Appendix G

Summaries for Geoguide 6:
Guide to Reinforced Fill Structure and Slope Design

Table G1 - Summary of Current British Standard References and Replacement Eurocodes

BS Status	Relevant Updated Code for Citation	ID No.	Page no.	Existing Content of Technical Guidance Document	General Comments to define Scope of Updating / Specific Clauses in EN (s) / UK NA(s)	Scope of Updating
Technical Clauses in Report						
BS 4320:1968 Specification for metal washers for general engineering purposes. Metric series						
Confirmed, Current	BS4320:1968	GEO6:4320-2	197	*In Model Specification clause A.13 (2) (c)* : plain washers conforming to BS 4320: 1968,	1968; Normative; GEO6:4320-2; The reference is current. The citation should not be changed.	1
BS 449:Part 2:1969 Specification for the use of structural steel in building. Metric units						
Superseded, Withdrawn	BS EN 14475:2006	GEO6:449-2	43	Depending on the material to be used, the strength of the facing and connection materials should be obtained from the relevant standards, e.g. BS 5400: Part 4 (BSI, 1990), BS 8110: Part 1 (BSI, 1997) or Buildings and Lands Department (1987a) for reinforced concrete, and BS 449 : Part 2 (BSI, 1969), BS 5950 : Part 1 (BSI, 2000) or Buildings and Lands Department (1987b) for steel. Where the structure is part of a private development, the requirements of the Buildings Ordinance (Laws of Hong Kong, CAP 123) must be complied with.	1969; Normative; GEO6:449-2; BS449-2:1969 has been superseded by various parts of BS EN 1993 Eurocode 3 'Design of steel structures'. These are not appropriate references for the context of the Geoguide 6 clause 4.2.1, which deals with material strength of facings and connections. Theses elements are addressed in BS8006-1:2010 by reference to BS EN 14475:2006 'Execution of special geotechnical works - reinforced fill'. This contains informative guidance, including relevant standards, for steel reinforcement and facings. It is appropriate to replace the current reference with BS EN 14475:2006.	4a
BS 4482:1985 Specification for cold reduced steel wire for the reinforcement of concrete						
Revised, Withdrawn	BS4482:2005	GEO6:4482-2	196	*In Model Specification clause A.12 (1) (b)* : carbon steel strips, sheets or mesh conforming to BS 1449: 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1985; Normative; GEO6:4482-2; The standard is a normative material specification and should be updated. (NB Incorrect year (1995) is ascribed to the standard.)	3a
Revised, Withdrawn	BS4482:2005	GEO6:4482-3	196	*In Model Specification clause A.13 (1) (a)* : metallic reinforcing elements formed from carbon steel conforming to BS 1449 : 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1985; Normative; GEO6:4482-3; The standard is a normative material specification and should be updated. (NB Incorrect year (1995) is ascribed to the standard.)	3a
Revised, Withdrawn	BS4482:2005	GEO6:4482-4	197	*In Model Specification clause A.13 (2) (d)* : dowels and rods which shall be made from either steel bar conforming to BS 4449: 1997 or steel conforming to BS 4482: 1985 or BS EN 10025: 1993,	1985; Normative; GEO6:4482-4; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS4482:2005	GEO6:4482-5	197	*In Model Specification clause A.13 (2) (e)* : tie strips which shall be made from carbon steel strip conforming to BS 1449: Part 1: 1991, BS 4482: 1985, BS EN 10025: 1993, or BS EN 10130: 1999,	1985; Normative; GEO6:4482-5; The standard is a normative material specification and should be updated.	3a
BS 5400:Part 4:1990 Steel, concrete and composite bridges. Code of practice for design of concrete bridges						
Superseded, Withdrawn	BS EN 1992-1-1:2004 BS EN 206-1:2000	GEO6:5400-2	43	Depending on the material to be used, the strength of the facing and connection materials should be obtained from the relevant standards, e.g. BS 5400: Part 4 (BSI, 1990), BS 8110: Part 1 (BSI, 1997) or Buildings and Lands Department (1987a) for reinforced concrete, and BS 449 : Part 2 (BSI, 1969), BS 5950 : Part 1 (BSI, 2000) or Buildings and Lands Department (1987b) for steel. Where the structure is part of a private development, the requirements of the Buildings Ordinance (Laws of Hong Kong, CAP 123) must be complied with.	1990a; Normative; GEO6:5400-2; It is not clear why BS8500-4:1990 in particular was identified as a suitable reference for the design of concrete elements in a reinforced earth structure, although it does contain sections on the design of structural elements. Its direct replacement is a code for concrete bridges. This is not seen as appropriate for reinforced earth. BS8006-1:2010 "Code of Practice fror Strengthened /reinforced Soils and other FIlls" advises that reinforced concrete elements be designed in accordance with BS EN 1992-	4a
BS 1377-3:1990 Methods of test for soils for civil engineering purposes. Chemical and electrochemical tests						
Confirmed, Current	BS1377-3:1990	GEO6:1377B-2	214	In the Model Specification: Testing: resistivity A.52 The method of testing shall be in accordance with the method as stated in BS 1377: Part 3: 1990, test 10.4.	1990c; Normative; GEO6:1377B-2; The citation is to a normative testing standard which is current. No change required.	1
Confirmed, Current	Geospec 3	GEO6:1377B-3	214	In the Model Specification: Testing: organic content A.53 The method of testing shall be in accordance with the method as stated in BS 1377: Part 3: 1990, test 3.	1990c; Normative; GEO6:1377B-3; Although the standard is current, it has been superseded in Hong Kong practice by Geospec 3 (GEO, 2001). The reference and citation should be amended accordingly. Geospec 3, cl 9.	4a
Confirmed, Current	BS1377-3:1990	GEO6:1377B-4	214	In the Model Specification: Testing: redox potential A.54 The method of testing shall be in accordance with the method as stated in BS 1377: Part 3: 1990, test 11.	1990c; Normative; GEO6:1377B-4; The citation is to a normative testing standard which is current. No change required.	1
BS 1449-1:1991 Steel plate, sheet and strip. Carbon and carbon-manganese plate, sheet and strip. General specification						
Confirmed, Current	BS1449-1:1991	GEO6:1449-2	196	*In Model Specification clause A.12 (1) (b)* : carbon steel strips, sheets or mesh conforming to BS 1449: 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1991; Normative; GEO6:1449-2; The standard is a normative material specification and is current.	1
Confirmed, Current	BS1449-1:1991	GEO6:1449-3	196	*In Model Specification clause A.13 (1) (a)* : metallic reinforcing elements formed from carbon steel conforming to BS 1449 : 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1991; Normative; GEO6:1449-3; The standard is a normative material specification and is current.	1
Confirmed, Current	BS1449-1:1991	GEO6:1449-4	197	*In Model Specification clause A.13 (2) (e)* : tie strips which shall be made from carbon steel strip conforming to BS 1449: Part 1: 1991, BS 4482: 1985, BS EN 10025: 1993, or BS EN 10130: 1999,	1991; Normative; GEO6:1449-4; The standard is a normative material specification and is current.	1
BS 2782-4:Method 452B:1993 Methods of testing plastics. Chemical properties. Determination of carbon black content of polyolefin compound						
Confirmed, Current	BS2782-4:Method 452B:1993	GEO6:2782-2	211	*In the Model Specification* : Testing: carbon black content A.43 The carbon black content of polymeric reinforcing element shall be determined in accordance with BS 2782: Part 4 Method 452B (1993).	1993a; Normative; GEO6:2782-2; The citation is to a normative testing standard which is current. No change required.	1

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BS Status	Relevant Updated Code for Citation	ID No.	Page no.	Existing Content of Technical Guidance Document	General Comments to define Scope of Updating / Specific Clauses in EN (s) / UK NA(s)	Scope of Updating
BS EN 10025:1993 Hot rolled products of non-alloy structural steels. Technical delivery conditions						
Revised, Withdrawn	BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-2	37	Metallic reinforcement are usually made from galvanised steel and formed as strips, grids or anchors. The strength properties of the common carbon steel elements for reinforced fill applications can be found in BS EN 10025 (BSI, 1993) and BS 4449 (BSI, 1997). The tensile strength of steel reinforcement used in permanent works should be tested in accordance with BS EN 10002-1 (BSI, 2001).	1993b; Normative; GEO6:10025-2; The cited reference has been updated. It is a normative material standard. Consequently the reference should be updated to the current standard.	3a
Revised, Withdrawn	BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-3	196	*In Model Specification clause A.12 (1) (b)* : carbon steel strips, sheets or mesh conforming to BS 1449: 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1993b; Normative; GEO6:10025-3; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-4	196	*In Model Specification clause A.12 (1) (c)* : structural steel sections conforming to BS EN 10025:1993. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1993b; Normative; GEO6:10025-4; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-5	196	*In Model Specification clause A.13 (1) (a)* : metallic reinforcing elements formed from carbon steel conforming to BS 1449 : 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1993b; Normative; GEO6:10025-5; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-6	197	*In Model Specification clause A.13 (2) (d)* : dowels and rods which shall be made from either steel bar conforming to BS 4449: 1997 or steel conforming to BS 4482: 1985 or BS EN 10025: 1993,	1993b; Normative; GEO6:10025-6; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-7	197	*In Model Specification clause A.13 (2) (e)* : tie strips which shall be made from carbon steel strip conforming to BS 1449: Part 1: 1991, BS 4482: 1985, BS EN 10025: 1993, or BS EN 10130: 1999,	1993b; Normative; GEO6:10025-7; The standard is a normative material specification and should be updated.	3a
BS 8006:1995 Code of practice for strengthened/reinforced soils and other fills						
Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-2	42	Polymeric reinforcement are generally more sensitive to construction damage. The effect of construction damage on polymeric reinforcement is to reduce the tensile strength but the deformation modulus (stiffness) is normally not affected. The amount of construction damage is dependent upon the nature of the reinforcement, the type of fill used and the compacting effort. The effects of construction damage to the tensile strength of polymeric reinforcement is considered in design by the use of partial factors applied to the tensile strength of the as-manufactured material (see Section 6.5.3(3)). The partial factor is determined by recovering the reinforcement from test sites and comparing the tensile properties with those of the pre-installed material. A site damage test for any form of reinforcement used in reinforced fill applications is detailed in BS 8006 (BSI, 1995).	1995; Informative; GEO6:8006-2; This refers to the site damage test in BS8006:1995 Annex D. The same site damage test is described in BS8006-1:2010 Annex D.	3a
Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-3	77	Metallic sections that are coupled together and not in contact with the soil can still corrode (BS 8006), a sacrificial thickness of 0.5 times the value given in Table 2 should be deducted from each internal surface of all component parts in close metal-to-metal contact or wholly enclosed within the connection.	1995; Normative; GEO6:8006-3; The wording preceding the citation cannot be found in BS8006:1995. The rest of the text, however, is related to cl 6.8.4.1 of BS8006:1995. This text is reproduced in cl 6.8.4.1 of BS8006-1:2010. Consequently the reference and citation can be updated. (NB The citation is incomplete. It is recommended that the complete citation be moved to the end	3a
Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-4	120	Table 2 - Sacrificial Thickness to be Allowed on Each Surface of Galvanised Steel Exposed to Corrosion in Selected Fill. Note (1) states: Values based on BS 8006 (BSI, 1995).	1995; Normative; GEO6:8006-4; The values quoted in Table 2 are taken from Table 7 of BS8006:1995. The same values are reproduced in Table 4 of BS8006-1:2010. The citation can therefore be directly updated to BS8006-1:2010.	3a
Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-5	125	Table 9 - Tolerance of Reinforced Fill Facing Systems to Differential Settlement. Note (1) states: Table based on BS 8006 (BSI, 1995).	1995; Normative; GEO6:8006-5; The information quoted in Table 9 are taken from Table 22 of BS8006:1995. The same values are reproduced in Table 17 of BS8006-1:2010. The citation can therefore be directly updated to BS8006-1:2010.	3a
Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-6	125	Table 10 - Minimum Vertical Movement Capacities Required for Facing Systems to Cope with Vertical Internal Settlement of Reinforced Fill. Note states: Values based on BS 8006 (BSI, 1995).	1995; Normative; GEO6:8006-6; The information quoted in Table 10 are taken from Table 21 of BS8006:1995. The same values are reproduced in Table 16 of BS8006-1:2010. The citation can therefore be directly updated to BS8006-1:2010.	3a
Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-7	158	Figure 26 - Connections in Geotextiles and Polymeric Reinforcement. Note states: Figure based on BS 8006 (BSI, 1995).	1995; Informative; GEO6:8006-7; Figure 26 is based on Figures 5 and 7 of BS8006:1995. The same figures are reproduced in Figures 5 and 7 of BS8006-1:2010. The citation can therefore be directly updated to BS8006-1:2010.	3a

