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1.0 DuraSteel

1.1 MATERIAL TESTS - All Building Sectors

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
F1	Durasteel Non-Combustibility	Yarsley Test	C 70178/2	BS476: Pt 4 1970	21.11.80
F3	Durasteel Impact Test	Yarsley Test	D 60333/6	BS1811: Pt 2 1969	22.02.77
F4	Durasteel Thermal Transmittance	Yarsley Test	D 64309/1	BS874 1973	06.04.77
F5	Durasteel Thermal Conductivity	Yarsley Test	U 64309/2	BS874 1973	06.04.77
F7	Durasteel Non-Combustibility- U.S.A.	Commercial Testing	25357	ASTM E136 1979	24.10.83
F11	Durasteel Non-Combustibility - France	C.S.T.B.	85.22962	Arrete of 30.06.83	23.01.86
F12*	Physical Strength bending stress Durasteel	Aberdeen University	AUES/M/003/93	Bending Strength	09.02.93
F13	Acoustic insulation of 9.5mm Durasteel	AIRO Test	L 1427	BS2750 1956	28.01.77
F14	Flooring panel - 5DF3	Yarsley Test	D82432/1	PSA. MOB 08.801	18.04.88
F15	Durasteel Non-Combustibility	Warnock Hersey	50493-C7-57680	CAN4-S114-M80	18.07.89
F16	CDL in-house fire test furnace	BRE	FRO512/12	BS476: Pts 20-24	02.02.90
F17	Non Combustibility a) German Language Durasteel b) English Language	If Bt	PA-III 4.596	DIN 4102-A1	08.02.90
F18	Asbestos Free	L.D.F	903077	Asbestanalytik	13.12.90
F22	Impact resistance of Durasteel	TRADA	MT1027	BS5669: Pt 1 1989	07.11.91
E3	Radio Frequency shielding	EMC	Cape 3/192	MIL-STD-285:Sect 4	20.01.92
L3	Impact/Projectile resistance	ULIRC		Ad-hoc test	Feb. 92
F23	Radiant heat test	Yarsley	J8990211	Ad-hoc test	12.03.92
F26	Pressure test on Durasteel up to 21psi	SCI	SCI-RT-149	Ad-hoc pressure test	Jul. 90
F28	Durastop : Non-combustibility	WFRC	55800	BS476: Pt 4 1970	29.11.91
F29	Thermal conductivity at ambient temperatures of Durastop, and Durastop Promaflex	AEA		Ad-hoc	Feb. 92
F31	Non toxicity test	IHA	PA-III 4.596	D1N4102:Tiel-KlasseA2	13.08.90
F32	Frost cycling and resistance test	IBMB	3310/2492	ÖNORM B 3303	Dec. 92
F36	Water tightness	CEE	4114	BS4624 1981	17.12.92
F37	Soaking & impact Durasteel Followed by fire test	BTC	BTC 5281F	BS476: Pt 22 1987	19.01.94
F49	Strength of 6.0 and 9.5mm thick panels	NDT	12036/95		Dec. 95
F51	Impact test for 6.0mm Durasteel	TRADA	ACT/F96017		Jul. 96
F58	Durasteel Surface Burning Characteristics	UL	SV8757	ANSI/UL723, ASTM E84	Jul. 05

SUPPORTING CERTIFICATION

CERT. NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
FF1	F1	Durasteel Asbestos Free Systems	BRE	FRS/35/01/FCA	30.09.80
FF4	A4	Table of Radiation Levels for Durasteel	BRE		14.04.80
FF5	F1	Acceptance of Durasteel Sheet	NCB	PW20393 Ap.No. 1773	20.07.81
FF18	Various	Acceptance of Durasteel Systems	MCC	RM/SG	10.03.87
FF25	F2, F13	Acoustic insulation 6.0mm Durasteel	AIRO	MS/CAR/L194/L1	30.03.88
FF53	CDL various	Use of CDL test furnace	BRE	FRO512/4 FT91/145/BS	19.07.91
FF58	Various	Performance of stainless steel Durasteel	BRE	RO512/4 FT92/29	27.04.92
FF90		Use of non-combustible materials	LPC	Letter	Feb. 96

* (Report re-written from original of April 1986)

1.2.1 PARTITIONS - General, Industrial, Commercial, Power Generation

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
A1	2 hr. Fire Check	FIRTO Test	TE 3451	BS476: Pt 8 1972	11.05.79
A2	4 hr. Fire Check	FIRTO Test	TE 3417	BS476: Pt 8 1972	09.03.79
A3	4 hr. Fire Check (Monel)	FIRTO Test	TE 3798	BS476: Pt 8 1972	04.11.80
A4	4 hr. Fire Check and Cold Face Radiation Test	FIRTO Test	TE 3598	BS476: Pt 8 1972	07.01.80
C8	3 hr. Fire Resistance U.S.A.	WRCSI/UL Test	ULR 11164-1	UL263 (ASTM E119, NFPA 251, ANSI A2.1)	26.10.84
G7	2 hr. Fire Check, 90 min. insulation	FIRTO Test	TE 5522	BS476: Pt 8 1972	14.11.85
A5	4 hr. Fire Barrier with Folding Fire Shutter	WFRC/CDL	DB/LD	BS476: Pt 8 1972	26.11.86
A6	4 hr. Fire Check Acoustic Test	AIRO	L1427	BS2750 1956	28.01.77
A7	3 hr. Fire Check - 2 hr. insulated barrier with penetration seals	CTICM	87-U-003P	French Home Secretary	07.01.87
A8	3 hr. Barrier Test - English Translation	CTICM	87-U-003	French Home Secy. Appendix No. III	07.01.87
A9	2 hr. fully insulated barrier using silicone and neoprene seals.	WFRC/CDL	43486	BS476: Pt 20 1987	28.01.88
A10	4 hr. integrity barrier with fire damper	WFRC/CDL	DB/KC	BS476: Pt 8 1972	25.11.86
G8	11/2 hr. fire resistance - single skin & Mandolite spray	FIRTO	TE 3181	SOLAS	22.02.78
A11	2 hr. insulated / 4 hr. integrity partition	Warnock Hersey	5727	CAN4-S101-M82 ASTM E119-88	10.05.89
A12	4 hr. stability & integrity firewall	Warnock Hersey	5767	CAN4-S101-M80	02.11.89
A13	4 hr. fire insulated barrier	FM	J1 1R Q3.AC (4510)	ASTM E119	25.10.90
A14	F180 - A special firebarrier	IBMB	3682/3950	DIN 4102 Teil 3	25.01.91
A15	F90 - A special firebarrier	IBMB	3152/1521	DIN 4102 Teil 3	01.07.91
A16	E240 - Firebarrier	IBMB	3423/3641	DIN 4102 Teil 2	15.11.91
A17	2 hr. insulated firewall with penetration seal	FRI	92/09/292	BS476: Pt 22 1987	14.09.92
A18	2 hr. fire integrity	FROSI	2695	BS476: Pt 1 1953	08.08.62
A19	4 hr. fire integrity	FROSI	6562	BS476: Pt 8 1972	Dec. 76
A20	4 hr. fire integrity supported from Dexion Speedlock racking system	LPC	TE 82786	BS476: Pt 22 1987	16.09.92
A21	4hr fire integrity - fast-track construction	LPC	TE 83352	BS476: Pt 22 1987	02.03.93
A22	Composite barrier with door, hatch, Penetration and socket enclosure	LPC	TE 83775	BS476: Pt 22 1987	02.07.93
A23	E240 - firebarrier measuring standoff Temperatures (German Language)	IBMB	3423/3641	DIN 4102 Teil 2	02.01.92
A24	F90 Lean Construction (in German)	IBMB	3372/7233	DIN 4102 Teil 3	24.10.93
A25	F90 Acoustic Rw=48 (in German)	IBMB	2109/3341	DIN 52210, DIN 4109	26.01.94
A26	F90 Acoustic Rw=52 (in German)	IBMB	2109/3342	DIN 52210, DIN 4109	26.01.94
A27	F90 Acoustic Rw=54 (in German)	IBMB	2109/3343	DIN 52210, DIN 4109	26.01.94
A28	F90 Acoustic Rw=56 (in German)	IBMB	2109/3344	DIN 52210, DIN 4109	26.01.94
A29	1 hr. insulated barrier (air gap)	BTC	BTC 5224F		Jun. 95
A32	Indicative Tests 2 & 4 hr. insulated panels	LPC	TE87107/8	BS476: Pt 20	Jan. 96
A33	Durabloc 902 - 90 min insulation, 2 hr. stability & integrity (in French)	CTICM	95-V-356	Arrêté du 21 Avril 1983	Aug. 95
A34	Durabloc 1202 - 2 hr. stability insulation	CTICM	95-V-020		Jan 96
A35	Acoustic tests on indicative panels Rw46 to Rw49	AIRO	L/2461		Sep. 96
A36	LT Barrier 4 hr. stability and integrity	LPC	TE88748		Jan. 97
A37	4 hr. fire resistant insulated barrier which incurred impact test at the 2 and 4 hr. point of the test	Efectis Nederland BV	CVB-R0563	EN 1364-1:1999 in compliance with NEN 6069:2005	Sep. 06
A38	4 hr. fire resistant insulated barrier to North American standards	UL/ULC	06CA48259	UL263, ASTM E119, NFPA 251, CAN/ULC-S101-04	Jan. 07
A39	1 ½ & 2 hr. fire resistant insulated barriers to North American standards	UL/ULC	07CA07694	UL263, ASTM E119, NFPA 251, CAN/ULC-S101-04	Jun. 07

