

<b>Central Data Bank</b> <b>List of Building Materials</b>
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**A. General**

Department:	Buildings
Type of building material:	Structural Fixing
Applications:	Drill-in/Cast-in Anchors

**B. Acceptance criteria****Testing standards:**

Testing of drill-in anchors and cast-in anchors should be in accordance with BS 5080.

**Conditions of Acceptance:**

- The factor of safety of structural fixing systems (drill-in anchors and cast-in anchors) shall not be less than 3.
- Structural fixing systems shall be properly installed and securely fixed to the parent structure in accordance with the manufacturer's specifications/recommendations.
- Suitability of the structural fixing system in terms of fire performance as well as any need for fire protection of the exposed parts of the fixing system shall be considered individually.
- Where drill-in anchors are used for cladding works or for supporting steel cantilevered canopy structures, strength tests on a representative number of the drill-in anchors may be required.

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 001	Fischer Steel Anchors Types EA M8, M12 & M16	fischerwerke Artur Fischer GmbH & Co. KG	Zinc-plated steel, or stainless steel A4.	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	University of Hong Kong, Department of Civil & Structural Engineering	A-MIS-487, A-MIS-488	January 1991	18/01/2005	No-objection letter issued in 1991. The application of the anchors is to be considered individually with regard to the fire resistance aspect.
BD-AF 002	Fischer Steel Anchors Types FB 8/50, 10/50 & 12/50	fischerwerke Artur Fischer GmbH & Co. KG	Zinc-plated steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	University of Hong Kong, Department of Civil & Structural Engineering	A-MIS-487, A-MIS-488	January 1991	18/01/2005	No-objection letter issued in 1991. The application of the anchors is to be considered individually with regard to the fire resistance aspect.
BD-AF 003	Hemax 820 Parallel Expansion Bolts M8, M10, M12, M16 & M20	Harris & Edgar Limited	Grade 303 austenitic stainless steel	Drill-in anchors fixed in concrete base material and subject to axial tension and shear. Details and load capacities of the anchors are as shown in appendix A to BD's letter Ref. BD GR/SEG/AF(9) of 6 September 1993.	BS 5080: Part 1: 1974  BS 5080: Part 2: 1986	N/A  NAMAS	John Laing Research and Development Limited.  Laing Technology Group Limited	RD/82/116/ST  TS931095	August 1982  July 1993	18/01/2005	No-objection letter issued in 1993. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.

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						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 004	Hilti HHS Self-drilling Anchor	Hilti (Hong Kong) Limited	Galvanized steel	Medium duty drill-in anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1984. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 005	Hilti HKD Anchor	Hilti (Hong Kong) Limited	N/A	Medium duty drill-in anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1984. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 006	Hilti HSA Stud Anchor	Hilti (Hong Kong) Limited	N/A	Medium duty drill-in anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1984. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 007	Hilti HSA – 303 Stud Anchor M8, M10 & M12	Hilti Corporation	Stainless steel grade 303	Drill-in anchors fixed in concrete base material and subject to axial tension and shear. Details and load capacities of the anchors are as shown in appendices A & B to BD's letter Ref. (3) in BD GR/SEG/AF(13) of 1 March 1994.	BS 5080: Parts 1 & 2	N/A	Hong Kong University, Civil Engineering Department Testing Laboratory	AN-1 AN-2	January 1994	18/01/2005	No-objection letter issued in 1994. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 008	Hilti HSC Safety Anchor AM8x40, AM8x50, AM10x40, AM12x60, IM8x40, IM10x50, IM10x60 & IM12x60	Hilti Aktiengesellschaft	Galvanized steel	Drill-in anchors fixed in concrete base material and subject to axial tension and shear. Details and load capacities of the anchors are as shown in appendix A to BD's letter Ref. (15) in BLD(B) GR/SEG/AF(6) of 8 July 1993.	BS 5080: Parts 1 & 2	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN56 AN57 AN82	May 1992 May 1992 June 1993	18/01/2005	No-objection letter issued in 1993. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 009	Hilti HSL Heavy Duty Anchor	Hilti (Hong Kong) Limited	Grade 8.8 galvanized steel	Heavy duty drill-in anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1984. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 010	Hilti HSL-TZ Heavy Duty Anchor M8, M10, M12, M16 & M20	Hilti Corporation	Zinc galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	University of Hong Kong, Department of Civil & Structural Engineering	AN11 AN24 AN25	October 1991 December 1991	18/01/2005	No-objection letter issued in 1992. The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 011	Hilti HST-R Safety Anchor M8, M10, M12, M16, M20 & M24	Hilti Corporation	Stainless steel A4	Drill-in anchors fixed in uncracked concrete base material and subject to axial tension and shear. Details and load capacities of the anchors are as shown in appendix A to BD's letter Ref. (19) in BD GR/SEG/AF(6) of 15 December 1993.	BS 5080: Parts 1 & 2	N/A	Hong Kong University, Civil Engineering Department Testing Laboratory	AN85 AN86	August 1993 September 1993	18/01/2005	No-objection letter issued in 1993. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 012	Hilti HVA Adhesive Anchor	Hilti (Hong Kong) Limited	N/A	Heavy duty anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1984. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 013	Ramset Chemset Chemical Anchor	Ramset Fasteners (H.K.) Ltd.	N/A	Heavy duty anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1989. The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 014	Ramset Dynabolt Anchor	Ramset Fasteners (H.K.) Ltd.	N/A	Medium duty anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1989. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 015	Ramset Dynaset Anchor	Ramset Fasteners (H.K.) Ltd.	N/A	Medium duty anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1989. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 016	Ramset Terrier Self-drilling Anchor	Ramset Fasteners (H.K.) Ltd.	N/A	Medium duty anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1989. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 017	Ramset Trubolt Anchor	Ramset Fasteners (H.K.) Ltd.	N/A	Medium duty anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1989. The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 018	Rawlplug Kemfix Chemical Anchor M8, M10, M12, M16, M20 & M24	Rawlplug Company Ltd.	Zinc plated, or stainless steel (grade 303)	Drill-in chemical anchors subject to axial tension and shear. Load capacities of the anchors are as shown in appendix C to BD's letter Ref. (19) in BD GR/SEG/AF(10)	BS5080 equivalent	N/A	Swedish National Testing Institute	87B1.1801	1988	18/01/2005	No-objection letter issued in 1994. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 019	Rawlplug Rawlbolt M6, M8, M10, M12, M16, M20 & M24	Rawlplug Company Ltd.	Zinc plated steel	Drill-in anchors subject to axial tension and shear. Load capacities of the anchors are as shown in appendix A to BD's letter Ref. (19) in BD GR/SEG/AF(10)	BS 5080 equivalent	N/A	Thornliebank	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1994. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.

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						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 020	Rawlplug Tufbolt M6, M8, M10, M12, M16 & M20	Rawlplug Company Ltd.	Zinc plated, or stainless steel (grade 303 or 316)	Drill-in anchors subject to axial tension and shear. Load capacities of the anchors are as shown in appendix A to BD's letter Ref. (14) in BD GR/SEG/AF(10)	BS 5080 equivalent	N/A	Thornliebank	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1993. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 021	Spit Fix Anchor M10 & M12	Signode Hong Kong Ltd.	Stainless steel grade 303	Drill-in anchors subject to axial tension and shear.	Testing methods were given in the test reports.	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	A-MIS-477 A-MIS-480 A-MIS-478 A-MIS-481	August 1990 August 1990 August 1990 August 1990	18/01/2005	No-objection letter issued in 1990. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 022	Spit Fix Anchor M16	Signode Hong Kong Ltd.	Grade 5.8 steel.	Drill-in anchors subject to axial tension and shear.	Testing methods were given in the test reports.	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	A-MIS-474 A-MIS-482	July 1990 August 1990	18/01/2005	No-objection letter issued in 1990. The application is to be considered individually with regard to the fire resistance aspect.



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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 023	Sunway Anchor Bolt Model SW-M-10	Sunway Metal Manufactory	Stainless steel (SUS 304)	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1974  BS 5080: Part 2: 1986	N/A	MaterialLab Limited  Engineering Materials Research & Laboratories Ltd.  OPP Testing Services Ltd.	910064t10008	January 1991	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Quality control procedures for manufacturing of the anchors should be in accordance with the Sunway's Quality Control Procedures (Revision A) and the subsequent amendment to the sampling rate of the pull-out and shear tests s, submitted to BD on 28.8.92 and 22.10.92 respectively. Tests for quality control and workmanship may be required during construction.
								901714t4858	August 1990		
								PD/2257/89	January 1989		
								SL0972	July 1991		
BD-AF 024	Upat EXA Express Anchor M6 & M12	Upat GmbH & Co.	Stainless steel grade 303 for M6 Stainless steel grade A1 for M12	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2, or otherwise as stated in the test reports.	N/A	University of Hong Kong, Department of Civil and Structural Engineering	A-MIS-484 A-MIS-485  AN5 AN6	September 1990  July 1991	18/01/2005	No-objection letters issued in 1990 and 1991. The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 025	Upat EXA Express Anchor M8 & M10	Upat GmbH & Co.	Stainless steel grade A1-70	Drill-in anchors subject to axial tension and shear. Details and load capacities of the anchors are as shown in appendix A to BD's letter Ref. (31) in BLD(B) GR/SEG/AF(4).	BS 5080: Parts 1 & 2	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN64 AN65  AN62 AN63	September 1992  August 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 026	Upat EXA Express Anchor M6, M8, M10, M12, M16 & M20	Upat GmbH & Co.	Zinc-plated steel, or hot-dipped galvanized steel.	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	University of Hong Kong, Department of Civil and Structural Engineering	AN5 AN6  AN20 AN22	July 1991  November 1991	18/01/2005	No-objection letters issued in 1991, 1992 and 1993. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 027	Upat PSE 14/25 Anchor M10	Upat GmbH & Co.	Zinc-plated steel	Heavy duty drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	University of Hong Kong, Department of Civil and Structural Engineering	AN5 AN6	July 1991	18/01/2005	No-objection letter issued in 1991. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 028	Upat PSE 18/25 Anchor M12	Upat GmbH & Co.	Zinc-plated steel	Heavy duty drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	University of Hong Kong, Department of Civil and Structural Engineering	AN21 AN23	November 1991	18/01/2005	No-objection letter issued in 1992. The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 029	Upat PSE 24/25 Anchor M16	Upat GmbH & Co.	Zinc-plated grade 8.8 steel	Heavy duty drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN55 AN53	April 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 030	Upat PSE 28/25 Anchor M20	Upat GmbH & Co.	Zinc-plated grade 8.8 steel	Heavy duty drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN55 AN53	April 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.

