DRAFT AMENDMENT
FOR PUBLIC COMMENT

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Draft Amendment No. 2 to

Singapore National Annex to Eurocode 2 : Design of concrete structures – Part 1-1 : General rules and rules for buildings (SS EN 1992-1-1:2008)

Submit Comments

Singapore National Annex to Eurocode 2 : Design of concrete structures

– Part 1-1 : General rules and rules for buildings

AMENDMENT NO. 2

Month / Year

1. **Page 7, Modifications to NA.1 Scope, NA.1.1(a)**

   Add "- 6.4.5 (1)" after "- 6.4.4(1)";

   Add "- 11.6.4.2 (2)" after "- 11.6.4.1 (1)";

   Replace "J.1 (2)" with "J.1".

2. **Page 8, Modification to NA.2 Nationally determined parameters, Table NA.1**

   Add the following footnote, below the table on every page:

   "[A)] Table NA.1 and the "Recommended values" noted therein relate to SS EN 1992-1-1 incorporating NA to SS EN 1992-1-1: 2008 and Amendment A1:2010."

3. **Page 9, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 4.4.1.2(5)**

   Replace entire text under Singapore decision with the following:

   Use data in SS 544 for recommendations for concrete quality for a particular exposure class and cover reinforcement c.

4. **Page 13, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 6.2.3(2)**

   Replace entire text under Singapore decision with the following:

   $1 \leq \cot\theta \leq 2.5$, except in elements in which shear co-exists with externally applied tension (i.e. tension caused by restraint is not considered here). In these elements, the value of $\cot\theta$ should lie between 1.0 and 1.25.

5. **Page 14, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 6.2.3(3)**

   Replace "6.3N" with "6.6N" under Eurocode recommendation.

6. **Page 15, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 6.4.4(1)**

   Add a new subclause 6.4.5(1) after 6.4.4(1):

Subclause	Nationally Determined Parameter	Eurocode[A)] recommendation	Singapore decision

6.4.5 (1)	Limiting value of punching shear resistance $V_{Rd,cs\,i}$	$k_{max}\ V_{Rd,c} = 1.5\ V_{Rd,c}$	$k_{max}\ V_{Rd,c} = 2.0\ V_{Rd,c}$

7. Page 15, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 6.4.5(3)

Replace entire subclause with the following:

Subclause	Nationally Determined Parameter	Eurocode[A)] recommendation	Singapore decision
6.4.5(3)	The value of maximum punching resistance adjacent to column $V_{rd,max}$	$V_{Rd,max} = 0.4vf_{cd}$	$V_{Rd,max} = 0.5vf_{cd}$

8. Page 16, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 6.8.4(1)

Replace entire subclause with the following:

Subclause	Nationally Determined Parameter	Eurocode[A)] recommendation	Singapore decision
6.8.4(1)	Values of parameters for S-N curves	Values of parameters for S-N curves for reinforcing steels given in Table 6.3N. Values of parameters for S-N curves for prestressing steels given in Table 6.4N	Use the recommended values

9. Page 19, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 9.5.3(3)

Replace "$\alpha_n = 1 - \sum(b_i^2/6)\ b_0\ h_0$" with "$\alpha_n = 1 - \sum(b_i^2/6\ b_0\ h_0)$" under Singapore decision.

10. Page 21, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 9.10.2.3(4)

Replace "q_4" with "Q_4" under Nationally determined parameter;

Replace "q_4" with "Q_4" under Eurocode recommendation.

11. Page 22, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 11.6.1(1)

Replace "$v_{1,min} = 0.28k^{3/2}f_{lck}^{1/2}$" with "$v_{1,min} = 0.028k^{3/2}f_{lck}^{1/2}$" under Eurocode recommendation.

12. Page 22, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 11.6.2(1)

Replace entire text under Singapore decision with the following:

Use the recommended values.

13. Page 22, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause 11.6.4.1(1)

Add the following new subclause after subclause 11.6.4.1(1):

Subclause	Nationally Determined Parameter	Eurocode[A)] recommendation	Singapore decision
11.6.4.2 (2)	Value of $V_{1Rd,max}$	*0.4* f_{lcd}	Use the recommended value Note that v = v_1 given by Exp (11.6.6N)

14. Page 23, Modification to NA.2 Nationally determined parameters, Table NA.1, subclause C.1(1)

Replace entire subclause with the following:

Subclause	Nationally Determined Parameter	Eurocode[A)] recommendation	Singapore decision
C.1(1)	Values for fatigue stress range, minimum relative rib area, β *and* exceptions to fatigue rules	Table C.2N $\beta = 0.6$ Exceptions: Reinforcement is for predominantly static loading or higher values of fatigue stress range and/or the number of cycles are shown to apply by testing.	Use the recommended values and the recommended exceptions