1.2.1 PARTITIONS (cont.)

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
AA1	A1	2 hr. Fire Check Acceptance (Monel)	BRE	FRS A134 FL220 FCA	22.09.81
AA2	A1	2 hr. Fire Check Acceptance (Stainless Steel)	BRE	FCA/IC	28.04.82
CC4	C8	4 hr. Assessment non-load bearing wall	WRCSI	36027	11.01.85
GG17	G7	6m Height Assessment	BRE	FRO430/107 MRR/TT	26.08.86
AA5	A1	2 hr. Barrier Acceptance	HK	BOO G 4/65V	15.07.80
AA6	A1	2 hr. Fire Check Approval	Malaysia	JPPB/0278/2	02.03.86
AA7	A1	2 hr. Fire Check from either side	BRE	FRO430/107 MRR/GG	18.06.86
AA8	A2	4 hr. Assessment using CR channels & self drilling/self tapping screws	BRE	FRO430/107 MRR/EJB	26.09.86
AA9	A1, A2	2 hr. and 4 hr. Fire Check constructions with fire from either side	BRE	FRO430/107B MRR	17.10.86
AA10	A1	2 hr. complex oversize barrier offering pressure resistance	BRE	FRO430/107 MRR	21.10.86
AA11	A2	4 hr. complex oversize barrier offering pressure resistance	BRE	FRO430/107 MRR	21.10.86
AA12	A2, D1	4 hr. Barrier Assessment with damper, door and duct openings	WFRC	40816	06.02.87
AA13	A1, A2	2 & 4 hr. Barrier Assessment with cables, pipes, dampers or door penetration	WFRC	41057	19.03.87
AA14	A1, A2, A4	9.5mm Durasteel - 22 min. insulation 6.0mm Durasteel - 15 min. insulation	BRE	FRO430/107	18.12.87
AA15	A4	4 hr. Barrier incorporating sliding door	BRE	FRO430/107/F87/191	01.10.87
AA16	C8	4 hr. Barrier using different steels	WFRC	41190	03.04.87
AA17	A2	4 hr. Barrier with corner details including doors	WFRC	40943	26.02.87
AA18	A2, A1	2 hr. and 4 hr. integrity barrier of 4.5m height	WFRC	C42716	22.10.87
GG21	G7	11/2 hr. Fire resistance Duraslim, 4m height	BRE	FRO430/107 F87/409	23.02.88
AA19	A7, A8	Insulated (2hr./3hr.) Firewall assessed to 6m height	C.T.I.C.M.	Extension no. 89/1	29.05.89
AA20	KK7, FF21	Composite Firewall using multilayer construction with Vermiculux and Durasteel providing 2 hr. Fire insulation to AS1540 Pt 4	BRE	FRO512/4 FT88/208/BS	07.02.89
AA21	CDL Drg. 3020/ FE1 & FE2	Fastrack Firewall using 9.5mm Durasteel with self drilling/tapping screws providing 4 hr. fire integrity.	BRE	FRO512/4 FT89/170/BS	19.07.89
AA22	C.8	3 hr. fire resistance for Canada (ULC Design No.W005)	ULC	CRO2030 89T182	31.08.89
AA23	A.1, A.2	2 hr. fire integrity -high bay firewall of 44m height	BRE	FRO512/4 FT89/471/BS	21.06.90
AA24	CDL application 9.10.91	Blanket' assessment of single skin barriers up to 12m high with 3mm cold rolled channels, up to 4 hr. fire integrity	BRE	FRO512/4 FT91/275/BS	17.10.91
AA25	A2	4 hr. Firewall approval	BOO	BLD(B)GR/BM/2-(156)- F(2)	12 12.90
AA26	A19, CDL Drg.: CI/DR/3859/ FE100	Glazed screen with 1 hr. fire resistance	BRE	FRO512/4	13.11.91
BB80	A2, AA9	Assessed to 4 hr. fire integrity to BS476: Pt 22 (Pac. 4)	BRE	FRO512/4 FT91/333/BS	03.12.91
EE2	A15, A16	F30 lining for container wagons	IBMB	314/Nau/ips	21.07.92
AA27	G3	Acceptance of 2 hr. single skin, 2 hr. double skin, and 6 hr. triple skin constructions	HKFSD	FPB 240/0040	19.03.79
AA28		Acceptance of 2 hr. fire integrity (6.0mm Durasteel)	BOO	BOO G4/65V	15.07.80
AA29	A15	Assessment of F90 barrier faced with plasterboard	IBMB	284/Nau/Md	11.08.92
AA30	A7	Assessment to include door in French firewall	CSTB	ALD/GA 89/491	02.10.92
AA31	A15	Assessment of F90 barrier including T90 hinged door	IBMB	412/Nau/Schu	02.10.92
AA32	A15	Assessment of F90 barrier including penetrating pipe of 150mm diameter	IBMB	312/Nau/Md	02.10.92
AA33	None	Comparison of BS476: Pt 8 with BS476: Pts 20 to 24 1987	BRE	FRO572/4 FT92/329/BS	13.01.93
AA34	A2, CDL Drg. RD/DR/PS953/ SK1	4 hr. Fire Integrity - face fixing to angles	BRE	None	25.05.93
AA35	A21	2 hr. Insulated Fire Barrier	LPC	CC 84162	22.10.93
AA36	A2, A1, A21	2 hr. Fire Integrity, Fast-Track Construction	LPC	CC 84161	14.10.93
AA37	CDL Drgs. L/DR/ 4050-FE1B & 2B	1 hr. Fire Integrity of Barrier with Multiple Access Panels- Site Specific	BRE	FRO512/4 FT92/237/BS	22.01.93
AA38	F34	4 hr. Insulated Barrier	LPC	CC84658	15.03.94
AA39	F34	4 hr. Insulated Barrier	LPC	CC85095	02.08.94
AA40		4 hr. Insulated Barrier (no cover strips)	LPC	CC87733	May 96
AA41		Durasteel & Plasterboard Barrier, 2 hr., SI & I	LPC	CC87904	Jul. 96
AA42	A21, A29, F34, F35,	Assessment of Single and Double Skin Partitions to 15m	WFRC	133548	Mar. 04

1.2.2 PARTITIONS - Exterior (Outdoor) Barriers

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
A1	2 hr. fire check	FIRTO Test	TE 3451	BS476: Pt 8 1972	11.05.79
A2	4 hr. fire check	FIRTO Test	TE 3417	BS476: Pt 8 1972	09.03.79
A3	4 hr. fire check (Monel)	FIRTO Test	TE 3798	BS476: Pt 8 1972	04.11.80
A4	4 hr. fire check and cold face radiation test	FIRTO Test	TE 3598	BS476: Pt 8 1972	07.01.80
A19	4 hr. fire integrity	FROSI	6562	BS476: Pt 8 1972	Dec. 76
A21	4 hr. fire integrity - fast-track construction	LPC	TE 83352	BS476: Pt 22 1987	02.03.93
A40	6 hr. fire integrity test, DuraBarrier	Blackburn Fire Test Centre	BFTC 06/14	Adhoc to ASTM E119 time temperature curve	Jul. 06
A41	2 hr. fire integrity test, fire barrier with 6.0mm Durasteel	Blackburn Fire Test Centre	BFTC 04/13	BS476: Pt 22 1987	May 04
A42	3 hr. fire integrity test, DuraBarrier	ULC	08CA37087	Special Services test to ASTM E119 temperature curve	Nov. 08
A43	blast & ballistic test, DuraSteel assemblies	LKD Technologies Inc.	DBI-75/2006	Adhoc	11.01.07
A44	ballistic test, additional bulletproof material for DuraBarrier	LKD Technologies Inc.	DBI-84/2008	Adhoc	20.10.08
A45	blast test, DuraSteel assemblies	LKD Technologies Inc.	DBI-74/2006	Adhoc	18.12.06
A46	blast test, DuraSteel rooms	LKD Technologies Inc.	DBI-73/2006	Adhoc	09.11.06
A47	sound absorption test, DuraBarrier	Vibro-Acoustics	VA #4222	ASTM C423-08	09.10.08
A48	sound transmission loss test, DuraBarrier	Architectural Testing	88766.01-113-11	ASTM E90-04	30.01.09

1.2.3 PARTITIONS - Offshore Oil and Gas Platforms

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
G1	A60	NbL Test (Norway)	45987	SOLAS 60	26.06.75
G2	A120	FROSI Test	6376	BS476: Pt 8 1972	Mar. 76
G3	A330	FROSI Test	5914	BS476: Pt 8 1972	Jul. 74
G4	H60	FIRTO Test	TE 4549	SOLAS 74 Mod H'Carb	22.03.83
G5	A60 w/w/out door W/w/out seals	AIRO	L1711/1-2-3	BS2750 1980 BS5821 1980	22.12.83
G6	H120	FIRTO Test	5270	SOLAS 74 Mod H'Carb.	22.02.85
G7	A60 Duraslim	FIRTO Test	5522	BS476: Pt 8 1972	14.11.85
A1	2 hr. Fire Check (A0)	FIRTO Test	TE 3451	BS476: Pt 8 1972	11.05.79
A2	4 hr. Fire Check (A0)	FIRTO Test	TE 3417	BS476: Pt 8 1972	09.03.79
A3	4 hr. Fire Check (A0) - Monel	FIRTO Test	TE 3798	BS476: Pt 8 1972	04.11.80
G8	A90 - single skin 6.0mm & 35mm Mandolite	FIRTO Test	TE 3181	SOLAS	22.02.78
G9	Radiant Heat Shield - Type A	WFRC	R11862	Ad hoc	30.05.95
G10	Radiant Heat Shield - Type B	WFRC	R11863	Ad hoc	30.05.95
G11	Radiant Heat Shield - Type C	WFRC	R11864	Ad hoc	30.05.95
G12	Radiant Heat Shield - Type D	WFRC	R11959	Ad hoc	30.05.95
G13	H0	LPC	TE88905	IMO A.754	06.05.97
L2	H120:Fireblast system	WFRC	54839	D.En H-test Issue 1:1990	13.11.91

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
GG1	G1	Change of Construction Approval - A60	SINTEF	WG/tb	09.09.77
GG2	G1	NMD Certificate - A60	NMD	A39909/75	23.07.75
GG3	G1	A60 (9mm)	Lloyds	SVG/F93/278	30.06.93
GG4	G1	A60 (6mm)	Lloyds	SVG/F93/277	30.06.93
GG5	G1	A60 (9mm)	DnV	F9971	10.03.89
GG6	G1	A60 (6mm)	DnV	F9972	10.03.89
GG7	G2	A120	Lloyds	SVG/F93/279	30.06.93
GG8	G4	H60	Lloyds	SAS F030416	14.10.03
GG9	A2	4 hr. Fire Check - (A60)	Lloyds	SVG/F93/276	30.06.93
GG10	A1	2 hr. Fire Check - (A0)	Lloyds	SAS F980421	11.07.98
GG11	A3	4 hr. Fire Check (Monel) - (A0)	Lloyds	ICD/F80/256	31.12.80
GG12	G4	DnV Certificate - H60	DnV	F7421	12.02.85
GG13	G2	NMD Certificate - A120	NMD	A59767	08.08.85
GG14	G4	NMD Certificate - H60	NMD	A60036	08.08.85
GG15	G6	DnV Certificate - H120	DnV	F7698	30.08.85
GG16	G7	NMD Certificate - A60 Duraslim	NMD	A60037	08.08.85
GG17	G7	6m Height Assessment - A60 Duraslim	BRE	FRO430/107 MRR/TT	26.08.86
AA7	G2	A120 From either side	BRE	FRO430/107 MRR/GG	18.06.86
GG18	G7	A60 Duraslim Certificate	Lloyds	SAS F020250	07.06.02
GG19	G7	A60 Duraslim - orientation of steels	BRE	FRO430/107C F87/260	09.11.87
GG20	G8	A90 Single skin + Mandolite spray	Lloyds	ICD/F83/590	14.06.83
GG21	G7	A60 Duraslim, 4m height	BRE	FRO430/107 F87/409	23.02.88
GG22	G2	DnV Certificate - A60 - 2 hr. Insulation	DnV	F9166	04.01.88
GG23	G5	Acoustic report	JMCA	18.1893.R1	08.07.88
GG24	A19, G4	Assessment of single skin for H0 rating	BRE	FRO512/4 FT92/206/BS	07.10.92
GG25	A19, GG24	H0 Certificate	Lloyds	SAS F070072	07.03.07
GG26	CDL 401	H0 Fire test maintaining 4 hr. integrity	BRE	FRO512/4 FT92/270/BS	27.11.92
GG27	G7, G4, G6 CDL Drgs RD/ DR/PS-835/1 to 4	A60, H60, H120; demountable constructions	LPC	83233	20.01.93
GG28	G13	H0 Certificate	DnV	F-16817	27.02.02
NAC6		Durasteel H0/H60 Acceptance	IMP	40084001	26.04.94

1.3.1 DOORS - General, Industrial, Commercial

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
B1	Duraleaf 2 hr. 2 single leaf doors	FIRTO Test	TE 3781	BS476: Pt 8 1972	17.10.80
B2	Duraflush 2 hr.	FROSI Test	FROSI 435	BS476: Pt 1 Sec 3 1953	06.10.53
B3	Duraflush 4 hr. twin door	FROSI Test	FROSI 435	BS476: Pt 1 Sec 3 1953	06.10.53
B4	Duraslide 4 hr.	BTC	BTC5383F	BS476: Pt 22 1987	24.08.94
B5	Durafire Heavy Duty 4 hr. Hinged-single	FIRTO Test	TE 5313	BS476: Pt 8 1972	27.04.85
B6	Durafire Heavy Duty 4 hr. Hinged-double	FIRTO Test	TE 5329	BS476: Pt 8 1972	21.06.85
B7	Durafire Prestige hinged single door with single latch - 4 hr.	FIRTO Test	TE 5672	BS476: Pt 8 1972	09.05.86
B8	3 hr. Insulated single	TIAJIN FSRI	870308	ISO 834 1975	29.04.87
B9	3 hr. Insulated Twin	TIAJIN FSRI	870313	ISO 834 1975	29.04.87
B10	Durafire Prestige Twin - 4 hr. fire integrity.	LPC:FIRTO	TE6307	Method 6: BS476: Pt 22 1987	14.07.87
B11	Channel Tunnel Shuttle Trains - Wagon end fire doors - 1/2 hr. fire resistance	FIRTO Test	TE6500	BS476: Pt 22 1987	18.03.88
B12	Insulated door and vision panel in partition	FIRTO Test	TE4586	BS476: Pt 8 1972	03.06.83
B13	Channel Shuttle train pass 1/2 hr. fire resistance	FULMER YARSLEY	J 84569/1	BS476: Pt 22 1987	05.10.89
B14	Air leakage test on twin leaf bi-directional door set.	WFRC	47814	BS476: Section 31.1	21.08.89
B15	Duraflush - 100,000 cycle test	SISIR	G141663/AWI	App. F of SS 332:1988	06.03.90
B16	Duraleaf & Duraflush	BTC	BTC5305F	BS476: Pt 22 1987	23.02.94
B17	'Prestige' (A60)	BTC	BTC5380F	BS476: Pt 22 1987	29.07.94
B18	'Prestige' single leaf 1 hr. insulation	BTC	BTC 5412F	BS476: Pt 22	17.03.95
B19	'Smooth' door single leaf	BTC	BTC 5433F	BS476: Pt 22	28.06.95
B20	'Smooth' door twin leaf	BTC	BTC 5459F	BS476: Pt 22	08.02.96