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Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-8	214	*In the Model Specification* : Testing: microbial activity index A.55 The method of testing shall be in accordance with the method as stated in BS 8006: 1995, annex B.	1995; Normative; GEO6:8006-8; The microbial activity testing described in Annex B of BS8006:1995 has been deleted from the current standard BS8006-1:2010. The current standard advises that bacterial activity should be investigated if it is considered a risk. This is usually done by means of redox testing, although the standard does not specify any particular test. Given that the microbial activity test is no longer recognised, the entire clause should be deleted. NB Removal will affect Table A.2, which states when the testing is	5
BS EN ISO 10319:1996 Geotextiles. Wide-width tensile test						
Revised, Withdrawn	BS EN ISO 10319:2008	GEO6:10319-2	37	Polymeric reinforcement are commonly manufactured from polyester fibres and high density polyethylene (HDPE) grids. Polymeric grids can be manufactured from drawn polymer sheets containing holes or formed from woven/knitted or solid structural polymeric elements (e.g. polymeric strips/bars) welded or knitted together (Figure 23(a)). The tensile strength of polymeric reinforcement used in permanent works should be tested in accordance with	1996a; Normative; GEO6:10319-2; The cited reference has been updated. It is a normative test standard. Consequently the reference should be updated to the current standard. (NB The citation is incomplete as the document is BS EN ISO 10319, not BS EN 10319 as published.)	3a
Revised, Withdrawn	BS EN ISO 10319:2008	GEO6:10319-3	211	*In the Model Specification* : Testing: tensile test A.40 (2) The tensile strength of polymeric reinforcing element shall be determined in accordance with BS EN ISO 10319: 1996. The tensile strength of polymeric reinforcement connection shall be determined in accordance with BS EN ISO 10321: 1996.	1996a; Normative; GEO6:10319-3; The citation is to a normative testing standard which requires updating.	3a
BS EN ISO 10321:1996 Geotextiles. Tensile test for joints/seams by wide-width method						
Revised, Withdrawn	BS EN ISO 10321:2008	GEO6:10321-2	42	All connections used in permanent works should be tested in accordance with BS EN ISO 10321 (BSI, 1996) for polymeric reinforcement and BS EN ISO 10002-1 (BSI, 2001) for steel reinforcement.	1996b; Normative; GEO6:10321-2; The cited reference has been updated. It is a normative test standard. Consequently the reference should be updated to the current standard.	3a
Revised, Withdrawn	BS EN ISO 10321:2008	GEO6:10321-3	211	*In the Model Specification* : Testing: tensile test A.40 (2) The tensile strength of polymeric reinforcing element shall be determined in accordance with BS EN ISO 10319: 1996. The tensile strength of polymeric reinforcement connection shall be determined in accordance with BS EN ISO 10321: 1996.	1996b; Normative; GEO6:10321-3; The citation is to a normative testing standard which requires updating.	3a
BS 4449:1997 Specification for carbon steel bars for the reinforcement of concrete						
Revised, Withdrawn	CS2:2012	GEO6:4449-2	37	Metallic reinforcement are usually made from galvanised steel and formed as strips, grids or anchors. The strength properties of the common carbon steel elements for reinforced fill applications can be found in BS EN 10025 (BSI, 1993) and BS 4449 (BSI, 1997). The tensile strength of steel reinforcement used in permanent works should be tested in accordance with BS EN 10002-1 (BSI, 2001).	1997a; Normative; GEO6:4449-2; The cited reference has been updated. It is a normative material standard in a 2009 revision. However, local standard CS2:2012 includes for the use of Grade 500 steel bars as a result of the migration from British Standards to Eurocodes. Consequently the reference should be updated to local standard CS2:2012.	3a
Revised, Withdrawn	CS2:2012	GEO6:4449-3	197	*In Model Specification clause A.13 (2) (d)* : dowels and rods which shall be made from either steel bar conforming to BS 4449: 1997 or steel conforming to BS 4482: 1985 or BS EN 10025: 1993,	1997a; Normative; GEO6:4449-3; The standard is a normative material specification and should be updated. However, as above local standard CS2:2012 provides an alternative local reference.	3a
BS 8110:1997 Structural use of concrete. Part 1 – Code of practice for design and construction						
Superseded, Withdrawn	BS EN 1992-1-1:2004	GEO6:8110-2	43	Depending on the material to be used, the strength of the facing and connection materials should be obtained from the relevant standards, e.g. BS 5400: Part 4 (BSI, 1990), BS 8110: Part 1 (BSI, 1997) or Buildings and Lands Department (1987a) for reinforced concrete, and BS 449 : Part 2 (BSI, 1969), BS 5950 : Part 1 (BSI, 2000) or Buildings and Lands Department (1987b) for steel. Where the structure is part of a private development, the requirements of the Buildings Ordinance (Laws of Hong Kong, CAP 123) must be complied with.	1997b; Normative; GEO6:8110-2; The design of concrete elements is covered by BS EN 1992-1-1:2004. Strength of elements is considered to be a function of the design of the element, rather than referring to the material standards of the components. It is therefore appropriate to replace this citation with reference to BS EN 1992-1-1:2004.	4a
Superseded, Withdrawn	BS8500-1:2006+A1:2012 BS8500-2:2006+A1:2012 BS EN 206-1:2000	GEO6:8110-3	43	(1) Reinforced concrete. Facings formed from reinforced concrete should be durable. Where sulphates are present in the backfill, subsoil or groundwater, reference may be made to BS 8110: Part 1 (BSI, 1997) for guidance on the selection of cement type and mix proportions to ensure durability.	1997b; Normative; GEO6:8110-3; BS EN 206-1:2000 applies to concrete for structures cast in situ, precast structures and structural precast products for buildings and civil engineering structures. It specifies requirements for the constituent materials of concrete, properties of fresh and hardened concrete and verification of these properties, limitations for concrete composition, specification of concrete, delivery of fresh concrete, production control procedures and conformity criteria and evaluation of conformity. BS 8500-1:2006+A1:2012 and BS 8500-2:2006+A1:2012 complement BS EN 206-1. BS 8500-1:2006+A1:2012 describes methods of specifying concrete and gives guidance for the specifier. BS 8500-2:2006+A1:2012 specifies constituent materials and concrete. They also cover materials, methods of testing and procedures that are outside the scope of BS EN 206-1.	4a

