

Checklist for CO₂/Halon Extinguishing System

I. REFERENCE

Project	F.S.D. Ref.
Address	Location/Room
.....
Working/Design Drawing Ref.	Yes No N/A
Is drawing enclosed?	[] [] []
Approved Computer Program Ref.	
Is program enclosed?	[] [] []
Is catalogue enclosed?	[] [] []
Is certification for pneumatic test to pipings enclosed?	[] [] []

II. TYPE OF SYSTEM

		CO ₂	BTM	BCF
		[]	[]	[]
Total Flooding []	Local Application []			
Modular []	Cylinder []			
Pre-engineered []	Engineered []			
High Pressure []	Low Pressure []			
Single Hazard []	Multiple Hazard []			
Primary Bank Only []	With Reserve Bank []			

III. PROTECTED AREA

	Yes	No	Remarks
3.1 Does occupancy tally with approved building plans?	[]	[]
3.2 Does compartmentation of protected premises tally with approved building plans?	[]	[]
3.3 Does general layout tally with F.S.I. drawings?	[]	[]
3.4 Are openings properly sealed or closable automatically during/before agent discharge?	[]	[]
3.5 Are warning/instruction signs provided at entrance to; and in the case of normally occupied premises, inside the protected area?	[]	[]

3.6 Does the following components:—

	Tally with drawings?		If not, whether the as-fitted location/position acceptable?		Remarks
	Yes	No	Yes	No	
3.6.1 Audio Alarm— Bell/Buzzer etc.	[]	[]	[]	[]
3.6.2 Visual Alarm— Light/Strobe etc.	[]	[]	[]	[]
3.6.3 Detector	[]	[]	[]	[]
3.6.4 Manual Release	[]	[]	[]	[]
3.6.5 Piping	[]	[]	[]	[]
3.6.6 Nozzles	[]	[]	[]	[]
3.6.7 Agent Container	[]	[]	[]	[]
3.6.8 Control/ Indication Panel	[]	[]	[]	[]
3.6.9 Ignition/Fuel source shut down device	[]	[]	[]	[]
3.6.10 Other Mechanical/ Electrical/ Pneumatic Operating Device	[]	[]	[]	[]

IV. THE SYSTEM (STATIC CHECK)

	Yes	No	Remarks
4.1 Are system components approved/listed?			
4.1.1 Actuating Solenoid	[]	[]
4.1.2 Cylinder Valve Assembly	[]	[]
4.1.3 Cylinder/Agent Container	[]	[]
4.1.4 Flexible Hose	[]	[]
4.1.5 Distributor/Selector Valve	[]	[]
4.1.6 Pilot Cylinder	[]	[]
4.1.7 Alarm Bell (For Normal Application)	[]	[]
4.1.8 Siren/Yodalarm	[]	[]
4.1.9 Control/Indication Panel	[]	[]
4.1.10 Remote Manual Release Unit	[]	[]
4.1.11 Detector	[]	[]
4.1.12 Discharge Nozzle	[]	[]
4.2 Is permanent nameplate with adequate information provided to:—			
4.2.1 BTM Container?	[]	[]
4.2.2 BCF Container?	[]	[]
4.2.3 CO ₂ Container?	[]	[]
4.3 Is reliable means of indication provided for the determination of pressure in BCF/BTM container?	[]	[]
4.4 Does the means of indication account for variation of container pressure with temperature?	[]	[]

	Yes	No	Remarks
4.5 Is agent of sufficient quantity provided?	[]	[]
4.6 Is cylinder/container properly mounted/secured?	[]	[]
4.7 Are markings on nozzles showing make; type and orifice size readily discernible?	[]	[]
4.8 Are pipings properly installed and secured in accordance with approved guide?	[]	[]
4.9 Are pipings properly earthed?	[]	[]
4.10 Are pipings suitably protected against mechanical, chemical, vibration or other damage?	[]	[]
4.11 Are pipings of the approved type provided? (Please indicate the type used):—	[]	[]
4.11.1 For 25-bar or 42-bar system:—			
4.11.1.1 BS 3601 Seamless Schedule 80 []			
4.11.1.2 ASTM A53 []			
4.11.1.3 ASTM A106 []			
4.11.1.4 JIS 3454 []			
4.11.2 For 25-bar system only:			
4.11.2.1 BS 1387 Heavy Grade Butt Welded [] (Up to and including 50 mm nominal pipe size)			
4.11.2.2 BS 3601 Seamless Schedule 40 [] (Up to and including 100 mm nominal pipe size)			
4.12 Are jointings of approved type provided? (Please indicate the type employed):—	[]	[]
Screwed Joints []			
Welded Joints []			
Others (Please state) []			
.....			
.....			
4.13 Is electrical apparatus intrinsically safe or of flame-proof type? (For application in explosive atmosphere only)			
4.13.1 Detector [] []		
4.13.2 Fire Alarm Bell/Sounder [] []		
4.13.3 Opening/Closing device will not generate sparks [] []		
4.13.4 Ventilation shut down device will not generate sparks [] []		

V. *DETECTION, ACTUATION & CONTROL SYSTEM (STATIC CHECK)*

	Yes	No	Remarks
5.1 Is the correct type of detector provided? (Please indicate the type employed):— Heat [] Smoke []	[]	[]
5.2 Is operating alarm/indicator provided? (Please indicate the type provided):— Alarm [] Indication [] Both [] Audio [] Visual [] Olfactory []	[]	[]
5.3 Do electrical sources i.e. AC & DC provide adequate source of energy for:—			
5.3.1 Detection?	[]	[]
5.3.2 Operating device?	[]	[]
5.4 Is manual control suitably protected against mechanical, weather or environmental damage?	[]	[]
5.5 Is manual control for actuation easily accessible at all times?	[]	[]

VI. *FUNCTIONAL TEST (DYNAMIC TEST)*

6.1 Does detector operate satisfactorily?	[ ]	[ ]	.....
6.2 If cross-zoning employed, is the zoning of detectors satisfactorily arranged?	[ ]	[ ]	.....
6.3 Does operating alarm/indication function properly?	[ ]	[ ]	.....
6.4 Does actuating solenoid operate satisfactorily?	[ ]	[ ]	.....
6.5 Does selector/distributor valve operate properly?	[ ]	[ ]	.....
6.6 Does the manual control require a force of not more than 178 newtons to secure operation?	[ ]	[ ]	.....
6.7 Does the manual control require a movement of not more than 356 mm to secure operation?	[ ]	[ ]	.....
6.8 Is the shut-down of ventilation system satisfactorily accomplished?	[ ]	[ ]	.....
6.9 If time delay of not more than 30 seconds is incorporated, does it function properly?	[ ]	[ ]	.....

