Singapore Standard SS EN 1993-1-4:2011

Eurocode 3: Design of steel structures

– Part 1-4: General rules – Supplementary rules for stainless steels

AMENDMENT NO. 1

May 2019

1. Page iv, Modification to National Foreword

In the National Foreword, in the section "National choice is allowed in EN 1993-1-4 through the following clauses:", *add* the following clauses for national choices at the end of the list:

– 7(1)
– A.2(8) and
– A.3, Table A.4.

2. Page 4, Modifications to 1.2, Normative references

Replace "EN 1993-1-1" *with* "EN 1993-1-1:2005"

Replace the following references:

EN 10088-1	*Stainless steels – Part 1: List of stainless steels;*
EN 10088-2,	*Stainless steels – Part 2: Technical delivery conditions for sheet/ plate and strip for general purposes*
EN 10088-3,	*Stainless steels – Part 3: Technical delivery conditions for semi-finished products, bars, rods and sections for general purposes*

with the following one:

EN 10088 (all parts), Stainless steels

3. Page 6, Modifications to 2.1.1, General

Replace Paragraph (1):

(1) The provisions given in this Part 1.4 should be applied only to design using austenitic, austenitic–ferritic and ferritic stainless steels.

with:

(1) The design provisions specified in this Part 1-4 are applicable for stainless steel material in the annealed condition in accordance with Table 2.1 and for austenitic stainless steel material in the cold worked condition in accordance with Table 2.2.

The typical grades used for the construction of building structures are listed in Tables 2.1 and 2.2. The design rules in this standard may also be applied to other grades in EN 10088-4 and EN 10088-5, provided the relevant partial factor (γ_M) is increased by 10%. Specialist advice should be sought regarding the durability, fabrication, weldability, fatigue resistance and high temperature performance of these grades, if appropriate.

In Paragraph (3), *replace* "EN 10088" with "EN standards".

Delete Paragraphs (4) and (5).

4. Page 6, Modifications to 2.1.2, Material properties for stainless steel

Replace Paragraphs (1) to (5), including Table 2.1, with the following text:

(1) In design calculations the values should be taken as follows, independent of the direction of rolling:

- yield strength f_y: nominal stress (0,2 % proof stress) specified in Tables 2.1 and 2.2*;*
- Ultimate tensile strength f_u : the nominal ultimate tensile strength specified in Tables 2.1 and 2.2*.*

(2) The ductility requirements in EN 1993-1-1:2005, 3.2.2 also apply to stainless steels. Steels conforming with one of the steel grades listed in Table 2.1 should be accepted as satisfying these requirements. The steels listed in Table 2.2 should have declared properties that meet the ductility requirements given in EN 1993-1-1.

(3) Higher strength values, for example derived from cold working the base material, may be used in design provided they are verified by tests in accordance with Clause 7.

Table 2.1 – Nominal values of the yield strength f_y and the ultimate tensile strength f_u for structural stainless steels to EN 10088[a]