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Superseded, Withdrawn	BS8500-1:2006+A1:2012 BS8500-2:2006+A1:2012 BS EN 206-1:2000	GEO6:8110-4	196	*In Model Specification clause A.12 (1) (a)* : reinforced concrete conforming to BS 8110: 1997,	1997b; Normative; GEO6:8110-4; The specification of prefabricated reinforced concrete is now covered by BS EN 206-1:2000 with complementary advice supplied in BS EN 8500-1:2006+A1:2012 and BS EN 8500:2006+A1:2012.	4a
BS 4483:1998 Steel fabric for the reinforcement of concrete						
Revised, Withdrawn	BS4483:2005	GEO6:4483-2	196	*In Model Specification clause A.12 (1) (b)* : carbon steel strips, sheets or mesh conforming to BS 1449: 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1998; Normative; GEO6:4483-2; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS4483:2005	GEO6:4483-3	196	*In Model Specification clause A.13 (1) (a)* : metallic reinforcing elements formed from carbon steel conforming to BS 1449 : 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1998; Normative; GEO6:4483-3; The standard is a normative material specification and should be updated.	3a
BS EN ISO 1461:1999 Hot dip galvanized coatings on Fabricated iron and steel articles. Specifications and test methods						
Revised, Withdrawn	BS EN ISO 1461:2009	GEO6:1461-2	197	*In the Model Specification* : Hot-dip galvanizing A.14 Hot-dip galvanizing shall be to BS EN ISO 1461: 1999, except that the minimum average zinc coating weight for the steel reinforcing elements specified in Clause A.13 shall be 610 g/m2 (85 microns) for land-based structures or slopes and 1000 g/m2 (140 microns) for structures or slopes that are periodically submerged in water.	1999a; Normative; GEO6:1461-2; The standard is a normative material and testing specification and should be updated.	3a
Revised, Withdrawn	BS EN ISO 1461:2009	GEO6:1461-3	211	*In the Model Specification* : Testing: weight/thickness and uniformity of galvanized coating A.42 The weight/thickness and uniformity of galvanized coating shall be determined in accordance with BS EN ISO 1461: 1999.	1999a; Normative; GEO6:1461-3; The standard is a normative material and testing specification and should be updated.	3a
BS EN 10130:1999 Cold-rolled low-carbon steel flat products for cold forming. Technical delivery conditions						
Revised, Withdrawn	BS EN 10130:2006	GEO6:10130-2	196	*In Model Specification clause A.12 (1) (b)* : carbon steel strips, sheets or mesh conforming to BS 1449: 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1999b; Normative; GEO6:10130-2; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS EN 10130:2006	GEO6:10130-3	196	*In Model Specification clause A.13 (1) (a)* : metallic reinforcing elements formed from carbon steel conforming to BS 1449 : 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	1999b; Normative; GEO6:10130-3; The standard is a normative material specification and should be updated.	3a
Revised, Withdrawn	BS EN 10130:2006	GEO6:10130-4	197	*In Model Specification clause A.13 (2) (e)* : tie strips which shall be made from carbon steel strip conforming to BS 1449: Part 1: 1991, BS 4482: 1985, BS EN 10025: 1993, or BS EN 10130: 1999,	1999b; Normative; GEO6:10130-4; The standard is a normative material specification and should be updated.	3a
BS 410-1:2000, ISO 3310-1:2000 Test sieves. Technical requirements and testing. Test sieves of metal wire cloth						
Current	BS410-1:2000, ISO 3310-1:2000	GEO6:410-2	199	*In the Model Specification* : In Table A.1 - Properties of Selected Fill Material, there are three sieve sizes stated. Each is described as a 'BS Sieve Size'.	2000a; Informative; GEO6:410-2; There is no direct citation of the British Standard covering the technical requirements of metal wire cloth test sieves. Consequently, it is not clear that there is any link to the reference section of Geoguide 6. However, the reference in Geoguide 6 is the correct and current standard for wire cloth sieves. A note could be added to the table to clarify the reference.	4b
Current	BS410-1:2000, ISO 3310-1:2000	GEO6:410-3	199	*In the Model Specification* : Table A.2 - Allowable Electrical and Chemical Limits of Selected Fill and Granular Filter. Note (2): The measurement of organic content shall be carried out for clayey soils where more than 15% passes a 63 microns BS Sieve Size.	2000a; Informative; GEO6:410-3; There is no direct citation of the British Standard covering the technical requirements of metal wire cloth test sieves. Consequently, it is not clear that there is any link to the reference section of Geoguide 6. However, the reference in Geoguide 6 is the correct and current standard for wire cloth sieves. The note could be amended to clarify the reference.	4b
BS 5950-1:2000 Structural use of steelwork in building. Code of practice for design. Rolled and welded sections						
Superseded, Withdrawn	BS EN 14475:2006	GEO6:5950-2	43	Depending on the material to be used, the strength of the facing and connection materials should be obtained from the relevant standards, e.g. BS 5400: Part 4 (BSI, 1990), BS 8110: Part 1 (BSI, 1997) or Buildings and Lands Department (1987a) for reinforced concrete, and BS 449 : Part 2 (BSI, 1969), BS 5950 : Part 1 (BSI, 2000) or Buildings and Lands Department (1987b) for steel. Where the structure is part of a private development, the requirements of the Buildings Ordinance (Laws of Hong Kong, CAP 123) must be complied with.	2000b; Normative; GEO6:5950-2; BS5950-1:2000 has been superseded by various parts of BS EN 1993 Eurocode 3 'Design of steel structures'. These are not appropriate references for the context of the Geoguide 6 clause 4.2.1, which deals with material strength of facings and connections. Theses elements are addressed in BS8006-1:2010 by reference to BS EN 14475:2006 'Execution of special geotechnical works - reinforced fill'. This contains informative guidance, including relevant standards, for steel reinforcement and facings. It is appropriate to replace the current reference with BS EN 14475:2006.	4a
BS 3692:2001 ISO metric precision hexagon bolts, screws and nuts. Specification						
Confirmed, Current	BS3692:2001	GEO6:3692-2	197	*In Model Specification clause A.13 (2) (a)* : precision hexagon bolts, screws and nuts conforming to BS 3692: 2001,	2001a; Normative; GEO6:3692-2; The standard is a normative material specification and is current.	1

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BS Status	Relevant Updated Code for Citation	ID No.	Page no.	Existing Content of Technical Guidance Document	General Comments to define Scope of Updating / Specific Clauses in EN (s) / UK NA(s)	Scope of Updating
BS 4190:2001 ISO metric black hexagon bolts, screws and nuts. Specification						
Confirmed, Current	BS4190:2001	GEO6:4190-2	197	*In Model Specification clause A.13 (2) (b)* : black hexagon bolts, screws and nuts conforming to BS 4190: 2001,	2001b; Normative; GEO6:4190-2; The standard is a normative material specification and is current.	1
BS EN 10002-1:2001 Tensile testing of metallic materials. Method of test at ambient temperature						
Superseded, Withdrawn	BS EN ISO 6892-1:2009	GEO6:10002-2	37	Metallic reinforcement are usually made from galvanised steel and formed as strips, grids or anchors. The strength properties of the common carbon steel elements for reinforced fill applications can be found in BS EN 10025 (BSI, 1993) and BS 4449 (BSI, 1997). The tensile strength of steel reinforcement used in permanent works should be tested in accordance with BS EN 10002-1 (BSI, 2001).	2001c; Normative; GEO6:10002-2; The cited reference has been replaced by BS EN ISO 6892-1:2009. It is a normative test standard. Consequently the reference should be updated to the current standard.	4a
Superseded, Withdrawn	BS EN ISO 6892-1:2009	GEO6:10002-3	42	All connections used in permanent works should be tested in accordance with BS EN ISO 10321 (BSI, 1996) for polymeric reinforcement and BS EN ISO 10002-1 (BSI, 2001) for steel reinforcement.	2001c; Normative; GEO6:10002-3; The cited reference has been has been replaced by BS EN ISO 6892-1:2009. It is a normative test standard. Consequently the reference should be updated to the current standard. (NB The current citation is incorrect. The standard is BS EN 10002-1, not BS EN ISO	4a
Superseded, Withdrawn	BS EN ISO 6892-1:2009	GEO6:10002-4	211	*In the Model Specification* : Testing: tensile test A.40 (1) The tensile strength of metallic reinforcing element and reinforcement connection shall be determined in accordance with BS EN 10002-1: 2001 or other test method as approved by the Engineer.	2001c; Normative; GEO6:10002-4; The standard is a normative testing specification and should be updated.	4a
Reference Section of Report						
Confirmed, Current	BS4320:1968	GEO6:4320-1	107	BSI (1968). Specification for metal washers for general engineering purposes. Metric series (BS 4320 : 1968). British Standards Institution, London.	1968; Reference; GEO6:4320-1; There is one normative citation of the reference document in the Model Specification. The reference document is current. No change required.	1
Superseded, Withdrawn	BS EN 1993-1-1:2005 BS EN 1993-1-5:2006 BS EN 1993-1-8:2005 BS EN 1993-1-10:2005 BS EN 1993-5:2007 BS EN 1993-6:2007	GEO6:449-1	107	BSI (1969). Specification for the use of structural steel in building. Metric units (BS 449 : Part 2 : 1969). British Standards Institution, London.	1969; Reference; GEO6:449-1; This reference document has one normative citation in the text of Geoguide 6. The reference should be updated to BS EN 14475:2006.	4a
Revised, Withdrawn	BS4482:2005	GEO6:4482-1		BS 4482:1985 Specification for cold reduced steel wire for the reinforcement of concrete	1985; Reference; GEO6:4482-1; This standard is quoted normatively four times in the Model Specification but does not appear in the reference section of Geoguide 6. The standard should be added to the references. (NB Two of the quotations are incorrect, giving the wrong year for the publication. These will	3a
Superseded, Withdrawn	BS EN 1992-2:2005	GEO6:5400-1	107	BSI (1990). Steel, concrete and composite bridges. Code of practice for design of concrete bridges (BS 5400: Part 4 : 1990). British Standards Institution, London.	1990a; Reference; GEO6:5400-1; This reference document has one normative citation in the text of Geoguide 6. The reference should be updated to two replacement standards; BS EN 1992-1-1:2004 and BS EN 206-1:2000. Citations will need to be adjusted appropriately.	4a
Confirmed, Current	BS1377-1:1990	GEO6:1377A-1	107	BSI (1990). Methods of test for soils for civil engineering purposes. General requirements and sample preparation (BS 1377: Part 1 : 1990). British Standards Institution, London.	1990b; Reference; GEO6:1377A-1; There are no citations of this standard.	2
Confirmed, Current	BS1377-3:1990	GEO6:1377B-1	107	BSI (1990). Methods of test for soils for civil engineering purposes. Chemical and electrochemical tests (BS 1377: Part 3 : 1990). British Standards Institution, London.	1990c; Reference; GEO6:1377B-1; There are three normative citations of the reference document in the Model Specification. The reference document is current. No change required. One of the citations, however, has been superseded in Hong Kong practice by Geospec 3 (GEO, 2001). This requires the addition of a new reference and a change to the citation.	1
Confirmed, Current	BS1449-1:1991	GEO6:1449-1	107	BSI (1991). Steel plate, sheet and strip. Carbon and carbon-manganese plate, sheet and strip. General specification (BS 1449: Part 1 : 1991). British Standards Institution, London.	1991; Reference; GEO6:1449-1; There are three normative citations of the reference document in the Model Specification. The reference document is current. No change required.	1
Confirmed, Current	BS2782-4:1993	GEO6:2782-1	107	BSI (1993). Methods of testing plastics. Chemical properties. Determination of carbon black content of polyolefin compound (BS 2782-4 : Method 452B : 1993). British Standards Institution, London.	1993a; Reference; GEO6:2782-1; There is one normative citation of the reference document in the Model Specification. The reference document is current. No change required.	1
Revised, Withdrawn	BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-1	107	BSI (1993). Hot rolled products of non-alloy structural steels. Technical delivery conditions (BS EN 10025 : 1993). British Standards Institution, London.	1993b; Reference; GEO6:10025-1; There are six normative citations of the reference document; Five citations occurs in the Model Specification and one in the text of Geoguide 6. The reference should be updated to two replacement standards; BS EN 10025-1:2004 and BS EN 10025-2:2004. Citations will need to be adjusted appropriately.	3a

Table G1 - Summary of Current British Standard References and Replacement Eurocodes