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						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 031	Upat UKA-3 EAP Chemical Anchor M8, M10, M12 & M16	Upat GmbH & Co.	Chemical anchor consists of a stainless steel (grade 316) threaded stud with nut and washer and a glass capsule containing quartz aggregate, epoxy acrylate resin and a small glass capsule containing the hardener.	Chemical anchor with anchorage to be achieved by the bond formed by the cured chemical mortar between the stud and the surrounding concrete.	BS 5080: Parts 1 & 2, or otherwise as stated in the test reports.	N/A	University of Hong Kong, Department of Civil and Structural Engineering	A-MIS-486 A-MIS-487  AN5 AN6	September 1990  July 1991	18/01/2005	No-objection letters issued in 1990 and 1991. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 032	Upat UKA-3 EAP Chemical Anchor M20 & M24	Upat GmbH & Co.	Chemical anchor consists of a zinc-plated steel (grade 5.8) threaded stud with nut and washer and a glass capsule containing quartz aggregate, epoxy acrylate resin and a small glass capsule containing the hardener.	Chemical anchor with anchorage to be achieved by the bond formed by the cured chemical mortar between the stud and the surrounding concrete.	BS 5080: Parts 1 & 2	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN54 AN52	April 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.

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						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 033	Upat USA Wedge Anchor M8, M10 & M12	Upat GmbH & Co.	Stainless steel grade A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN59 AN60	May 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 034	HIT-C100 Injection System for Deformed Reinforcement	Hilti (Hong Kong) Ltd.	Modified epoxy acrylate resin adhesive	Injection system for grouting of deformed reinforcement.	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1990. The application of this rebar system is to be considered individually with regard to the fire resistance.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 035	Hilti HIT-Rebar Fastenings	Hilti Corporation	Two-component adhesive based on resin and cementitious agents.	Anchorage of Y10 & Y16 deformed reinforcement as structural fixing in concrete base material for internal building works only. Setting details, recommended load capacities and the user guide are as shown in appendices A & B to BD's letter Ref. (17) in BD GR/SEG/ADH(1)	BS 5080: Part 1: 1993	N/A	Hong Kong University, Civil Engineering Department Testing Laboratory	MI-960181 MI-960182	June 1996	18/01/2005	No-objection letter issued in 1996. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
					BS 5080: Part 2: 1986	N/A	Hong Kong University, Civil Engineering Department Testing Laboratory	MI-960178 MI-960177	June 1996		
BD-AF 036	Ramset Chemset Injection System	Ramset Fasteners (H.K.) Ltd.	N/A	Chemical injection system for heavy duty anchor fixing.	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1989. The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 037	Red Head Epcon Ceramic 6 Injection System M16 & M20	Signode Hong Kong Ltd.	N/A	Chemical injection system for anchor fixing.	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1990. This anchor system is not to be used for fire resisting construction.

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BD-AF 038	Halfen HTA Cast-in Channel Type HTA 52/34 (52x34x5.2kg./m [, with M10, M12, M16 or M20 bolts)	Halfeneisen GmbH & Co.	Channel: hot-dip galvanized mild steel grade St 37-2, or stainless steel grade A4 Bolt: grade 4.6 steel	Cast-in channels used as structural fixings in building works. Details and load capacities of the cast-in channels are as shown in appendix A to BD's letter Ref. (9) in BLD(B) GR/SEG/5/8(III) .	BS 5080: Part 1: 1974, or otherwise as stated in the test reports.	HOKLAS	Testconsult Far East Ltd.	S/017/90/1	January 1991	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
						N/A	Wiss, Janney, Elstner Associates, Inc.	WJE No. 880203	November 1988		
BD-AF 039	Halfen HTA Cast-in Channel Type HTA 50/30 (50x30x3.4kg./m [, with M10, M12, M16 or M20 bolts)	Halfeneisen GmbH & Co.	Channel: hot-dip galvanized mild steel grade St 37-2 Bolt: grade 4.6 steel, or stainless steel grade A4	Cast-in channels used as structural fixings in building works. Details and load capacities of the cast-in channels are as shown in appendix A to BD's letter Ref. BD GR/SEG/5/8(III) of 13 April 1994.	BS 5080: Part 1: 1974  BS 5080: Part 2: 1986	HOKLAS	Department of Civil & Structural Engineering, Hong Kong Polytechnic	N/A	April 1993	18/01/2005	No-objection letter issued in 1994. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
						HOKLAS	Department of Civil & Structural Engineering, Hong Kong Polytechnic	N/A	January 1994		

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BD-AF 040	Halfen HTA Cast-in Channel Type HTA 40/22 (40x22x2.2kg/m[, with M10, M12 or M16 bolts)	Halfeneisen GmbH & Co.	Channel: hot-dip galvanized mild steel grade St 37-2 Bolt: grade 4.6 steel, or stainless steel grade A4	Cast-in channels used as structural fixings in building works. Details and load capacities of the cast-in channels are as shown in appendix A to BD's letter Ref. (9) in BLD (B) GR/SEG/5/8(III) of 18 November 1992.	BS 5080: Part 1: 1974, or otherwise as stated in the test reports.	HOKLAS  N/A	Testconsult Far East Ltd.  Wiss, Janney, Elstner Associates, Inc.	S/017/90/1  WJE No. 880203	January 1991  November 1988	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
BD-AF 041	Halfen HTA Cast-in Channel Type HTA 38/17 (38x17x1.8kg/m[, with M10, M12 or M16 bolts)	Halfeneisen GmbH & Co.	Channel: hot-dip galvanized mild steel grade St 37-2, stainless steel grades A2 or A4 Bolt: grade 4.6 steel, stainless steel grades A2 or A4	Cast-in channels used as structural fixings in building works. Details and load capacities of the cast-in channels are as shown in appendix A to BD's letter Ref. (23) in BD GR/SEG/5/8(III) of September 1993.	BS 5080: Part 1: 1974, or otherwise as stated in the test reports.	HOKLAS  N/A	Department of Civil & Structural Engineering, Hong Kong Polytechnic  Wiss, Janney, Elstner Associates, Inc.	N/A  WJE No. 880203	April 1993  November 1988	18/01/2005	No-objection letter issued in 1993. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.



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BD-AF 042	Jordahl Anchor Channel Type JTA W 54/40/4.0 (54x40x5.19kg/m[, with Type B bolts of M10, M12, M16 or M20].	Jordahl Deutsche Kahneisen Gesellschaft West GmbH.	Channel: mild steel grade St37-2 Bolt: grade 4.6 steel or stainless steel grade A4	Anchor channels used as structural fixings in building works. Details and load capacities of the anchor channels are as shown in appendix A to BD's letter Ref. (11) in BLD(B) GR/SEG/AF(8) of 9 November 1992.	BS 5080: Part 1, or otherwise as stated in the test reports.	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN62	June 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
						N/A	Institute for Material Testing (BAM)	2..2/195414	March 1980		
BD-AF 043	Jordahl Anchor Channel Type JTA W 50/30/3.0 (50x30x3.2kg/m[, with Type B bolts of M10, M12, M16 or M20].	Jordahl Deutsche Kahneisen Gesellschaft West GmbH.	Channel: mild steel grade St37-2 Bolt: grade 4.6 steel or stainless steel grade A4	Anchor channels used as structural fixings in building works. Details and load capacities of the anchor channels are as shown in appendix A to BD's letter Ref. (11) in BLD(B) GR/SEG/AF(8) of 9 November 1992.	BS 5080: Part 1, or otherwise as stated in the test reports.	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN62	June 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
						N/A	Institute for Material Testing (BAM)	2..2/191531	January 1979		

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 044	Jordahl Anchor Channel Type JTA W 40/22/2.5 (40x22x2.04kg/m], with Type C bolts of M10, M12 or M16]	Jordahl Deutsche Kahneisen Gesellschaft West GmbH.	Channel: mild steel grade St37-2 Bolt: grade 4.6 steel or stainless steel grade A4	Anchor channels used as structural fixings in building works. Details and load capacities of the anchor channels are as shown in appendix A to BD's letter Ref. (11) in BLD(B) GR/SEG/AF(8) of 9 November 1992.	BS 5080: Part 1, or otherwise as stated in the test reports.	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN62	June 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
						N/A	Institute for Material Testing (BAM)	2..2/191531	January 1979		
BD-AF 045	Jordahl Anchor Channel Type JTA K 38/17/3.0 (38x17x1.78kg/m], with Type H bolts of M10, M12 or M16].	Jordahl Deutsche Kahneisen Gesellschaft West GmbH.	Channel: mild steel grade St37-2 or stainless steel grade A4 Bolt: grade 4.6 steel or stainless steel grade A4	Anchor channels used as structural fixings in building works. Details and load capacities of the anchor channels are as shown in appendix A to BD's letter Ref. (11) in BLD(B) GR/SEG/AF(8) of 9 November 1992.	BS 5080: Part 1, or otherwise as stated in the test reports.	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN62	June 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
						N/A	Institute for Material Testing (BAM)	2..2/191531	January 1979		