VII. *PRACTICAL DISCHARGE TEST (DYNAMIC TEST) (IF REQUIRED)*

By Designed Agent	[]		
By Approved Substitute	[]		
	Yes	No	Remarks
7.1 Does agent discharge time within the limit specified by F.S.D.?	[]	[]
7.2 Are pipings securely installed to prevent pipe displacement or hazardous movement during discharge?	[]	[]
7.3 Is mechanical tightness of pipings and associated equipment in order?	[]	[]

VIII. REINSTATEMENT OF SYSTEM AFTER DISCHARGE (STATIC CHECK)

	Yes	No	Remarks
8.1 Is replacement cylinder/container of the correct type with sufficient pressure and content provided?	[]	[]
8.2 Is cylinder/container properly mounted?	[]	[]
8.3 Is cylinder/container properly connected?	[]	[]
8.4 Is control/indication panel properly reset?	[]	[]
8.5 Is ETL properly replaced/reinstated?	[]	[]
8.6 Is actuating solenoid properly linked/connected?	[]	[]

IX. GENERAL COMMENTS & REMARKS

Test witnessed by:—

..... (Signature)

..... (Signature)

..... (Name in block letters)

..... (Name in block letters)

F.S.I. Contractor's Representative

F.S.D. Inspecting Officer

Date

Date

**Checklist for Fire Shutters Constructed and Installed in accordance
with the Rules of the Fire Offices' Committee**

(For Proprietary Shutters Complete Sections I, II, IX, X and XI *ONLY*)

I. REFERENCE

Project F.S.D. Ref.
 Address Location

 F.O.C. Ref. Maker's Name

II. TYPE

Single Steel Rolling Shutter []
 Double Steel Rolling Shutter []
 Push-up Type with Lifting Handle []
 With Mechanical Gearing []

III. WALL OPENING

	Yes	No	Remarks
3.1 Does location tally with approved building plans?	[]	[]
3.2 Is the doorway not exceeding 15.6 sq.m. in area?	[]	[]
3.3 Is the doorway not exceeding 4.27 m in width?	[]	[]
3.4 Is the doorway not exceeding 3.66 m in height?	[]	[]
3.5 Are sill and jambs constructed of approved materials?	[]	[]
3.6 Is the head constructed of reinforced concrete of at least 125 mm in depth?	[]	[]
3.7 Where steel lintel is provided, is it protected by brickwork/concrete not less than 50 mm thick?	[]	[]
3.8 Is a minimum bearing of 100 mm at each end provided on the jambs to support the barrel enclosure?	[]	[]
3.9 Is adequate expansion clearance provided to barrel enclosure and enclosing jambs?	[]	[]
3.10 Are chases with nominal dimension of 115 mm x 115 mm provided to house the channel guides?	[]	[]
3.11 Are chases set back at least 100 mm from the front of the jambs?	[]	[]
3.12 Is the barrel enclosure housed completely within the wall opening?	[]	[]

	Yes	No	Remarks
3.13 Is the clearance between the sill and shutter, when closed, not exceeding 6 mm?	[]	[]
3.14 Is there a minimum gap of 225 mm between the inner faces of double rolling shutters when they are in a closed position?	[]	[]
3.15 Are barrels of double shutters installed at the same level?	[]	[]
3.16 Are projecting jambs of a width not less than 225 mm provided?	[]	[]
3.17 Are projecting jambs of at least 100 mm in width provided to enclose the ends of the barrel enclosure?	[]	[]
3.18 Is the projecting head constructed of reinforced concrete of not less than 125 mm thick?	[]	[]
3.19 Does the projecting head rest on projecting jambs?	[]	[]
3.20 Does the projecting head extend the full width and projections of the projecting jambs?	[]	[]
3.21 Where wall opening is to be used for the passage of powered vehicles, is adequate protection provided to prevent mechanical damage to the shutter assembly, frame and wall opening?	[]	[]

IV. CONSTRUCTION OF CURTAIN

4.1 Is the curtain formed from rolled steel lath of 1.2 mm thick?	[ ]	[ ]	.....
4.2 Is steel of the appropriate class used for the laths?	[ ]	[ ]	.....
4.3 Do laths have sheared parallel edges?	[ ]	[ ]	.....
4.4 Do laths curl on both edges to form quirks of not more than 10 mm outside diameter?	[ ]	[ ]	.....
4.5 Does each quirk form a continuous, fully-interlocking hinge with that on the adjacent lath?	[ ]	[ ]	.....
4.6 Is a minimum engagement of 2 mm provided between 2 adjacent laths?	[ ]	[ ]	.....
4.7 Are centres of interlocks not less than 45 mm apart?	[ ]	[ ]	.....
4.8 Are centres of interlocks not more than 75 mm apart?	[ ]	[ ]	.....
4.9 Does the curtain have sufficient width to extend at least 64 mm (75 mm when the wall opening exceeds 2.44 m in width) into channel guides?	[ ]	[ ]	.....
4.10 Does the curtain have sufficient length to extend from the sill to the top of the barrel and thence round at least a quarter of the barrel circumference before fixing?	[ ]	[ ]	.....

	Yes	No	Remarks
4.11 Are steel or malleable cast iron end locks fitted to the ends of each lath?	[]	[]
4.12 Do end locks have a minimum thickness of 3 mm?	[]	[]
4.13 Are end locks riveted to the lath by 2 mild steel rivets of not less than 3 mm diameter?	[]	[]
4.14 Do end locks fit the contour of the curtain laths and fill the channel guides closely?	[]	[]
4.15 Is the bottom lath fitted with a bottom rail of one of the following methods of construction?	[]	[]
4.15.1 a steel Tee section of at least 75 × 75 × 3* mm section with a backing strip of at least 64 × 6 mm.	[]		
4.15.2 2 steel flats of at least 38 × 6 mm.	[]		
4.15.3 2 steel angles of at least 38 × 38 × 3* mm section.	[]		
*5 mm for shutters in opening in excess of 2.44 m in width.			
4.16 Does the curtain extend at least 32 mm between the Tee section, flats or angles?	[]	[]
4.17 Are Tee section, flats or angles welded, bolted or riveted to the laths by at least 8 mm diameter steel bolts or steel peened rivets?	[]	[]
4.18 Do the above fixings apace not more than 300 mm apart?	[]	[]
4.19 Does the bottom rail extend the full width of the curtain except for the portion housed within the channel guides?	[]	[]
4.20 Do expansion clearances of at least 12.5 mm per metre run provided for the bottom rail relative to the channel guides?	[]	[]
4.21 Does bottom rail make flush contact with the sill when the shutter is closed?	[]	[]
4.22 Are steel lifting handles bolted, riveted or welded to the bottom rail on each side of the curtain?	[]	[]
4.23 Do the lifting handles space not more than 750 mm apart?	[]	[]
4.24 Do the handles interfere with the correct opening or closing of the shutter?	[]	[]
4.25 Is the curtain secured to the barrel by steel screws or steel bolts at least 6 mm in diameter?	[]	[]