<table>
<tr><th rowspan="6">Types of stainless steel</th><th rowspan="6">Grade</th><th colspan="8">Product form</th></tr>
<tr><th colspan="2">Cold rolled strip</th><th colspan="2">Hot rolled strip</th><th colspan="2">Hot rolled plate</th><th colspan="2">Bars, rods and sections</th></tr>
<tr><th colspan="8">Nominal thickness t</th></tr>
<tr><th colspan="2">t ≤ 8mm</th><th colspan="2">t ≤ 13,5 mm</th><th colspan="2">t ≤ 75mm</th><th colspan="2">t ≤ 250mm</th></tr>
<tr><th>f_y</th><th>f_u</th><th>f_y</th><th>f_u</th><th>f_y</th><th>f_u</th><th>f_y</th><th>f_u</th></tr>
<tr><th>N/mm²</th><th>N/mm²</th><th>N/mm²</th><th>N/mm²</th><th>N/mm²</th><th>N/mm²</th><th>N/mm²</th><th>N/mm²</th></tr>
<tr><td rowspan="3">Ferritic steels</td><td>1.4003</td><td>280</td><td>450</td><td>280</td><td>450</td><td>250 [c]</td><td>450 [c]</td><td>260 [d]</td><td>450 [d]</td></tr>
<tr><td>1.4016</td><td>260</td><td>450</td><td>240</td><td>450</td><td>240 [c]</td><td>430 [c]</td><td>240 [d]</td><td>400 [d]</td></tr>
<tr><td>1.4512</td><td>210</td><td>380</td><td>210</td><td>380</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td rowspan="14">Austenitic steels</td><td>1.4306</td><td rowspan="3">220</td><td rowspan="3">520</td><td rowspan="3">200</td><td rowspan="3">520</td><td rowspan="3">200</td><td rowspan="3">500</td><td>180</td><td>460</td></tr>
<tr><td>1.4307</td><td>175</td><td>500</td></tr>
<tr><td>1.4541</td><td rowspan="2">190</td><td rowspan="2">500</td></tr>
<tr><td>1.4301</td><td>230</td><td>540</td><td>210</td><td>520</td><td>210</td><td>520</td></tr>
<tr><td>1.4401</td><td rowspan="4">240</td><td rowspan="3">530</td><td rowspan="4">220</td><td rowspan="3">530</td><td rowspan="4">220</td><td rowspan="4">520</td><td rowspan="2">200</td><td rowspan="2">500</td></tr>
<tr><td>1.4404</td></tr>
<tr><td>1.4539</td><td>230</td><td>530</td></tr>
<tr><td>1.4571</td><td>540</td><td>540</td><td rowspan="3">200</td><td rowspan="3">500</td></tr>
<tr><td>1.4432</td><td rowspan="2">240</td><td rowspan="2">550</td><td rowspan="2">220</td><td rowspan="2">550</td><td rowspan="2">220</td><td rowspan="2">520</td></tr>
<tr><td>1.4435</td></tr>
<tr><td>1.4311</td><td>290</td><td>550</td><td>270</td><td>550</td><td>270</td><td>550</td><td>270</td><td>550</td></tr>
<tr><td>1.4406</td><td>300</td><td rowspan="2">580</td><td>280</td><td rowspan="2">580</td><td>280</td><td rowspan="2">580</td><td rowspan="2">280</td><td rowspan="2">580</td></tr>
<tr><td>1.4439</td><td>290</td><td>270</td><td>270</td></tr>
<tr><td>1.4529</td><td>-</td><td>-</td><td>-</td><td>-</td><td>300</td><td>650</td><td>300 [b]</td><td>650 [b]</td></tr>
</table>

	1.4547	320	650	300	650	300	650	300	650
	1.4318	350	650	330	650	330	630	-	-
Austenitic – ferritic steels	1.4062	530 [e]	700 [e]	480 [f]	680 [f]	450 [g]	650 [g]	380 [b]	650 [b]
	1.4162	530 [e]	700 [e]	480 [f]	680 [f]	450	650	450 [b]	650 [b]
	1.4482	500 [e]	700 [e]	480 [f]	660 [f]	450	650	400 [b]	650 [b]
	1.4662	550 [e]	750 [e]	550	750	480	680	450 [b]	650 [b]
	1.4362	450	650	400	650	400	630	400 [b]	600 [b]
	1.4462	500	700	460	700	460	640	450 [b]	650 [b]

[a] The nominal values of f_y and f_u given in this table may be used in design without taking special account of anisotropy or strain hardening effects.
[b] $t \leq$ 160mm
[c] $t \leq$ 25mm
[d] $t \leq$ 100mm
[e] $t \leq$ 6,4mm
[f] $t \leq$ 10mm
[g] $t \leq$ 50 mm (f_y = 430 N/mm^2 and f_u = 625 N/mm^2 for 50mm < $t \leq$ 75mm)

Table 2.2 – Nominal values of the yield strength f_y and the ultimate tensile strength f_u for structural stainless steels to EN 10088 in the cold worked condition

Grade	Cold Worked Condition			
	CP350		CP500	
	f_y N/mm^2	f_u[a] N/mm^2	f_y N/mm^2	f_u[a] N/mm^2
1.4301	350	600	460	650
1.4318	[b]	[b]	460	650
1.4541	350	600	460	650
1.4401	350	600	460	650
1.4571	350	600	460	650

[a] According to EN 10088, the CP classification defines only the required 0,2% proof strength, f_y. The steels used should have declared properties that meet the conservative tabulated values for tensile strength, f_u unless type testing is used to demonstrate the acceptability of lower values.
[b] Grade 1.4318 develops a 0,2% proof strength of 350 N/mm^2 in the annealed condition; see Table 2.1.

5. Page 8, Modification to 2.1.4, Fracture toughness

In Paragraph (1), in the 2nd NOTE, *replace* “Annex A.5.3” with “A.5”.

