FSI Drawings Submission
消防裝置圖則審批
CAP. 572
香港法例第572章
Relevant Documents for Vetting

• Fire Safety Directions (FSDns) under Cap. 572
• Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment [March 1994]
• FOC Rules (29th Edition)/ LPC Rules
• FSD Circular Letters
Documents to be provided in the submission

- Consent / Employment / Nomination letter(s) from the Incorporated Owners (I.O.) / Owner(s) of Non-domestic Purposes

- Complete and accurate information on Form FSI/314C

- Letter of consent / approval from Buildings Department (BD)
  1. New FS water tank(s)
  2. Conversion of existing water tank(s) to serve as FS water tank
  3. Pump plinth and housing ... etc

- Confirm with Water Supplies Department (WSD) on “minimum water pressure” available from the water town mains
  - Improvised Sprinkler Installation & Direct Feed to FS water tank
Documents to be provided in the submission

- Letter of consent from Incorporated Owners / Owner(s) on the location of FS equipment
  1. FS Inlet / Sprinkler Inlet
  2. Sprinkler Control Valve set
  3. New FS water tank(s)
  4. New transfer / up-feed water tank
  5. FS pump(s) / sprinkler pump(s) / booster pump(s) / transfer water pump(s)

- Letter of consent from I.O. / Owner(s) for any additional / voluntary FS improvement work other than FSDn requirements
Documents to be provided in the submission

• **Electrical schematic diagram** (copies with WR2)

• **Agreement** from I.O. / Owner(s) for *connection to the main FS system*
  1. Piping connection to the main FS systems (i.e. FH/HR & sprinkler)
  2. Fire signal connected to the existing MFA system
Flexible and pragmatic approach (Cap. 572)

- Reduced capacity FS water tank
  (9,000 litres effective volume for FH/HR system)
- Improvised sprinkler system
  1. Direct Town Main (DTM)
  2. Connection from existing FS water tank
Application for Relaxation of FS Installation

• Spatial, and/or other constraints **(justifications including site photos)**:-

1. **FS / Sprinkler Inlet(s) at principal face of building facing the main road or EVA**
2. **Sprinkler Control Valve set at main entrance**
3. **Hose reel, alarm bell and MFA call point** in common areas immediately on that floor
4. **MFA panel** at main entrance (unavailable of caretaker / management office)
Application for Relaxation of FS Installation (For Consideration and Assessment)

• Approval from BD regarding Structural Constraints
  1. Approval on the SAR report
  2. Unavailable Building Structure Record Plan

And

• Objection letter from R/F Owner(s) in private owned areas
Structural Appraisal Report (SAR)

- Prepared by Authorized Person [AP(RSE)]
- Submission to Buildings Department (BD) directly
- Submission through FSD

(Two copies of SAR report for onward submission to BD)
Contents of Structural Appraisal Report (SAR)

• Location of FS water tank

Consider the best place where,

1. There are adequate existing supporting structural columns underneath to sustain all the additional structural loading, or

2. The span of existing / new supporting beam / columns underneath to sustain the additional structural loading, or

3. It can be feasible to add structural steel beams or supporting steel members / frames to sustain the additional structural loading
Contents of Structural Appraisal Report (SAR)

- Calculation Procedure
  1. Detailed **structural calculations** and procedures
  2. Structural framing plan and architectural layout plan with all **possible locations** to accommodate the new FS water tank
  3. The calculation procedure shall **not only include the predetermined capacity (effective) of the new FS water tank** but it shall include calculations for each step up size tank of **500 litres increment** up to **utmost capacity**
Contents of Structural Appraisal Report (SAR)

• Calculation Procedure (cont’d)

4. A summary table showing the comparison of all the existing column loadings, spare loading / capacity on existing columns and all the newly added column loadings should be included for BD assessment

5. The report shall be signed by [AP(RSE)]
Contents of Structural Appraisal Report (SAR)

• Additional Sections
  1. Recommendation
     ✓ FS water tank of the utmost size __________ litres
  2. Certification
     AP(RSE)’s Certification with Profession Qualification in abbreviation format
        Full Name
        Registered Structural Engineer
        BSc(Eng), MSc(Eng), PhD,
        MIstructE, MHKIE etc...
Requirements of FSI Drawings (General)

• Complete set of submission shall include Diagrams of Piping schematic, MFA schematic, Electrical schematic and Floor layout plan

• Names of surrounding street(s) / road(s) should be indicated on G/F plan

• All FS equipment (i.e. FS / sprinkler inlet, sprinkler control valve & etc. ) shall be located within building boundary / Lot

• Do not colour the pipes for water supply system (i.e. between the water town mains & the inlet of the Sprinkler / FH/HR / HR tank