	Yes	No	Remarks
4.26 Are screws/bolts passing through laterally elongated horizontal holes (nominally 50 mm in length) in the top lath into drilled and tapped holes in the barrel?	[]	[]
4.27 Do screws/bolts space not more than 250 mm apart?	[]	[]
4.28 Does a screw/bolt provided to within 125 mm from each end of the top lath?	[]	[]
4.29 Are screws/bolts located at centres of elongated holes?	[]	[]
4.30 Are fusible metal and steel washers fitted to each screw/bolt?	[]	[]

V. CHANNEL GUIDES

5.1 Do channel guides extend continuously from within the barrel enclosure to the sill?	[ ]	[ ]	.....
5.2 Does the top of the channel guide locate such as to permit upward expansion?	[ ]	[ ]	.....
5.3 Are guides fabricated from steel sections of at least 3 mm thick (5 mm when the doorway exceeds 3 m in width or 3 m in height)?	[ ]	[ ]	.....
5.4 Are steel peened rivets or steel bolts not less than 6 mm in diameter or 3 mm fillet welds used in fabrication of the guides?	[ ]	[ ]	.....
5.5 Do centres of rivets/bolts space not more than 150 mm apart?	[ ]	[ ]	.....
5.6 Is the length of the fillet welds not less than 50 mm and spaced not more than 150 mm apart?	[ ]	[ ]	.....
5.7 Do guides form a channel of sufficient depth to accommodate at least 64 mm (75 mm when the wall opening exceeds 2.44 m in width) of the curtain together with sufficient clearance to permit unrestricted expansion of the curtain?	[ ]	[ ]	.....
5.8 Are guides set back as far as possible within the chases provided in the jambs?	[ ]	[ ]	.....
5.9 Are they fitted as close as possible to the front side of the chases?	[ ]	[ ]	.....
5.10 Are they wholly contained within the chases so as not to project beyond the faces of the jambs?	[ ]	[ ]	.....
5.11 Are guides fixed to jambs by steel expanding anchor bolts of at least 6 mm diameter?	[ ]	[ ]	.....
5.12 Are centres of fixings not more than 600 mm apart?	[ ]	[ ]	.....

	Yes	No	Remarks
5.13 Is there a fixing bolt within 150 mm of the barrel enclosure and one within 150 mm of the sill?	[]	[]
5.14 With the exception of the lowest one, are fixings provided with vertically elongated bolt holes (nominally 50 mm in length)?	[]	[]
5.15 Are bolts fitted with fusible metal washers?	[]	[]
5.16 Are bolts fitted with steel washers?	[]	[]
5.17 Are bolts fixed at the highest positions of the slots to allow expansion of the guides in an upward direction?	[]	[]

VI. BARREL

6.1 Is the barrel formed from mild steel tube of not less than 114 mm outside diameter?	[ ]	[ ]	.....
6.2 Is the mild steel tube not less than 5.4 mm thick?	[ ]	[ ]	.....
6.3 Is the barrel mounted on mild steel axle of not less than 25 mm diameter?	[ ]	[ ]	.....
6.4 Does the axle extend the full length of the barrel?	[ ]	[ ]	.....
6.5 Is a minimum bearing of 25 mm provided in each axle support bracket?	[ ]	[ ]	.....
6.6 Does the axle project not more than 100 mm beyond each end of the barrel?	[ ]	[ ]	.....
6.7 Is expansion clearance provided between the axle and the ends of the barrel enclosure?	[ ]	[ ]	.....
6.8 Does barrel enclose helical steel spring for counterbalancing the curtain?	[ ]	[ ]	.....
6.9 Is the barrel mounted on rigid or self-aligning bearings?	[ ]	[ ]	.....
6.10 Is it fitted with mild steel spring charging device to enable the spring to be adjusted after the curtain is in position?	[ ]	[ ]	.....
6.11 Are axle support brackets made of steel or malleable cast iron?	[ ]	[ ]	.....
6.12 Do they support and enclose the axle at each end?	[ ]	[ ]	.....
6.13 Are they fixed to the ends of the barrel enclosure by at least 2 steel peened rivets or steel bolts at least 8 mm in diameter or 6 mm fillet welds?	[ ]	[ ]	.....
6.14 Are they of sufficient size to accommodate the axle and fusible metal packings?	[ ]	[ ]	.....

VII. BARREL ENCLOSURE

	Yes	No	Remarks
7.1 Are barrel and axle enclosed completely by an enclosure pressed or fabricated from steel at least 6 mm thick?	[]	[]
7.2 Are steel peened rivets, steel bolts not less than 8 mm in diameter or 6 mm fillet welds not less than 50 mm in length being used for the fixings?	[]	[]
7.3 Are centres of fixings not more than 150 mm apart?	[]	[]
7.4 Does the fabrication extend completely along each edge of the enclosure?	[]	[]
7.5 Does the front edge of the bottom enclosure form a 40 mm wide flange?	[]	[]
7.6 Is the distance between the flange and the face of the curtain not more than 15 mm?	[]	[]
7.7 Where a drop bar is used, is the distance between the flange and the face of the curtain not more than 50 mm?	[]	[]
7.8 Is the barrel enclosure bolted to each enclosing jamb by 2 steel expanding anchor bolts of not less than 10 mm diameter?	[]	[]
7.9 If fixed vertically, are elongated fixing holes provided?	[]	[]
7.10 Are fusible metal washers provided to the fixing bolts?	[]	[]
7.11 Are steel washers provided to the fixing bolts?	[]	[]
7.12 Where double shutters are fitted and barrels are accommodated in the same enclosure, is dividing plate made of steel at least 6 mm thick provided to separate the barrels?	[]	[]
7.13 Is a fascia plate of 6 mm steel provided to form the front of the barrel enclosure?	[]	[]
7.14 Does the fascia plate overlap the opening by at least 100 mm at the top and at each end?	[]	[]
7.15 Is the fascia plate made of steel of at least 6 mm thick?	[]	[]
7.16 Does the bottom edge of the fascia plate form a channel of a depth not less than 100 mm?	[]	[]
7.17 Does the channel extend to within 15 mm of the face of the curtain?	[]	[]
7.18 Does the channel have a flange not less than 40 mm wide next to the face of the curtain?	[]	[]
7.19 Is the fascia plate fixed independently of the barrel enclosure by bolting to the head and jambs?	[]	[]

