - t_1)$" into "h_z"</p> | Brace failure | | $M_{ip,1,Rd} = f_{y1} t_1 b_{eff} (h_1 - t_1) / \gamma_{M5}$ | |
| Brace failure | | | | | |
| $M_{ip,1,Rd} = f_{y1} t_1 b_{eff} (h_1 - t_1) / \gamma_{M5}$ | | | | | |
| Figure 7.7 | in the text below the right hand side figure change "Bracing effective..." into "Brace effective..." | | | | |
| Table 7.23 | in 3 rd column change "class 1" into "class 1 or 2" | | | | |
| Table 7.23 | in 6 th column change "class 2" into "class 1 or 2" | | | | |
| Table 7.23 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 10px; text-align: center;"> $25\% \leq \lambda_{ov} < 100\%$ $b_1/b_2 \geq 0,75$ </td> <td style="width: 50%;"></td> </tr> </table> <p>change "$25\% \leq \lambda_{ov} < 100\%$ ²⁾" into "$25\% \leq \lambda_{ov} \leq \lambda_{ov,lim.}$ ²⁾"</p> | $25\% \leq \lambda_{ov} < 100\%$ $b_1/b_2 \geq 0,75$ | | | |
| $25\% \leq \lambda_{ov} < 100\%$ $b_1/b_2 \geq 0,75$ | | | | | |
| Table 7.23 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> $\beta^* = b_1/b_0^*$ $b_0^* = b_0 - 2(t_w + r_0)$ </td> <td style="width: 50%;"></td> </tr> <tr> <td style="padding: 5px;"> ¹⁾ This condition only apply when $\beta \leq 0,85$. </td> <td></td> </tr> </table> <p>add a second note: ²⁾ $\lambda_{ov,lim.} = 60\%$ if the hidden seam is not welded and 80% if the hidden seam is welded. If the overlap exceeds $\lambda_{ov,lim.}$ or if the braces are rectangular sections with $h_i < b_i$ and/or $h_j < b_j$, the connection between the braces and chord face has to be checked</p> | $\beta^* = b_1/b_0^*$ $b_0^* = b_0 - 2(t_w + r_0)$ | | ¹⁾ This condition only apply when $\beta \leq 0,85$. | |
| $\beta^* = b_1/b_0^*$ $b_0^* = b_0 - 2(t_w + r_0)$ | | | | | |
| ¹⁾ This condition only apply when $\beta \leq 0,85$. | | | | | |

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| | for shear." | |
| Table 7.24 | K and N overlap joints *) | <div style="display: flex; justify-content: space-between;"> Brace failure $25\% \leq \lambda_{ov} < 50\%$ </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> $N_{i,Rd} = f_{yi} t_i (b_{eff} + b_{e,ov} + (2h_i - 4t_i) \lambda_{ov} / 50) / \gamma_{M5}$ </div> |
| |  | |
| | <p>in the formula change "$(2h_i - 4t_i) \lambda_{ov} / 50$" into "$2h_i \frac{\lambda_{ov}}{50} - 4t_i$"</p> | |
| Table 7.24 | <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> For CHS braces except the chord failure, multiply the above resistances by $\pi/4$ and replace both b_1 and h_1 by d_1 as well as b_2 and h_2 by d_2. </div> <p>change "...except the chord failure,..." into "...except for the chord shear,..."</p> | |