6. Page 9, Modification to 2.3, Welding consumables

Renumber Paragraph (2) as (3) and *add* a new Paragraph (2):

(2) As an exception to 2.3(1), for austenitic stainless steel in the cold worked condition, the filler metal may have lower nominal strength than for the base material, see 6.3. In general, austenitic filler metals should be used for welding stainless steels in the cold worked condition. Austenitic-ferritic filler metals may also be used, provided the mechanical properties of the joint are verified by tests in accordance with Clause 7.

Delete the old Paragraph (3) but keep the NOTE and place it under the new Paragraph (3).

7. Page 9, Modification to Clause 3, Durability

Delete Paragraphs (1) to (5) and *add* a new Paragraph (1):

(1) Annex A gives a procedure for selecting an appropriate grade of stainless steel for the service environment in which the structural members are to be used.

8. Page 12, Modification to 5.1, General

Replace Paragraph (5) with:

(5) Where members may be subjected to significant deformation, account may be taken of the potential for enhanced strength gained through the cold worked properties of austenitic stainless steel. Where this cold working increases the actions resisted by the members, the joints should be designed to be consistent with the increased member resistance, especially where capacity design is required.

9. Page 14, Modification to 5.2.2, Classification of compression elements

In Table 5.2 (sheet 1 of 3), *replace* Rows 2, 4, 5 and 7 with the following ones:

....			
Class	Part subject to bending	Part subject to compression	Part subject to bending and axial force
1	$c/t \leq 72\varepsilon$	$c/t \leq 33\varepsilon$	*when* $\alpha > 0{,}5$: $c/t \leq \frac{396\varepsilon}{13\alpha - 1}$ *when* $\alpha \leq 0{,}5$: $c/t \leq \frac{36\varepsilon}{\alpha}$
2	$c/t \leq 76\varepsilon$	$c/t \leq 35\varepsilon$	*when* $\alpha > 0{,}5$: $c/t \leq \frac{420\varepsilon}{13\alpha - 1}$ *when* $\alpha \leq 0{,}5$: $c/t \leq \frac{38\varepsilon}{\alpha}$
…			
3	$c/t \leq 90\varepsilon$	$c/t \leq 37\varepsilon$	$c/t \leq 18{,}5\varepsilon\sqrt{k\sigma}$ For $k\sigma$ see EN 1993-1-5

”.

In Table 5.2 (sheet 2 of 3), *replace* Rows 2, 4, 5 and 7 with the following ones:

…				
Class	Section type	Part subject to compression	Part subject to bending and axial force	
			Tip in compression	Tip in tension
1	Cold formed and welded	$c / t \leq 9\varepsilon$	$c / t \leq \frac{9\varepsilon}{\alpha}$	$c / t \leq \frac{9\varepsilon}{\alpha\sqrt{\alpha}}$
2	Cold formed and welded	$c / t \leq 10\varepsilon$	$c / t \leq \frac{10\varepsilon}{\alpha}$	$c / t \leq \frac{10\varepsilon}{\alpha\sqrt{\alpha}}$
…				
3	Cold formed and welded	$c / t \leq 14\varepsilon$	$c / t \leq 21{,}0\varepsilon\sqrt{k_\sigma}$ For k_σ see EN 1993-1-5	
…				

In Table 5.2 (sheet 3 of 3), *replace* Rows 4 and 9 with the following ones:

Angles …		
3	$h / t \leq 15\varepsilon : \frac{b+h}{2t} \leq 11{,}5\varepsilon$	
Tubular sections **…**		
3	$d / t \leq 280\varepsilon^2$ NOTE: For *d>240mm and/or d / t > 280ε²* *See EN 1993-1-6*	$d / t \leq 90\ \varepsilon^2$ **NOTE** : For $d / t > 90\varepsilon^2$ see EN 1993-1-6.
…		

10. Page 17, Modification to 5.2.3, Effective widths in Class 4 cross-sections

In Paragraph (1), *replace*:

Cold formed or welded internal elements:

$$\rho = \frac{0{,}772}{\bar{\lambda}_p} - \frac{0{,}125}{\bar{\lambda}_p^2} \quad \text{but} \le 1 \qquad (5.1)$$

Cold formed outstand elements:

$$\rho = \frac{1}{\bar{\lambda}_p} - \frac{0{,}231}{\bar{\lambda}_p^2} \quad \text{but} \le 1 \qquad (5.2)$$