	Yes	No	Remarks
7.20 Are steel expanding bolts of not less than 10 mm diameter used for the fixings?	[]	[]
7.21 Are fixing bolts located as follows:—			
7.21.1 25 mm from top edge spaced at not more than 600 mm centres?	[]	[]
7.21.2 50 mm from ends?	[]	[]
7.21.3 50 mm from bottom edge?	[]	[]
7.21.4 at mid-height of the fascia?	[]	[]
7.22 Are elongated bolt holes provided to the fascia plate?	[]	[]
7.23 Are bolts located in the centre of the elongated holes?	[]	[]
7.24 Are bolts fitted with fusible metal washers?	[]	[]
7.25 Are bolts fitted with steel washers?	[]	[]
7.26 Where an opening is provided for the adjustment of the barrel springs, does the opening not exceed 250 mm × 150 mm?	[]	[]
7.27 Is it covered by a 6 mm steel plate at least 50 mm longer and wider than the opening?	[]	[]
7.28 Is the cover plate fixed by not less than six steel screws, bolts not less than 8 mm diameter?	[]	[]

VIII. MECHANICAL GEARING

8.1 Is mechanical gearing provided to doorway exceeding 5.2 sq. m. in area?	[ ]	[ ]	.....
8.2 Is mechanical gearing provided when the height of the bottom of the barrel enclosure above floor level exceeds 2.2 m?	[ ]	[ ]	.....
8.3 Is the gearing system so arranged that the shutter could be manually opened and closed from either side of the wall opening?	[ ]	[ ]	.....
8.4 Where double shutters were provided, do they operate simultaneously?	[ ]	[ ]	.....
8.5 Is the gearing system made of steel mounted on self-lubricating bushes and/or rigid self-aligning ball or roller bearings?	[ ]	[ ]	.....
8.6 Are gears machine cut from a suitable grade of steel?	[ ]	[ ]	.....
8.7 Are gears connected by shafts not less than 19 mm in diameter?	[ ]	[ ]	.....

	Yes	No	Remarks
8.8 Where gearing mechanism is housed in a chase, does the chase have a minimum dimension of 114 × 114 mm with side walls each at least 114 mm thick and the rear wall not less than 150 mm thick?	[]	[]
8.9 Is the chase covered by steel plate at least 6 mm thick?	[]	[]
8.10 Is the cover plate fixed by steel expanding bolts of not less than 6 mm diameter?	[]	[]
8.11 Are centres of fixings not exceeding 600 mm?	[]	[]
8.12 Are anchor bolts fitted with steel washers?	[]	[]
8.13 Where chases are enclosed by brickwork/blockwork, does the latter have a minimum thickness of 100 mm?	[]	[]
8.14 Is brickwork/blockwork keyed into the wall?	[]	[]
8.15 Are steel maintenance covers provided and installed adjacent to the gearing ?	[]	[]
8.16 Where gearing mechanism is enclosed in a casing, is the casing fabricated from steel at least 6 mm thick?	[]	[]
8.17 Are steel peened rivets or steel bolts not less than 8 mm in diameter or 6 mm fillet welds at least 50 mm in length used for the fabrication of the casing?	[]	[]
8.18 Do centres of rivets/bolts/welds not more than 150 mm?	[]	[]
8.19 Is the casing fixed to the face of the wall by expanding anchor bolts?	[]	[]
8.20 Is the diameter of the anchor bolts not less than 8 mm?	[]	[]
8.21 Are steel washers fitted to the anchor bolts?	[]	[]
8.22 Do centres of anchor bolts within 600 mm?	[]	[]
8.23 Is access opening for maintenance incorporated in the casing?	[]	[]
8.24 Is it covered by at least 6 mm thick steel plate at least 50 mm longer and wider than the opening?	[]	[]
8.25 Is cover plate attached to casing by steel screws/bolts at least 8 mm in diameter?	[]	[]
8.26 Are screws/bolts spaced at not more than 150 mm centres?	[]	[]

	Yes	No	Remarks
8.27 Where the barrel enclosure, fascia plate or dividing plate are perforated to permit passage of gearing system, are size and number of perforations kept to a minimum consistent with the satisfactory operation of the gearing?	[]	[]
8.28 Are perforations so arranged that there is no exposed opening into the barrel enclosure?	[]	[]
8.29 Are they so arranged that lateral expansion of barrel enclosure and fascia plate is not restricted?	[]	[]
8.30 Are operating wheels spokeless?	[]	[]
8.31 Are operating wheels non-detachable?	[]	[]
8.32 Are they located adjacent to the wall opening?	[]	[]
8.33 Are they located not less than 750 mm, nor more than 1 200 mm above the floor?	[]	[]
8.34 Where handles on the operating wheels are provided, are they so arranged as to close within the wheel when not in use?	[]	[]

IX. INSTALLATION

9.1 Where automatic self-closing devices are fitted, do they cause no interference to the manual opening and closing of the shutter?	[ ]	[ ]	.....
9.2 Where smoke detectors are provided for the actuation of the shutter, are they fitted to both sides of the wall opening?	[ ]	[ ]	.....
9.3 Are smoke detectors installed as far as practicable to the provisions of the F.O.C. rules for A.F.A.?	[ ]	[ ]	.....
9.4 Is permanent nameplate with adequate information provided?	[ ]	[ ]	.....
9.5 Are manual controls provided to both sides of the wall opening?	[ ]	[ ]	.....