BS Status	Relevant Updated Code for Citation	ID No.	Page no.	Existing Content of Technical Guidance Document	General Comments to define Scope of Updating / Specific Clauses in EN (s) / UK NA(s)	Scope of Updating
Superseded, Withdrawn	BS8006-1:2010	GEO6:8006-1	107	BSI (1995). Code of Practice for strengthened/reinforced soil and other fills (BS 8006 : 1995). British Standards Institution, London.	1995; Reference; GEO6:8006-1; There are five normative and two informative citations of the reference document; One normative citation occurs in the Model Specification, all the other occurrences are in the text of Geoguide 6. It is recommended that the normative citation in the Model Specification be deleted. The reference should be updated to BS8006-1:2010 and citations adjusted appropriately.	3a
Revised, Withdrawn	BS EN ISO 10319:2008	GEO6:10319-1	107	BSI (1996). Geotextiles. Wide-width tensile test (BS EN ISO 10319 : 1996). British Standards Institution, London.	1996a; Reference; GEO6:10319-1; There are two normative citations of the reference document; One citations occurs in the Model Specification and one in the text of Geoguide 6. The reference should be updated to BS EN ISO 10319:2008. Citations will need to be adjusted appropriately.	3a
Revised, Withdrawn	BS EN ISO 10321:2008	GEO6:10321-1	107	BSI (1996). Geotextiles. Tensile test for joints/seams by wide-width method (BS EN ISO 10321 : 1996). British Standards Institution, London.	1996b; Reference; GEO6:10321-1; There are two normative citations of the reference document; One citations occurs in the Model Specification and one in the text of Geoguide 6. The reference should be updated to BS EN ISO 10321:2008. Citations will need to be adjusted appropriately.	3a
Revised, Withdrawn	BS4449:2005+A2:2009	GEO6:4449-1	108	BSI (1997). Specification for carbon steel bars for the reinforcement of concrete (BS 4449 : 1997). British Standards Institution, London.	1997a; Reference; GEO6:4449-1; There are two normative citations of the reference document; One citations occurs in the Model Specification and one in the text of Geoguide 6. As discussed above, the reference should be updated to local standard CS2:2012. Citations will need to be adjusted appropriately.	3a
Superseded, Withdrawn	BS EN 1992-1-1:2004	GEO6:8110-1	108	BSI (1997). Structural use of concrete. Part 1 – Code of practice for design and construction (BS 8110 : 1997). British Standards Institution, London.	1997b; Reference; GEO6:8110-1; There are three normative citations of the reference document; One citations occurs in the Model Specification and two in the text of Geoguide 6. The reference should be updated to four replacement standards; BS EN 1992-1-1:2004, BS8500-1:2006+A1:2012, BS8500-2:2006+A1:2012 and BS EN 206-1:2000. Citations will need to be	4a
Revised, Withdrawn	BS4483:2005	GEO6:4483-1		BS 4483:1998 Steel fabric for the reinforcement of concrete	1998; Reference; GEO6:4483-1; This standard is quoted normatively twice in the Model Specification but does not appear in the reference section of Geoguide 6. The standard should be added to the references.	3a
Revised, Withdrawn	BS EN ISO 1461:2009	GEO6:1461-1	108	BSI (1999). Hot dip galvanized coatings on Fabricated iron and steel articles. Specifications and test methods (BS EN ISO 1461 : 1999). British Standards Institution, London.	1999a; Reference; GEO6:1461-1; There are two normative citations of the reference document in the Model Specification. The reference should be updated to BS EN ISO 1461:2009. Citations will need to be adjusted	3a
Revised, Withdrawn	BS EN 10130:2006	GEO6:10130-1	108	BSI (1999). Cold-rolled low-carbon steel flat products for cold forming. Technical delivery conditions (BS EN 10130 : 1999). British Standards Institution, London.	1999b; Reference; GEO6:10130-1; There are three normative citations of the reference document in the Model Specification. The reference should be updated to BS EN 10130:2006. Citations will need to be adjusted appropriately.	3a
Current	BS410-1:2000	GEO6:410-1	108	BSI (2000). Test sieves. Technical requirements and testing. Test sieves of metal wire cloth (BS 410-1 : 2000, ISO 3310-1 : 2000). British Standards Institution, London.	2000a; Reference; GEO6:410-1; No citations. References are made to 'BS sieve' at two places in the Model Specification, but there is no statement of the standard or citation to this reference. The reference should be retained and appropriate citations added to the text.	1
Superseded, Withdrawn	BS EN 1993-1-1:2005 BS EN 1993-1-5:2006 BS EN 1993-1-8:2005 BS EN 1993-1-10:2005 BS EN 1993-5:2007 BS EN 1993-6:2007	GEO6:5950-1	108	BSI (2000). Structural use of steelwork in building. Code of practice for design. Rolled and welded sections (BS 5950-1 : 2000). British Standards Institution, London.	2000b; Reference; GEO6:5950-1; This reference document has one normative citation in the text of Geoguide 6. The reference should be updated to BS EN 14475:2006.	4a
Confirmed, Current	BS3692:2001	GEO6:3692-1	108	BSI (2001). ISO metric precision hexagon bolts, screws and nuts. Specification (BS 3692 : 2001). British Standards Institution, London.	2001a; Reference; GEO6:3692-1; There is one normative citation of the reference document in the Model Specification. The reference document is current. No change required.	1
Confirmed, Current	BS4190:2001	GEO6:4190-1	108	BSI (2001). ISO metric black hexagon bolts, screws and nuts. Specification (BS 4190 : 2001). British Standards Institution, London.	2001b; Reference; GEO6:4190-1; There is one normative citation of the reference document in the Model Specification. The reference document is current. No change required.	1
Superseded, Withdrawn	BS EN ISO 6892-1:2009	GEO6:10002-1	108	BSI (2001). Tensile testing of metallic materials. Method of test at ambient temperature (BS EN 10002-1 : 2001). British Standards Institution, London.	2001c; Reference; GEO6:10002-1; There are three normative citations of the reference document; One citations occurs in the Model Specification and two in the text of Geoguide 6. The reference should be updated to BS EN ISO 6892-1:2009. Citations will need to be adjusted appropriately.	4a

Table G1 - Summary of Current British Standard References and Replacement Eurocodes

BS Status	Relevant Updated Code for Citation	ID No.	Page no.	Existing Content of Technical Guidance Document	General Comments to define Scope of Updating / Specific Clauses in EN (s) / UK NA(s)	Scope of Updating
Superseded, Withdrawn	BS EN 14475:2006	GEO6:14475-1	108	BSI (2002). Execution of special geotechnical works – Reinforced fill (Draft for public comment) (prEN 14475). British Standards Institution, London.	2002; Reference; GEO6:14475-1; There are no citations of this standard.	2

Table G2 - Extracts of Relevant Sections or Clauses of the British Standards and Eurocodes / National Annexes

Relevant Updated Code for Citation	ID No.	Page no.	Scope of Updating	Extracts of Relevant Sections or Clauses of the superseded British Standard(s)	Extracts of Relevant Sections or Clauses of the replacement British/European Standards
Technical Clauses in Report					
BS 4320:1968 Specification for metal washers for general engineering purposes. Metric series					
BS4320:1968	GEO6:4320-2	197	1	N/A	N/A
BS 449:Part 2:1969 Specification for the use of structural steel in building. Metric units					
BS EN 14475:2006	GEO6:449-2	43	4a	Whole document.	BS EN 14475, Annexes E and F
BS 4482:1985 Specification for cold reduced steel wire for the reinforcement of concrete					
BS4482:2005	GEO6:4482-2	196	3a	Whole document.	Whole document.
BS4482:2005	GEO6:4482-3	196	3a	Whole document.	Whole document.
BS4482:2005	GEO6:4482-4	197	3a	Whole document.	Whole document.
BS4482:2005	GEO6:4482-5	197	3a	Whole document.	Whole document.
BS 5400:Part 4:1990 Steel, concrete and composite bridges. Code of practice for design of concrete bridges					
BS EN 1992-1-1:2004 BS EN 206-1:2000	GEO6:5400-2	43	4a	Whole document.	Whole document.
BS 1377-3:1990 Methods of test for soils for civil engineering purposes. Chemical and electrochemical tests					
BS1377-3:1990	GEO6:1377B-2	214	1	N/A	N/A
Geospec 3	GEO6:1377B-3	214	4a	BS1377-3:1990 cl 3	Geospec 3, cl 9
BS1377-3:1990	GEO6:1377B-4	214	1	N/A	N/A
BS 1449-1:1991 Steel plate, sheet and strip. Carbon and carbon-manganese plate, sheet and strip. General specification					
BS1449-1:1991	GEO6:1449-2	196	1	N/A	N/A
BS1449-1:1991	GEO6:1449-3	196	1	N/A	N/A
BS1449-1:1991	GEO6:1449-4	197	1	N/A	N/A
BS 2782-4:Method 452B:1993 Methods of testing plastics. Chemical properties. Determination of carbon black content of polyolefin compound					
BS2782-4:Method 452B:1993	GEO6:2782-2	211	1	N/A	N/A
BS EN 10025:1993 Hot rolled products of non-alloy structural steels. Technical delivery conditions					
BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-2	37	3a	Whole document.	Whole document.
BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-3	196	3a	Whole document.	Whole document.
BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-4	196	3a	Whole document.	Whole document.
BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-5	196	3a	Whole document.	Whole document.
BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-6	197	3a	Whole document.	Whole document.
BS EN 10025-1:2004, BS EN 10025-2:2004	GEO6:10025-7	197	3a	Whole document.	Whole document.
BS 8006:1995 Code of practice for strengthened/reinforced soils and other fills					
BS8006-1:2010	GEO6:8006-2	42	3a	Annex D	BS8006-1:2010, Annex D
BS8006-1:2010	GEO6:8006-3	77	3a	cl 6.8.4.1	BS8006-1:2010, cl 6.8.4.1
BS8006-1:2010	GEO6:8006-4	120	3a	Table 7	BS8006-1:2010, Table 4
BS8006-1:2010	GEO6:8006-5	125	3a	Table 22	BS8006-1:2010, Table 17
BS8006-1:2010	GEO6:8006-6	125	3a	Table 21	BS8006-1:2010, Table 16
BS8006-1:2010	GEO6:8006-7	158	3a	Figures 5 and 7	BS8006-1:2010, Figures 5 and 7
BS8006-1:2010	GEO6:8006-8	214	5	Annex B	No equivalent information.
BS EN ISO 10319:1996 Geotextiles. Wide-width tensile test					
BS EN ISO 10319:2008	GEO6:10319-2	37	3a	Whole document.	Whole document.
BS EN ISO 10319:2008	GEO6:10319-3	211	3a	Whole document.	Whole document.