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 046	Jordahl Anchor Channel Type JSA K 28/15/2.3 (28x15x1.11kg /m[, with Type D bolts of M6, M8 or M10]	Jordahl Deutsche Kahneisen Gesellschaft West GmbH.	Channel: mild steel grade St37-2, stainless steel grades A4 or A2 Bolt: grade 4.6 steel or stainless steel grade A4	Anchor channels used as structural fixings in building works. Details and load capacities of the anchor channels are as shown in appendix A to BD's letter Ref. (11) in BLD(B) GR/SEG/AF(8) of 9 November 1992.	BS 5080: Part 1, or otherwise as stated in the test reports.	HOKLAS	Hong Kong University, Civil Engineering Department Testing Laboratory	AN51	March 1992	18/01/2005	No-objection letter issued in 1992. Structural applications which may be exposed to fire will be considered individually. Tests for quality control and workmanship may be required during construction.
						N/A	Institute for Material Testing (BAM)	2..2/191531	January 1979		
BD-AF 047	TRW Nelson Deformed Anchor Stud Bar Type D2L	TRW Nelson Stud Welding Division, Control & Fasteners Group	Bars of diameters of 16mm and 19mm conforming to ASTM-A-496.	Deformed anchor stud bars used as concrete connectors in building works.	Steel bars were subjected to tensile and bend tests in accordance with BS 4449: 1978. Tensile and shear tests were also conducted on stud welded samples.	N/A	MateriaLab Limited	901865m10099	February 1991	18/01/2005	No-objection letter issued in 1991. The application of the anchors is to be considered individually with regard to the fire resistance aspect. Quality control tests on sufficient samples of completed stud connections may be required to be conducted at a HOKLAS accredited laboratory.
BD-AF 048	Ramset Concrete Insert	Ramset Fasteners (H.K.) Ltd.	N/A	Medium duty anchors	N/A	N/A	N/A	N/A* * Test report could not be retrieved.	N/A	18/01/2005	No-objection letter issued in 1989. The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 049	Hilti HSL-3 Heavy Duty Anchor M12 & M20	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	023097ST22409 023097ST22411 023097ST22409(1) 023097ST22411(1)	2 January 2003 2 January 2003 2 January 2003 2 January 2003	28/04/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 050	Hilti HSC-A Safety Anchor M10x40	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	Hong Kong University, Civil Engineering Department Testing Laboratory	AN56 AN57 AN82	May 1992 May 1992 June 1993	28/04/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 051	Fischer FAZ 16/25/146 Anchor Bolt M16	Fischerwerke Artur Fischer GmbH & Co KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1 In house method based on BS 5080: Part 2: 1986	HOKLAS N/A	Hong Kong Curtain Wall Testing Centre Ltd.	SF-0052R7283 SF-T0088R7283	5 February 2005 5 February 2005	28/04/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 052	Hilti HIT-RE 500 injection adhesive with anchor rod M42	Hilti Corporation	Epoxy resin system for chemical fastening with grade SUS316 anchor rod.	Anchors for installation of rubber fenders..	BS 5080: Part 1: 1993. BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	042835ST41894 A 042835ST41895 A	2 November 2004 2 November 2004	28/04/2005	The application is to be considered individually with regard to the fire resistance aspect, if applicable.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 053	Hilti HIT-HY 150 injection adhesive with Grade 460 rebar of diameter of 16mm	Hilti Corporation	Hybrid resin system for fixing of galvanized Grade 460 rebar anchor.	Anchors for fixing of outdoor ancillary amenities.	BS 5080: Part 1	N/A	Hong Kong University, Civil Engineering Department Testing Laboratory	AN-44	15 March 1995	28/04/2005	The application is to be considered individually with regard to the fire resistance aspect, if applicable.
BD-AF 054	Hilti HIT-HY 150 injection adhesive with Grade 460 rebar of diameter of 32mm	Hilti Corporation	Hybrid resin system for fixing of galvanized Grade 460 rebar anchor	Anchors for fixing of outdoor ancillary amenities.	In house method based on BS 5080: Part 1	N/A	Hong Kong Testing Co., Ltd.	H06099M1487	17 November 1999	28/04/2005	The application is to be considered individually with regard to the fire resistance aspect, if applicable.
BD-AF 055	Hilti HDA-T self-undercut anchor M10, M12, M16 & M20	Hilti Corporation	Galvanized grade 8.8 steel	Anchors for shear connections	BS 5080: Part 2: 1986	N/A	MaterialLab Limited	000324ST00430(1)	19 April 2000	03/08/2005	The application is to be considered individually with regard to the fire resistance aspect.
					In-house method			000324ST00430(3)	19 April 2000		
								000324ST00430(5)	19 April 2000		
							Fugro Technical Services Limited	040547ST40553 A	31 March 2004		
BD-AF 056	Hilti HSL-3 Heavy Duty Anchor M16	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993.	N/A	Fugro Technical Services Limited	023097ST22410	2 January 2003	03/08/2005	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986			023097ST22410(1)	2 January 2003		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 057	Hilti HSL-3 Heavy Duty Anchor M10	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	023097ST22408 023097ST22408(1)	2 January 2003 2 January 2003	03/08/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 058	Ramset Trubolt stud anchor T08090SS M8x90	Ramset Fasteners (Aust) Pty Limited	Grade 316 stainless steel	Heavy duty torque setting expansion anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	A.E.S. Destructive & Non-destructive Testing Ltd.	GS03-0733 AMD No. 1	Test date is available but not the report date	03/08/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 059	Hilti HSL-GR Heavy Duty Anchor M12/25	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear	BS 5080: Part : 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50383 FDA50429	26 May 2005 8 June 2005	03/08/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 060	Fischer FZA 18x100 M12 D/20 A4 Anchor Bolt M12	Fischerwerke Artur Fischer GmbH & Co KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	In house method based on HKHA MTS (2000/2002) Specification and BS 5080: Part 1: 1993	HOKLAS	Castco Testing Centre Ltd.	BD/MISCEL 240427-1	29 April 2004	26/10/2005	The application is to be considered individually with regard to the fire resistance aspect.
					In house method based on BS 5080: Part 2: 1986	N/A	Castco Testing Centre Ltd.	BD/MISCEL 240910-1 BD/MISCEL 240910-2 BD/MISCEL 240910-3 BD/MISCEL 240910-4 BD/MISCEL 240910-5	13 September 2004		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 061	Hilti HIT-RE 500 injection adhesive with Grade 460 rebar of diameter of 12mm	Hilti Corporation	Epoxy resin system for fixing of galvanized Grade 460 rebar anchor.	Anchors for installation of balustrade (not for fire resisting construction)	BS 5080: Part 1: 1993	N/A	Fugro Technical Services Limited	020323ST20500	Report certified on 13 June 2002.	26/10/2005	The application is to be considered individually with regard to the fire resistance aspect, if applicable.
BD-AF 062	Fischer EA M6 A4 Anchor Bolt M6	Fischerwerke Artur Fischer GmbH & Co KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 In house method based on BS 5080: Part 2: 1986	N/A	Hong Kong Testing Co., Ltd. Castco Testing Centre Ltd.	1001503M00354 BD/MISCEL 250712-9	7 March 2003 14 July 2005	26/10/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 063	Jordahl Anchor Channel Type JTA W 53/34 with Type B bolts of M16 or M20	Deutsche Kahneisen Gesellschaft mbH	Channel: hot-dip galvanized mild steel grade St 37-2 Bolt: grade 4.6 steel	Anchor channels used as structural fixings in building works.	BS 5080: Part 1: 1993	UKAS CNAL	CERAM Building Technology National Centre for Quality Supervision and Test of Building Engineering	SW032.02 BETC-CL1-2005-54	21 March 2002 23 March 2005	26/10/2005	The application is to be considered individually with regard to the fire resistance aspect. Shear load capacity shall be limited to not exceeding the tensile load capacity.
BD-AF 064	Hilti HSL-3 Heavy Duty Anchor M24	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993. BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	023097ST22412 023097ST22412(1)	2 January 2003 2 January 2003	26/10/2005	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 065	Hilti HSL-3 Heavy Duty Anchor M8	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993. BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	023097ST22407 023097ST22407(1)	2 January 2003 2 January 2003	26/10/2005	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 066	Hilti HDA-TR self-undercut anchor M16x190/40	Hilti Corporation	A4-80 stainless steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50469 FDA50399	9 June 2005 30 May 2005	03/02/2006	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 067	Ramset ChemSet CS12160 Stud Anchor grouted in EPCON G5 M12x80mm embedment	Ramset Fasteners (Aust) Pty Limited	Zinc-plated steel of grade 5.8	Steel threaded studs grouted with chemical injection mortar.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA51110 FDA51111	24 November 2005 24 November 2005	03/02/2006	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 068	Hilti HSA-R stud anchor M10	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50772 FDA50730	6 September 2005 30 August 2005	03/02/2006	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 069	MKT Wedge Anchor B8-10/75	Metall-Kunststoff-Technik GmbH & Co. KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	993114ST10286(4) 993114ST10286(5)	31 March 2001 31 March 2001	21/04/2006	The application is to be considered individually with regard to the fire resistance aspect.