X. SHUTTER OPERATION

10.1 Does the automatic actuation device function satisfactorily?	[ ]	[ ]	.....
10.2 Is secondary source of electricity supply provided?	[ ]	[ ]	.....
10.3 Is the descending speed* of the shutter acceptable?	[ ]	[ ]	.....

* Descending time shall within 15-60 seconds for shutters in openings in excess of 2.5 m in height; not faster than 8 seconds for other shutters in openings of height within 2.5 m and that the bottom rail of the shutter shall reach the mid-height in not less than half the total descending time of the shutter.

XI. GENERAL COMMENTS & REMARKS

Test witnessed by:—

..... (Signature)

..... (Signature)

..... (Name in block letters)
F.S.I. Contractor's
Representative

..... (Name in block letters)
F.S.D. Inspecting Officer

Date

Date

**Checklist for Fire Hydrant and Hose Reel Installations
in accordance with Code of Practice (Inspection and Testing)**

I. REFERENCE

Project F.S.D. Ref.
 Type of Building: ‡ Domestic/Industrial/ Godown/ Others
 Address
 F.S.I. Drawing Ref.
 The date of initial building plan submission to Building Authority

‡ Delete whichever not applicable.

II. F.S.I. DRAWINGS AGAINST BUILDING PLANS

	Yes	No	N/A	Remarks
F.S.D. FILE REF:				
2.1 Check nos. and locations of:				
2.1.1 Fire service inlets	[]	[]	[]
2.1.2 Fire hydrants and hose reels	[]	[]	[]
2.1.3 Fixed fire pumps	[]	[]	[]
2.1.4 Intermediate booster pumps	[]	[]	[]
2.1.5 Water tank and capacity	[]	[]	[]

III. PLUMBING LINE DIAGRAM

3.1 CHECK:

3.1.1 Piping is suitably connected to the fire pumps, fire hydrants, hose reels and fire service inlets.	[ ]	[ ]	[ ]	.....
3.1.2 Size of the rising mains are correct.	[ ]	[ ]	[ ]	.....
3.1.3 Size of the inter-connection header pipe(s) for fire service inlets is correct.	[ ]	[ ]	[ ]	.....
3.1.4 By-pass piping for intermediate booster pumps.	[ ]	[ ]	[ ]	.....
3.1.5 F.S. appliance to be provided by F.S.D. to test the system. (to be confirmed by F.S.D.)	[ ]	[ ]	[ ]	.....

IV. ON SITE INSPECTION

4.1 FIRE HYDRANT

4.1.1 Outlets are of:				
Male round thread	[]	or		
Female instantaneous	[]			
4.1.2 Adaptable to F.S.D. equipment.	[ ]	[ ]	[ ]	.....
4.1.3 Individually controlled by wheel operated screw valve designed to open by counter-clockwise rotation.	[ ]	[ ]	[ ]	.....
4.1.4 The direction of opening engraved in both English and Chinese on the wheel of the valve.	[ ]	[ ]	[ ]	.....

	Yes	No	N/A	Remarks
4.1.5 Not less than 800 mm nor more than 1 200 mm above finished floor level.	[]	[]	[]
4.1.6 Prominently sited [] or Recessed []	[]	[]	[]
4.1.7 All round clearance to permit free use.	[]	[]	[]
4.1.8 Not obstructing any door opening, or any exit route.	[]	[]	[]
4.1.9 Not to be canceled by the leaves of an adjacent door when that door is opened.	[]	[]	[]
4.1.10 Water supply is fed:				
By gravity	[]		
From fixed fire pump	[]		
4.2 HOSE REEL				
4.2.1 The drum is not less than 150 mm in diameter.	[]	[]	[]
4.2.2 Internal bore of tubing is not less than 19 mm diameter.	[]	[]	[]
4.2.3 Length of hose reel is not exceeding 30 metres in length.	[]	[]	[]
4.2.4 Every part of the building can be reached by a nozzle.	[]	[]	[]
4.2.5 Capable of projecting a 6-metre jet.	[]	[]	[]
4.2.6 Orifice of nozzle is 4.5 mm.	[]	[]	[]
4.2.7 Nozzle is fitted with simple two-way on/off valve and the valve is not spring loaded.	[]	[]	[]
4.2.8 Control valves are of gate type or of simple two-way ball type.	[]	[]	[]
4.2.9 Gate valves are closed by clockwise rotation.	[]	[]	[]
4.2.10 Rising mains and associated pipework are not less than 40 mm nominal bore.	[]	[]	[]
4.2.11 Pipes feeding individual hose reel are not less than 25 mm nominal bore.	[]	[]	[]
4.2.12 Control valves are adjacent to the nozzles.	[]	[]	[]
4.2.13 Nozzle and control valves are not more than 1 350 mm from the finished floor level.	[]	[]	[]
4.2.14 Suitable guide ring is provided to permit easy withdrawal of the hose reel tubing.	[]	[]	[]
4.2.15 An operation instruction is affixed prominently adjacent to each hose reel.	[]	[]	[]
4.2.16 The notice is clearly marked with the standard wordings in English and Chinese characters of at least 5 mm high in red letters on white background or vice versa.	[]	[]	[]
4.2.17 Manual fire alarm call points are sited at a prominent position near the hose reels.	[]	[]	[]

	Yes	No	N/A	Remarks
4.2.18 The manual fire alarm call points are not more than 1 200 mm above the finished floor level.	[]	[]	[]
4.2.19 Upon actuation of any manual fire alarm call point in the building, the fixed fire pump shall come into operation regardless of the zoning of the fire alarm call point.	[]	[]	[]
4.2.20 Door fitted to the hose reel cabinet.	[]	[]	[]
4.2.20.1 Such doors cause no undue obstruction and no interference with any exit point when in open position.	[]	[]	[]
4.2.20.2 Such doors cause no obstruction to the hose being run out in either directions.	[]	[]	[]
4.2.20.3 Such doors bear the words "FIRE HOSE REEL" (消防喉轆) of at least 50 mm high.	[]	[]	[]
4.2.20.4 No locking device is fitted to such doors.	[]	[]	[]
4.2.20.5 Control valves and nozzles are sited in a discernible and accessible position of not more than 500 mm from the surface of the doors.	[]	[]	[]
4.2.20.6 Operation instruction notice is affixed immediately below the words "FIRE HOSE REEL" on the outer surface of the door.	[]	[]	[]
4.2.21 Hose reel of swinging cradle type.	[]	[]	[]
4.2.21.1 When not in use the outer face of the reel is flush with the wall.	[]	[]	[]
4.2.21.2 When required for use the cradle can be swung freely into the corridor or passage.	[]	[]	[]
4.3 SUPPLY TANK				
4.3.1 Correct location and adequate capacity of water tank.	[]	[]	[]
4.3.2 Refilling system is in efficient working order.	[]	[]	[]
4.3.3 Fire Service Completion Advice issued. (Other details, see Section 5.25)	[]	[]	[]
4.4 FIXED FIRE PUMP				
4.4.1 Mode of power for driving the pump is:				
4.4.1.1 Electricity [] or				
4.4.2 Secondary power supply provided.	[]	[]	[]
4.4.2.1 If no, diesel engine driven standby pump provided.	[]	[]	[]
4.4.3 Where the motive power for any pump is not electricity, alternative means of starting the pump manually, in addition to manual fire alarm call points, are provided.	[]	[]	[]