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
BB5	B2	Duracheck Door approval from FOC/LPC	FOC/LPC	317	02.12.81
BB8	B2	Assessment as 2 hr. fire door	BRE	FRS/308/FCA	21.12.79
BB50	CDL Drg's 4839/DE1 RevC	Assessment of hinged twin leaf door with Transom panel	BRE	FRO512/4 FT89/057/BS	01.06.89
BB52	CDL Drg T212 Rev B	Combination Duraflush/Duracheck door with partition detail	BRE	FRO512/4 FT88/298/BS	04.04.89
BB57	B2	Single leaf door assessed at 2200mm wide x 2500mm high	BRE	FRO512/4 FT89/176/BS	18.09.89
BB58	B2, BB57	Single leaf door assessed at 2200mm wide x 3500mm high	BRE	FRO512/4 FT89/176/BS	22.09.89
BB59	B2	Standard construction assessed for single and twin leaf formats	BRE	FRO512/4 FT89/181/BS	12.09.89
BB63	PP2-01	Standard construction faced with stainless steel assessed for 2 hr. fire integrity	BRE	FRO512/4 FT89/506/BS	27.02.90
BB70	CDL Drg PP2 -01 Rev 1	Non standard construction assessed for 2 hr. fire integrity	BRE	FRO512/4 FT89/559/BS	26.03.90
BB75	BB34, BB30, CDL Drg T175 Rev B	Twin leaf door assessed at 2100mm wide x 2800mm high	BRE	FRO512/4 FT90/474/BS	17.01.91
BB76	CDL Drg. SK833	2 hr. fire door approval	800	BLD(B)GR/HM/2(5)	15.04.87
BB97	CDL Drg. SK833	Acceptance of standard Duracheck construction	HKFSD	FPB206/0126(12)	22.04.87
BB99	CDL Drg. PP2- 01 Rev 1	Assessment of Duracheck construction with tower bolts	BRE	FRO512/4 FT91/357/BS	24.12.91
BB3	CDL Drg. SK455	Duraflush Assessment of oversize twin leaf doors, up to 4200mm wide and 3594mm high	BRE	FRS308/FK304 FCA/DME	14.05.81
BB4	B3	Door approval from FOC/LPC	FOC/LPC	316	02.12.81
BB7	B3	Assessment as 4 hr. fire door	BRE	FRS308/FJ486/FCA	01.04.80
BB26	B2	Double tier, twin leaf door assessed for 2 hr. fire integrity	BRE	FRO430/107	09.06.87
BB27	B3, B5	Twin leaf door with wicket inset for 4 hr. fire integrity	BRE	FRO430/107 F87/195	01.10.87
BB38	B3	Size assessments for single and twin leaf constructions Single leaf door: 1083mm wide x 2119mm high Twin leaf door: 1533mm wide x 2119mm high	BRE	FRO430/107 F87/432	04.03.88

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
		Duraflush (cont.)			
BB47	CDL Drg. T225	Twin leaf door with or without wicket door, assessed using stainless steel construction	BRE	FRO512/4 FT88/270/BS	28.03.89
BB51	CDL Drg T233 Rev B	Twin leaf door with side partition assessed for 4 hr. fire integrity	BRE	FRO512/6 FT88/298/BS	04.04.89
BB52	CDL Drg T212 Rev B	Combination Duraflush/Duracheck door with partition detail	BRE	FRO512/4 FT88/298/BS	04.04.89
BB60	B3	Single leaf oversized door with wicket door assessed for 4 hr. fire integrity	BRE	FRO512/4	22.01.90
BB68	B2	Assessment of current manufacturing method	BRE	FRO512/4	16.05.90
BB78	B2, CDL Drg. DT/DR/7-424 rev.A	Large twin leaf door with wicket door for 2 hr. integrity	BRE	FRO512/4 FT91/301/BS	08.11.91
BB84	BB3	Acceptance for large twin leaf doors	HKFSD	FPB206/0126(12)	22.04.87
BB85	B2, BB4, CDL Drg SK413	Acceptance for large single leaf doors	HKFSD	FPB206/0126(15)	29.10.85
BB91	BB27, CDL Drg T175B	Acceptance of large twin leaf door with wicket door	HKFSD	FPB206/0126(12)	29.01.88
BB92	BB63, BB70	Acceptance of modifications to facings, frame and hardware for transformer rooms	HKFSD	FPB206/0126(12)	04.06.90
BB93	BB92, BB99	Acceptance of modifications for all buildings	HKFSD	FPB206/0126(12)	27.03.92
BB95	CDL Drg T-175B	Assessment to BS476: Pt 22 for 4 hr. integrity of twin door with wicket	BRE	FRO512/4 FT92/135	29.07.92
BB108		Duraflush twin leaf doors up to 2400mm x 2400mm	LPC	CC87600	Jun. 96
BB110		Duraflush alternative latching system	LPC	CC88500	Nov. 96
BB111		Duraflush door with bolted channel binding	LPC	CC8705	Jul. 96
		Duraleaf			
BB1	B1	Door approval from FOC/LPC	FOC/ LPC	367	11.10.82
BB2	B1	Single leaf door assessed at 1000mm wide x 2750mm high	BRE	FRS A134 FCA 1C	20.10.83
BB29	B1, B6	Twin leaf door assessed for 2 hr. fire integrity	LPC	CC/10428/01360/RHE/BD	15.12.87
BB30	B6	Twin leaf door with wicket, assessed for 2 hr. fire integrity	BRE	FRO430/107 F87/330	30.12.87
BB36	B1	Single leaf door assessed at 930mm wide x 2500mm high	BRE	FRO430/107D F87/397	12.02.88
BB40	B1	Single and twin leaf doors, with vision panel and flush steel finish	BRE	FRO430/107 F88/171	21.07.88
BB54	B1, B6, BB2	Oversize single and twin leaf doors: single: 1300mm wide x 2700mm high, twin: 2160mm wide x 2700mm high	BRE	FRO512/4 FT89/369/BS	18.12.89
BB55	B1, B6, BB2	Oversize single and twin leaf doors; single: 1500mm wide x 2000mm high, twin: 3000mm wide x 3000mm high	BRE	FRO512/4 FT89/369/BS	18.12.89
BB62	B1	Twin leaf door with removable transom panel	BRE	FRO512/4 FT89/498/BS	22.02.90
BB66	B5	Single leaf door assessed at 1000mm wide x 2500mm high	BRE	FRO512/4 FT90/266/BS	24.09.90
BB73	B1, B6	Oversize twin leaf door assessed at 3000mm wide x 3000mm high	BRE	FRO512/4 FT89/396/BS	06.03.91
BB76	B1	2 hr. fire approval	BOO	BLD(B)GR/HM/2(5)	15.04.87
BB80	B1, BB2	Assessed to 4 hr. fire integrity to BS476: Pt 22, (Pac. 1)	BRE	FRO512/4 FT91/333/BS	03.12.91
BB87	CDL Drg T-44	Acceptance of single leaf construction	HKFSD	FPB206/0126III	23.08.84
BB90	B1, BB36	Acceptance of single leaf construction	HKFSD	FPB206/0126(12)	02.05.88
BB96	CDL Drgs CI/DR/5562/SK1 CI/DR/5562/BE1B CI/DR/5562/BE2A	Assessment using lightweight blockwork as infill around Frame	BRE	FRO512/4 FT92/137	28.07.92
BB103	B1	Modified Zed frame	BRE	FRO512/4	02.06.93
BB104	B1	Assessed for 2 hr integrity to BS476: Pt 22	BRE		04.05.93
		Durafire Heavy Duty			
BB22	B5	Twin leaf door approval from FOC/LPC	FOC/LPC	402	12.12.85
BB23	B6	Single leaf door approval from FOC/LPC	FOC/LPC	403	12.12.85
BB25	B5, B6	Oversize single and twin leaf doors; single: 1090mm wide X 3056mm high, twin: 2103mm wide x 3056mm high	BRE	FRO430/107 MRR/GG	12.09.86
BB28	B5	Twin leaf door assessed at 2000mm wide x 2500mm high	BRE	FRO430 Pt C F86/101	16.03.87
BB34	B5, BB30	Twin leaf door with wicket: 2600mm wide x 2800mm high	BRE	FRO430/107 PtDF87/384	08.02.88
BB37	B5, CDL Drg T184, BB34	Twin leaf door with wicket: using alternative frame detail	BRE	FRO430/107D F87/397	12.02.88
BB39	CDL Drg T166	Twin leaf door, assessed at 2500mm wide x 2500mm high	BRE	FRO430/107/F87/480	24.03.88
BB67	B6	Single and twin doors with stainless steel facing sheets	BRE	FRO512/4 FT90/372/BS	19.11.90
BB77	CDL. Drg T130				
BB77	B5, B6	Single and twin leaf approval from BOO	BOO	BLD(B)GR/BM/2(5)-F(15)	12.10.90
BB80	B5, B6	Assessed to 4 hr. fire integrity to BS476: Pt 22 (Pac. 3)	BRE	FRO512/4 FT91/333/BS	03.12.91
BB89	B5, B6, BB28 CDL Drgs T165, T166	Acceptance of Durafire doors	HKFSD	FPB206/0126(12)	22.04.87