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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 070	Hilti HIT-HY 150	Hilti Corporation	Hybrid resin system	Injection system for making nominal anchorage connections of Grade 460 rebars of diameters up to 25mm in reinforced concrete elements up to 4 hrs. FRP.	BS 476: Part 20: 1987	UKAS	Warrington Fire Research Centre	WFRC No. C121086	25 September 2002	21/07/2006	The assessment report no. WFRC No. C121086 is valid until 1 October 2007. Load carrying capacity of the injection system for rebar fixing under the effects of fire should be assessed with an appropriate factor of safety compatible with the structural design of the parent structure. Reference can also be made to ref. BD-FP 054 under the .
BD-AF 071	Hilti HIT-RE 500	Hilti Corporation	Epoxy resin system	Injection system for making nominal anchorage connections of Grade 460 rebars of diameters up to 40mm in reinforced concrete elements up to 4 hrs. FRP.	BS 476: Part 20: 1987	UKAS	Warrington Fire Research Centre	WFRC No. C121086	25 September 2002	21/07/2006	The assessment report no. WFRC No. C121086 is valid until 1 October 2007. Load carrying capacity of the injection system for rebar fixing under the effects of fire should be assessed with an appropriate factor of safety compatible with the structural design of the parent structure. Reference can also be made to ref. BD-FP 055 – Fire Protection Material for Structural Use.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 072	Macsim Wedge Anchor 38S10100 M10	Macsim Fastenings Pty Ltd.	Grade 316 stainless steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Hong Kong Testing Co., Ltd.	M019206M02093 M019206M02597	22 May 2006 27 June 2006	20/10/2006	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 073	Ramset TRIGA Z Heavy Duty Anchor V12-18/25 M12	SPIT	Zinc plated grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50179 FDA50180	3 March 2005 3 March 2005	20/10/2006	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 074	Ramset TRIGA Z Heavy Duty Anchor V16-24/25 M16	SPIT	Zinc plated grade 8.8 steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50313 FDA50569	23 April 2005 21 July 2005	20/10/2006	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 075	MKT Wedge Anchor B6 (setting depth /embedded length: 50mm) Anchor diameter: 6mm	Metall-Kunststoff-Technik GmbH & Co. KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	012720ST21677 012720ST21677(1)	17 September 2002 17 September 2002	20/10/2006	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 076	Hilti HDA-TR self-undercut anchor M12x125/30	Hilti Corporation	A4-80 stainless steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50476A FDA50397	28 October 2005 30 May 2005	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 077	Hilti HIT-RE 500 injection adhesive with HAS ER M20 rods	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA61247 FDA61253	6 September 2006 6 September 2006	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 078	Hilti HIT-HY 150 injection adhesive with HAS-E M20 rods.	Hilti Corporation	Hybrid resin system for fixing grade 5.8 galvanized steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA61313 FDA61318	15 September 2006 15 September 2006	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 079	Hilti HSL-GR Heavy Duty Anchor M16/25	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50435 FDA50431	8 June 2005 8 June 2005	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 080	Hilti HSA-R stud anchor M12	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear	BS 5080: Part 1: 1993. BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50774 FDA50732	6 September 2005 30 August 2005	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 081	Hilti HSA-R stud anchor M16	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993. BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA50780 DA50734	6 September 2005 30 August 2005	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 082	Hilti HST-R stud anchor M16	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear	BS 5080: Part : 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA51018 FDA51078	9 November 2005 14 November 2005	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 083	Hilti HIT-RE 500 injection adhesive with HAS ER M16 rods	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part : 1993 BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA61246 FDA61252	6 September 2006 6 September 2006	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 084	MKT Wedge Anchor B8 (setting depth /embedded length: 55mm) Anchor diameter: 8mm	Metall-Kunststoff-Technik GmbH & Co. KG	Hot dip galvanized steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	053357ST51586 053357ST51586 (1)	9 February 2006 9 February 2006	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 085	MKT Wedge Anchor B10 (setting depth /embedded length: 60mm) Anchor diameter: 10mm	Metall-Kunststoff-Technik GmbH & Co. KG	Hot dip galvanized steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	053357ST51595 053357ST51595 (1)	9 February 2006 9 February 2006	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 086	MKT Wedge Anchor B10-20/90	Metall-Kunststoff-Technik GmbH & Co. KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	993114ST10286 993114ST10286 (1)C	26 March 2001 11 August 2003	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 087	MKT Wedge Anchor B12-15/110	Metall-Kunststoff-Technik GmbH & Co. KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	N/A	Fugro Technical Services Limited	993114ST10286 (2)B 993114ST10286 (3)B	11 August 2003 11 August 2003	22/01/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 088	Hilti HSL-GR Heavy Duty Anchor M10	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA50394A FDA50425	24 May 2005 26 May 2005	25/04/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 089	Hilti HIT-RE 500 injection adhesive with HAS ER M20 rods	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA61247 FDA61253	29 August 2006 29 August 2006	25/04/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 090	Ramset EPCON G5 injection grout with M16 A4-80 Stainless steel Anchor Stud	ITW Red Head	Epoxy injection system for fastening of M16 A4-80 stainless steel anchor stud	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA70419A FDA70388A	28 February 2007 28 February 2007	25/04/2007	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 091	Ramset EPCON G5 injection grout with M30 Grade 8.8 Anchor Stud	ITW Red Head	Epoxy injection system for fastening of M30 Grade 8.8 anchor stud	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS  N/A	ETS-Testconsult Limited	FDA70317B  FDA70316B	13 February 2007  13 February 2007	18/10/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 092	Ramset Trubolt T10090SS (M10 x90mm) & T12140SS (M12x140mm )	Ramset Fasteners (Aust) Pty Limited	Grade 316 stainless Steel	Heavy duty torque setting expansion anchor subject to axial tension and shear	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS  N/A	ETS-Testconsult Limited	FDA51140A FDA60635  FDA60637 FDA60638	22 Nov 2005 17 May 2006  17 May 2006 17May 2006	18/10/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 093	Ramset EPCON G5 injection grout with Y32 and Y40 rebar	ITW Red Head	Epoxy injection system for fastening of Y32 and Y40 rebar	Injection adhesive rebar subject to axial tension only	BS 5080: Part 1: 1993	HOKLAS  N/A	ETS-Testconsult Limited	FDA50334  FDA50335	16 April 2005  16 April 2005	18/10/2007	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 094	Hilti HSA-R Stud Anchor M8	Hilti Corporation	Stainless Steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS  N/A	ETS-Testconsult Limited	FDA50776  FDA50728	27 July 2005  8 August 2005	18/10/2007	The application is to be considered individually with regard to the fire resistance aspect
BD-AF 095	Hilti HSC-IR Safety Anchor M10	Hilti Corporation	Stainless Steel A4 Internal Thread	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS  N/A	ETS-Testconsult Limited	FDA51054  FDA51035	27 October 2005  8 November 2005	18/10/2007	The application is to be considered individually with regard to the fire resistance aspect

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 096	Hilti HIT-RE 500	Hilti Corporation	Epoxy resin system	Injection system for making nominal anchorage connections of Grade 460 rebars of diameters up to 40mm in reinforced concrete elements up to 2 hrs. FRP.	BS 5080: Part 1: 1993.	N/A	Fugro Technical Services Limited	020323ST20493 020323ST20500 020323ST20501 020323ST20510 020323ST20538 020323ST20593 020323ST20607	12 June 2002	21/1/2008	The corresponding fire assessment report no. WF 166402 is valid until 1 November 2012 Load carrying capacity of the injection system for rebar fixing under the effects of fire should be assessed with an appropriate factor of safety compatible with the structural design of the parent structure. Reference can also be made to ref. BD-FP 077 - Fire Protection Material for Structural Use.
BD-AF 097	Hilti HSL-G-R Heavy Duty Anchor M20/30	Hilti Corporation	Stainless Steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA50466A	28 October 2005	21/1/2008	The application is to be considered individually with regard to the fire resistance aspect
					BS 5080: Part 2: 1986	N/A		FDA50433	8 June 2005		

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 098	Fischer Anchor FBN-Bolt (A4) M8/48, M10/50, M12/70 & M16/84	Fischerwerke Artur Fischer GmbH & Co KG	Stainless Steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 with modification for M8, M10	HOKLAS	Castco Testing Centre Ltd.	I001503M00355	7 March 2003	31/1/2008	The application is to be considered individually with regard to the fire resistance aspect
					In-house method based on BS 5080: Part 1: 1986 for M12, M16	HOKLAS		BD/MISCEL 260301-1	4 March 2006		
					BS 5080: Part 2: 1986 for M12	N/A		I001503M00355	7 March 2003		
					In-house method based on BS 5080: Part 2: 1986 for M8, M10, M16	N/A		BD/MISCEL 251027-8	3 November 2005		
								BD/MISCEL 270228-2	10 May 2007		
								BD/MISCEL 270228-6	7 June 2007		
BD-AF 099	Fischer Anchor FAZ-Anchor Bolt (A4) M8	Fischerwerke Artur Fischer GmbH & Co KG	Stainless Steel A4	Drill-in anchors subject to axial tension and shear.	In-house method based on BS 5080: Part 1: 1993	HOKLAS	Castco Testing Centre Ltd.	BD/MISCEL 270228-1	10 May 2007	31/1/2008	The application is to be considered individually with regard to the fire resistance aspect
					BS 5080: Part 2: 1986	N/A		BD/MISCEL 270228-4	7 June 2007		
BD-AF 100	Hilti HIT-RE 500 injection adhesive with HAS-ER M24 rods	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA61082 FDA61314	10 August 2006 30 September 2006	25/04/2008	The application is to be considered individually with regard to the fire resistance aspect.