	Yes	No	N/A	Remarks
4.4.4 Starting instructions for diesel driven pump are prominently displayed in the pump room.	[]	[]	[]
4.4.5 No automatic means of stopping the pump, other than by switching off at the pump control installed near the pump.	[]	[]	[]
4.4.6 Manual fire alarm call points are wired for starting the pump.	[]	[]	[]
4.4.7 The pumps are duplicated for duty and standby use.	[]	[]	[]
4.4.8 The fire pump starters are wired through a selector switch for duty and standby pump selection.	[]	[]	[]
4.4.9 The standby pump is energized within 15 seconds upon failure of the duty pump.	[]	[]	[]
4.4.10 The motor/engine for the pump is rated to give 20% more power in addition to the hydraulic power required for the rated flow of the system.	[]	[]	[]
4.4.11 Pumps are permanently primed.	[]	[]	[]
4.4.12 Non-return valve(s) are provided to prevent water backflow into the water tank.	[]	[]	[]
4.4.13 The status of each fire pump comprising "Power Supply On", "Pump Running" and "Pump Failed" are monitored and displayed at the pump control panel in the pump room.	[]	[]	[]
4.4.14 Such signals are repeated to:	[]	[]	[]
Fire control room [] or				
A status panel at the main entrance of the building []				
4.4.15 All fire pumps are housed in suitable enclosures and designed solely for accommodating pumps for fire service installations.	[]	[]	[]
4.4.16 Pump enclosures are laid clear of any exit or normal communication routes through the premises.	[]	[]	[]
4.4.17 Pump enclosures are clearly marked in English and Chinese characters.	[]	[]	[]
4.4.18 Pumps enclosures are suitably locked to prevent unauthorized tampering of the pumps.	[]	[]	[]
4.4.19 Flow rate and pressure tested in accordance with Figure No. _____ in Annex I.	[]	[]	[]
Floor level of tested hydrant : _____				
Flow (l/min) : _____				
Pressure (Kpa): _____				

	Yes	No	N/A	Remarks
4.4.20 Running and static pressure at any hydrant outlet not exceeding 850 Kpa.	[]	[]	[]
4.5 INTERMEDIATE BOOSTER PUMP	[]	[]	[]
4.5.1 Height between the topmost hydrant and the lowest F.S. inlet (m) : _____				
4.5.2 No. of rising main : _____				
4.5.3 Required aggregate flow (l/min) : _____				
4.5.4 The pumps are duplicated for duty and standby use.	[]	[]	[]
4.5.5 The standby pump is energized within 15 seconds upon failure of the duty pump.	[]	[]	[]
4.5.6 Intermediate booster pump arrangements:—				
4.5.6.1 One set consisting of duty and standby to feed all rising mains in the same system.	[]	[]	[]
4.5.6.2 Two/three pumps of same capacity using sequential starting as duty pumps with one standby to achieve required flow and pressure within 30 seconds.	[]	[]	[]
4.5.7 The motors driving the pumps are rated to give 20% more power in addition to the hydraulic power required for the rated flow.	[]	[]	[]
4.5.8 All pumps are permanently primed and electrically driven.	[]	[]	[]
4.5.9 Pump continues to run irrespective of power interruption when start button is activated.	[]	[]	[]
4.5.10 Start/stop push buttons with pump running indication light and buzzer provided adjacent to the fire service inlet.	[]	[]	[]
4.5.11 The status of each fire pump comprising "Power Supply On", "Pump Running" and "Pump Failed" are monitored and displayed at the pump control panels in the pump enclosures.	[]	[]	[]
4.5.12 Such signals are repeated to:	[]	[]	[]
Fire control room [] or				
A status panel at the main entrance of the building []				
4.5.13 All fire pumps are housed in suitable enclosures and designed solely for accommodating pumps for fire service installations.	[]	[]	[]
4.5.14 Pump enclosures are suitably locked and laid clear of any exit or normal communication routes through the premises.	[]	[]	[]

	Yes	No	N/A	Remarks
4.5.15 Pump enclosures are clearly marked in English and Chinese characters.	[]	[]	[]
4.5.16 The intermediate booster pump utilized as the the fixed fire pump.	[]	[]	[]
4.5.17 Flow rate and pressure tested in accordance with Figure No. _____ in Annex I.	[]	[]	[]
Floor level of tested hydrant : _____				
Flow (l/min) : _____				
Pressure (Kpa): _____				
4.5.18 Running and static pressure at any hydrant outlet not exceeding 850 Kpa.	[]	[]	[]
4.6 RISING MAIN				
4.6.1 The nominal bore of the rising main, in the case of industrial/godown buildings:				
Not less than 100 mm	[]	[]	[]
Each rising main supplies two hydrant outlets per floor	[]	[]	[]
4.6.2 The nominal bore of the rising main in other types of buildings:				
Not less than 80 mm	[]	[]	[]
Each rising main supplies one hydrant per floor	[]	[]	[]
4.6.3 Provision of by-pass for intermediate booster pump.	[]	[]	[]
4.6.4 All rising and down-coming mains are permanently primed.	[]	[]	[]
4.6.5 Suitable air relief valves provided.	[]	[]	[]
4.6.6 Each rising main is connected to a fire service inlet.	[]	[]	[]
4.6.7 Header pipe(s) provided to connect the fire service inlets to the rising mains.	[]	[]	[]
4.6.8 The diameter of the header pipe is:—				
For industrial/godown buildings not less than 150 mm nominal bore	[]	[]	[]
For other buildings not less than 100 mm nominal bore	[]	[]	[]
4.6.9 For godown/industrial buildings, a rising main provided for each staircase with a fire service inlet.	[]	[]	[]
4.6.10 Number and location of fire service inlets are conforming to latest approved building plan.	[]	[]	[]
4.7 FIRE SERVICE INLET				
4.7.1 Suitably enclosed and protected.	[]	[]	[]
4.7.2 Readily accessible by Fire Services personnel.	[]	[]	[]