Welded outstand elements:

$$\rho = \frac{1}{\bar{\lambda}_p} - \frac{0{,}242}{\bar{\lambda}_p^2} \quad \text{but} \le 1 \qquad (5.3)$$

with:

Internal compression elements (cold formed or welded)

$$\rho = \frac{0{,}772}{\bar{\lambda}_p} - \frac{0{,}079}{\bar{\lambda}_p^2} \quad \text{but} \le 1{,}0 \qquad (5.1)$$

Outstand compression elements (cold formed or welded)

$$\rho = \frac{1}{\bar{\lambda}_p} - \frac{0{,}188}{\bar{\lambda}_p^2} \quad \text{but} \le 1{,}0 \qquad (5.2)$$

11. Page 21, Modifications to 5.6, Shear resistance

Replace the first sentence of Paragraph (2) with:

(2) Plates with h_w/t greater than $\frac{56{,}2}{\eta}\varepsilon$ for an unstiffened web or $\frac{24{,}3}{\eta}\varepsilon\sqrt{k_\tau}$ for a stiffened web should be checked for resistance to shear buckling and should be provided with transverse stiffeners at the supports.

Replace Paragraph (3) with:

(3) For webs with transverse stiffeners at supports only and for webs with either intermediate transverse or longitudinal stiffeners or both, the factor χ_w for the contribution of the web to shear buckling resistance should be obtained from Table 5.4:

Table 5.4 – Web shear buckling reduction factor χ_w

	χ_w for rigid end post	χ_w for non-rigid end post
$\bar{\lambda}_w \le 0{,}65/\eta$	η	η
$0{,}65/\eta < \bar{\lambda}_w < 0{,}65$	$0{,}65 / \bar{\lambda}_w$	$0{,}65/\bar{\lambda}_w$
$\bar{\lambda}_w \ge 0{,}65$	$1{,}56 / (0{,}91 + \bar{\lambda}_w)$	$1{,}19 / (0{,}54 + \bar{\lambda}_w)$

End support conditions and $\bar{\lambda}_w$ are defined in Paragraphs 5.3(3) and (5) of EN 1993-1-5.

12. Page 23, Modification to 6.3, Design of welds

Replace Paragraph (1) with the following paragraphs:

(1) In determining the design resistance of fillet welds, the value of the correlation factor β_w should be taken as 1,0 for all grades of stainless steel, unless a lower value is justified by test in accordance with Clause 7.

(2) For welding of material in the cold worked condition, the resistance of the parent material in the heat affected zones of butt welds should be taken as the tensile strength of the annealed parent material, but see 6.3(4) also.

(3) For welding of material in the cold worked condition, the filler metal may have lower strength than the parent material, in which case the design resistance of fillet and butt welds should be based on the nominal tensile strength of the filler metal. See 6.3(4) also.

(4) In welded joints of cold worked material, annealing of the heat-affected zones may be incomplete, and the actual strength of joints may be higher than those calculated in accordance with 6.3(2) and (3). Under the circumstances, it may be possible to establish higher design properties by tests in accordance with Clause 7.

13. Page 23, Modification of Clause 7, Design assisted by testing

Add the following NOTE under Paragraph (1):

NOTE: The National Annex may give further information on testing.

14. Page 24, Modification to Annex A, Selection of materials and durability

Replace Annex A [informative] with the following new Annex A [normative]:

Annex A [normative] – Selection of materials and durability

A.1 Corrosion protection of construction products – Requirements

(1) Provided that the material is selected in accordance with the procedure given in Tables A.1, A.2 and A.3, subject to the limitations in A.2, and there are no additional requirements given in A.3 to A.6, stainless steel members and fasteners require no applied corrosion protection treatment to ensure satisfactory durability.

A.2 Selection of materials

(1) The procedure given in this subclause relates to the selection of materials for structural applications and assumes the components in question are load bearing.

(2) The procedure does not take account of:

– grade / product availability;

– surface finish requirements, for example for architectural or hygiene reasons;

– methods of joining / connecting.

The type of surface finish may have an important effect on durability. If visual quality is of importance for a given component, an appropriate finish may be specified in accordance with EN 10088-4 or EN 10088-5.

(3) The procedure assumes that the following criteria will be met:

– the service environment will be in the near neutral pH range (pH 4 to 10);

– the structural parts are not directly exposed to, or part of, a chemical process flow stream;

– the service environment is not permanently or frequently immersed in seawater.