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
BB94	BB30, BB42, BB72 CDL Drgs: T-184A, T209B	Durafire Heavy Duty (cont.) Acceptance of twin leaf door + wicket + vision panel	HKFSD	FPB206/0126(12)	01.07.91
BB3	CDL Drg SK456	Duraslide & Durafire Sliding Doors Assessment of oversize sliding doors up to 5120mm wide and 5600mm high	BRE	FRS/308/FK304 FCA/DMB	14.05.81
BB6	B4	Door approval from FOC/LPC	FOC/LPC	326	02.12.81
BB19	B5, B6	Assessment for Durafire Sliding Door	BRE	FRS/134 FCA/DMB	02.07.85
BB48	B4	Assessment for 30 min. Fire Insulation	BRE	FRO512/4 FT88/193/BS	01.02.89
BB49	B4	Bi-parting leaves for opening 7000mm wide x 3800mm high	BRE	FRO512/4 FT89/074/BS	09.06.89
BB71	B4	Assessment for size: 5000mm wide x 4000mm high	BRE	FRO512/4 FT90/024/BS	23.04.90
BB76	CDL Drg SK416	4 hr. fire duration, approval	BOO	BLD(B)GR/HM/2(5)	15.04.87
BB84	BB3, CDL Drg SK456	Acceptance for large sliding doors	HKFSD	FPB206/0126(12)	22.04.87
BB86	BB19, B5, CDL Drg T-117 Rev A	Acceptance of sliding door construction	HKFSD	FPB206/0126(12)	19.12.85
BB9	B4	Drop/Rising Shutters Assessment of construction for 4 hr. fire integrity	BRE	FRS/A134/FCNIC	19.10.83
BB45	CDL Drg's T194, T195	Rising shutter assessed for 1 hr. fire integrity	BRE	FRO512/4 FT88/220/BS	13.02.89
BB83	BB9, CDL Drg R.7986B	Acceptance for 4 hr. fire integrity up to size: 2450mm x 2150mm	HKFSD	FPB206/0126(12)	11.02.88
BB43	B3, CDL Drg's T197, T198, T211	Trapdoors Single and twin leaf trapdoors assessed up to 4 hr. fire integrity	BRE	FRO500/41/FT88/48/BS	16.11.88
BB74	BB43, CDL Drg T211	Single and twin leaf trapdoor size assessment: single: 1060mm x 1060mm or 700mm wide x 1500mm long twins: 1200mm x 1200mm	BRE	FRO512/4 FT90/470/BS	14.01.91
BB79	A18, G3	Large single leaf composite trapdoor of 2 hr. integrity	BRE	FRO512/4FT91/327/BS	22.11.91
BB91	BB98, CDL Drgs T197A, T198A, T211A	Acceptance of single and twin leaf trapdoors	HKFSD	FPB206/0126(12)	08.07.91
BB98	BB43, BB74	Assessment of pull handles	BRE	FRO512/4 FT91/103/BS	17.06.91
BB10	B2, B3, G1	Door Furniture Surelock 3-way shoot bolt assessment	BRE	FRS/308/FJ419/FCA/GG	21.02.80
BB11	B2, B3, G1	3-way crash bar mechanism assessment	BRE	FRS/A1 FCA 1C	26.07.83
BB12	CDL Drg SK758 B2, B3, G1	Assessment of the range of hinges, applicable sizes & uses	BRE	FRS/308FJ419/FCA/GG	21.02.80
BB13	CDL Drg SK390 PT 150B	Assessment of vision panel construction: 100mm wide x 150mm high	BRE	FRS/309 (FK153)FCA/DF	18.07.80
BB14	CDL Drg PT150	Assessment of modified vision panel detail	BRE	FRS A134 FCA/IC	19.10.83
BB16	B2, B3, B4, BB8	Asbestos-free door constructions, assessment	BRE	FRS/308 FCA	21.12.79
BB17	B1, B2, B3	Assessment of lock mechanisms	BRE	FRS/A1 34 FCA/IC	20.10.83
BB20	B1, B2, B3	Acceptance of door hardware range	BRE	FRS/A134 FCA/MEF	21.10.85
BB24	BB13, BB14	Acceptance of vision panel assessments	HK	FPB 206/0126 (12)	10.10.86
BB42	B1, B5, B6, CDL Drg. T209	Vision panel of 100mm x 150mm for single skin constructions	BRE	FRO500/41/FT 88/31/BS	04.11.88
BB44	CDL 106	Vision panel of size: 600mm wide x 800mm high for 1 hr fire integrity	BRE	FRO500/41 FT88/139/BS	22.12.88
BB46	CDL Drg. T184	Vision panel - detail change	BRE	FRO500/41 FT88/136/BS	20.12.88
BB56	BB47, CDL Drg T225	Modifications to hinges on stainless steel Durafush doors	BRE	FRO512/4 FT89/227/BS	18.09.89
BB69	B7, CDL Drgs DT/DR/DDR/1001/5&6&7	Modifications to furniture on Prestige door including: vision panels, sill plate and panic bar	BRE	FRO/Si 2/4 FT90/396/BS	21.11.90
BB72	BB42, CDL Drg T209 rev B	Modification to vision panel assembly for single skin constructions	BRE	FRO512/4 FT90/589/BS	18.03.91
BB76	BB14, CDL Drg PT 150	2 hr. fire rated vision panel approval	BOO	BLD(B)GR/HM/2(5)	15.04.87
BB81	Various	Stainless steel furniture assessment	BRE	FRO512/4 FT92/42/BS	23.05.92
BB82	CDL 356 CDL Drg RD/PS-657/SK-2A	Vision panel of size: 500mm x 125mm wide for 2 hr. fire integrity	BRE	FRO512/4FT92/76BS	09.07.92

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
BB100	B1, B5, BB47, BB63, BB67, CDL Drgs. T130, T175, T165	Door Furniture (cont.) Dorma TS73 & TS83 door closers	BRE	FRO512/4	23.07.93
BB101		Stainless steel facings on Durafire Heavy Duty twin and single, & Duraflush single, twin and wicket door types	BRE	FRO512/4	08.07.93
BB102	BB72, CDL Drgs. T165, T166	Positions and sizes of vision panels	BRE	FRO512/4	15.01.93
BB106	None	Vision panels: percentage glazing	BRE	FT92/333/BS	19.11.93
BB107		Vision panels (Pyran S glass) in Duraleaf doors	LPC	FRS93/994/11 CC87601	May 96

1.3.2 DOORS - Offshore Oil and Gas Platforms

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
H1	A60 Single	Statsproveanstalten Test	B10354/76	SOLAS 60	23.01.76
H3	A60 Slider	FIRTO Test	TE 4295	SOLAS 74	07.07.82
H4	A60 Twin	FIRTO Test	TE 4327	SOLAS 74	29.07.82
H5	H60 Single	WRCSI Test	34908	SOLAS 74 Mod	07.06.84
H6	H60 Slider	FIRTO Test	TE 5649	SOLAS 74 Mod	21.03.86
H7	A60 Single leaf with A60 vision panel	LPC	TE82425	SOLAS/BS476: Pt 20 1987	13.05.92
H8	A60 Twin leaf with A60 vision panel	LPC	TE82426	SOLAS/BS476: Pt 20 1987	20.05.92
H9	H120 single	LPC	TE82868	SOLAS: IM05	10.11.92
H10	H0 single leaf door (after blast test)	LPC	TE86858	BS476: Pt 22	Jan. 96
H11	H0 Single leaf door	WFRC	140115	IMP FTPC Part 3	11.11.04

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
HH1	H1	A60 single	DnV	F8103	07.04.86
HH2	H1	A60 single	DSS	Y952L1 Reg 1-2-6511	27.02.81
HH3	H1	A60 single	Lloyds	SAS F970389	20.09.97
HH5	H3	A60 Slider	Lloyds	ICD/F88/406	30.06.88
HH6	H3	A60 Slider	DnV	F5921	13.02.84
HH7	H4	A60 Twin	Lloyds	SAS F970390	30.09.97
HH8	H4	A60 Twin	DnV	F9973	10.03.89
HH10	H3	A0 Slider	Lloyds	ICD/F88/411	30.06.88
HH11	H1	Triple Latching System for A0 and A60	Lloyds	ICD/324/SB/B227/1	29.08.84
HH12	B2, B3	A0 Single with Vision Panel	Lloyds	ICD/F88/409	30.06.88
HH13	B2, B3	A0 Single - NMD Certificate	NMD	A62617	14.10.85
HH14	B4	A0 Slider - NMD Certificate	NMD	A62675	14.10.85
HH15	H1	A60 Single NMD Certificate	NMD	A80038	08.08.85
HH16	H4	A60 Twin NMD Certificate	NMD	A60039	08.08.85
HH17	H3	A60 Slider NMD Certificate	NMD	A60040	08.08.85
HH18	H5	H60 Single NMD Certificate	NMD	A60041	08.08.85
HH19	B2, B3	A0 Hinged Single - smoke tight	Lloyds	LON/508057/1	11.12.85
HH20	HH10, H3	A0 Slider - smoke tight	Lloyds	LON/508057/2	20.12.85
HH21	H1	A60 Single	}	ABS	T-15-2
	H4	A60 Twin			
	H3	A60 Slider			
HH22	H5	H60 Single	Lloyds	SAS F070073	07.03.07
HH23	H6	H60 Slider - reinforcement modification	BRE	FRO430/107C F87/165	27.04.87
HH24	H6, HH23	H60 Slider with reinforcement modification	Lloyds	SVG/F92/487	13.11.92
HH26	G5	34dB Assessment - A60 door w/out min wool	AIRO	MS/ VF/L1905/L1	15.07.87
HH27	HH5	A60 Vision panel for A60 door	Lloyds	ICD12324/SB/FIRE B227/01/09	13.03.85
HH28	H6	H60 Slider	Lloyds	SAS F030265	14.10.03
HH29	H4	A60 Single	BRE	FRO512/4 FT88/238/BS	08.03.89
HH30	H5	H60 Single with removable jamb	BRE	FRO512/4 FT89/483/BS	01.02.90
HH31	H7	A60 Single with A60 vision panel certificate	Lloyds	SVG/F92/367	30.09.92
HH32	H8	A60 Twin with A60 vision panel certificate	Lloyds	SVG/F92/368	30.09.92
HH33	H4, H5	H60 Twin assessment	BRE	None	07.06.93
HH34	H9 CDL Drg RD/DR/3026/SK	H120 Single	Lloyds	SVG/F93/046	09.02.93

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
HH35	H6	H60 sliding door alternative construction	LPC	CC87282	07.02.96
HH36	H10	H0 (Duracheck) door - single leaf hinged	DnV	F-16816	27.02.02
HH37	H11	H0 Single	DnV	F-18865	18.11.08

1.4 DUCTS - General, Industrial, Commercial, Institutional

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
F6	Durasteel Duct Test/Plenum Ceiling	FIRTO Test	TE 4220	Ad-hoc Test	11.05.82
F8	Durasteel Duct Test- 4 hr. integrity for fire inside and outside	FIRTO Test	TE 5124	ISO/DIS 6944	03.09.84
F9	Durasteel Duct Test- 4 hr. integrity for fire Outside	FIRTO Test	TE 5157	BS476: Pt 8 1972	15.10.84
F19	F and H fastrack ducting (4 hr. integrity)	BRE/CDL	FRO512/4 FT90/423/BS	BS476: Pt 24	12.12.90
F20	2 hr. fire insulated duct construction	WFRC/CDL	C51720	BS476: Pt 24	10.09.90
F21	Sound transmission loss for Durasteel duct Compared with galvanized steel duct	BVA	VA2572	Ad hoc sound transmission test	10.06.91
F24	2 hr. duct fire integrity test	ULC	CR2280, 7939	ISO 6944 1985	04.09.91
F25	Duct pressure/leakage test to -5000Pa (minus 5kPa)	BSRIA	10528/1	Ad hoc leakage test	26.03.92
F27	Kitchen extract ducting test for zero Clearance' applications	ORTECH/ULC	CR2354, 10260	ULC & NFPA 96	09.09.92
F30	Vibration and displacement fatigue Testing	MIRA	K271915/1	Ad hoc: 60,000 cycles	25.09.92
F33	Excessive displacement (back break) Fatigue test, followed by leakage Test: Class D	MIRA	K271915/2	Ad hoc: 1.3 million cycles leakage test: DW142	05.11.92
F38	2 hr. insulated duct	LPC	TE84477	BS476: Pt 24:1987	17.03.94
F39	2 hr. insulated duct (acoustic test)	BTC	BTC2591A	BS2750: Pt3	29.04.94
F40	Vibration test 2hr insulated duct – 1.3 million cycles	MIRA	272096/1	Ad hoc	12.07.94
F41	Insulated duct test	LPC	TE 84477	BS476: Pt 24 1987	17.03.94
F42	Flat pack ducts	LPC	TE 85412	BS476: Pt 24 1987	22.11.94
F44	Insulated Duct to BS7346 PT 2 (smoke temperatures)	LPC (witnessed)	CDL 544		16.08.95
F47	Duct airflow resistance	BSRIA	120832/2		Nov. 95
F48	2 hr. insulated Type A duct	LPC	TE84477A	BS476: Pt 24 1987	Jun. 96
F50	DuraDuct LT test report (Type B)	LPC	TE87812	BS476: Pt 24 1987	Jul. 96
F52	DuraDuct LT test report (Type A)	LPC	TE87812/A	BS476: Pt 24 1987	Jul. 96
F53	Vibration of Durasteel panels	AUES	AUES/M/003/93		Feb. 93
F54	Blast testing of DuraDuct & DuraDuct LT	SWRI		Ad hoc	Dec. 04
F55	DuraDuct LT 1 hr. listed UL/ULC system	UL/ULC		ISO 6944 1985	Jan. 05
F56	Sound Transmission Loss for DuraDuct LT	Vibro Acoustic	VA 4147	Ad hoc sound test	Feb. 05
F57	DuraDuct HP Air Leakage and Deflection Test	Dass Enterprises Inc.	PPT – 1	ANSI/ASHRAE/SMACNA Standard 126-2000, SMACNA HVAC Air Duct Leakage Test Manual, and Air Power Equipment of Canada Ltd.	Sep. 05
F60	DuraDuct SD - 2 hr. listed UL/ULC system	UL/ULC	06CA59582	ISO 6944 1985	Apr. 07
F61	DuraDuct GNX 2 hr. UL/ULC Listed system	ULC	07CA43920	ISO 6944 1985	Mar. 08
F62	DuraDuct SD Blast Test	SWRI	18.18096.02.016	Ad hoc	Jan. 09