Table G2 - Extracts of Relevant Sections or Clauses of the British Standards and Eurocodes / National Annexes

Relevant Updated Code for Citation	ID No.	Page no.	Scope of Updating	Extracts of Relevant Sections or Clauses of the superseded British Standard(s)	Extracts of Relevant Sections or Clauses of the replacement British/European Standards
BS EN ISO 10321:1996 Geotextiles. Tensile test for joints/seams by wide-width method					
BS EN ISO 10321:2008	GEO6:10321-2	42	3a	Whole document.	Whole document.
BS EN ISO 10321:2008	GEO6:10321-3	211	3a	Whole document.	Whole document.
BS 4449:1997 Specification for carbon steel bars for the reinforcement of concrete					
CS2:2012	GEO6:4449-2	37	3a	Whole document.	Whole document.
CS2:2012	GEO6:4449-3	197	3a	Whole document.	Whole document.
BS 8110:1997 Structural use of concrete. Part 1 – Code of practice for design and construction					
BS EN 1992-1-1:2004	GEO6:8110-2	43	4a	Whole document.	Whole document.
BS8500-1:2006+A1:2012 BS8500-2:2006+A1:2012 BS EN 206-1:2000	GEO6:8110-3	43	4a	Whole document.	Whole document.
BS8500-1:2006+A1:2012 BS8500-2:2006+A1:2012 BS EN 206-1:2000	GEO6:8110-4	196	4a	Whole document.	Whole document.
BS 4483:1998 Steel fabric for the reinforcement of concrete					
BS4483:2005	GEO6:4483-2	196	3a	Whole document.	Whole document.
BS4483:2005	GEO6:4483-3	196	3a	Whole document.	Whole document.
BS EN ISO 1461:1999 Hot dip galvanized coatings on Fabricated iron and steel articles. Specifications and test methods					
BS EN ISO 1461:2009	GEO6:1461-2	197	3a	Whole document.	Whole document.
BS EN ISO 1461:2009	GEO6:1461-3	211	3a	Whole document.	Whole document.
BS EN 10130:1999 Cold-rolled low-carbon steel flat products for cold forming. Technical delivery conditions					
BS EN 10130:2006	GEO6:10130-2	196	3a	Whole document.	Whole document.
BS EN 10130:2006	GEO6:10130-3	196	3a	Whole document.	Whole document.
BS EN 10130:2006	GEO6:10130-4	197	3a	Whole document.	Whole document.
BS 410-1:2000, ISO 3310-1:2000 Test sieves. Technical requirements and testing. Test sieves of metal wire cloth					
BS410-1:2000, ISO 3310-1:2000	GEO6:410-2	199	4b	N/A	N/A
BS410-1:2000, ISO 3310-1:2000	GEO6:410-3	199	4b	N/A	N/A
BS 5950-1:2000 Structural use of steelwork in building. Code of practice for design. Rolled and welded sections					
BS EN 14475:2006	GEO6:5950-2	43	4a	Whole document.	BS EN 14475, Annexes E and F
BS 3692:2001 ISO metric precision hexagon bolts, screws and nuts. Specification					
BS3692:2001	GEO6:3692-2	197	1	N/A	N/A
BS 4190:2001 ISO metric black hexagon bolts, screws and nuts. Specification					
BS4190:2001	GEO6:4190-2	197	1	N/A	N/A
BS EN 10002-1:2001 Tensile testing of metallic materials. Method of test at ambient temperature					
BS EN ISO 6892-1:2009	GEO6:10002-2	37	4a	Whole document.	Whole document.
BS EN ISO 6892-1:2009	GEO6:10002-3	42	4a	Whole document.	Whole document.
BS EN ISO 6892-1:2009	GEO6:10002-4	211	4a	Whole document.	Whole document.

Table G3 - Description of Standards, Differences and Recommended Amendments

ID No.	Page no.	Scope of Updating	Description of Design, Specification and/or Testing Required		Effects of differences in Adopting Up-to-date Standard(s)	Recommended Amendments
			Quoted Standard(s)	Up-to-date Standard(s)		
Technical Clauses in Report						
BS 4320:1968 Specification for metal washers for general engineering purposes. Metric series						
GEO6:4320-2	197	1	Material specification for metal washers.	N/A	N/A	Reference document is up to date. No change required.
BS 449:Part 2:1969 Specification for the use of structural steel in building. Metric units						
GEO6:449-2	43	4a	Specification on use of steel.	Detailed advice on use of steel in reinforced earth.	Improved clarity of advice.	Update of reference and citation required.
BS 4482:1985 Specification for cold reduced steel wire for the reinforcement of concrete						
GEO6:4482-2	196	3a	Material specification for steel to be used in reinforcedconcrete	Material specification for steel to be used in reinforcedconcrete	No change.	Update of reference and citation required.
GEO6:4482-3	196	3a	Material specification for steel to be used in reinforcedconcrete	Material specification for steel to be used in reinforcedconcrete	No change.	Update of reference and citation required.
GEO6:4482-4	197	3a	Material specification for steel to be used in reinforcedconcrete	Material specification for steel to be used in reinforcedconcrete	No change.	Update of reference and citation required.
GEO6:4482-5	197	3a	Material specification for steel to be used in reinforcedconcrete	Material specification for steel to be used in reinforcedconcrete	No change.	Update of reference and citation required.
BS 5400:Part 4:1990 Steel, concrete and composite bridges. Code of practice for design of concrete bridges						
GEO6:5400-2	43	4a	Code of practice for design.	Design standard and method of specification of material.	Improved clarity of advice.	Update of reference and citation required.
BS 1377-3:1990 Methods of test for soils for civil engineering purposes. Chemical and electrochemical tests						
GEO6:1377B-2	214	1	Test method for soils.	N/A	N/A	Reference document is up to date. No change required.
GEO6:1377B-3	214	4a	Test method for soils.	Test method for soils.	No change.	Although the reference document is current, it has been replaced in Hong Kong practice by Geospec 3. The reference for this citation should be changed.
GEO6:1377B-4	214	1	Test method for soils.	N/A	N/A	Reference document is up to date. No change required.
BS 1449-1:1991 Steel plate, sheet and strip. Carbon and carbon-manganese plate, sheet and strip. General specification						
GEO6:1449-2	196	1	Material specification for steel elements.	N/A	N/A	Reference document is up to date. No change required.
GEO6:1449-3	196	1	Material specification for steel elements.	N/A	N/A	Reference document is up to date. No change required.
GEO6:1449-4	197	1	Material specification for steel elements.	N/A	N/A	Reference document is up to date. No change required.
BS 2782-4:Method 452B:1993 Methods of testing plastics. Chemical properties. Determination of carbon black content of polyolefin compound						
GEO6:2782-2	211	1	Test method for plastic.	Test method for plastic.	No change.	Update of reference and citation required.
BS EN 10025:1993 Hot rolled products of non-alloy structural steels. Technical delivery conditions						
GEO6:10025-2	37	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:10025-3	196	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:10025-4	196	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:10025-5	196	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:10025-6	197	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:10025-7	197	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.

Table G3 - Description of Standards, Differences and Recommended Amendments

ID No.	Page no.	Scope of Updating	Description of Design, Specification and/or Testing Required		Effects of differences in Adopting Up-to-date Standard(s)	Recommended Amendments
			Quoted Standard(s)	Up-to-date Standard(s)		
BS 8006:1995 Code of practice for strengthened/reinforced soils and other fills						
GEO6:8006-2	42	3a	Code of practice for design.	Code of practice for design.	No change.	Update of reference and citation required.
GEO6:8006-3	77	3a	Code of practice for design.	Code of practice for design.	No change.	Update of reference and citation required.
GEO6:8006-4	120	3a	Code of practice for design.	Code of practice for design.	No change.	Update of reference and citation required.
GEO6:8006-5	125	3a	Code of practice for design.	Code of practice for design.	No change.	Update of reference and citation required.
GEO6:8006-6	125	3a	Code of practice for design.	Code of practice for design.	No change.	Update of reference and citation required.
GEO6:8006-7	158	3a	Code of practice for design.	Code of practice for design.	No change.	Update of reference and citation required.
GEO6:8006-8	214	5	Code of practice for design.	No information in current standard.	Existing clauses in Geoguide 6 no longer supported.	Delete the citation and related text.
BS EN ISO 10319:1996 Geotextiles. Wide-width tensile test						
GEO6:10319-2	37	3a	Method of test for geotextiles.	Method of test for geotextiles.	No change.	Update of reference and citation required.
GEO6:10319-3	211	3a	Method of test for geotextiles.	Method of test for geotextiles.	No change.	Update of reference and citation required.
BS EN ISO 10321:1996 Geotextiles. Tensile test for joints/seams by wide-width method						
GEO6:10321-2	42	3a	Method of test for geotextiles.	Method of test for geotextiles.	No change.	Update of reference and citation required.
GEO6:10321-3	211	3a	Method of test for geotextiles.	Method of test for geotextiles.	No change.	Update of reference and citation required.
BS 4449:1997 Specification for carbon steel bars for the reinforcement of concrete						
GEO6:4449-2	37	3a	Material specification for steel elements.	Material specification for steel reinforcement of concrete	No reduction of standard; use of this local standard also includes for use of Grade 500 steel for the migration from BS to Eurocodes.	Update of reference and citation required.
GEO6:4449-3	197	3a	Material specification for steel elements.	Material specification for steel reinforcement of concrete	No reduction of standard; use of this local standard also includes for use of Grade 500 steel for the migration from BS to Eurocodes.	Update of reference and citation required.
BS 8110:1997 Structural use of concrete. Part 1 – Code of practice for design and construction						
GEO6:8110-2	43	4a	Code of practice for design and construction.	Code of practice for design.	Improved clarity of advice.	Update of reference and citation required.
GEO6:8110-3	43	4a	Code of practice for design and construction.	Code of practice for design and material specification.	Improved clarity of advice.	Update of reference and citation required.
GEO6:8110-4	196	4a	Code of practice for design and construction.	Code of practice for design and material specification.	Improved clarity of advice.	Update of reference and citation required.
BS 4483:1998 Steel fabric for the reinforcement of concrete						
GEO6:4483-2	196	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:4483-3	196	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
BS EN ISO 1461:1999 Hot dip galvanized coatings on Fabricated iron and steel articles. Specifications and test methods						
GEO6:1461-2	197	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:1461-3	211	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
BS EN 10130:1999 Cold-rolled low-carbon steel flat products for cold forming. Technical delivery conditions						
GEO6:10130-2	196	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:10130-3	196	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
GEO6:10130-4	197	3a	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
BS 410-1:2000, ISO 3310-1:2000 Test sieves. Technical requirements and testing. Test sieves of metal wire cloth						
GEO6:410-2	199	4b	Technical specifications for metal wire cloth sieves.	N/A	N/A	Reference document is up to date. No change required.
GEO6:410-3	199	4b	Technical specifications for metal wire cloth sieves.	N/A	N/A	Reference document is up to date. No change required.
BS 5950-1:2000 Structural use of steelwork in building. Code of practice for design. Rolled and welded sections						
GEO6:5950-2	43	4a	Specification on use of steel.	Detailed advice on use of steel in reinforced earth.	Improved clarity of advice.	Update of reference and citation required.