• Ensure that the means of escape (MoE) is not obstructed by any fire service installations
Requirements on FSI Drawings (FH/HR)

- Hose reel, MFA call point and fire alarm bell shall be located in common area and immediately outside the occupied unit on that floor.
- Integral cockloft with G/F area, the Hose reel, MFA call point and fire alarm bell may not be required for cockloft if the covering distance from G/F hose reel is justifications.
- If the cockloft with an exit / opening to the staircase / corridor or with independent staircase discharge to street, the cockloft shall be treated as individual floor. Hose reel, MFA call point and fire alarm bell shall be provided.
Requirements on FSI Drawings (FH/HR)

• FH/HR, MFA call point and fire alarm bell would **not** be required to be installed on **Open Roof without any accommodation**

• A hose reel, a MFA call point and a fire alarm bell should be installed **inside** each of the shop

• FSD may consider the proposal of using a **common** set of hose reel, MFA call point and fire alarm bell for the shops and have the set to be located in the **common area at the main entrance** provided that :-
  
  a) **written consent / confirmation letter** submitted by the I.O. / Owner(s)
  
  b) **the hose reel and MFA call point are accessible to the shops at all times without obstruction** by any types of lockable gate
Requirements on FSI Drawings (Improvised Sprinkler System)

• **Design point(s)** for friction loss not exceeding **500 mbar** shall be indicated on the layout plan for pre-calculated installation.

• The **pipe size** shall work in accordance with Table 4122.1, **FOC** for OH(1) and/or Tables 57 & 58, **LPC Rule** of pre-calculated method.

• The sprinkler inlet, anti-pollution valve and sprinkler control valve shall be located **within the building boundary** which can be **readily accessible by F.S. Personnel**.
Requirements on FSI Drawings (Electrical Schematic)

• All fixed fire pumps, sprinkler pumps, jockey pumps and FS control panel shall be connected from both **primary and secondary source** of power supply

• **Fire resisting cables** to BS 6387 Cat. AWX or SWX or BS 6207 or BSEN 60702 shall be used for **new fire alarm system**

• Only FS equipment be permitted for connection after the essential auto changeover switch

• Protection device for fixed fire / sprinkler pump(s) shall be of **HRC fuse**

• The power supply cables for FS pumps should follow the **CoP for the Electricity (Wiring) Regulations, EMSD**
Requirements on FSI Drawings (VAC)

• Schematic air flow diagram showing the air-side arrangement
• All HVAC equipment under VAC control should be coloured in the schematic diagram and layout plans
• Designed flow capacities of HVAC equipment should be indicated
• Method(s) for VAC control system shall be stated
• The manual override switch and fire alarm control panel should be incorporated with the schematic of VAC control system
• Location of manual override switch and FS main panel
FSI Drawings Vetting Process

• The vetting of FSI drawings adopt **First-come-first-serve principle**
• **Initial Checking Process** with Checklist
• **Detail checking Process**

**Remark:**

Approval shall **not** be given to those **non-functioned FSI systems** (i.e. hose reel or sprinkler inside individual unit as building system could not be function properly (cases under Cap 572))
FSI Drawings Submission & Vetting (Result)

- **Rejected cases**
  1. Result would notify the FSIC / Consultant with comment sheet
  2. Separate notification to I.O. / Owner(s) without comment sheet

- **Accepted / Approved cases**
  1. **Minor corrections** may be arranged with FSIC / Consultant accordingly
  2. **Fire Certificate** (F.S. 161) on approval of FSI Drawings to be issued to FSIC / Consultant
  3. **Result** would notify I.O. / Owner(s)
Priority Vetting

• Priority vetting for FSI plan only be **granted under the following conditions:**
  1. Case under **court order**
  2. OBB/HS/other **Loan scheme cases** reaching the **final appeal board**

• The **application** shall **apply** to case Officer under separate submission

• Approval granted from **Senior Officials**
Other points to note

• FSIC / Consultant shall **notify** their employer(s) / owner(s) / related parties for the status of FSI drawing submission

• FSIC / Consultant shall indicate the status of submission (i.e. new or re-submission)
Technical Enquiry

Building Improvement Division 1,
(North Point Office)

Principal Technical Officer
Mr. WONG Po-keung
Tel: 2807 9166

Building Improvement Division 2,

Principal Technical Officer
Mr. YIM Chi-wai
Tel: 2117 6503
General Aspect – Use of Form

Out-dated FSI/314C
>>Forms can be downloaded from FSD web Site<<
## Downloadable Forms

### General Form
- Application for Access to Information
- Application Form for Inclusion in the FSD Supplier Lists
- Application Form for Fire Services Department Public Liaison Group
- Application for Fire Safety Talk / Evacuation Drill / Exhibition / Pamphlets Distribution / Mobile Publicity Unit / Fire Safety Education Bus
- Application Form for Employment with the Government of the Hong Kong Special Administrative Region (GF340)
- Fire Safety Checklist
- Personal Data (Privacy) Ordinance Data Access Request Form (OPS003)