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
FF2	F8, F9	Air flow resistance of 4 sided duct	CBP		08.03.82
FF3	F6	GLC Assessment	GLC	AR/BR/CS/503/RFC	18.11.82
FF6	F8, F9	GLC Assessment	GLC	AR/BR/CS/508/TA	12.06.85
FF7	F8, F9	LPC Assessment - Kitchen Extract Ducts	LPC	CC/10 229 RHE/TV/D/LS	18.07.86
FF12	F8, F9	3mm Internal Angle Framing	BRE	FRO430/107 A134 MRR/DMB	29.05.86
FF13	F8, F9	Substitution of 9.5mm with 6.0mm 3DF2 Durasteel	BRE	FRO430/107 MRR/GG	18.06.86
FF14	F8, F9	Duct construction using self drilling self tapping screws	BRE	FRO430/1078 MRR/RQ	10.10.86

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
FF15	C8,G7	Duct covers for cable trench – 2 hr. fire resistance assessment (Singapore MRTC)	WFRC	40648	09.01.87
FF16	F6	2 hr. ceiling assessed using 6.0mm Durasteel	BRE	FRO430/1078 F86/25	23.02.87
FF17	F8, F9	Calculation of nominal air resistance (with example)	BSRIA	4804: No. 1	Mar. 87
FF20	F8, F9	4 hr. ducting system, up to 2200mm wide	BRE	FRO430/107	17.07.87
FF21	F9	Assessment for 2 hr. insulated smoke duct	LPC	CC/10372/0817/W	20.08.87
FF23	F9	Assessment for 3 hr. insulated smoke duct	LPC	CC/10427/01328/BD	10.12.87
FF26	F8, F9	Ducts without external angle trim	BRE	FRO430/107PtD F87/384	08.02.88
FF27	C8, CDL Drg. CPM1 to CPM6	Assessment of 3 hr. insulated duct	WFRC	C43873	28.03.88
FF28	FF21	Composite 2 hr. insulated ceiling - 9.5mm 3DF2 and 20mm Vermiculux - using vertical stub bulkheads	BRE	FRO430/107 F88/172	26.07.88
FF29	F8, F9	Kitchen extract duct incorporating an oil drainage tap	LPC	CC10542/01992/RHE/BD	24.05.88
FF30	CDL6	Duct cross section size 1000mm x 1000mm	BRE	FRO430/107 F88/162	19.07.88
FF31	C8	3 hr. insulated duct wall panel enclosing steel duct	WFRC	C43873	28.03.88
FF33	F8	Equivalence of testing standards and test results between ISO6944 and BS476: Pt 24, 1987	BRE	FRO430/107/F88/193	31.08.88
FF36	F8, F9, CDL93	Revised sealing of duct system using COROFIL C144	BRE	FRO430/107F88/281	17.10.88
FF37	F8, F9	Duct assessment for sizes up to 2.4m x 1.0m deep providing 4 hr. integrity, using M8 bolts	BRE	FRO500/41 FT88/85/BS	30.11.88
FF38	F8, F9	Duct systems as for FF37 but assessed using M6 BUILDEX screws	BRE	FRO512/4 FT88/85/BS	01.02.89
FF42	F9, CDL Drg. C665- 1	2 hr. fire integrity vertical cable shaft enclosure	BRE	FRO512/4 FT89/161/BS	13.07.89
FF43	F8, F9	Duct assessment for sizes up to 3000mm wide x 100mm deep x 2300mm long - 2 hr.	BRE	FRO512/4	13.09.89
FF44		Vermiculux duct assessment 2500mm x 650mm spanning between concrete walls 2 hr. stability & insulation to Aus. Std. 1530 Part 4 Section 9.	BRE	FRO512/4 FT89/198/BS	12.09.89
FF45	F6, F8	CDL Inhouse witnessed test of duct joints & sealing	BRE	FRO512/4 FT89/371/89	Dec. 89
FF46		Approval of Durasteel ducts to "Specification for smoke extract systems"	HKFSD	(61)FPB 312/61 III	15.03.90
FF47	F8, F9	Heat radiation assessment	WFRC	CL 10297	17.07.90
FF48	F8, F9	'F and H' fastrack ducting of 4 hr. fire resistance with adjusted hanger system up to 500mm x 500mm duct size	BRE	FRO512/4/FT90/357/BS	05.11.90
FF49	CDL 241	'F and H' fastrack ducting system assessing practical heat radiation	BRE	FT90/423/BS	12.12.90
FF50	F9	Assessment of 'fitness for purpose' of ducting systems against fire, and mechanical damage	LPC	CC 10932/RHE	18.04.90
FF51	CDL Drg ASCEX 90/01 rev.B. and CDL 208	Australis duct 4 hr. fire integrity. size: 2.3m wide x 2.4m deep.	BRE	FT90/155/BS	09.07.90
FF52	F8	Heat radiation from 4 hr. ducting system.	WFRC	CL 10297	17.07.90
FF54		Approval of ducts for kitchen extract	CoL	DH/DA	26.04.91
FF55	F9, CDL Drgs Various	Access panel to service duct to meet AS1530	BRE	FRO512/4/FT90/580/BS	18.03.91
FF56	F24	ULC Listing of Canadian ducts	ULC	CR2280:Report 1779	28.11.91
FF57	F6, F8, F9	4 hr. fire rated ducting approval	BOO	BLD(B)GR/BM/2(14)	02.07.87
BB80	F8, F9	Assessment of ducting system to BS476: Pt 24, (Pac. 2)	BRE	FRO512/4 FT91/333/91	03.12.91
FF60	F6, F8, F9	Acceptance for 4 hr. fire integrity ducts	BOO	BLD(B)GR/BM/2(14)	02.07.87
FF61	F8, FF38, F22	Acceptance for ducts sizes up to 2400mm wide x 1000mm deep, including impact assessment	HKFSD	(18)FPB316/2311	29.01.92
FF63	CLD Drg PS750/6	2 sided vertical shaft assessed to 2 hr. fire integrity	BRE	FRO512/-FT92/BS	14.10.92
FF64	BB80 (Pac 2), F8	Acceptance of 4 hr. horizontal duct construction	BOO	BLD(B)GR/BM/2(14)	24.03.92
FF65	BB80 (Pac 2), F9	Acceptance of 4 hr. smoke extract duct	BOO	BLD(B)GR/BM/2(14)	24.03.92
FF66		2 hr. insulated ducts using Conlit 150 wrap	BRE	None	02.04.93
FF67	F8, CDL Drgs: RD/DR/PS-925/SK06 to 08	2 hr. insulated double skin ducts	BRE	None	02.04.93
FF74	F41, F8, F9	Insulated duct (Newtherm) assessment for: sheet steel lining	LPC	CC84867	03.08.94
FF80		1 hr. insulation (25mm), 4 hr. insulation (100mm)	LPC	TE85412	03.01.95
FF81	F8, F9, F38	Flat Pack Ducts 2 hr. insulated	LPC	CC85452	06.01.95
FF85		Duraduct 30	LPC	CC86888A	Nov. 95
FF86		2 hr. insulated duct (Durasteel/min wool/steel)	LPC	CC86888B	Nov. 95
FF88		4 hr. insulated duct (Durasteel/min wool/steel)	LPC	CC86889	Jan. 96
FF88		4 hr. stability/integrity duct 40mm x 40mm x 3mm angle	LPC	CC86446	Jul. 95
FF89		Insulated duct 90 min hydrocarbon fire	LPC	CC87223	Feb. 96
FF91		2 & 3 sided insulated ducts - 2 hr. insulation	LPC	CC87283	Feb. 96
FF92		Enclosures for building services (4 sided)	LPC	CC87284	Mar. 96
FF93		Duraduct with 50mm thick Newtherm 1000 board lining	LPC	CC87285	Mar. 96
FF94		2 & 3 sided insulated ducts - 2 hr.	LPC	CC87285	Mar. 96

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
FF95		6.0mm single skin ducts	LPC	CC87456	Mar. 96
FF96		2, 3 and 4 sided enclosures for building services	LPC	CC87283A	Apr. 96
FF97		As FF96 but 6.0mm Durasteel – 2 hr.	LPC	CC87459	Apr. 96
FF100		Duct hanger sizes	LPC	CC87735	Jun. 96
FF102		4 hr. insulated duct - Type A	LPC	CC87736	Jun. 96
FF103		Insulated building services enclosures	LPC	CC87907	Aug. 96
FF104		Assessment of large ducts	LPC	CC88245	Sep. 96
FF105		Alternative hanger rod bracket (one anchor bolt)	LPC	CC88501	Jan. 97
FF106		LT2 Duct - assessment of clamping angles	LPC	CC88940	Feb. 97
FF108		New York City MEA Fire rated duct system	NYC Building Department	MEA 162-05-M	Jan. 06

1.5 CEILINGS & FLOORS - General, Industrial, Commercial, Institutional

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
F6	Durasteel Plenum ceiling	FIRTO Test	TE4220	Ad-Hoc test	11.05.82
F34	4 hr. insulated and loaded floor (5kPa)	LPC	TE82867	BS476: Pts 20 & 21	10.11.92
F35	4 hr. integrity ceiling - fire from below	LPC	TE83248	BS476: Pts 20 & 22	04.02.93

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
FF19	G7, FF24	3 hr. ceiling using 6.0mm Durasteel and self	WFRC	41536	08.06.87
FF24	F6, A2	3 hr. fire integrity plenum ceiling	WFRC	40897	24.02.87
FF32	FF24	4 hr. integrity ceiling fixed to lightweight Concrete block	BRE	FRO430/1 07D F88/1 94	31.08.88
FF34	F6	4 hr. fire integrity to BS476: Pt 22	BRE	FRO500/41 FT88/85IBS	30.11.88
FF35	F6	2 hr. fire integrity to BS476: Pt 22	BRE	FRO430/107 FT88/255	04.10.88
FF39	CDL Drg. T235	2 hr. fire integrity Plenum ceiling for road tunnels (6.0mm. Durasteel)	GRE	FRO51214 FT88/187/BS	06.02.89
FF40	CDL Drg. T235	As for FF39, but using 9.5mm Durasteel	BRE	FRO512/4 FT88/1 87/BS	06.02.89
FF57	F6, F8, F9	4 hr. fire rated ceiling approval	BOO	BLD(B)GR/BM/2(14)	02.07.87
FF59	G2	Assessment of ceiling as soffit protection for concrete floor	BRE	FRO512/4	16.07.92
FF62	F6	Assessment for 1 hr. insulated ceiling	BRE	FRO512/4 FT92 188/BS	21.09.92
FF68	F34	4 hr. insulated floor - loaded to 10kPa	LPC	CC83683A RHE/MB	26.05.93
FF69	F35	2 hr. fire resistant ceiling with fire above or below membrane	LPC	CC83683C	16.07.93
FF70	F35	4 hr. fire integrity ceiling with alternative channel supports	LPC	CC84001/rak	31.08.93
FF71	F34	4 hr. insulated and loaded floor with 1 beam supports	LPC	CC84000/rak	31.08.93
FF72	F35	2 hr. fire insulated ceiling with fire below	LPC	CC83683C	16.07.93
FF73	F34	Acceptance of loaded floor construction	BOO	(5)in BLD(B)GR/BM/2(272)	15.06.93
FF75	F34, F35	4 hr. insulated ceiling - fire above or below	LPC	CC85096B	04.08.94
FF76	F35, F34	4 hr. insulated ceiling - fire from below	LPC	CC85096A	04.08.94
FF77	F35, F34, AI, A2	2 hr. insulated ceiling (6.3mm) - fire above or below	LPC	CC850978	04.08.94
FF78	F35F34, AI, A2	2 hr. insulated ceiling (62mm) - fire from below	LPC	CC85097A	04.09.94
FF79	F34, F35	Ceiling to AS1530: Pt 4 (Australia)	LPC	CC85084	29.07.94
FF82	F34, F35, A21	Assessment for 2 hr. plenum ceiling, fire above or below	LPC	CC85656	22.12.94
FF83	F34	Assessment for 2 hr. loaded floor	LPC	CC85898	01.03.95
FF84	F34, F35	Assessment for 4 hr. ceiling, fire above or below	LPC	CC85920	07.03.95
FF87		2 hr. insulated ceiling - Rockwool laid over	LPC	CC86886	Nov. 95
FF98		2 hr. insulated ceiling - calcium silicate	LPC	CC87598	Apr. 96
FF99		4 hr. insulated ceiling - calcium silicate	LPC	CC87599	Apr. 96
FF101		2 hr. ceiling - 6.0mm Durasteel	LPC	CC87734	Jun. 96
FF107	F34, F35	2 and 4 hr. ceiling assessment for 6.0mm and 9.5mm DuraSteel	WFRC	C126658D	Jan. 03

1.6 FIREBLAST® WALLS - Offshore, Petrochemical & Explosion Hazards

(Structural barriers designed to withstand the dual risks of gas explosions followed by hydrocarbon fires).