Table G3 - Description of Standards, Differences and Recommended Amendments

ID No.	Page no.	Scope of Updating	Description of Design, Specification and/or Testing Required		Effects of differences in Adopting Up-to-date Standard(s)	Recommended Amendments
			Quoted Standard(s)	Up-to-date Standard(s)		
BS 3692:2001 ISO metric precision hexagon bolts, screws and nuts. Specification						
GEO6:3692-2	197	1	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
BS 4190:2001 ISO metric black hexagon bolts, screws and nuts. Specification						
GEO6:4190-2	197	1	Material specification for steel elements.	Material specification for steel elements.	No change.	Update of reference and citation required.
BS EN 10002-1:2001 Tensile testing of metallic materials. Method of test at ambient temperature						
GEO6:10002-2	37	4a	Method of test for metallic materials.	Method of test for metallic materials.	No change.	Update of reference and citation required.
GEO6:10002-3	42	4a	Method of test for metallic materials.	Method of test for metallic materials.	No change.	Update of reference and citation required.
GEO6:10002-4	211	4a	Method of test for metallic materials.	Method of test for metallic materials.	No change.	Update of reference and citation required.
Reference Section of Report						
GEO6:4320-1	107	1	This reference document is: Confirmed, Current.	The current document(s) is (are): BS4320:1968	No change.	Existing reference to be retained.
GEO6:449-1	107	4a	This reference document is: Superseded, Withdrawn.	The current document(s) is (are): BS EN 1993-1-1:2005 BS EN 1993-1-5:2006 BS EN 1993-1-8:2005 BS EN 1993-1-10:2005 BS EN 1993-5:2007 BS EN 1993-6:2007	The superseding documents do not address the requirements of Geoguide 6. Relevant advice is now concentrated in BS EN 14475:2006.	Replace the reference with BS EN 14475:2006.
GEO6:4482-1	0	3a	This reference document is: Revised, Withdrawn.	The current document(s) is (are): BS4482:2005	There is no reference to this document.	Insert reference for BS 4482:2005.
GEO6:5400-1	107	4a	This reference document is: Superseded, Withdrawn.	The current document(s) is (are): BS EN 1992-2:2005	BS EN I992-2:2005 is not suitable in the context of Geoguide 6. The equivalent information is now contained in BS EN 1992-1-1:2004 and BS EN 206-1:2000.	Replace the reference with BS EN 1992-1-1:2004 and BS EN 206-1:2000.
GEO6:1377A-1	107	2	This reference document is: Confirmed, Current.	The current document(s) is (are): BS1377-1:1990	There are no citations to this reference.	Delete the reference.
GEO6:1377B-1	107	1	This reference document is: Confirmed, Current.	The current document(s) is (are): BS1377-3:1990	Of the three citations one requires changing to a new reference.	Retain existing reference but add reference to Geospec 3 (GEO, 2001) and amend citation for GEO6:1377B-3.
GEO6:1449-1	107	1	This reference document is: Confirmed, Current.	The current document(s) is (are): BS1449-1:1991	No change.	Existing reference to be retained.
GEO6:2782-1	107	1	This reference document is: Confirmed, Current.	The current document(s) is (are): BS2782-4:1993	No change.	Existing reference to be retained.
GEO6:10025-1	107	3a	This reference document is: Revised, Withdrawn.	The current document(s) is (are): BS EN 10025-1:2004, BS EN 10025-2:2004	The reference has been updated and split into two.	Replace the reference with BS EN BS EN 10025-1:2004 and BS EN 10025-2:2004.
GEO6:8006-1	107	3a	This reference document is: Superseded, Withdrawn.	The current document(s) is (are): BS8006-1:2010	The reference has been updated and split into two, however only one is relevant to reinforced soil.	Replace the reference with BS 8006-1:2010.
GEO6:10319-1	107	3a	This reference document is: Revised, Withdrawn.	The current document(s) is (are): BS EN ISO 10319:2008	The reference has been updated.	Replace the reference with BS EN ISO 10319:2008.
GEO6:10321-1	107	3a	This reference document is: Revised, Withdrawn.	The current document(s) is (are): BS EN ISO 10321:2008	The reference has been updated.	Replace the reference with BS EN ISO 10321:2008.
GEO6:4449-1	108	3a	This reference document is: Revised, Withdrawn.	The current BS document(s) is (are): BS4449:2005+A2:2009 but local standard CS2:2012 provides an alternative local reference and includes for the use of Grade 500 steel	The reference has been updated.	Replace the reference with local standard CS2:2012
GEO6:8110-1	108	4a	This reference document is: Superseded, Withdrawn.	The current document(s) is (are): BS EN 1992-1-1:2004	The replacement of the original standard by several new standards means that no single standard covers all the citations in Geoguide 6.	Replace the reference with BS EN 1992-1-1:2004, BS8500-1:2006+A1:2012, BS8500-2:2006+A1:2012 and BS EN 206-1:2000.
GEO6:4483-1	0	3a	This reference document is: Revised, Withdrawn.	The current document(s) is (are): BS4483:2005	There is no reference to this document.	Insert reference for BS 4483:2005.
GEO6:1461-1	108	3a	This reference document is: Revised, Withdrawn.	The current document(s) is (are): BS EN ISO 1461:2009	The reference has been updated.	Replace the reference with BS EN ISO 1461:2009.
GEO6:10130-1	108	3a	This reference document is: Revised, Withdrawn.	The current document(s) is (are): BS EN	The reference has been updated.	Replace the reference with BS EN ISO 10130:2006.

Table G3 - Description of Standards, Differences and Recommended Amendments

ID No.	Page no.	Scope of Updating	Description of Design, Specification and/or Testing Required		Effects of differences in Adopting Up-to-date Standard(s)	Recommended Amendments
			Quoted Standard(s)	Up-to-date Standard(s)		
GEO6:410-1	108	1	This reference document is: Current.	The current document(s) is (are): BS410-1:2000	No change.	Existing reference to be retained.
GEO6:5950-1	108	4a	This reference document is: Superseded, Withdrawn.	The current document(s) is (are): BS EN 1993-1-1:2005 BS EN 1993-1-5:2006 BS EN 1993-1-8:2005 BS EN 1993-1-10:2005 BS EN 1993-5:2007 BS EN 1993-6:2007	The superseding documents do not address the requirements of Geoguide 6. Relevant advice is now concentrated in BS EN 14475:2006.	Replace the reference with BS EN 14475:2006.
GEO6:3692-1	108	1	This reference document is: Confirmed, Current.	The current document(s) is (are): BS3692:2001	No change.	Existing reference to be retained.
GEO6:4190-1	108	1	This reference document is: Confirmed, Current.	The current document(s) is (are): BS4190:2001	No change.	Existing reference to be retained.
GEO6:10002-1	108	4a	This reference document is: Superseded, Withdrawn.	The current document(s) is (are): BS EN ISO 6892-1:2009	The reference has been superseded.	Replace the reference with BS EN ISO 6892-1:2009.
GEO6:14475-1	108	2	This reference document is: Superseded, Withdrawn.	The current document(s) is (are): BS EN 14475:2006	There are no citations to this reference.	Delete the reference.

Table G4 - Recommended Revisions to Existing Clauses referring to British Standards

Page no.	BS Referenced in Technical Guidance Document	Scope of Updating (1)	ID No.	Existing Content of Technical Guidance Document	Recommended Content for Updated Technical Guidance Document
37	BS EN 10025:1993 BS4449:1997 BS EN 10002-1:2001	3a 3a 4a	GEO6:10025-2 GEO6:4449-2 GEO6:10002-2	Metallic reinforcement are usually made from galvanised steel and formed as strips, grids or anchors. The strength properties of the common carbon steel elements for reinforced fill applications can be found in BS EN 10025 (BSI, 1993) and BS 4449 (BSI, 1997). The tensile strength of steel reinforcement used in permanent works should be tested in accordance with BS EN 10002-1 (BSI, 2001).	Metallic reinforcement are usually made from galvanised steel and formed as strips, grids or anchors. The strength properties of the common carbon steel elements for reinforced fill applications can be found in BS EN 10025-1 (BSI, 2004b), BS EN 10025-2 (BSI, 2004c) and CS2:2012. The tensile strength of steel reinforcement used in permanent works should be tested in accordance with BS EN ISO 6892-1 (BSI, 2009b).
37	BS EN ISO 10319:1996	3a	GEO6:10319-2	Polymeric reinforcement are commonly manufactured from polyester fibres and high density polyethylene (HDPE) grids. Polymeric grids can be manufactured from drawn polymer sheets containing holes or formed from woven/knitted or solid structural polymeric elements (e.g. polymeric strips/bars) welded or knitted together (Figure 23(a)). The tensile strength of polymeric reinforcement used in permanent works should be tested in accordance with BS EN 10319 (BSI, 1996).	Polymeric reinforcement are commonly manufactured from polyester fibres and high density polyethylene (HDPE) grids. Polymeric grids can be manufactured from drawn polymer sheets containing holes or formed from woven/knitted or solid structural polymeric elements (e.g. polymeric strips/bars) welded or knitted together (Figure 23(a)). The tensile strength of polymeric reinforcement used in permanent works should be tested in accordance with BS EN 10319 (BSI, 2008a).
42	BS8006:1995	3a	GEO6:8006-2	Polymeric reinforcement are generally more sensitive to construction damage. The effect of construction damage on polymeric reinforcement is to reduce the tensile strength but the deformation modulus (stiffness) is normally not affected. The amount of construction damage is dependent upon the nature of the reinforcement, the type of fill used and the compacting effort. The effects of construction damage to the tensile strength of polymeric reinforcement is considered in design by the use of partial factors applied to the tensile strength of the as-manufactured material (see Section 6.5.3(3)). The partial factor is determined by recovering the reinforcement from test sites and comparing the tensile properties with those of the pre-installed material. A site damage test for any form of reinforcement used in reinforced fill applications is detailed in BS 8006 (BSI, 1995).	Polymeric reinforcement are generally more sensitive to construction damage. The effect of construction damage on polymeric reinforcement is to reduce the tensile strength but the deformation modulus (stiffness) is normally not affected. The amount of construction damage is dependent upon the nature of the reinforcement, the type of fill used and the compacting effort. The effects of construction damage to the tensile strength of polymeric reinforcement is considered in design by the use of partial factors applied to the tensile strength of the as-manufactured material (see Section 6.5.3(3)). The partial factor is determined by recovering the reinforcement from test sites and comparing the tensile properties with those of the pre-installed material. A site damage test for any form of reinforcement used in reinforced fill applications is detailed in BS 8006-1 (BSI, 2010).
42	BS EN ISO 10321:1996 BS EN 10002-1:2001	3a 4a	GEO6:10321-2 GEO6:10002-2	All connections used in permanent works should be tested in accordance with BS EN ISO 10321 (BSI, 1996) for polymeric reinforcement and BS EN ISO 10002-1 (BSI, 2001) for steel reinforcement.	All connections used in permanent works should be tested in accordance with BS EN ISO 10321 (BSI, 2008b) for polymeric reinforcement and BS EN ISO 6892-1 (BSI, 2009b) for steel reinforcement.
43	BS449-2:1969 BS5400-4:1990 BS8110:1997 BS5950-1:2000	4a 4a 4a 4a	GEO6:449-2 GEO6:5400-2 GEO6:8110-2 GEO6:5950-2	Depending on the material to be used, the strength of the facing and connection materials should be obtained from the relevant standards, e.g. BS 5400: Part 4 (BSI, 1990), BS 8110: Part 1 (BSI, 1997) or Buildings and Lands Department (1987a) for reinforced concrete, and BS 449 : Part 2 (BSI, 1969), BS 5950 : Part 1 (BSI, 2000) or Buildings and Lands Department (1987b) for steel. Where the structure is part of a private development, the requirements of the Buildings Ordinance (Laws of Hong Kong, CAP 123) must be complied with.	Depending on the material to be used, the strength of the facing and connection materials should be obtained from the relevant standards, e.g. BS EN 206-1 (BSI, 2000), BS EN 1992-1-1 (BSI, 2004a) or Buildings and Lands Department (1987a) for reinforced concrete, and BS EN 14475 (BSI, 2006b) or Buildings and Lands Department (1987b) for steel. Where the structure is part of a private development, the requirements of the Buildings Ordinance (Laws of Hong Kong, CAP 123) must be complied with.
43	BS8110:1997	4a	GEO6:8110-3	(1) Reinforced concrete. Facings formed from reinforced concrete should be durable. Where sulphates are present in the backfill, subsoil or groundwater, reference may be made to BS 8110: Part 1 (BSI, 1997) for guidance on the selection of cement type and mix proportions to ensure durability.	(1) Reinforced concrete. Facings formed from reinforced concrete should be durable. Where sulphates are present in the backfill, subsoil or groundwater, reference may be made to BS EN 206-1 (BSI, 2000), BS8500-1 (BSI, 2012a), and BS8500-2 (BSI, 2012b) for guidance on the selection of cement type and mix proportions to ensure durability.
77	BS8006:1995	3a	GEO6:8006-3	Metallic sections that are coupled together and not in contact with the soil can still corrode (BS 8006), a sacrificial thickness of 0.5 times the value given in Table 2 should be deducted from each internal surface of all component parts in close metal-to-metal contact or wholly enclosed within the connection.	Metallic sections that are coupled together and not in contact with the soil can still corrode. A sacrificial thickness of 0.5 times the value given in Table 2 should be deducted from each internal surface of all component parts in close metal-to-metal contact or wholly enclosed within the connection (BS 8006-1 (BSI, 2010)).
107	BS4320:1968	1	GEO6:4320-1	BSI (1968). Specification for metal washers for general engineering purposes. Metric series (BS 4320:1968). British Standards Institution, London.	No change.
107	BS449-2:1969	4a	GEO6:449-1	BSI (1969). Specification for the use of structural steel in building. Metric units (BS 449:Part 2:1969). British Standards Institution, London.	*[Delete], [Replacement shared with GEO6:5950-1]*
107	BS5400-4:1990	4a	GEO6:5400-1	BSI (1990). Steel, concrete and composite bridges. Code of practice for design of concrete bridges (BS 5400: Part 4:1990). British Standards Institution, London.	*[Delete], [Replacement references shared with GEO6:8110-1]*