	Yes	No	N/A	Remarks
4.7.3 Not less than 600 mm nor more than 1 000 mm above ground level.	[]	[]	[]
4.7.4 A non-return valve provided for each inlet.	[]	[]	[]
4.7.5 Each inlet is affixed with a metal identification plate raised or engraved with English and Chinese characters.	[]	[]	[]
4.7.6 The frontage of each inlet enclosure is clearly and permanently indicated in English and Chinese characters "F.S. Inlet" (消防入水掣) of not less than 50 mm high.	[]	[]	[]

V. GENERAL COMMENTS & REMARKS

Test witnessed by:—

..... (Signature)

..... (Signature)

..... (Name in block letters)
F.S.I. Contractor's
Representative

..... (Name in block letters)
F.S.D. Inspecting Officer

Date







Date

ANNEX I - FIGURES FOR EQUIPMENT ARRANGEMENT
FOR TESTING OF FIRE PUMPS

GENERAL NOTES :-

- (i) THE FLOW MEASURING DEVICE(S) MAY BE PLACED AT ROOF LEVEL FOR CONVENIENT DISCHARGE OF WATER.
- (ii) ALL HYDRANTS UNDER TEST SHALL BE FULLY OPENED.
- (iii) THE PRESSURE GAUGE SHALL BE SITUATED ADJACENT TO THE HYDRANT OUTLET UNDER TEST.

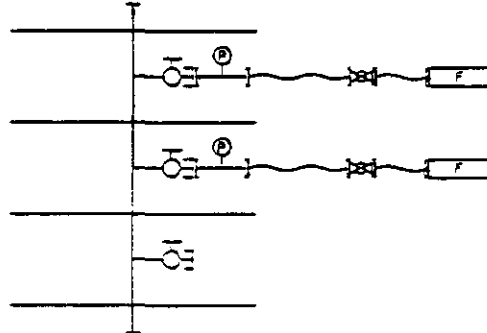
LEGEND :

- P : PRESSURE
- F : FLOW RATE
-  FIRE SERVICES INLET
-  FIRE HYDRANT
-  PRESSURE GAUGE
-  FLOW MEASUREMENT DEVICE
-  FLOW REGULATION DEVICE
-  FLEXIBLE HOSE

1. FIXED FIRE PUMP (BUILDINGS OTHER THAN INDUSTRIAL/ 6000MM - i.e. 900 l/min.)

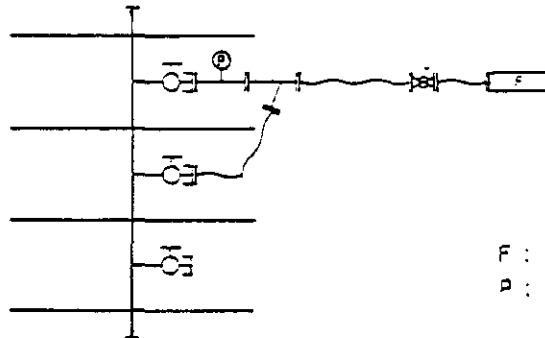
(ANY OF THE FOLLOWING ARRANGEMENTS SHALL BE FOLLOWED)

FIG. 1.1



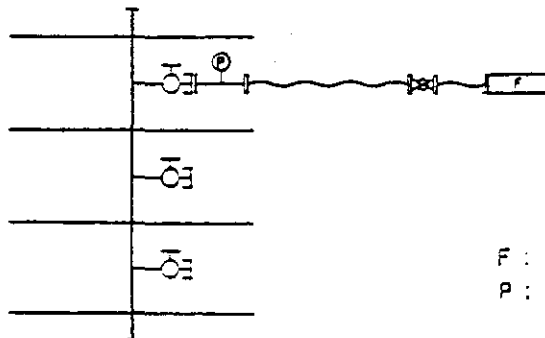
F : at 450 l/min
P : > 350 KPa

FIG. 1.2



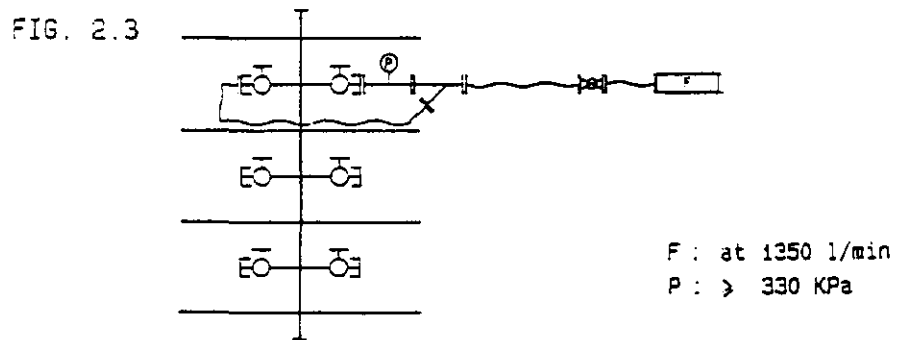
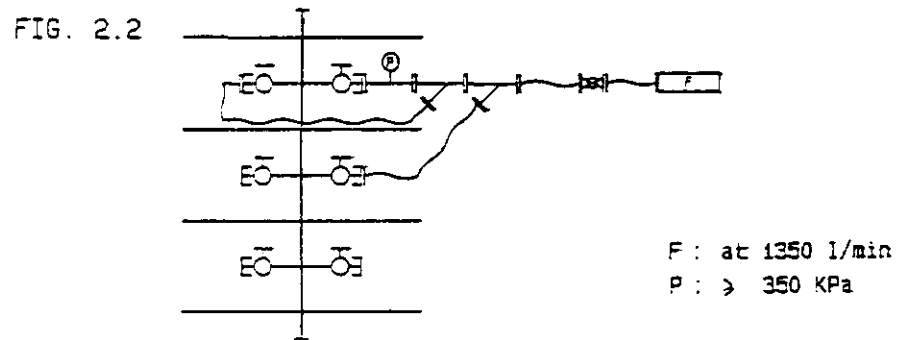
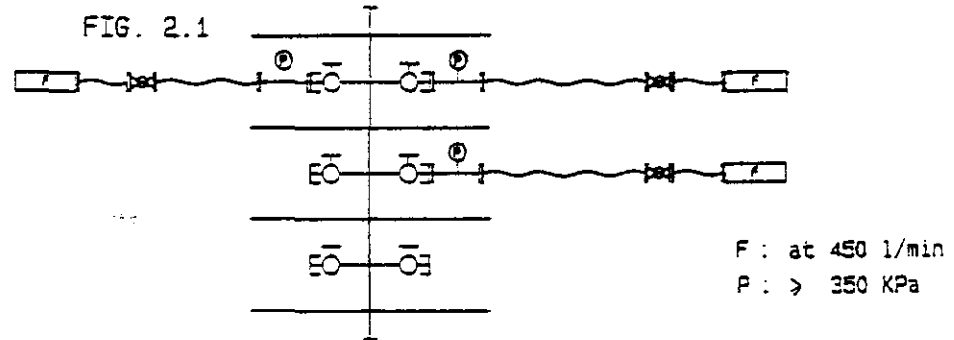
F : at 900 l/min
P : > 350 KPa