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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 101	Upat EXA Express Anchor M8	Fischerwerke Artur Fischer GmbH & Co KG	Zinc-plated steel, or hot-dipped galvanized steel.	Drill-in anchors subject to axial tension and shear.	BS 5080: Parts 1 & 2	N/A	University of Hong Kong, Department of Civil and Structural Engineering	AN5 AN6  AN20 AN22	July 1991  November 1991	22/7/2008	It should be read in conjunction with BD-AF 026 Note on change of manufacturer.
BD-AF 102	Hilti HKD-SR Push-in Anchor M10 A4	Hilti Corporation	Stainless Steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993  BS 5080: Part 2: 1986	HOKLAS  N/A	ETS-Testconsult Limited	FDA50718A  FDA50790A	9 September 2005  20 September 2005	22/7//2008	Overall FOS shall not be less than 3.0. Manufactured shall be consulted in this aspect for design. The application is to be considered individually with regard to the fire resistance aspect
BD-AF 103	Fischer Anchor FBN M10/15 fvz	Fischerwerke Artur Fischer GmbH & Co KG	Hot-dipped galvanized steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993  BS 5080: Part 2: 1986	HOKLAS  N/A	Castco Testing Centre Ltd.	BD/MISCEL 240925-1  BD/MISCEL 240923-9	27 September 2004  28 September 2004	22/7/2008	Recommended load for design shall be determined from dividing the characteristic load by a FOS 3.0. The application is to be considered individually with regard to the fire resistance aspect

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 104	Fischer Anchor FAZ-Bolt (A4) M10, M12, M16, M20 & M24	Fischerwerke Artur Fischer GmbH & Co KG	Stainless Steel A4	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Castco Testing Centre Ltd.	BD/MISCEL 270412-4 BD/MISCEL 270228-3	10 May 2007 7 June 2007	22/7/2008	Recommended load for design shall be determined from dividing the characteristic load by a FOS 3.0.  The application is to be considered individually with regard to the fire resistance aspect
					BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Castco Testing Centre Ltd.	BD/MISCEL 251208-5 BD/MISCEL 270228-7	16 December 2005 7 June 2007		
					BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Hong Kong Curtain Wall Testing Centre Ltd	SF – 0052R7283 SF – T0088R7283	5 February 2005 5 February 2005		
					BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Castco Testing Centre Ltd.	BD/MISCEL 270412-5 BD/MISCEL 270412-7	10 May 2007 4 June 2007		
					BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Castco Testing Centre Ltd.	BD/MISCEL 270412-6 BD/MISCEL 270412-8	10 May 2007 4 June 2007		
BD-AF 105	Ramset Trubolt T16175SS (M16 x125mm)	Ramset Fasteners (Aust) Pty Limited	Grade 316 stainless Steel	Heavy duty torque setting expansion anchor subject to axial tension and shear	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA60636	24 May 2006	22/7/2008	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A		FDA60639	24 May 2006		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 106	Ramset EPCON G5 injection grout with Y12 & Y16 high yield dowel	ITW Red Head	Epoxy injection system for fastening of Y12 & Y16 high yield dowel bar	Injection adhesive anchor subject to axial tension only	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA50330 (for Y12) FDA 50331(for Y16)	23 April 2005 23 April 2005	22/7/2008	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 107	Fischer Anchor FBN M12/15 fvz	Fischerwerke Artur Fischer GmbH & Co KG	Hot-dipped galvanized steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Castco Testing Centre Ltd.	BD/MISCEL 240917-6 BD/MISCEL 240923-10	21 September 2004 28 September 2004	22/10/2008	Recommended load for design shall be determined from dividing the characteristic load by a FOS 3.0. The application is to be considered individually with regard to the fire resistance aspect
BD-AF 108	Hilti HIT-HY 150 injection adhesive with HAS-E M16 rods.	Hilti Corporation	Hybrid resin system for fixing grade 5.8 galvanized steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA61360 FDA61367	22 September 2006 22 September 2006	22/10/2008	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 109	Hilti HCS M8 x 40 Cast-in Socket	Hilti Corporation	A2 – 304 stainless steel	Cast-in socket used as structural fixing for M8 bolt/ threaded rod for fastening of cladding.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA60243 FDA60239	7 March 2006 7 March 2006	22/10/2008	The application is to be considered individually with regard to the fire resistance aspect. Tests for quality control and workmanship may be required during construction.

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 110	Hilti HIT-RE 500 injection adhesive with HAS-ER M8 and M10 rods	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor fixed on brickwork subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Qualitech Testing & Consultancy Limited.	20080730-BD-PL-02 20080730-BD-S-04	1 August 2008 1 August 2008	23/1/2009	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 111	Hilti HIT-RE 500 injection adhesive with HAS-ER M33 rods	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA61084 FDA61168	10 August 2006 24 August 2006	23/1/2009	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 112	Ramset Concrete Insert CIM10SS	Ramset Fasteners (Aust) Pty Limited	Grade304 stainless Steel	Cast-in insert used as structural fixing for M10 bolt/ threaded rod for fastening	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA81285 FDA81277	20 October 2008 20 October 2008	23/1/2009	The application is to be considered individually with regard to the fire resistance aspect. Tests for quality control and workmanship may be required during construction.
BD-AF 113	Nelton Tanchor Channel – HBC-52/26(3003) with T-bolt HB-M16	Shanghai Sishun Industry & Trade Co. Ltd.	Galvanized mild steel Channel: Grade Q235B Anchor stud : Grade Q195 T-bolt : Grade 8.8	Cast-in channel with inserted T-bolt subject to axial tension and shear	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Fugro Technical Service Ltd.	082615ST 80814 082615ST 80814(1)	9 December 2008 9 December 2008	23/1/2009	The application is to be considered individually with regard to the fire resistance aspect. Tests for quality control and workmanship may be required during construction.

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 114	Ramset EPCON A7 Injection Adhesive with M8 A4-80 Stud and M16 A4-80 Stud	ITW Red Head	Acrylic chemical injection for A4 stainless steel anchor bolt	Injection adhesive anchor stud subject to axial tension and shear	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA81100 (for M8 in tension)	4 September 2008	23/1/2009	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A		FDA 81101 (for M16 in tension)	4 September 2008		
								FDA81280 (for M8 in shear)	20 October 2008		
								FDA 81283 (for M16 in shear)	20 October 2008		
BD-AF 115	Ramset TRIGA Z-A4 Heavy Duty Anchor M8, M10, M12 & M16 V8-12/25 V10-15/25 V12-18/25 E16-24/25	SPIT	A4 Stainless Steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA81424 (for M8 in tension)	25 November 2008	23/1/2009	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A		FDA61177 (for M10 in tension)	24 August 2006		
								FDA61178 (for M12 in tension)	24 August 2006		
								FDA61179 (for M16 in tension)	24 August 2006		
								FDA81425 (for M8 in shear)	25 November 2008		
								FDA61180 (for M10 in shear)	24 August 2006		
								FDA61181 (for M12 in shear)	24 August 2006		
								FDA61182 (for M16 in shear)	24 August 2006		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 116	Fischer Anchor FBN M8/10 fvz	Fischerwerke Artur Fischer GmbH & Co KG	Hot-dipped galvanized steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	Castco Testing Centre Ltd.	BD/MISCEL 240917-4	21 September 2004	30/4/2009	Recommended load for design shall be determined from dividing the characteristic load by a FOS 3.0. The application is to be considered individually with regard to the fire resistance aspect
					BS 5080: Part 2: 1986	N/A		BD/MISCEL 250219-1	21 February 2005		
BD-AF 117	Hilti HVU adhesive capsule with HAS-ER-M24 anchor rod	Hilti Corporation	Urethane methacrylate resin for chemical fastening with grade A4 stainless steel anchor rod	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA61170A	30 August 2006	30/4/2009	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A		FDA61366	22 September 2006		
BD-AF 118	Hilti HIT-RE 500 injection adhesive with HAS-ER M12 rods	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA61245	6 September 2006	12/8/2009	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A		FDA61251	6 September 2006		
BD-AF 119	Fischer Anchor FBN M16/25 fvz	Fischerwerke Artur Fischer GmbH & Co KG	Hot-dipped galvanized steel	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	Castco Testing Centre Ltd.	BD/MISCEL 250112-52	17 January 2005	12/8/2009	Recommended load for design shall be determined from dividing the characteristic load by a FOS 3.0. The application is to be considered individually with regard to the fire resistance aspect
					BS 5080: Part 2: 1986	N/A		BD/MISCEL 250115-1	17 January 2005		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 120	Hilti HSC-IR Safety Anchor M12	Hilti Corporation	Stainless Steel A4 Internal Thread	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA51056	14 November 2005	4/11/2009	The application is to be considered individually with regard to the fire resistance aspect
					BS 5080: Part 2: 1986	N/A		FDA51037	14 November 2005		
BD-AF 121	Hilti HSC-IR Safety Anchor M8	Hilti Corporation	Stainless Steel A4 Internal Thread	Drill-in anchors subject to axial tension and shear.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA51053	14 November 2005	22/2/2010	The application is to be considered individually with regard to the fire resistance aspect
					BS 5080: Part 2: 1986	N/A		FDA51034	14 November 2005		
BD-AF 122	Hilti HIT-RE 500 injection adhesive with HAS-ER A4 M30 and M39 stainless steel anchor rod	Hilti Corporation	Epoxy resin system for chemical fastening with grade A4 stainless steel rod.	Injection adhesive anchor subject to axial tension and shear.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited	FDA61172 FDA61174 FDA61171 FDA61169	24 August 2006	3/5/2010	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 123	Sampag TSA Anchor Channel 41/25 with 2Nos Grade 4.6 ZP M16 T-bolt & Anchor Channel 51/31 with 2Nos Grade 4.6 ZP M20 T-bolt	Sampag Anchoring Systems Ltd.	Galvanized hot-rolled carbon steel Channel: Grade S235JRG2 to EN10025 Anchor stud : Grade S235JRG2 to EN10025 T-bolt : Grade 4.6 to EN ISO 898-1 Zinc Plated	Cast-in channel with inserted T-bolt subject to axial tension and shear	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	Castco Testing Centre Ltd	BD 0091007-12 to 16 BD 0090710-1 to 5 BD0090710-16 to 20 BD 0091007-17 to 21 BD 0090710-6 to 10 BD 0090710-11 to 15	14 July 2009 14 October 2009	25/8/2010	The application is to be considered individually with regard to the fire resistance aspect. Tests for quality control and workmanship may be required during construction.