Table G4 - Recommended Revisions to Existing Clauses referring to British Standards

Page no.	BS Referenced in Technical Guidance Document	Scope of Updating (1)	ID No.	Existing Content of Technical Guidance Document	Recommended Content for Updated Technical Guidance Document
107	BS1377-1:1990	2	GEO6:1377A-1	BSI (1990). Methods of test for soils for civil engineering purposes. General requirements and sample preparation (BS 1377: Part 1:1990). British Standards Institution, London.	*[Delete], [No citations therefore not required.]*
107	BS1377-3:1990	1	GEO6:1377B-1	BSI (1990). Methods of test for soils for civil engineering purposes. Chemical and electrochemical tests (BS 1377: Part 3:1990). British Standards Institution, London.	No change.
107	BS1449-1:1991	1	GEO6:1449-1	BSI (1991). Steel plate, sheet and strip. Carbon and carbon-manganese plate, sheet and strip. General specification (BS 1449: Part 1:1991). British Standards Institution, London.	No change.
107	BS2782-4:1993	1	GEO6:2782-1	BSI (1993). Methods of testing plastics. Chemical properties. Determination of carbon black content of polyolefin compound (BS 2782-4:Method 452B:1993). British Standards Institution, London.	No change.
107	BS EN 10025:1993	3a	GEO6:10025-1	BSI (1993). Hot rolled products of non-alloy structural steels. Technical delivery conditions (BS EN 10025:1993). British Standards Institution, London.	BSI (2004b). Hot Rolled Products of Structural Steels - Part 1. General Technical Delivery Conditions (BS EN 10025-1:2004). British Standards Institution, London, 36p. BSI (2004c). Hot rolled Products of Structural Steels - Part 2. Technical Delivery Conditions for Non-alloy Structural Steels (BS EN 10025-2:2004). British Standards Institution, London, 38p.
107	BS8006:1995	3a	GEO6:8006-1	BSI (1995). Code of Practice for strengthened/reinforced soil and other fills (BS 8006:1995). British Standards Institution, London.	BSI (2010). Code of Practice for Strengthened/Reinforced Soils and other Fills (BS 8006-1:2010). British Standards Institution, London, 260p.
107	BS EN ISO 10319:1996	3a	GEO6:10319-1	BSI (1996). Geotextiles. Wide-width tensile test (BS EN ISO 10319:1996). British Standards Institution, London.	BSI (2008a). Geosynthetics. Wide-width Tensile Test (ISO 10319:2008) (BS EN ISO 10319:2008). British Standards Institution, London, 18p.
107	BS EN ISO 10321:1996	3a	GEO6:10321-1	BSI (1996). Geotextiles. Tensile test for joints/seams by wide-width method (BS EN ISO 10321:1996). British Standards Institution, London.	BSI (2008b). Geosynthetics. Tensile Test for Joints/Seams by Wide-width Strip Method (ISO 10321:2008) (BS EN ISO 10321:2008). British Standards Institution, London, 20p.
108	BS4449:1997	3a	GEO6:4449-1	BSI (1997). Specification for carbon steel bars for the reinforcement of concrete (BS 4449:1997). British Standards Institution, London.	Construction Standard CS2:2012, Steel Reinforcing Bars for the Reinforcement of Concrete. The Government of the Hong Kong Special Administrative Region, Hong Kong 50p.
108	BS8110:1997	4a	GEO6:8110-1	BSI (1997). Structural use of concrete. Part 1 – Code of practice for design and construction (BS 8110:1997). British Standards Institution, London.	BSI (2000). Concrete - Part 1: Specification, Performance, Production and Conformity (BS EN 206-1:2000). British Standards Institution, London, 74p. BSI (2004a). Eurocode 2: Design of Concrete Structures - Part 1-1. General Rules and Rules for Buildings (BS EN 1992-1-1:2004). British Standards Institution, London, 230p. BSI (2012a). Concrete - Complementary British Standard to BS EN 206-1 - Part 1: Method of Specifying and Guidance for the Specifier (BS 8500-1:2006+A1:2012). British Standards Institution, London, 66p. BSI (2012b). Concrete - Complementary British Standard to BS EN 206-1 - Part 2: Specification for Constituent Materials and Concrete (BS 8500-2:2006+A1:2012). British Standards Institution, London, 52p.
108	BS EN ISO 1461:1999	3a	GEO6:1461-1	BSI (1999). Hot dip galvanized coatings on Fabricated iron and steel articles. Specifications and test methods (BS EN ISO 1461:1999). British Standards Institution, London.	BSI (2009a). Hot Dip Galvanized Coatings on Fabricated Iron and Steel Articles - Specifications and Test Methods (ISO 1461:2009) (BS EN ISO 1461:2009). British Standards Institution, London, 24p.
108	BS EN ISO 10130:1999	3a	GEO6:10130-1	BSI (1999). Cold-rolled low-carbon steel flat products for cold forming. Technical delivery conditions (BS EN 10130:1999). British Standards Institution, London.	BSI (2006a). Cold-rolled Low Carbon Steel Flat Products for Cold Forming - Technical Delivery Conditions (BS EN 10130:2006). British Standards Institution, London, 16p.
108	BS410-1:2000	1	GEO6:410-1	BSI (2000). Test sieves. Technical requirements and testing. Test sieves of metal wire cloth (BS 410-1:2000, ISO 3310-1:2000). British Standards Institution, London.	BSI (2000). Test sieves. Technical requirements and testing. Test sieves of metal wire cloth (BS 410-1:2000, ISO 3310-1:2000). British Standards Institution, London.
108	BS5950-1:2000	4a	GEO6:5950-1	BSI (2000). Structural use of steelwork in building. Code of practice for design. Rolled and welded sections (BS 5950-1:2000). British Standards Institution, London.	BSI (2006b). Execution of Special Geotechnical Works - Reinforced Fill (BS EN 14475:2006). British Standards Institution, London, 60p.

Table G4 - Recommended Revisions to Existing Clauses referring to British Standards