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
L1	Range of gas explosion tests up to 2 bars overpressure	BRE	TCR 5/91	industry standard	25.10.90
L2	H120: FIREBLAST system	WFRC	54839	D.En. Hydrocarbon test Issue 1:1990	13.11.91
L3	Impact/projectile resistance	ULIRC		Ad-hoc test	Feb. 92
L4	Development & validation of FIREBLAST	S.C.I.	SCI-RT-187	Blast testing	Jan. 91
L5	Series of blast tests on H60, Duracheck & Duraflush doors	BRE	TCR 112/95	Blast testing	Jan. 96

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
LL1	L2	H0 certificate	Lloyds	SAS F070072	07.03.07
LL2	L2	H60 certificate	Lloyds	SAS F070071	07.03.07
LL3	L2	H120 certificate	Lloyds	SAS F070070	07.03.07
LL4	L2, G6, LL1, LL2, LL3	LR Type Approval – FIREBLAST	Lloyds	92/00031(E2)	16.10.03
LL5	L2, G6, LL3	FIREBLAST with jet fire certification (H120/J60)	Lloyds	CSD/SVS/FIRE/DGG/255 6	16.08.93
LL6	H5,L5	H60 Single Blast Door	Lloyds	SAS F050032	05.02.05
LL7	L5	Stainless Steel Blast Door Assessment	Ireland Eng.	5085	11.10.05
DD9	LL5, CDL Drgs RD/DR/PS1003/SK11 & SK12	Penetration seals through Fireblast (H120/J60) for cables and pipes	Lloyds	CSD/SVS/FIRE/DGG/255 6	24.09.93
DD10	LL5, CDL Drgs RD/DR/PS1003/SK9	Penetration seals through Fireblast (H120/J60) For single pipes	Lloyds	CSD/SVS/FIRE/DGG/255 6	05.10.93

1.7 DURASHAFT® - Commercial

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
K1	1 hr. insulated DURASHAFT	CDL	FRO512/4	BS476: Pt 20	03.01.91
K2	2 hr. insulated DURASHAFT	(BRE witnessed test) CDL	FT90/444/BS FRO512/4	BS476: Pt 20	03.01.91
K3	2 hr. insulated DURASHAFT sealing system.	(BRE witnessed test) CDL	FT90/445/BS FRO512/4	BS476: Pt 20	04.01.91
K4	1 hr. insulated DURASHAFT-improved construction/ -plasterboard facing fire	(BRE witnessed test) CDL 408	FT90/446/BS FRO512/2	BS476: Pts 20 & 22	18.12.92
K5	1 hr. insulated DURASHAFT-improved construction/ -Durasteel facing fire	(BRE witnessed test) CDL 409	FT92/218/BS FRO512/2	BS476: Pts 20 & 22	18.12.92
K6	2 hr. insulated DURASHAFT-Improved construction/ -plasterboard facing fire	(BRE witnessed test) CDL 412	FRO512/2	BS476: Pts 20 & 22	18.12.92
K7	2 hr. insulated DURASHAFT-improved construction/ -Durasteel facing fire	(BRE witnessed test) CDL 437	FRO512/2 FT92/316/BS	BS476: Pts 20 & 22	24.02.93

1.8 CABLE MODULES & FIRE BARRIERS - Power Generation

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
C1	Module 1 hr. Fire Resistance	WRCSI Test	29177	BS476: Pt 8 1972	10.05.82
C2	1 hr. Fire Resistance	FIRTO Proving Test	TE 4665	BS476: Pt 8 1972	19.07.83
C3	1 hr. Fire Resistance	FIRTO Test	TE 4666	CEGB Appendix A BS476: Pt 8 1972	12.07.83
C4	1 hr. Fire Resistance	FIRTO Modification Test	TE 4679	CEGB Appendix A BS476: Pt 8 1972	26.07.83
C5	Durafoil Crossover Fire Wall	WRCSI Test	33156	BS476: Pt 8 1972	23.08.83
C6	Barrier Mechanical Test	TRADA	MT219		20.07.82
C7	Barrier Mechanical Test	TRADA	MT327		12.08.83
C8	Barrier 3 hr. Fire Resistance, USA	WRCSI/UL Test	Underwriters Lab R11164-1 TE 83509	UL263 (ASTM E119, NFPA 251, ANSI A2.1) BS476: Pt 20	26.10.84
C9	Composite barrier, including door and penetration seals for 3 hr.	LPC	TE 83509	E/TSS/EX5/7080:Issue 7	Sep. 93

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
CC1	C1	Module Modification Assessment	WRCSI	30241	30.03.82
CC2	C3	Assessment for Fire from Either side	BRE	FRS/A 134 F83/528	24.01.84
CC3	C8	3 hr. Assessment Non Load-bearing Wall	WRCSI	36026	11.01.85
CC4	C8	4 hr. Assessment Non Load-bearing Wall	WRCSI	36027	11.01.85
CC5	C3, C4 & Various CDL in-house tests.	Type Approval to CEGB Standard: E/TSS/EX5/7080: Issue 6	CEGB	EPA210/2	Jun. 86

1.9 ENCLOSURES - Valve Actuator Boxes, Computer Enclosures, Hazardous Material Stores, Container Wagons

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
E1	Actuator Box	Yarsley Fire Test	D 74054	Hydrocarbon engulfment	19.08.83
E2	Actuator Box	Yarsley Fire Test	E 77347/3	Hydrocarbon engulfment	23.08.85
E3	Radio frequency shielding	EMC	CAPE 3/192	MIL-STD-285	20.01.92
E4	Hazardous material storage enclosure for LUL	WFRC	56013	BS476: Pt 20 -ad-hoc fire from inside	07.09.92
D32	1 hr. insulated pen. seal for LUL enclosure	WFRC	57384	BS476: Pt 20 ad-hoc	29.10.92
E5	Actuator Box	LPC	TE82869	Pool fire engulfment	21.10.92
E6	Actuator Box 30min	LPC	TE83090	Pool fire engulfment	15.12.92

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
EE1	E2	Replacement of stainless steel with galvanized steel Durasteel	BRE	FRO512/4 FT90/593/BS	18.03.91
EE2	A15, A16	F30 lining for container wagons	IBMB	314/Nau/ips	21.07.92
EE3	E4, D32	1 hr. insulated relay box	WFRC	C80436	26.01.93
EE4	E4	1 hr. insulated enclosure, alternative construction	WFRC	C80560	26.01.93
EE5	E4, EE4	1 hr. insulated 'linking collar' for adjacent enclosures	WFRC	C80759	17.08.93

1.10 COMPOSITE SYSTEMS - General, Industrial, Commercial, Institutional

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
KK1	C8	Hatch covers, 4 hr. insulated removable trench covers, using angle frame support.	WFRC	40783	20.02.87
KK2	C8	Hatch covers, 4 hr. insulated removable trench covers, using rebated concrete floor support	WFRC	41056	18.03.87
KK3	A1, A2, A10, D25	2 hr. and 4 hr. integrity barrier construction incorporating pen seals, a twin door, & a fire damper, all capable of withstanding 4g shockwave and be gas-tight	WFRC	41057	19.03.87
KK4	C8, A10, D25	4 hr. insulated barrier construction incorporating: pen seals, a twin-door & a fire damper, all capable of withstanding 4g shockwave and be gas-tight	WFRC	C42278	08.09.87
KK5	C8	Hatch covers - 4 hr. insulated removable trench covers, panel size 3000mm x 1050mm x 198mm	WFRC	40716	20.01.87
KK6	C8, G7	Hatch covers - 2 hr. insulated removable trench cover, using brick supports	WFRC	40648	09.01.87
KK7	FF21, CDL51	Vertical bulkhead and ceiling for Fire Escape passage providing 2 hr. insulation	BRE	FRO430/107 F88/172	26.07.88
KK8	CDL Drg T291B	2 hr. demountable firewall with Duracheck door to AS1530: Part4	BRE	FRO512/4 FT91/150/BS	29.07.91
KK9		Column encasement with Durasteel and Conlit 150P	IBMP	08/Nau/Rm	11.03.91

2.0 DuraWall

2.1 MATERIAL TESTS - All Building Sectors

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
M1	DuraWall acoustic testing	CSTB	AC97-216	NF S 31-049, S 31-050, S 31-045, EN ISO 717.1	Dec. 97
M2	DuraWall growth promotion analysis	CCFRA Technology Limited	FH/REP/67949/1	Japanese Seal Method	Aug. 02
M3	DuraWall water absorption properties	CCFRA Technology Limited	FH/REP/67949/2	CP-BM-2/67-2	Sep. 02
M4	DuraWall bacteria growth test	CCFRA Technology Limited	FH/67949/3	Adhoc	Oct. 02
M5	DuraWall wall and ceiling installation to an unlimited height	FM Global	3016766	Class 4880	Oct. 05
M6	DuraWall non-combustibility	UL/ULC	06CA62101	CAN4-S114-05	Dec. 06
M7	Durasystems acoustical barrier absorption testing	Vibro-Acoustical	4222	ASTM C423-08	Oct. 08
M8	Load test of Promat H wall with wood studs	Architectural Test Inc	89-020-1	ASTM E-72	Jan. 90

2.2 PARTITIONS - General, Industrial, Commercial, Institutional

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
NP1	100mm DuraWall panel wall, 4 hr. integrity, 2 hr. insulation	Warrington Fire Research	127950	BS 476: Pt 22	Mar. 03
NP2	150mm DuraWall panel wall 3 hr. system	Warrington Fire Research	127952	BS 476: Pt 22	May 03
NP3	150mm DuraWall panel wall 4 hr. having increased heights and spans assessment report	Warrington Fire Research	148955	BS 476: Pt 22	Aug. 05
NP4	150mm DuraWall panel wall 4 hr. system	Warrington Fire Research	147018	BS 476: Pt 22	Aug. 05
NP5	175mm DuraWall panel wall 3 hr. system	Warrington Fire Research	158380	BS 476: Pt 22	Nov. 06
NP6	Between 60mm and 175mm extended spans of 7.5 meters exterior DuraWall fire performance assessment report	BRE	CC 220366	BS 476: Pt 22	Mar. 06
NP7	Between 60mm and 200mm extended spans of 7.5 meters interior DuraWall fire performance assessment report	BRE	CC 214575	BS 476: Pt 22	Mar. 06
NP8	Between 100mm and 175mm DuraWall panel wall 1 hr. thru 3 hr. having increased heights and spans assessment report	Warrington Fire Research	159925	BS 476: Pt 22	Dec. 06
NP9	100mm DuraWall North American panel 45min wall system	UL/ULC	07CA40986	UL263, ASTM E119, NFPA 251, CAN/ULC-S101-04	Oct. 07
NP10	150mm DuraWall North American panel 2 hr. wall system	UL/ULC	06CA58550	UL263, ASTM E119, NFPA 251, CAN/ULC-S101-04	Mar. 07