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 124	Hilti HIT-RE 500 injection adhesive with HAS-E M16, M20, M24 & M33 Grade 8.8 threaded rod	Hilti Corporation	Epoxy resin system for chemical fastening with grade 8.8 threaded rod.	Injection system for making nominal anchorage connections of Grade 8.8 threaded rod in reinforced concrete elements up to 2 hrs. FRP.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA61246	6 September 2006	17/10/2011	The assessment report no. WFRC No. C121086 is valid until 1 October 2007. Load carrying capacity of the injection system for rebar fixing under the effects of fire should be assessed with an appropriate factor of safety compatible with the structural design of the parent structure.
					BS 5080: Part 2: 1986	N/A		FDA61252 FDA61247 FDA61253 FDA61082 FDA61314 FDA61084 FDA61168	6 September 2006  6 September 2006  6 September 2006  6 September 2006  10 August 2006  30 September 2006  10 August 2006  24 August 2006		
BD-AF 125	Hilti HST-R M12 stud anchor	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	Dakks/ ILAC	University of Dortmund	NR 02.02.38  NR 02.02.51	25 Sept 2002  24 Jan 2003	17/10/2011	The application is to be considered individually with regard to the fire resistance aspect.



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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 126	Hilti HSA M6 anchor bolt	Hilti Corporation	Galvanized carbon steel	Drill-in anchors subject to axial tension and shear for uncracked concrete.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS  N/A	ETS-Testconsult Limited	FDA50580 FDA50676	25 July 2005 11 August 2005	17/10/2011	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 127	Hilti HST-R M10, M16 anchor bolt	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	Dakks/ ILAC	University of Dortmund	NR 02.02.38 NR 02.02.51	25 September 2002 24 January 2003	17/10/2011	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 128	Hilti HSL-3 M10 anchor bolt	Hilti Corporation	Galvanized carbon steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	COFRAC	CSTB	NR 02.02.38 NR 02.02.51	25 September 2002 24 January 2003	17/10/2011	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 129	Hilti HSA M10 and M12 stud anchor	Hilti Corporation	Galvanized carbon steel	Drill-in anchors subject to axial tension and shear for uncracked concrete.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS  N/A	ETS-Testconsult Limited	FDA01776 FDA01777 FDA01778 FDA01779	31 December 2010	21/9/2012	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 130	Hilti HST-R M8, M12 and M16 anchor bolt	Hilti Corporation	Stainless steel	Drill-in anchors subject to axial tension and shear for cracked and uncracked concrete.	ETAG001	Dakks/ ILAC	University of Dortmund	NR 02.02.38 NR 02.02.51	25 September 2002 24 January 2003	21/9/2012	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 131	Nelton Tanchor Channel – HBZ-52/26(3504) with 2Nos. HB-M16 T-bolt	Shanghai Sishun Industry & Trade Co. Ltd.	Galvanized mild steel Channel: Grade Q235B Anchor stud : Grade Q195 T-bolt : Grade 8.8	Cast-in channel with inserted T-bolt subject to axial tension and shear	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS N/A	ETS-Testconsult Limited Fugro Technical Service Ltd	FDA11449 101164ST100529(3)	9 December 2008 9 December 2008	21/9/2012	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 132	Hilti Anchor Channel Channel - Type HAC-60 with 2Nos. HBC-C M16 bolts	Hilti Corporation	Channel: hot-dip galvanized mild steel grade S235 to BS EN 10025-2 Bolt: grade 8.8 steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked and uncracked concrete.	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986 CUAP 06.01/01 Common Understanding of Assessment Procedure for ETA-Anchor Channels	HOKLAS N/A Dakks/ ILAC	ETS-Testconsult Limited ETS-Testconsult Limited Hilti AG	FDA 10910 FDA 10911 P8Q-066	9 June 2011 8 June 2011 23 August 2011	21/9/2012	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 133	Hilti HSL-3 M16 anchor bolt	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	COFRAC	CSTB	ER 553 00 0520/part1	2 October 2002	21/1/2013	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 134	Hilti Anchor Channel - Type HAC-50 with 2Nos. HBC-C M16 bolts & Type HAC-70 with 2Nos. HBC-C M16 bolts	Hilti Corporation	Channel: hot-dip galvanized mild steel grade S235 to BS EN 10025-2 Bolt: grade 8.8 steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked and uncracked concrete.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA 10649 FDA 10804	18 April 2011 20 May 2011	21/1/2013	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA 10650 FDA 10805	18 April 2011 20 May 2011		
					CUAP 06.01/01 Common Understanding of Assessment Procedure for ETA-Anchor Channels	Dakks/ ILAC	Hilti AG	P8Q-066	23 August 2011		
BD-AF 135	Nelton Tanchor Channel – HBZ-52/26(3503) with 2Nos. HB-M16 T-bolt	Shanghai Sishun Industry & Trade Co. Ltd.	Galvanized mild steel Channel: Grade Q235B Anchor stud : Grade Q195 T-bolt : Grade 8.8	Cast-in channel with inserted T-bolt subject to axial tension and shear	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA11647	9 September 2011	2/4/2013	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A	Fugro Technical Service Ltd	101164ST100529(1)	13 January 2011		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 136	Hilti HDA-TR M12x125/30 anchor bolt	Hilti Corporation	Stainless steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	COFRAC	CSTB	ER 553 97022/part1	15 June 1999	3/7/2013	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 137	Sampag TSA Anchor Channel 51/31L with 2Nos Type TS 50 M20 Grade 8.8 T-bolt	Sampag International Limited	Hot-dip galvanized carbon steel Channel: Grade S235JRG2 to EN10025 Anchor stud : Grade S235JRG2 to EN10025 T-bolt : Grade 8.8 to EN ISO 898-1	Cast-in channel with inserted T-bolt subject to axial tension and shear	BS 5080: Part 1: 1993  BS 5080: Part 2: 1986	HOKLAS	Castco Testing Centre Ltd	BD 0091215-22 to 24 BD 0091215-26 BD 0091007-30 BD 0101027-11 to 15	16 August 2012	13/8/2013	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 138	Hilti Anchor Channel - Type HAC-40 with 2Nos. HBC-C M16 bolts	Hilti Corporation	Channel: hot-dip galvanized mild steel grade S235 to BS EN 10025-2 Bolt: grade 8.8 steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked and uncracked concrete.	BS 5080: Part 1: 1993  BS 5080: Part 2: 1986  CUAP 06.01/01 Common Understanding of Assessment Procedure for ETA-Anchor Channels	HOKLAS  N/A  Dakks/ ILAC	ETS-Testconsult Limited  ETS-Testconsult Limited  Hilti AG	FDA 10588  FDA 10589  P8Q-066	8 April 2011  8 April 2011  23 August 2011	13/8/2013	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 139	Ramset CIM Concrete Insert M12	Ramset Fasteners (Aust) Pty Limited	Grade 316 stainless steel	Cast-in insert subject to axial tension and shear for cracked and uncracked concrete	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA 60786	22 June 2006	17/10/2013	The application is to be considered individually with regard to usage with fire resistance and in cracked concrete. No test/ assessment report was provided for application in cracked concrete
					BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA 60787	22 June 2006		
BD-AF 140	Ramset Fix Z A4 anchor bolt M10	ITW SPIT	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA91236	23 October 2009	14/2/2014	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA91237	23 October 2009		
					ETAG001	COFRAC	CSTB	ER 553 02 0506/part1	3 June 2003		
BD-AF 141	Fischer FAZ II Anchor bolt M8, M10, M12 & M16	Fischerwerke GmbH & Co. KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	bmwfj	BOKU – IKI	ER1 ER3	February 2005 30 June 2008	14/2/2014	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 142	Halfen HZA Cast-in Channel Type HZA 41/27 350mm with 2Nos. HS 38/23 M16 T-head bolts	Halfen GmbH & Co. KG	Channel: hot rolled S275JR Bolt: grade 8.8	Cast-in channel with inserted T-head bolt subject to axial tension and shear for uncracked concrete.	BS 5080: Part 1: 1993	HOKLAS	Fugro Technical Service Ltd	090077ST90036	20 May 2009	14/2/2014	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A	Fugro Technical Service Ltd	090077ST90036 (1)	20 May 2009		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 143	Ramset EPCON G5 Injection Adhesive with Grade 460 high yield deformed bars of diameters 12mm to 40mm	ITW Red Head	Epoxy injection system	Injection system for making anchorage connections of Grade 460 rebars of diameters 12mm to 40mm in reinforced concrete elements up to 4 hrs. FRP.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA50330	23 April 2005	01/09/2014	The corresponding fire assessment review report no. 25276-00 is valid until 30 November 2015. Load carrying capacity of the injection system for rebar fixing under the effects of fire should be assessed with an appropriate factor of safety compatible with the structural design of the parent structure. Reference can also be made to ref. BD-FP 128 - Fire Protection Material for Structural Use.
								FDA50331	23 April 2005		
								FDA50332	23 April 2005		
								FDA50333A	19 May 2005		
								FDA50334	23 April 2005		
								FDA50335	23 April 2005		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 144	Sunway Anchor Bolt SW-E8, SW-E10 & SW-E12	Sunway Metal Manufactory	Grade 304/316 stainless steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	BS 5080: Part 1: 1993 and ETAG-001-Annex-A	N/A	Fugro Technical Service Ltd	124675ST130008 (9) to (11)	28 May 2013	1/12/2014	Test methods were not within the scope of HOKLAS accreditation of Fugro Technical Service Ltd. Reliability/Suitability tests to ETAG 001 and evaluation on reliability/suitability test results have not been carried out. The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986 and ETAG-001-Annex-A	N/A	Fugro Technical Service Ltd	124675ST130008 (6) to (8)	28 May 2013		
					BS 5080: Part 1: 1993 and in-house method STMS-2991 which refers to ETAG-001-Annex-A	N/A	Fugro Technical Service Ltd	124675ST130008 (3) to (5)	28 May 2013		
								113700ST110717, 113700ST110717 (1) & (2)	16 February 2012		
					BS 5080: Part 2: 1986 and in-house method STMS-3131 which refers to ETAG-001-Annex-A	N/A	Fugro Technical Service Ltd	124675ST130008, 124675ST130008 (1) & (2)	28 May 2013		
								114392ST120023	10 April 2012		
								114392ST120023 (2)	20 April 2012		
								120188ST120147	1 June 2012		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 145	Hilti Anchor Channel Channel - Type HAC-40 with 2Nos. HBC-C M12 bolts	Hilti Corporation	Channel: hot-dip galvanized mild steel grade S235 to BS EN 10025-2 Bolt: grade 8.8 steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked and uncracked concrete.	BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA 22371	10 December 2012	5/1/2015	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA 22362	10 December 2012		
					CUAP 06.01/01 Common Understanding of Assessment Procedure for ETA-Anchor Channels	Dakks/ ILAC	Hilti AG	P8Q-066	23 August 2011		
BD-AF 146	Hilti HSC-IR M12 anchor bolt	Hilti Corporation	Stainless steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	COFRAC	CSTB	ER 553 00 0518/part1	17 June 2002	23/7/2015	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 147	Halfen HTA Cast-in Channel Type HTA 55/42 450mm with 2Nos. HS 50/30 M16 T-head bolts	Halfen GmbH	Channel: hot rolled S275JR Bolt: grade 8.8	Cast-in channel with inserted T-head bolt subject to axial tension and shear	BS 5080: Part 1: 1993 BS 5080: Part 2: 1986	HOKLAS  N/A	Fugro Technical Service Ltd  Fugro Technical Service Ltd	102162ST100410  102162ST100410 (1)	18 October 2010  20 October 2010	24/8/2015	The application is to be considered individually with regard to the fire resistance aspect.