FIG. 1.3



F : at 900 l/min
P : > 310 KPa

2. FIXED FIRE PUMP (INDUSTRIAL / GODOWN BUILDINGS)
 (ANY OF THE FOLLOWING ARRANGEMENTS SHALL BE FOLLOWED)



3. INTERMEDIATE BOOSTER PUMP (BUILDINGS OTHER THAN INDUSTRIAL / 6000MM)

FIG. 3.1 DOMESTIC AND OTHER BUILDINGS WITH SINGLE RISING MAIN (900 l/min)

TESTING EQUIPMENT TO BE ARRANGED IN ACCORDANCE WITH (1)

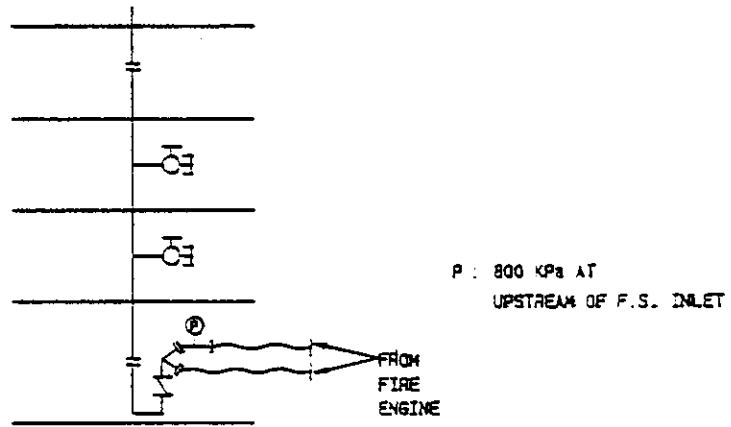
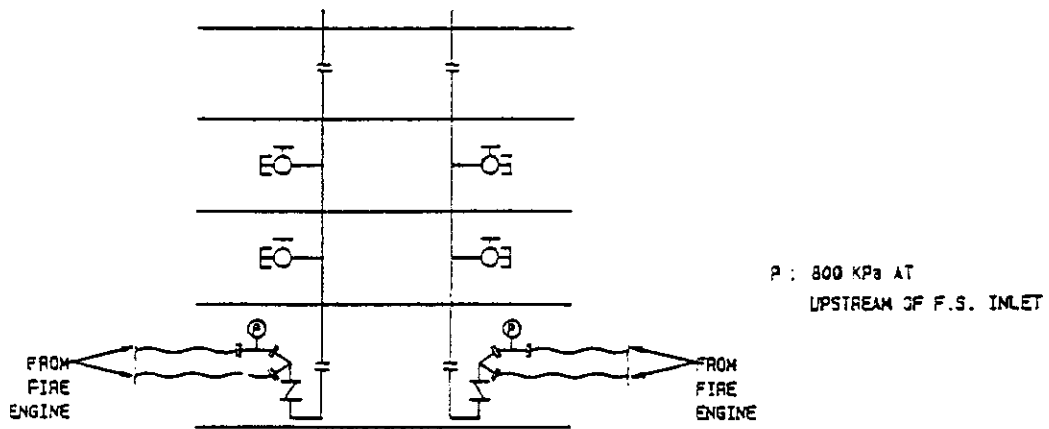


FIG. 3.2 OTHER BUILDINGS WITH TWO OR MORE RISING MAINS (1800 l/min)

TWO SETS OF RISING MAIN SHALL BE TESTED SIMULTANEOUSLY IN ACCORDANCE WITH (1)



INTERMEDIATE BOOSTER PUMP (INDUSTRIAL / GOVERN BUILDINGS)

FIG. 4.1 SINGLE RISING MAIN (1350 l/min)

TESTING EQUIPMENT TO BE ARRANGED IN ACCORDANCE WITH (2)

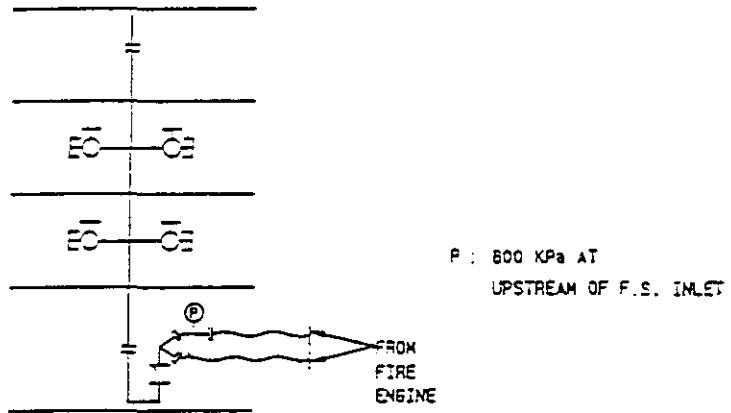


FIG. 4.2 TWO OR MORE RISING MAINS (2700 l/min)

TWO SETS OF RISING MAIN SHALL BE
TESTED SIMULTANEOUSLY IN ACCORDANCE WITH (2)