If these conditions are not met, specialist advice should be sought.

Reference should be made to EN 1992 and EN 1996 for guidance on material selection for fixings into concrete and masonry respectively.

(4) The procedure is suitable for environments found within Europe. The procedure should not be used for regions outside Europe and may be particularly misleading in certain parts of the world such as the Middle East, Far East and Central America.

(5) The procedure involves the following steps:

– determination of the Corrosion Resistance Factor (CRF) for the environment (Table A.1);

– determination of the Corrosion Resistance Class (CRC) from the CRF (Table A.2);

Table A.3 gives grades which have a suitable corrosion resistance for the service environment. The choice of specific grade will depend on other factors in addition to corrosion resistance, such as strength and availability in the required product form. Specification of the material by CRC and design strength, e.g. CRC II and $f_y = 450$ N/mm^2, is sufficient to allow the supplier to recommend the actual grade from the CRC.

(6) The procedure applies to components exposed in external environments. For components in internally controlled environments, the CRF is 1.0.

An internally controlled environment is an environment which is either air-conditioned, heated or contained within closed doors. Multi-storey car parks, loading bays or other structures with large openings should be considered as external environments.

NOTE: Indoor swimming pools are special cases of internal environments covered by A.3

(7) The CRF depends on the severity of the environment and is calculated as follows:

$$\mathbf{CRF = F_1 + F_2 + F_3}$$

where

F_1 = Risk of exposure to chlorides from salt water or deicing salts;

F_2 = Risk of exposure to sulfur dioxide;

F_3= Cleaning regime or exposure to washing by rain.

(8) The value of F_1 for applications on the coastline depends on the particular location in Europe and is derived from experience with existing structures, corrosion test data and chloride distribution data. The large range of environments within Europe means that in some cases the calculated CRF will be consecutive.

NOTE: The National Annex may specify whether a less severe CRF may be chosen when validated local operating experience or test data support such a device.

(9) Different parts of the same structure may have different exposure conditions, for example one part may be fully exposed and another part fully sheltered. Each exposure case should be assessed separately.

(19) The procedure assumes that the requirements of EN 1090-2 are followed in relation to:

- welding procedures and post weld cleaning,
- avoidance or removal and cleaning of contamination of the stainless steel surfaces after thermal or mechanical cutting.

Failure to do so may reduce the corrosion resistance of welded parts.

Table A.1 – Determination of Corrosion Resistance Factor CRF = $F_1 + F_2 + F_3$

F_1 Risk of exposure to chlorides from salt water or deicing salts		
NOTE M is distance from the sea and S is distance from roads with deicing salts		
1	Internally controlled environment	
0	Low risk of exposure	M > 10 km or S > 0,1km
-3	Medium risk of exposure	1 km < M ≤ 10 km or 0,01 km < S ≤ 0,1 km
-7	High risk of exposure	0,25km < M ≤ 1km or S ≤ 0,01km
-10	Very high risk of exposure	Road tunnels where deicing salt is used or where vehicles might carry deicing salts into the tunnel
-10	Very high risk of exposure	M ≤ 0,25 km North Sea coast of Germany and all Baltic coastal areas
-15	Very high risk of exposure	M ≤ 0,25km Atlantic coast line of Portugal, Spain and France. English Channel and North Sea Coastline of UK, France, Belgium, Netherlands and Southern Sweden. All other coastal areas of UK, Norway, Denmark and Ireland. Mediterranean Coast.
F_2 Risk of exposure to sulfur dioxide		
For European coastal environments the sulfur dioxide concentration is usually low. For inland environments the sulfur dioxide concentration is either low or medium. The high classification is unusual and associated with particularly heavy industrial locations or specific environments such as road tunnels. Sulfur dioxide concentration may be evaluated according to the method in ISO 9225.		
0	Low risk of exposure	< 10 $\mu g/m^3$ average gas concentration
-5	Medium risk of exposure	10 – 90 $\mu g/m^3$ average gas concentration
-10	High risk of exposure	90 – 250 $\mu g/m^3$ average gas concentration
F_3 Cleaning regime or exposure to washing by rain (if $F_1 + F_2 \geq 0$, then F3 = 0)		
0	Fully exposed to washing by rain	
-2	Specified cleaning regime	
-7	No washing by rain or No specified cleaning	
If the component is to be regularly inspected for any signs of corrosion and cleaned, this should be made clear to the user in written form. The inspection, cleaning method and frequency should be specified. The more frequently cleaning is carried out, the greater the benefit. The frequency should not be less than every 3 months. Where cleaning is specified it should apply to all parts of the structure, and not just those easily accessible and visible.		