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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 148	Hilti HST3-R M16 anchor bolt	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear for cracked and uncracked concrete	ETAG001	Akkreditierung Austria	Bautechnische Versuchsanstalt	282/14	16 June 2015	12/5/2016	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 149	Hilti HST3-R M10 & M12 anchor bolts	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear for cracked and uncracked concrete.	ETAG001	Akkreditierung Austria  Dakks	Bautechnische Versuchsanstalt  Kiwa MPA Bautech GmbH Augsburg	280/14 281/14  A 9023a/2014	16 June 2015 16 June 2015  25 July 2014	30/12/2016	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 150	Hilti HSL-3 M8 & M12 anchor bolt	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	COFRAC	CSTB	ER 553 00 0520/part1	2 October 2002	20/2/2017	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 151	Hilti HST3-R M8 anchor bolt	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete.	ETAG001	Akkreditierung Austria	Bautechnische Versuchsanstalt	285/14	25 May 2015	30/3/2017	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 152	Hilti HIT-HY200 injectable Mortar with HIT-Z-R M16 A4 threaded rod	Hilti Corporation	Hybrid urethane methacrylate adhesive system for chemical fastening with Grade A4 stainless steel threaded rod.	Drill-in injectable mortar system for chemical anchor subject to axial tension and shear for both cracked and uncracked concrete	BS 5080	HOKLAS	ETS-Testconsult Limited	653/2013	12 April 2013	21/4/2017	The application is to be considered individually with regard to the fire resistance aspect.
					ETAG001/ ICC-ES AC 308	DAkKS	Kiwa MPA Bauteest GmbH	H253/02-12/18	30 March 2012		
					ETAG001/ ICC-ES AC 308	COFRAC	CSTB	EEM 10 26027562/B	24 February 2012		
BD-AF 153	Hilti HST3-R M20 & M24 anchor bolts	Hilti Corporation	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete.	ETAG001	Akkreditierung Austria	Bautechnische Versuchsanstalt	127/15 305/15	28 July 2015 25 January 2016	2/6/2017	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 154	Hilti HIT-HY 200 injectable mortar with Grade 500 rebars of diameters of 10mm and 12mm	Hilti Corporation	Hybrid urethane methacrylate adhesive grouting system for grade 500 rebar connection system	Drill-in injectable mortar system for grade 500 rebar subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	DAkKS COFRAC	Kiwa MPA Bauteest GmbH CSTB	A 9036-39/2010 EEM 10 26027562/A	August 2012 July 2010, Sept 2011	18/8/2017	The application is to be considered individually with regard to the fire resistance aspect.
BD-AF 155	Ramset Fix Z A4 anchor bolt M16	ITW SPIT	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	COFRAC	CSTB	ER 553 02 0506/part1	3 June 2003	27/11/2017	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 156	Sampag TSA Anchor Channel 51/31 with 2 Nos type TS50 M16 T-bolts	Sampag International Limited, Hong Kong	Hot-dip galvanized carbon steel Channel: Grade S235JR to EN10025 Anchor stud: Grade S235JR to EN10025 Tee-Bolts: Grade 8.8, EN ISO 898-1	Cast-in channel with inserted T-bolts subjected to axial tension and shear for both cracked and uncracked concrete	BS 5080: Part 1: 1993	HOKLAS	Castco Testing Centre Ltd	BD0121217-1; Castco LRN: BD0121206-38, 39, 40, 41, 42	14 December 2012	27/11/2017	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 2: 1986	HOKLAS	Fugro Technical Service Ltd	123044ST120483; Specimen ID: 4, 5, 6, 11, 22	25 January 2013		
					ASTM E 488 & ICC AC232	I.A.S.	Element Materials Technology, U.S.	ESP013231P.5131	12 August 2013		
BD-AF 157	Ramset Fix Z A4 anchor bolt M12	ITW SPIT	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	TAG001	COFRAC	CSTB	ER 553 02 0506/part1	3 June 2003	13/6/2018	The application is to be considered individually with regard to the fire resistance aspect.
					BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA91164	8 October 2009		
					BS 5080: Part 2: 1986	N/A	ETS-Testconsult Limited	FDA91169	8 October 2009		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 158	Halfen Cast-in Channel Hot Rolled HZA 38/23	Halfen GmbH	Channel: hot rolled S275JR and Stainless Steel A 4 EN 10088 1.4571 Bolt: grade 4.6, 8.8, A4-50, A4-70	Cast-in channel with inserted T-bolt subject to axial tension and shear under concrete slab and on RC beam.	BS 5080: Part 1: 1993 and reference to ETAG001 Annex A	N/A	Fugro Technical Service Ltd	130928ST130159 A	28 May 2013	22/11/2019	The application is to be considered individually with regard to usage with the fire resistance.  Test/Assessment report was provided for application in cracked concrete
					BS 5080: Part 2: 1986 and reference to ETAG001 Annex A	N/A	Fugro Technical Service Ltd	130928ST130159(1)A	29 May 2013		
					BS 5080:Part 1:1993	N/A	Fugro Technical Service Ltd	132219ST130361(1)	10 June 2013		
					AC232	N/A	Fugro Technical Service Ltd	150573ST150242(1)	13 April 2015		
BD-AF 159	Ramset Fix Z A4 M8 Stud Anchor	ITW SPIT	Stainless Steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG001	COFRAC	CSTB	ER 553 02 0506/ Part 1	24 January 2017	24/11/2020	The application is to be considered individually with regard to the fire resistance.
					BS 5080: Part 1: 1993	HOKLAS	ETS-Testconsult Limited	FDA91163	8 October 2009		
					BS 5080: Part 2: 1986	HOKLAS	ETS-Testconsult Limited	FDA91168	8 October 2009		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 160	Hilti HIT-HY 200 injectable mortar with Grade 500 rebars of diameters of 16mm, 20mm and 25mm	Hilti Corporation	Hybrid urethane methacrylate adhesive grouting system for grade 500 rebar connection system	Drill-in injectable mortar system for grade 500 rebar subject to axial tension for both cracked and uncracked concrete	ETAG001	DAkKS	Kiwa MPA Bautech GmbH	A 9036-39/2010	August 2012	6/4/2022	The application is to be considered individually with regard to the fire resistance aspect.
						COFRAC	CSTB	EEM 10 26027562/A	July 2010, Sept 2011		
						CNAS	National Center for Quality Supervision and Test of Building Engineering	BETC-CL1-2016-02231	8-18 January 2017		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 161	Hilti HAC-70 CRFoS Anchor Channel with 2 Nos. HBC-C M16 T-bolts (GR. 8.8)	Hilti Corporation	Channel: hot-dip galvanized steel grade S235 to BS EN 10025-2 and grade 500 Y16 rebar Bolt: grade 8.8 steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked and uncracked concrete.	AC 232 and EAD 330008-02-0601	Akkreditierung Austria	Universitat fur Baodenkultur Wien	875-15-019 875-15-021 875-15-022	9 November 2015	10/5/2023	The application is to be considered individually with regard to the fire resistance.
					AC 232	Akkreditierung Austria	Bautechnische Versuchsanstalt	183/15	30 July 2015		
					AC232	IAS	CSTB	Test report n° MRF 14 26054134-2	23 July 2015		
					AC232	DAkKS	Kiwa	A1840028-03	12 October 2018		
					EAD 330008-03-0601, AC232 and prEN 1992-4	Akkreditierung Austria	Universitat fur Baodenkultur Wien	Evaluation Report for the assessment of Hilti anchor channel HAC CRFoS	14 December 2018		
					ASTM E488-2010 and ETAG001-1997	CNAS	National Center for Quality Supervision and Test of Building Engineering	BETC-CL1-2016-01570	14 November 2016		
BD-AF 162	Hilti HSL-4 M10, M16 & M20 anchor bolt	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	EAD 330232-01-0601	COFRAC	CSTB	SMP 20 26086015	20 March 2020	20/7/2023	The application is to be considered individually with regard to the fire resistance aspect.