2.3 CEILINGS - General, Industrial, Commercial, Institutional

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
NC1	100mm DuraWall 1 hr. ceiling	Warrington Fire Research	127951	BS 476: Pt 22	Mar. 03
NC2	150mm DuraWall 2 hr. ceiling	Warrington Fire Research	150114	BS 476: Pt 22	Feb. 06

3.0 Calcium Silicate Products

3.1 MATERIAL TESTS - All Building Sectors

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
O1	Promat H Flammability test	Omega Point Laboratories	95726-1	ASTM E136-79	Mar. 87
O2	Promat H smoke and flame spread testing	United States Testing Company Inc.	96847-4	ASTM E84-84a	Aug. 87
O3	Promat H surface burning characteristics test	United States Testing Company Inc.	97636	ASTM E-84-86	Nov. 87
O4	Promat L combustion test	Omega Point Laboratories	8806-88011	ASTM E136-82	Sep. 88
O5	Promat L smoke and flame spread testing	Omega Point Laboratories	8806-88031	ASTM E84-84a	Nov. 88
O6	Promat L toxicity of combustion test	Omega Point Laboratories	8806-88006	University of Pittsburg Toxicity Test	Jan. 89
O7	Promat H toxicity of combustion test	Omega Point Laboratories	8806-88007	University of Pittsburg Toxicity Test	Jan. 89
O8	Radiation exposure endurance testing of Promat H and L	Omega Point Laboratories	8806-89007	Adhoc	May 89
O9	Testing for nonmetallic thermal insulation for austenitic stainless steel	Omega Point Laboratories	8806-80002/3	U.S. Atomic Energy Commission	Jan. 89
O10	Wicking Effects of Promat H and L	Omega Point Laboratories	8806-88040	Adhoc	Jan. 89
O11	Airborne particle when sawing material analysis	Omega Point Laboratories	8806-90244	OSHA	Jun. 90

3.2 PARTITIONS - General, Industrial, Commercial, Power Generation

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
OP1	Hydrocarbon fire test for Promat H protecting concrete	VTEC Laboratories Inc.	100-75B	Adhoc	Apr. 87
OP2	Hydrocarbon fire test for Promat H protecting concrete	VTEC Laboratories Inc.	100-130	Adhoc	Jun. 88
OP3	4 hr. Hydrocarbon fire test for Promat H protecting concrete	Omega Point Laboratories	8806-80054	Adhoc	Jan. 89
OP4	2 hr. Promat H metal stub load bearing wall test	UL	89NK22185	ASTM E119, UL 263, NFPA 251	Dec. 89
OP5	Load Testing of a 2 hr. wood stud wall	Architectural Testing Inc.	ATI-7008-1	ASTM E72-80, ASTM E564-76	Jan. 90
OP6	Load Testing of a 2 hr. solid wall	Architectural Testing Inc.	ATI-7008-3	ASTM E72-80, ASTM E564-76	Jan. 90
OP7	4 hr. 15mm of Promat H board fastened to 8" non-fire rated block assembly	Omega Point Laboratories	8806-90030	ASTM E72-80, ASTM E564-76	Feb. 90
OP8	3 hr. Promat H cladding solid wall/ceiling assemblies	Omega Point Laboratories	8806-90254	ASTM E119, UL 263, NFPA 251, ANSI A2.1	Jun. 90
OP9	2 hr. curtain wall/floor intersection protection system	Omega Point Laboratories	8806-90560	ASTM E119, UL 263, NFPA 251, ANSI A2.1	Oct. 90
OP10	1 and 2 hr. Promat H solid wall	UL	89NK28691/ 89NK11307	ASTM E119, E814-83, UL 263, NFPA 251, ANSI A2.1	Jan. 90

3.3 CEILINGS - General, Industrial, Commercial

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
OC1	1 hr. Promat H Ceiling	SwRI	01-1902-619	ASTM E119-83	Apr. 89

3.4 CONDUIT/CABLE TRAY - Power Generation, General, Industrial, Commercial

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
OCT2	1 hr. Promat H cable tray protection	Omega Point Laboratories	8806-1HRSS-01	ANI/MAERP RA Guide Lines for Fire Stop and Wrap Systems	Apr. 88
OCT3	1 hr. Promat H cable tray protection	SwRI	01-2299-001	ANI/MAERP RA Guide Lines for Fire Stop and Wrap Systems	Dec. 88
OCT4	Sprinkler resistance for 1 hr. Promat H cable tray protection	Omega Point Laboratories	8806-88049a	Adhoc	Feb. 89
OCT5	Sprinkler resistance for 3 hr. Promat H & L cable tray protection	Omega Point Laboratories	8806-88049b	Adhoc	Feb. 89
OCT6	3 hr. Promat L cable tray protection	Omega Point Laboratories	8806-89006	ANI/MAERP RA Guide Lines for Fire Stop and Wrap Systems	May 89
OCT7	3 hr. Promat H & L conduit protection against concrete	Omega Point Laboratories	8806-89004	ANI/MAERP RA Guide Lines for Fire Stop and Wrap Systems	May 89
OCT8	3 hr. Promat H & L cable drop protection	Omega Point Laboratories	8806-88053	ANI/MAERP RA Standard Fire Endurance Test for Class 1E Electrical Circuits and Cable Drop Protection	May 89
OCT9	3 hr. Promat H & L cable tray protective system	Omega Point Laboratories	8806-89017a	ANI/MAERP RA Standard Fire Endurance Test for Class 1E Electrical Circuits	May 89
OCT10	3 hr. Promat L Free Standing Conduit	Omega Point Laboratories	8806-89017b	ANI/MAERP RA Standard Fire Endurance Test for Class 1E Electrical Circuits Revision 1	Apr. 91

3.5 MARINE SYSTEMS

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
OMT1		European Union Promarine-640/B-15 Certificate	Warrington/MCA	WCL MED0159QA	25.08.04
OMT2		UK and Northern Ireland Promarine-640 Certificate	Warrington/MCA	WCL MED0160TE	25.08.04
OMT3		European Union Promarine-450/B-15 Certificate	Warrington/MCA	WCL MED0161QA	25.08.04
OMT4		UK and Northern Ireland Promarine 450 Certificate	Warrington/MCA	WCL MED0162TE	25.08.04

4.0 Fire Stopping and Miscellaneous Products

4.1 PENETRATION SEALS - Power Generation, Industrial, Commercial, Offshore

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
Duras.t.o.p. Mortar					
D1	2 hr. Fire Resistance	WRCSI Test	33646	BS 476: Pt 8 1972 App. A	15.11.83
D2	Non Combustibility	WRCSI Test	34928	BS 476: Pt 4 1970	07.11.90
D3	Vibration Testing	Plessey Test	4334	CEGB 7080	17.02.84
A7	3 hr. integrity / 2 hr. Insulation pen seals in barriers	CTICM	87-U-003P	French Home Secretary	07.01.87
D23	4 hr. seal in concrete floor and 6 hr. seal in brick or block work wall	WFRC/CDL	43485	BS 476: Pt 20 1987	04.02.88
D24	4 hr. integrity in horizontal Durasteel single skin barrier with penetration seal.	WFRC/CDL	40652	BS 476: Pt 8 1972	12.01.87
D25	4 hr. integrity in horizontal Durasteel double skin barrier with penetration seal.	WFRC/CDL	MC(828)	BS 476: Pt 8 1972	19.11.86
D30	Water Penetration. Class III	CNPP/EDF	P.F.87 4037-03	ESEPE 8743-B	03.12.87
D31	2 hr. fire resistance	CNPP/EDF	P.F.87 4021-03	ESEPE 8526-A	14.12.87
F29	Thermal conductivity at ambient	AEA		Ad hoc	Feb. 92
D32	1 hr. insulated system for enclosures	WFRC	57384	BS 476: Pt 20 ad hoc	29.10.92
D39	Aging Durastop	BTC	BTC 5282F	BS 476: Pt 22 1987	31.01.94
D40	Vibrated Durastop and fire test	BTC	BTC 5283F	BS 476: Pt 22 1987	31.01.94
D41	Vibration	MIRA	94-272064	CEGB Specification 7080 Section 7.3.8	12.01.94
D44	Durastop with cables through wall	CTICM	96-P-508	BS 476: Pt 22 1987	Jan. 97
D45	Durastop with cables through ceiling	CTICM	96-P-509	BS 476: Pt 22 1987	Jan. 97
NA1	3 hr. FTH with duct through concrete slab	ULC	24495	ULC-S115	14.05.98
NA2	4 hr. FT with ducts through concrete slab	ULC	24533	ULC-S115	13.03.98
NA3	2 hr. FH, 1 & 2 hr. FTH cables and pipes through concrete slab	ULC	24576	ULC-S115	14.08.98
Durastop LDSE					
D11	3 hr. Fire Resistance: cables & pipes	SwRI	CTP 1024	ASTM E119	21.04.82
D12	3 hr. Fire Resistance: cables & conduits	SwRI	CTP 1063	ASTM E119	21.01.85
D13	3 hr. Fire Resistance: aluminum conduit	SwRI	CTP 1092.4	ASTM E119	16.05.85
D26	1 m ² Seal - fabrication procedure	CDL/NNC	CDL23 Part 1	Installation	04.12.86
D27	1 m ² Seal - high pressure test to 20psi for 15min.	CDL/NNC	CDL23 Part 2	Ad-hoc	04.12.86
D28	1 m ² Seal - 1 hr. fire resistance	CDL/NNC	CDL23 Part 3	BS 476: Pt 8	04.12.86
D29	1 m ² Seal - hose stream test	CDL/NNC	CDL23 Part 4	CEGB: E/TSS/EX5/7080 Issue 6	04.12.86
Durastop HDSE					
D14	3 hr. Fire Resistance: cables, pipes & Conduits	SwRI	CTP 1002	ASTM E119	27.05.80
D15	3 hr. Fire Resistance: cables, pipes & Conduits	SwRI	CTP 1010	ASTM E119	23.07.81
D16	3 hr. Fire Resistance: repaired seals	SwRI	CTP 1012	ASTM E119	23.07.81
D17	3 hr. Fire Resistance: minimum spacings	SwRI	CTP 1014	ASTM E119	23.07.81
D12	3 hr. Fire Resistance: insulated pipes	SwRI	CTP 1063.5	ASTM E119	21.01.85
D9	3 hr. Fire Resistance: large openings, cables, pipes, conduits & sub-seals	SwRI	CTP 1076	ASTM E119	09.10.84
Durastop Promaflex					
D18	3 hr. Fire Resistance: cables & pipes: insulated and non-insulated, flexed prior to fire testing.	SwRI	CTP 1025	ASTM E119	21.04.82
F29	Thermal conductivity at ambient	AEA		Ad-hoc	Feb. 92
Durastop Radflex					
D14	Fire Resistance: cables & pipes	SwRI	CTP 1002	ASTM E119	27.05.80
D19	3 hr. Fire Resistance: radiation exposure prior to fire testing.	SwRI	CTP 1093.1	ASTM E119	16.05.85