Table A.2 – Determination of Corrosion Resistance Class CRC

Corrosion Resistance Factor (CRF)	Corrosion Resistance Class (CRC)
CRF = 1	I
0 ≥ CRF > -7	II
-7 ≥ CRF > -15	III
-15 ≥ CRF ≥ -20	IV
CRF < -20	V

Table A.3 – Grades in each Corrosion Resistance Class CRC

Corrosion resistance class CRC				
I	II	III	IV	V
1.4003	1.4301	1.4401	1.4439	1.4565
1.4016	1.4307	1.4404	1.4462	1.4529
1.4512	1.4311	1.4435	1.4539	1.4547
	1.4541	1.4571		1.4410
	1.4318	1.4429		1.4501
	1.4306	1.4432		1.4507
	1.4567	1.4162		
	1.4482	1.4662		
		1.4362		
		1.4062		
		1.4578		

A grade from a higher class may be used in place of the class indicated by the CRF.

NOTE: The corrosion resistant classes are only intended for use with this grade selection procedure and are only applicable to structural applications.

A.3 Swimming pool environments

(1) To address the risk if stress corrosion cracking (SCC) in pool atmospheres, only the steel grades given in Table A.4 shall be used for load bearing parts exposed to atmospheres above indoor swimming pools.

Table A.4 – Steel grades for indoor swimming pool atmospheres

Load bearing parts in swimming pools atmospheres	Corrosion resistance class CRC
Load-bearing members which are regularly cleaned[a]	CRC III or CRC IV (excluding 1.4162, 1.4662, 1.4362, 1.4062)
Load-bearing members which are not regularly cleaned	CRC V (excluding 1.4410, 1.4501 and 1.4507)
All fixings, fasteners and threaded parts	CRC V (excluding 1.4410, 1.4501 and 1.4507)

[a] If the component is to be regularly inspected for any signs of corrosion and cleaned, this should be made clear to the user in written form. The inspection, cleaning method and frequency should be specified. The more frequently cleaning is carried out, the greater the benefit. The frequency should not be less than every week. Where cleaning is specified, it should apply to all parts of the structure, and not just those easily accessible and visible.

NOTE: The National Annex may specify if less frequent cleaning is permitted.

A.4 Corrosion protection of connections with other metals

(1) Bimetallic corrosion may occur if dissimilar metals are in electrical contact and the contact area is exposed to an electrolyte (e.g. water or soil). Bimetallic corrosion may result in additional corrosion of one of the metals unless it is protected or electrically isolated from the other metal.

(2) If necessary, bimetallic corrosion should be prevented by isolating the stainless steel electrically from the other metal. Electrical isolation may be achieved by the use of isolating washers and bushes on both sides of the joint or by protective coatings applied to the non-stainless steel parts.

(3) Special measures should be taken to ensure the durability of welds between stainless steel and other metals (usually carbon steel), for example the weld should be painted and the paint continued at least 75mm onto the stainless steel.

A.5 Galvanizing and contact with molten zinc

(1) Hot-dip galvanizing of components made of stainless steel is not allowed because contact with molten zinc can cause embrittlement of the stainless steel.

(2) Precautions should be taken to ensure that in the event of fire, molten zinc from galvanized steel cannot drip or run onto the stainless steel and cause embrittlement. Additionally, there is a risk of embrittlement of a stainless steel component is joined to a carbon steel component which subsequently undergoes hot-dipping galvanizing.

15. Page 34, Modification to Annex B, Stainless steel in the work hardened condition

Replace the title of Annex B with the following one: “Stainless steel in the cold worked condition”.

16. Page 34, Modification to B.1, General

Delete Paragraph (1) and renumber the following Paragraph (2) into (1).

17. Page 34, Modification to B.2, Work hardening from cold rolling

Delete Subclause B.2 including Table B.1 and *renumber* Subclause B.3 (Work hardening from fabrication) into B.2.

18. Page 34, Modification to B.3 (i.e new Clause B.2), Work hardening from fabrication

Replace the title of Subclause B.3 (i.e new Clause B.2) with “Cold working from fabrication”.

Replace Paragraph (1) with:

(1) Cold working during fabrication of structural components may be utilized in the design provided that the effect of cold working has been verified by full size tests in accordance with Clause 7.