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 163	Hilti Anchor Channel Cast-in Channel – Type HAC-C 50/30 with 2 Nos. HBC 50/30 M16 T-bolts (Gr. 8.8F)	Hilti Corporation	Channel: hot-dip galvanized mild steel grade S355 to BS EN 10025-2 Bolt: grade 8.8 hot-dip galvanized steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked and uncracked concrete.	EAD 330008-02-0601	Akkreditierung Austria	Universitat fur Baodenkultur Wien	Test results and evaluation of the Hilti Anchor Channels HAC-C 40/22, HAC-C 50/30 and HAC-C 52/34 with channel bolts HBC-40/22 and HBC-50/30 in normal-weight concrete according to EAD 330008-02-0601	19 April 2018	13/10/2023	The application is to be considered individually with regard to the fire resistance.
					BS 5080: Part 1: 1993	HOKLAS	Geotechnics & Concrete Engineering (H.K.) Ltd	GCD180144136	20 January 2018		
					BS 5080: Part 2: 1986	HOKLAS	Geotechnics & Concrete Engineering (H.K.) Ltd	GCD180144097	26 January 2018		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 164	Hilti Anchor Channel Cast-in Channel – Type HAC-C 52/34 with 2 Nos. HBC 50/30 M16 T-bolts (Gr. 8.8F)	Hilti Corporation	Channel: hot-dip galvanized mild steel grade S355 to BS EN 10025-2 Bolt: grade 8.8 hot-dip galvanized steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked and uncracked concrete.	EAD 330008-02-0601	Akkreditierung Austria	Universitat fur Baodenkultur Wien	Test results and evaluation of the Hilti Anchor Channels HAC-C 40/22, HAC-C 50/30 and HAC-C 52/34 with channel bolts HBC-40/22 and HBC-50/30 in normal-weight concrete according to EAD 330008-02-0601	19 April 2018	13/10/2023	The application is to be considered individually with regard to the fire resistance.
					BS 5080: Part 1: 1993	HOKLAS	Geotechnics & Concrete Engineering (H.K.) Ltd	GCD180144144	20 January 2018		
					BS 5080: Part 2: 1986	HOKLAS	Geotechnics & Concrete Engineering (H.K.) Ltd	GCD180144102	26 January 2018		



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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 165	Hilti HIT-HY200-R injectable Mortar with HAS-U M12 & M16 A4 threaded rod	Hilti Corporation	Hybrid urethane methacrylate adhesive system for chemical fastening with Grade A4 stainless steel threaded rod.	Drill-in injectable mortar system for chemical anchor subject to axial tension and shear for both cracked and uncracked concrete	ETAG001/ ICC-ES AC 308	DAkKS	Kiwa GmbH, Baustest Augsburg	A 9059-03/2014	18 May 2015	2/1/2024	The application is to be considered individually with regard to the fire resistance aspect.
					ETAG001	Akkreditierung Austria	Bautechnische Versuchsanstalt	202/14	24 September 2015		
					ETAG001/ ICC-ES AC 308	DAkKS	Kiwa MPA Baustest GmbH	A 9036-17/2010	7 February 2012		
					ETAG001	DAkKS	Kiwa GmbH, Baustest Augsburg	A 9059-04/2014	4 August 2015		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 166	Hilti Anchor Channel Cast-in Channel – Type HAC-V 60 with 2 Nos. HBC-C M16 T-bolts (Gr. 8.8F)	Hilti Corporation	Channel: hot-dip galvanized carbon steel to BS EN 10025-2 Bolt: grade 8.8 hot-dip galvanized steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked concrete.	EAD 330008-04-0601, Edition 06/2022	N/A	Deutsches Institut für Bautechnik	ETA-11/0006	24 October 2022	25 June 2024	The application is to be considered individually with regard to the fire resistance.
					AC232	N/A	Universität für Bodenkultur Wien	Test Results and Evaluation Report for the assessment of Hilti anchor channel HAC-V(-T)	17 December 2021		
					EAD 330008-03-0601	N/A	Universität für Bodenkultur Wien	Test Results and Evaluation Report for the assessment of Hilti anchor channel HAC(-T)	25 September 2018		
					AC232	DAkkS	Kiwa GmbH	A2040099-02a	29 November 2021		
					AC232 and EAD 330008-02-0601	Akkreditierung Austria	Universität für Bodenkultur Wien	Nr. 875-15-022	16 November 2015		

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Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 167	Fischer FAZ II Plus R Anchor Bolt M8, M10, M12, M16 & M20	Fischerwerke GmbH & Co. KG	Stainless steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	EAD 330232-00-0601	Akkreditierung Austria	Universitat fur Baodenkultur Wien	Nr. 875-22-016	15 December 2022	14 January 2025	The application is to be considered individually with regard to the fire resistance.
					EAD 330232-01-0601	DAkKS	University of Stuttgart	20-008-1	8 May 2023		
					ETAG 001	CNAS	CABR Testing Center Co. Ltd	BETC-CL1-2022-01336	13 September 2022		
								BETC-CL1-2022-01337	15 September 2022		
								BETC-CL1-2022-01338	19 September 2022		
								BETC-CL1-2022-01339	21 September 2022		
								BETC-CL1-2022-01340	23 September 2022		

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 168	Hilti Anchor Channel Cast-in Channel – Type HAC-V 70 (length: 350mm) with 2 Nos. HBC-C M16 T-bolts	Hilti Corporation	Channel: hot-dip galvanized carbon steel grade S235 to BS EN 10025-2 Bolt: grade 8.8 hot-dip galvanized steel	Cast-in channel with inserted T-bolt subject to axial tension and shear for cracked concrete.	EAD 330008-04-0601, Edition 06/2022	N/A	Deutsches Institut für Bautechnik	ETA-11/0006	24 October 2022	24 April 2025	The application is to be considered individually with regard to the fire resistance.
					AC232	N/A	Universität für Bodenkultur Wien	Test Results and Evaluation Report for the assessment of Hilti anchor channel HAC-V(-T)	17 December 2021		
					EAD 330008-03-0601	N/A	Universität für Bodenkultur Wien	Test Results and Evaluation Report for the assessment of Hilti anchor channel HAC(-T)	25 September 2018		
					AC232	DAkKS	Kiwa GmbH	A2040099-02a	29 November 2021		
					AC232 and EAD 330008-02-0601	Akkreditierung Austria	Universität für Bodenkultur Wien	Nr. 875-15-022	16 November 2015		
BD-AF 169	Würth Fixanchor W-FAZ PRO/A4 M8, M10, M12 & M16 Anchor Bolt	Würth Group	Stainless Steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	EAD 330232-00-0601	DAkKS	Technische Universität Kaiserslautern	18027CT1511_5 18027CT1511_6 18027CT1511_7 18027CT1511_8	25 May 2023	23 July 2025	The application is to be considered individually with regard to the fire resistance.

## Reference List of Structural Fixing

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report				Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report		
BD-AF 170	Würth High Performance Anchor W-HAZ-S/A4 M10 Anchor Bolt	Würth Group	Stainless Steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG 001	DAkKS	Kiwa GmbH	A9011-02 A9011-03 A9011-04 A9011-11  A9011-12a	13 December 2010    1 February 2011	23 July 2025	The application is to be considered individually with regard to the fire resistance.
BD-AF 171	Würth Fixanchor W-FAZ-IG/A4 M12 Anchor Bolt	Würth Group	Stainless Steel A4	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	ETAG 001	DakKS	Technische Universität Kaiserslautern	16038CT15511	20 June 2016	23 July 2025	The application is to be considered individually with regard to the fire resistance.
					ETAG 001	DAkKS	Institut für Werkstoffe im Bauwesen, Universität Stuttgart	ER MKT Z A4 IG M6 to M12  BAZ 09/99 BAZ 10/99 Mk045/01-98/14 MK 100/02-01/15	16 December 2001  18 May 1999 10 July 1998 10 August 1998 15 November 2001		
					ETAG 001	DAkKS	Forschungs-und Materialprüfungsanstalt Baden-Württemberg, Otto-Graf-Institut	Nr. 24-28204	16 December 1998		
BD-AF 172	Hilti HSL4-B M12, M16, M20 & M24 Anchor Bolt	Hilti Corporation	Galvanized grade 8.8 steel	Drill-in anchors subject to axial tension and shear for both cracked and uncracked concrete	EAD 330232-01-0601	COFRAC	CSTB	Evaluation Report no. SMP 20 26086015	20 March 2020	22 August 2025	The application is to be considered individually with regard to the fire resistance aspect.