

**Code of practice for
Design of concrete structures for retaining aqueous liquids**

AMENDMENT NO. 1

December 2011

1. Page 8, Foreword

Insert at the end of the Foreword:

With the introduction of the new suite of SS EN for structural design (otherwise known as Eurocodes) in Singapore and to allow industry designers to phase in to the Eurocodes, the Building and Construction Authority has announced that there will be a co-existence period of 2 years for the SS EN 1992-3 'Design of concrete structures – Liquid retaining and containment structures' and SS CP 73 'Code of practice for design of concrete structures for retaining aqueous liquids'. The SS CP 73 for use during the transition to SS EN 1992-3 will be withdrawn at the end of the transition period as per Eurocodes implementation schedule in Singapore.

Singapore Standard SS CP 73 : 1998
Amendment No. 1

2. Page 44, Standards referred to

Replace the list of standards / publications with the following:

S/N	Standard referred to in SS CP 73	Status or replaced by
1.	ASTM A775/A775M-97 Standard specification for epoxy-coated reinforcing steel bars	ASTM A775 / A775M - 2007b Standard Specification for epoxy-coated steel reinforcing bars
2.	BS 729 : 1971(1994) Specification for hot dip galvanized coating iron and steel articles	BS EN ISO 1461 : 2009 Hot dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods
3.	BS 3572 : 1986 Specification for access fittings for chimneys and other high structures in concrete or brick work	<i>Current</i>
4.	BS 3892 Specification for pulverized-fuel ash for use with Portland cement Part 1 : 1997 Pulverized-fuel ash	BS EN 450-1 :2005+A1 : 2007 Fly ash for concrete. Definition, specifications and conformity criteria
5.	BS 4211 : 1994 Specification for ladders for permanent access to chimneys, other high structures, silos and bins	BS 4211 : 2005+A1 : 2008 Specification for permanently fixed ladders
6.	BS 5328 Concrete Part1 : 1997 Guide to specifying concrete Part 2 : 1997 Methods for specifying concrete mixes Part 3 : 1990 Specification for the procedures to be used in producing and transporting concrete Part 4 : 1990 Specification for the procedures to be used in sampling, testing and assessing compliance of concrete	SS EN 206-1 : 2009 Concrete - Specification, performance, production and conformity SS 544 Concrete – Complementary Singapore Standard to SS EN 206-1 Part 1 : 2009 Method of specifying and guidance for the specifier Part 2 : 2009 Specification for constituent materials and concrete
7.	BS 5395-3:1985 Code of practice for the design of industrial type stairs, permanent ladders and walkways	<i>Current, obsolescent, partially replaced by BS EN ISO 14122 Parts 1 to 4</i>
8.	BS 6213 : 1982 (1992) Guide to selection of constructional sealants	BS 6213 : 2000+A1 : 2010 Selection of construction sealants. Guide

Singapore Standard SS CP 73 : 1998
Amendment No. 1

S/N	Standard referred to in SS CP 73	Status or replaced by
9.	BS 6699 : 1992 Specification for ground granulated blastfurnace slag for use with Portland cement	SS EN 15167 : 2008 Ground granulated blast furnace slag for use in concrete, mortar and grout Part 1 : Definitions, specifications and conformity criteria Part 2 : Conformity evaluation
10.	BS 6744 : 1986 Specification for austenitic stainless steel bars for the reinforcement of concrete	BS 6744 : 2001+A2 : 2009 Stainless steel bars for the reinforcement of and use in concrete. Requirements and test methods
11.	BS 8102 : 1990 Code of practice for protection of structures against water from the ground	BS 8102 : 2009 Code of practice for protection of below ground structures against water from the ground
12.	CIRIA Report no. 91 Early-age thermal crack control in concrete, by T.A. Harrison	CIRIA C660 Control of Contraction Induced Cracking in Concrete (F. Papworth & P. Bamforthe)
13.	CIRIA Technical Note 21 Control of thermal and shrinkage cracking in restrained reinforced concrete walls, by B.P. Hughes	<i>No change</i>
14.	CIRIA Technical Note 36 Elimination of shrinkage and cracking in a water-retaining structure, by B.P. Hughes	<i>No change</i>
15.	SS 2 Specification for steel for the reinforcement of concrete Part 3 : 1987 Plain and ribbed bars (Steel grades 250 and 460)	<i>*Current</i>
16.	SS 31 : 1998 Aggregates	SS EN 12620 : 2008 + Amendment 1 : 2009 Specification for aggregates for concrete
17.	SS 32 Specification for welded steel fabric for the reinforcement of concrete Part 2 : 1986 (Steel grade 485)	<i>*Current</i>

Singapore Standard SS CP 73 : 1998
Amendment No. 1

S/N	Standard referred to in SS CP 73	Status or replaced by
18.	<p>SS 73 Methods for sampling and testing of mineral aggregates, sand and fillers</p> <p>Part 0 : 1992 General requirements for apparatus and calibration</p> <p>Part 1 : 1992 Guide to sampling and testing aggregates</p> <p>Part 5.1: 1992 Methods for determination of particle shape flakiness index</p> <p>Part 6 : 1992 Methods for determination of shell content</p> <p>Part 18 : 1992 Methods for determination of sulphate content</p> <p>Part 19 : 1992 Methods for determination of acid-soluble material in fine aggregate</p> <p>Part 20 : 1992 Methods for testing and classifying drying shrinkage of aggregates in concrete</p>	<p>Relevant parts of:</p> <p>BS EN 932 Tests for general properties of aggregates</p> <p>BS EN 933 Tests for geometrical properties of aggregates</p> <p>BS EN 1367 Tests for thermal and weathering properties of aggregates</p> <p>BS EN 1744 Tests for chemical properties of aggregates</p>
	<p>SS 73 Methods for sampling and testing of mineral aggregates, sand and fillers</p> <p>Part 17 : 1992 Methods for determination of water-soluble chloride salts</p> <p>Part 21 : 1992 Methods for determination of soundness</p> <p>Part 3.2 : 1992 Sedimentation test</p>	<p><i>Current</i></p>
19.	<p>SS 320 : 1987 Specification for concrete admixtures</p>	<p>SS EN 934 : 2008 Admixtures for concrete, mortar and grout</p> <p>Part 1 : Common requirements</p> <p>Part 2 : Definitions, requirements, conformity, marking and labelling</p> <p>Part 4 : Admixtures for grout for prestressing tendons - Definitions, requirements, conformity, marking and labelling</p> <p>Part 6 : Sampling, conformity control and evaluation of conformity</p>

Singapore Standard SS CP 73 : 1998
Amendment No. 1

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20.	SS CP 65 Code of practice for structural use of concrete Part 1 : 1999 Design and construction Part 2 : 1996(1999) Special circumstances	SS CP 65 Code of practice for structural use of concrete Part 1: 1999 Design and construction (including Amendment No. 1, December 2011) Part 2 : 1996(1999) Special circumstances (including Amendment No. 1, December 2011)
21.	Civil engineering specification for the water industry, 2 nd edition, 1984	<i>No change</i>
22.	Design of liquid retaining concrete structures, 2 nd edition, 1992	<i>No change</i>
23.	Design of concrete structures for retaining aqueous liquids – design tables to BS 8007, by Richard Cheng, published by Thomas Telford, 1996	<i>No change</i>

*SS 2 : Part 3 : 1987 and SS 32 : Part 2 : 1986 will be withdrawn after the co-existence period of SS CP 65 and SS EN 1992-1-1 as per Eurocodes implementation schedule in Singapore.