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
Durastop Fireboots					
D14	3 hr. Fire Resistance	SwRI	CTP 1002	ASTM E119	27.05.80
D20	3 hr. Fire Resistance: using extension sleeve	SwRI	CTP 1020	ASTM E119	21.04.82
D21	3 hr. Fire Resistance: boot as sub seal	SwRI	CTP 1022	ASTM E119	21.04.82
D22	3 hr. Fire Resistance: using inverted boot	SwRI	CTP 1045	ASTM E119	29.06.83
D12	3 hr. Fire Resistance: insulated pipe	SwRI	CTP 1063.6	ASTM E119	21.01.85
Durastop Radboots					
D20	3 hr. Fire Resistance: using sleeve using sleeve extenders	SwRI	CTP 1020	ASTM E119	21.04.82
Durastop Building Gap Seals					
D34	3 hr. fire resistance of cruciform joint configuration fully deflected	LPC	TE82552	BS476: Pt 20 + Hose Stream Test	Aug. 92
D35	Air leakage test fully deflected	AEA	E 01689	Ad-hoc test	24.06.92
D36	Hydrostatic water leakage at 8.1psi	AEA	T120/92	Ad-hoc test	02.07.92
D37	Air leakage test at 105°C, 3.8psi	AEA	T121/92	Ad-hoc test	02.07.92
D38	Hydrostatic water leakage at 8.1psi fully deflected	AEA	T122/92	Ad-hoc test	02.07.92
D42	Flexible gap seal - Duraflex C19N31	BTC	BTC 5470F	BS476: Pt 22	Jul. 96
D43	Flexible gap seal - Duraflex C19	BTC	BTC 5471F	BS476: Pt 22	Jul. 96
D33	Flexible composite fabric gap seal	LPC	TE 82551	BS476: Pt 22 + Hose Stream Test	Aug. 92

SUPPORTING CERTIFICATION

CERT NO.	OTHER REFERENCES	CERTIFICATE DETAILS	AUTHORITY	NUMBER	DATE
DD1	D1	Assessment of Fire Resistance, 2 hr.	WRCSI	35148	03.07.84
DD2	D1 & various CDL in-house Tests	Type Approval to CEGB standard: E/TSS/EX5/7080: Issue 6	CEGB	EPA211	Jul. 85
DD3	D1	Durastop acceptance	Singapore	SFS/ED/bm/72	22.03.86
DD4	D2	Durastop - non combustibility acceptance	Lloyds	ICD/2604/JHCR/FIRE B/27/1/1	16.07.86
DD5	D14	1 hr. fire resistance to PVC pipe within steel pipe	BRE	FRO512/4 FT90/246/BS	04.09.90
DD6	CDL Drg CDL/R/391/44	Composite seal configuration using Durastop, Mineral wool, and Interflex for 4 hr. fire insulation	BRE	FRO512/4 FT90/587/BS	22.03.91
DD7	CDL Drg T419	Durasteel sliding plate expansion gap seal	BRE	FRO512/4 FT91/122/BS	09.07.91
DD8		Durastop acceptance	BOO	BDD(B)GR/BM/2 XI	25.06.84
DD9	LL5, CDL Drgs RD/DR/PS 1003/SK11 & SK12	Offshore penetration seal: H120/J60 for cables & pipes	Lloyds	CSD/SVS/FIRE/OGG/2556	24.09.93
DD10	LL5, CDL Drg RD/DR/PS 1003/SK9	Offshore penetration seal: H120/J60 for single pipes	Lloyds	CSD/SVS/FIRE/DGG/2556	05.10.93
DD11	D2	Durastop - test assessment	LUL	6220-JIU-F9575-TSK 9907	26.04.93
DD12		Durastop batts fire seal	LPC	CC86860C	Oct. 95
DD13		Durastop pillow	LPC	CC86860B	Oct. 95
DD14		Durastop expansion seal	LPC	CC86860A	Oct. 95
DD15		Durastop FR intumescent acrylic sealant	WFRC	54260/B	Sep. 95
DD16		Durastop FR intumescent acrylic sealant	WFRC	54845/B	Sep. 95
DD17		Durastop FR intumescent acrylic sealant	WFRC	59021	Sep. 95
DD18		Durastop FR intumescent acrylic sealant	WFRC	59022	Sep. 95
DD19		Durastop FR intumescent acrylic sealant	WFRC	57133	Sep. 95
DD20		Durastop FR 55 silicone seal	WFRC	C81890	Oct. 95
DD21		Duraflex C19N31 - fire from both sides	BTC	0268FA	Aug. 96
DD22		Duraflex C19 - fire from both sides	BTC	0269FA	Aug. 96
NAC1	NA1	3 hr. FTH Durastop, mineral wool, silicone for FRD-1	ULC	SP847	17.09.98
NAC2	NA1	3 hr. FTH Durastop, mineral wool, silicone for FRD-2	ULC	SP848	17.09.98
NAC3	NA2	4 hr. FT intumescent pillows, mineral wool, silicone for FRD-1 (pressurization duct)	ULC	SP849	17.09.98
NAC4	NA2	4 hr. FT intumescent pillows, mineral wool, silicone for FRD-2 (kitchen exhaust duct)	ULC	SP850	17.09.98
NAC5	NA3	2 hr. FH, 1 & 2 hr. FTH Durastop, silicone sealant, intumescent sealant for pipes and cables	ULC	SP851	23.09.99
NAC7		Durastop Acceptance	IMP	40084002	26.04.94

4.2 GREASE DUCT ACCESS DOORS

INDEPENDENT TESTING

TEST NO.	TYPE	TESTING LABORATORY	NUMBER	STANDARD	DATE
AD1	Grease Duct Access Door	UL/ULC	MH26975	UL 1978	Apr. 02

5.0 GLOSSARY

LABORATORIES

AEA	Atomic Energy Authority Industrial Technology
AIRO	Acoustical Investigation and Research Organization
AUES	Aberdeen University Engineering Services
BTC	Building Test Centre
BSRIA	Building Services Research and Information Association
CEE	Cape Environmental Engineering, Warwick
BVA	BVA Systems, Vibro-Acoustics - Ontario, Canada
CDL	Cape Durasteel Ltd. - independently witnessed test
COMMERCIAL TESTING	Commercial Testing Company - Georgia, U.S.A.
CNPP	Centre National de Prevention, et de Protection, Champs-sur-Marne France
CSTB	French approved independent testing house in Paris
CTICM	French approved commercial testing house in Maziers-Le-Metz
EMC	Electromagnetic Compatibility Consultants - Bishop's Stortford, UK
FIRTO	Fire Insurers Research and Testing Organization - Part of LPC
FM	Factory Mutual Research - Massachusetts, USA
FRI	Forest Research Institute, Malaysia
FROSI	Fire Research Organization Special Investigation - Ministry of Technology and Fire Offices' Committee Joint Fire Research Organization
IBMB	Institut Fur Baustoffe, Massivbau und Brandschutz, Braunschweig, Germany
IfBt	Institut Fur Bautechnik, Berlin
IHA	Institut fur Hygiene und Arbeitsmedizin, Aachen
IMP	Instituto Mexicano del Petroleo
LDF	Labor Dr. Fechter, Berlin
MIRA	Motor Industry Research Association, Nuneaton
NbL	Norge Branntekniske Laboratorsum - Trondheim, Norway
SCI	Steel Construction Institute, Ascot
SISIR	Singapore Institute of Standards and Industrial Research
STATSPROVEANSTALTEN	National Institute for Testing of Material - Copenhagen, Denmark
SwRI	South West Research Institute - San Antonio, Texas
TRADA	Timber Research and Development Association
ULIRC	University of Liverpool Impact Research Centre
Vibro-Acoustics	Vibro-Acoustics Noise Control Products and Systems
WARNOCK HERSEY	Warnock Hersey Laboratories, Vancouver
WFRC	Warrington Fire Research Centre
WRCSI	Warrington Research Centre Special Investigation (NATLAS)
YARSLEY	Yarsley Technical Centre incorporating Yarsley Research Laboratories (NATLAS)

AUTHORITIES

AS	Australian Standards Institute
ABS	American Bureau of Shipping - London, UK
ANSI	American National Standards Institute
ANI/MAERP	American Nuclear Insurers - Mutual Atomic Energy Re-insurance Pool
ASTM	American Society for Testing Materials
BOO	Building Ordinance Office, Building & Lands Dept., Hong Kong
BRE	Building Research Establishment Fire Research Station. part of Department of the Environment Borehamwood UK
BSI (BS)	British Standards Institution (BS)
BV	Bureau Veritas - Paris, France
CBP	Cape Building Products Research Laboratory - Uxbridge, UK
CCG	Canadian Coastguard
CEGB	Central Electricity Generating Board, Generation Development & Construction Division - Barnwood UK
CoL	City of London
COM	Melbourne City Council
DnV	Det Norske Veritas- Oslo, Norway
DSS	Direktorater for Statens Skibstilsyn - Copenhagen, Denmark
DOT	Department of Trade (Marine Surveyors) - London, UK
EDF	Electricite de France
FOC	Fire Offices' Committee - London, UK
GLC	Greater London Council - London, UK
HK	Hong Kong
HKFSD	Hong Kong Fire Services Department
ISO(DIS)	International Standards Organization (Draft international Standard)
JMCA	James Madden Cooper Atkins - Acoustic Consultants. Australia
LLOYDS	Lloyds Register of Shipping - London, UK
LPC	The Loss Prevention Council, Borehamwood
LUL	London Underground Limited, Scientific Services Division
MALAYSIA	Ibu Pejabat, Jabatan Perhidmatan, Bomba
MVVWS	Ministrie van Verkeer en Waterstaat, Scheepvaartinspectie - Rijnsijk, Nederland
NCB	National Coal Board Mining Department - Doncaster, UK
NFPA	National Fire Protection Association
NMD	Norwegian Maritime Directorate - Oslo, Norway

AUTHORITIES

NNC
NSASN
ORTECH
SINGAPORE
SINTEF
SOLAS
UL
ULC
WRCSI

STANDARDS

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ASTM E136 1979
BS 476
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BS 476 Part 4 1970
BS 476 Part 8 1972
BS 476 Part 8 CEGB Appx A
BS 476 Part 11 1982
BS 476 Part 20 1987
BS 476 Part 22 1987
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BS 476 Part 24 1987
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BS 476 Section 31.1 1983

BS 874 1973
BS 1811 Part 2 1969
BS 2750 1980
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BS 5669 Part 1 1989
BS 5821 1980
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National Swedish Administration of Shipping and Navigation
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Government of Singapore
Norges Branntekniske Laboratorium (Norwegian Fire Research Laboratory) - Trondheim, Norway
International Conference on the Safety of Life at Sea
Underwriters Laboratories - Chicago, U.S.A.
Underwriters Laboratories of Canada - Scarborough, Ontario
Warrington Research Centre - Warrington, UK

Methods for fire tests on building materials, components and structures
Behaviour of Materials in a Vertical Tube Furnace at 750 °C
Fire Tests on Building Materials and Structures
Fire Resistance Tests of Structures
Non Combustibility Test for Materials
Test Method and Criteria for the Fire Resistance of Elements of Building Construction
Test as BS 476 Part 8 with modified time/temperature curve
Method for assessing the heat emission from building materials
Method for determination of the fire resistance of elements of construction
Method for determining of the fire resistance of non-load bearing elements of construction
Methods for determination of the contribution of components to the fire resistance of a structure
Method for determination of the fire resistance of ventilation ducts

Method of measurement under ambient temperature conditions (smoke penetration through doorsets and shutter assemblies)
Methods for Determining Thermal Insulation Properties
Methods of Test for Woodchip Boards and other Particle Boards
Methods of Measurement of Sound Insulation in Buildings and of Building Elements
Water tightness test
Particleboards - methods of testing, including impact test
Method for Rating Sound Insulation in Buildings and of Building Elements
Dept. of Energy, hydrocarbon fire resistance test for elements of construction for offshore installations
Fire behaviour of building materials and components with definitions and requirements
Fire behaviour of building materials and components particularly firewalls and non-load-bearing external walls
Testing of natural stone: freeze-thaw cyclic test: method Z
HVAC test: specification for air leakage of ductwork
National Power standard for fire resistance of barriers in power stations
Fire resistance and gas tightness of penetration seals
Water retention test for penetration seals
Requirements for electromagnetic shielding enclosures, attenuation characteristics and measurement (US military standard)
Vapour removal from cooking equipment: 1991
Testing of concrete
Fire Resistance of Building Elements
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Specification for Fire Doors - Singapore
Fire Testing of Building Construction and Materials - USA

TRADEMARKS

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