Page no.	BS Referenced in Technical Guidance Document	Scope of Updating (1)	ID No.	Existing Content of Technical Guidance Document	Recommended Content for Updated Technical Guidance Document
108	BS3692:2001	1	GEO6:3692-1	BSI (2001). ISO metric precision hexagon bolts, screws and nuts. Specification (BS 3692:2001). British Standards Institution, London.	BSI (2001). ISO metric precision hexagon bolts, screws and nuts. Specification (BS 3692:2001). British Standards Institution, London.
108	BS4190:2001	1	GEO6:4190-1	BSI (2001). ISO metric black hexagon bolts, screws and nuts. Specification (BS 4190:2001). British Standards Institution, London.	BSI (2001). ISO metric black hexagon bolts, screws and nuts. Specification (BS 4190:2001). British Standards Institution, London.
108	BS EN 10002:2001	4a	GEO6:10002-1	BSI (2001). Tensile testing of metallic materials. Method of test at ambient temperature (BS EN 10002-1:2001). British Standards Institution, London.	BSI (2009b). Metallic Materials - Tensile Testing - Part 1: Method of Test at Ambient Temperature (BS EN ISO 6892-1:2009). British Standards Institution, London, 76p.
108	prEN 14475	2	GEO6:14475-1	BSI (2002). Execution of special geotechnical works – Reinforced fill (Draft for public comment) (prEN 14475). British Standards Institution, London.	*[Delete], [No citations therefore not required.]*
	BS4482:1985	3a	GEO6:4482-1	*[No existing reference]*	BSI (2005b). Steel wire for the Reinforcement of Concrete Products - Specification (BS 4482:2005). British Standards Institution, London, 30p.
	BS4483:1998	3a	GEO6:4483-1	*[No existing reference]*	BSI (2005a). Steel fabric for the Reinforcement of Concrete - Specification (BS 4483:2005). British Standards Institution, London, 18p.
	Additional reference required				GEO (2001). Model Specification for Soil Testing (Geospec 3). Geotechnical Engineering Office, Hong Kong, 340p.
120	BS8006:1995	3a	GEO6:8006-4	*Table 2 - Sacrificial Thickness to be Allowed on Each Surface of Galvanised Steel Exposed to Corrosion in Selected Fill. Note (1) states*: Values based on BS 8006 (BSI, 1995).	*Table 2 - Sacrificial Thickness to be Allowed on Each Surface of Galvanised Steel Exposed to Corrosion in Selected Fill. Note (1) states*: Values based on BS 8006-1 (BSI, 2010).
125	BS8006:1995	3a	GEO6:8006-5	*Table 9 - Tolerance of Reinforced Fill Facing Systems to Differential Settlement. Note (1) states*: Table based on BS 8006 (BSI, 1995).	*Table 9 - Tolerance of Reinforced Fill Facing Systems to Differential Settlement. Note (1) states*: Table based on BS 8006-1 (BSI, 2010).
125	BS8006:1995	3a	GEO6:8006-6	*Table 10 - Minimum Vertical Movement Capacities Required for Facing Systems to Cope with Vertical Internal Settlement of Reinforced Fill. Note states*: Values based on BS 8006 (BSI, 1995).	*Table 10 - Minimum Vertical Movement Capacities Required for Facing Systems to Cope with Vertical Internal Settlement of Reinforced Fill. Note states*: Values based on BS 8006-1 (BSI, 2010).
158	BS8006:1995	3a	GEO6:8006-7	*Figure 26 - Connections in Geotextiles and Polymeric Reinforcement. Note states*: Figure based on BS 8006 (BSI, 1995).	*Figure 26 - Connections in Geotextiles and Polymeric Reinforcement*. Note states: Figure based on BS 8006-1 (BSI, 2010).
196	BS8110:1997	4a	GEO6:8110-4	*In Model Specification clause A.12 (1) (a)*: reinforced concrete conforming to BS 8110: 1997,	*In Model Specification clause A.12 (1) (a)*: reinforced concrete conforming to BS EN 206-1:2000, BS 8500-1:2006+A1:2012 and BS 8500-2:2006+A1:2012,
196	BS4482:1985 BS1449-1:1991 BS EN 10025:1993 BS4483:1998 BS EN 10130:1999	3a 1 3a 3a 3a	GEO6:4482-2 GEO6:1449-2 GEO6:10025-3 GEO6:4483-2 GEO6:10130-2	*In Model Specification clause A.12 (1) (b)*: carbon steel strips, sheets or mesh conforming to BS 1449: 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	*In Model Specification clause A.12 (1) (b)*: carbon steel strips, sheets or mesh conforming to BS 1449: 1991, BS 4482: 2005, BS 4483: 2005, BS EN 10025-1: 2004, BS EN 10025-2: 2004 or BS EN 10130: 2006. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,
196	BS EN 10025:1993	3a	GEO6:10025-4	*In Model Specification clause A.12 (1) (c)*: structural steel sections conforming to BS EN 10025:1993. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	*In Model Specification clause A.12 (1) (c)*: structural steel sections conforming to BS EN 10025-1: 2004 and BS EN 10025-2: 2004. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,
196	BS4482:1985 BS1449-1:1991 BS EN 10025:1993 BS4483:1998 BS EN 10130:1999	3a 1 3a 3a 3a	GEO6:4482-3 GEO6:1449-3 GEO6:10025-5 GEO6:4483-3 GEO6:10130-3	*In Model Specification clause A.13 (1) (a)*: metallic reinforcing elements formed from carbon steel conforming to BS 1449 : 1991, BS 4482: 1995, BS 4483: 1998, BS EN 10025: 1993 or BS EN 10130: 1999. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,	*In Model Specification clause A.13 (1) (a)*: metallic reinforcing elements formed from carbon steel conforming to BS 1449-1 : 1991, BS 4482: 2005, BS 4483: 2005, BS EN 10025-1: 2004, BS EN 10025-2: 2004 or BS EN 10130: 2006. The fabricated components shall be hot-dip galvanized in accordance with Clause A.14,
197	BS3692:2001	1	GEO6:3692-2	*In Model Specification clause A.13 (2) (a)*: precision hexagon bolts, screws and nuts conforming to BS 3692: 2001,	No Change.
197	BS4190:2001	1	GEO6:4190-2	*In Model Specification clause A.13 (2) (b)*: black hexagon bolts, screws and nuts conforming to BS 4190: 2001,	No Change.
197	BS4320:1968	1	GEO6:4320-2	*In Model Specification clause A.13 (2) (c)*: plain washers conforming to BS 4320: 1968,	No Change.
197	BS4482:1985 BS EN 10025:1993 BS4449:1997	3a 3a 3a	GEO6:4482-4 GEO6:10025-6 GEO6:4449-3	*In Model Specification clause A.13 (2) (d)*: dowels and rods which shall be made from either steel bar conforming to BS 4449: 1997 or steel conforming to BS 4482: 1985 or BS EN 10025: 1993,	*In Model Specification clause A.13 (2) (d)*: dowels and rods which shall be made from either steel bar conforming to CS2:2012 or steel conforming to BS 4482: 2005, BS EN 10025-1: 2004 or BS EN 10025-2: 2004,

Table G4 - Recommended Revisions to Existing Clauses referring to British Standards

Page no.	BS Referenced in Technical Guidance Document	Scope of Updating (1)	ID No.	Existing Content of Technical Guidance Document	Recommended Content for Updated Technical Guidance Document
197	BS4482:1985 BS1449-1:1991 BS EN 10025:1993 BS EN 10130:1999	3a 1 3a 3a	GEO6:4482-5 GEO6:1449-4 GEO6:10025-7 GEO6:10130-4	*In Model Specification clause A.13 (2) (e)*: tie strips which shall be made from carbon steel strip conforming to BS 1449: Part 1: 1991, BS 4482: 1985, BS EN 10025: 1993, or BS EN 10130: 1999,	*In Model Specification clause A.13 (2) (e)*: tie strips which shall be made from carbon steel strip conforming to BS 1449-1: 1991, BS 4482: 2005, BS EN 10025-1: 2004, BS EN 10025-2: 2004, or BS EN 10130: 2006,
197	BS EN ISO 1461:1999	3a	GEO6:1461-2	*In the Model Specification*: Hot-dip galvanizing A.14 Hot-dip galvanizing shall be to BS EN ISO 1461: 1999, except that the minimum average zinc coating weight for the steel reinforcing elements specified in Clause A.13 shall be 610 g/m2 (85 microns) for land-based structures or slopes and 1000 g/m2 (140 microns) for structures or slopes that are periodically submerged in water.	*In the Model Specification*: Hot-dip galvanizing A.14 Hot-dip galvanizing shall be to BS EN ISO 1461: 2009, except that the minimum average zinc coating weight for the steel reinforcing elements specified in Clause A.13 shall be 610 g/m2 (85 microns) for land-based structures or slopes and 1000 g/m2 (140 microns) for structures or slopes that are periodically submerged in water.
199	BS410-1:2000, ISO 3310-1:2000	4b	GEO6:410-2	*In the Model Specification: Table A.1 - Properties of Selected Fill Material. Note states*: No dispersant shall be used in the determination of particle size distribution.	*In the Model Specification: Table A.1 - Properties of Selected Fill Material. Note states*: (1) No dispersant shall be used in the determination of particle size distribution. (2) BS Sieve Sizes are in accordance with BS 410-1:2000, ISO 3310-1:2000.
199	BS410-1:2000, ISO 3310-1:2000	4b 5	GEO6:410-3 GEO6:8006-8	*In the Model Specification: Table A.2 - Allowable Electrical and Chemical Limits of Selected Fill and Granular Filter. Notes state*: (1) Submerged structure means a structure that is periodically submerged in water but excluding marine condition and contaminated or saline water. (2) The measurement of organic content shall be carried out for clayey soils where more than 15% passes a 63 microns BS Sieve Size. (3) The measurement of either redox potential or microbial activity index shall be carried out for clayey soils with an organic content in excess of the specified limit.	*In the Model Specification: Table A.2 - Allowable Electrical and Chemical Limits of Selected Fill and Granular Filter. Notes state*: (1) Submerged structure means a structure that is periodically submerged in water but excluding marine condition and contaminated or saline water. (2) The measurement of organic content shall be carried out for clayey soils where more than 15% passes a 63 microns BS Sieve Size. (3) The measurement of redox potential shall be carried out for clayey soils with an organic content in excess of the specified limit. (4) BS Sieve Sizes are in accordance with BS 410-1:2000, ISO 3310-1:2000.
211	BS EN 10002-1:2001	4a	GEO6:10002-4	*In the Model Specification*: Testing: tensile test A.40 (1) The tensile strength of metallic reinforcing element and reinforcement connection shall be determined in accordance with BS EN 10002-1: 2001 or other test method as approved by the Engineer.	*In the Model Specification*: Testing: tensile test A.40 (1) The tensile strength of metallic reinforcing element and reinforcement connection shall be determined in accordance with BS EN ISO 6892-1:2009 or other test method as approved by the Engineer.
211	BS EN ISO 10319: 1996 BS EN ISO 10321: 1996	3a 3a	GEO6:10319-3 GEO6:10321-3	*In the Model Specification*: Testing: tensile test A.40 (2) The tensile strength of polymeric reinforcing element shall be determined in accordance with BS EN ISO 10319: 1996. The tensile strength of polymeric reinforcement connection shall be determined in accordance with BS EN ISO 10321: 1996.	*In the Model Specification*: Testing: tensile test A.40 (2) The tensile strength of polymeric reinforcing element shall be determined in accordance with BS EN ISO 10319: 2008. The tensile strength of polymeric reinforcement connection shall be determined in accordance with BS EN ISO 10321: 2008.
211	BS EN ISO 1461: 1999	3a	GEO6:1461-3	*In the Model Specification*: Testing: weight/thickness and uniformity of galvanized coating A.42 The weight/thickness and uniformity of galvanized coating shall be determined in accordance with BS EN ISO 1461: 1999.	*In the Model Specification*: Testing: weight/thickness and uniformity of galvanized coating A.42 The weight/thickness and uniformity of galvanized coating shall be determined in accordance with BS EN ISO 1461: 2009.
211	BS2782-4:Method 452B:1993	1	GEO6:2782-2	*In the Model Specification*: Testing: carbon black content A.43 The carbon black content of polymeric reinforcing element shall be determined in accordance with BS 2782: Part 4 Method 452B (1993).	*In the Model Specification*: Testing: carbon black content A.43 The carbon black content of polymeric reinforcing element shall be determined in accordance with BS 2782: Part 4 Method 452B (1993).
214	BS1377-3:1990	1	GEO6:1377B-2	*In the Model Specification*: Testing: resistivity A.52 The method of testing shall be in accordance with the method as stated in BS 1377: Part 3: 1990, test 10.4.	No change.
214	BS1377-3:1990	4a	GEO6:1377B-3	*In the Model Specification*: Testing: organic content A.53 The method of testing shall be in accordance with the method as stated in BS 1377: Part 3: 1990, test 3.	*In the Model Specification*: Testing: organic content A.53 The method of testing shall be in accordance with the method as stated in Geospec 3, clause 9.
214	BS1377-3:1990	1	GEO6:1377B-4	*In the Model Specification*: Testing: redox potential A.54 The method of testing shall be in accordance with the method as stated in BS 1377: Part 3: 1990, test 11.	No change.

Table G4 - Recommended Revisions to Existing Clauses referring to British Standards

Page no.	BS Referenced in Technical Guidance Document	Scope of Updating (1)	ID No.	Existing Content of Technical Guidance Document	Recommended Content for Updated Technical Guidance Document
214	BS8006:1995	5	GEO6:8006-8	*In the Model Specification*: TESTING: FILL MATERIAL – MICROBIAL ACTIVITY INDEX Testing: microbial activity indexA.55 The method of testing shall be in accordance with the method as stated in BS 8006: 1995, annex B.	*In the Model Specification*: TESTING: FILL MATERIAL – [INTENTIONAL BLANK] Testing: [intentional blank] A.55 [intentional blank]