### Fire Service Installation Contractor (FSIC)
- Application for Change of Particulars - Fire Services Department Fire Service Installation Contractor (FSIC)
- Application for Registration as Class 1 and/or Class 2 Fire Service Installation Contractor (FS250A)
- Application for Registration as Class 3 Fire Service Installation Contractor (FS250B)
- Fire Service Installation Schematic Drawings / As-fitted Layout Drawings (FSI/314)
- Fire Service Installation Plans (FSI/314A)
- Fire Service Installation Plans for Prescribed Commercial Premises / Specified Commercial Buildings (FSI/314B)
- Fire Service Installation Plans for Composite Building / Domestic Building (FSI/314C)
- Application for inspection and Testing of Fire Service Installations and Equipment (FSI/501)

Tick here to download
FSI/314C

To: Director of Fire Services
(Attn: Building Improvement Division) * 1 / 2

Fire Service Installation Plans for
* Composite Building / Domestic Building at

This is to certify that the details and specifications of all installations shown on
the attached fire service installation plans are as prescribed by the Fire Services
Department under the Fire Safety (Buildings) Ordinance and in accordance with
the relevant Rules and Codes of Practice, as may be applicable. e.g. -
* Rules of Loss Prevention Council for Automatic Sprinkler Installation
* Fire Officers’ Committee for Automatic Sprinkler Installation (20th Edition)
* Code of Practice for Minimum Fire Service Installations and Equipment,
  Fire Services Department

Full Name of FSI / Contractor / Consultant:

Contact Person:

Address:

Tel.:

Signed: ___________________________ Date: ___________________________

* To be deleted as appropriate
General Aspect – Use of Form

Inappropriate items

i) BI office division number (i.e. 1 or 2)

ii) Type of the subject building

iii) Adopted standards & trade of the applicant

iv) Address of the subject building is not in line with that as stated in Fire Safety Direction
General Aspect – Supporting Documents

a) No related document

i) Employment / Nomination letter from Incorporated Owners (I.O.) or Owners

ii) Letter of consent from I.O. / Owner on the locations of FS installations (e.g. sprinkler control valve set, FS water tank and pumps)

iii) Letter from WSD showing water supply pressure, size and location of tee-off pipe for improvised sprinkler system fed from direct water town main

iv) Approval /consent from Building Department
b) Common errors found in Employment / Nomination letter from I.O. or Owners

i) No company chop

ii) Missing full name or signature of I.O. / Owners
General Aspect – Supporting Documents

Good Practice -

Covering letter specifying the contents of submission

- Drawing numbers
- Nos. of set of drawings
- Supporting documents attached
General Aspect – FSI Drawings

i) Incorrect scale of FSI layout plans are shown.

ii) Scale of FSI layout plans are not drawn in minimum S.I. Metric ratio 1:100

iii) Texts and symbols are too small to read / low colour contrast between text/symbols and the drawing

>> All texts and symbols shown on drawings shall be min. size 2.5mm height

FSD Circular Letter No. 4/96 Part I Clause 3.6.1
iv) New F.S. pipes have not been colored with appropriate colour

v) Locations of FS water tank and FS pumps are not in line with those as indicated on approved building plans / building record plans
General Aspect – FSI Drawings

For some FSI submissions, only part plan(s) are provided. A clear indication of the location should be submitted.
Technical Aspect – FH/HR System

i) Hose reels are not placed at immediately outside occupied units/areas

>> To provide justification (e.g. photos showing spatial constraint and proposed new position)

ii) No jockey pump or other priming facilities provided for F.S. water tank located below the highest fire hydrants/hose reels

iii) Fail to provide independent water inlets and outlets for each water tank in a multi-water tanks arrangement
Technical Aspect – Automatic Sprinkler System

Improvised sprinkler system fed from Direct Town’s Main (DTM)

- No letter from WSD showing water supply pressure and location of tee-off pipe
- No hydraulic calculations provided (Pre-calculated)
- No design point provided or incorrect design point

To provide hydraulic calculations (Pre-calculated)

  a) Friction loss (<0.5bar) from sprinkler control valve (“C” Gauge) to the design point
  b) Required running pressure at low flow (375 L/min) and high flow (540 L/min)
Technical Aspect – Automatic Sprinkler System

- **Non-functional** building sprinkler system is provided
  (e.g. without connection of any sprinkler heads)
Technical Aspect – Automatic Sprinkler System

- Sprinkler inlet c/w anti-pollution valve are not placed at the **main entrance** of the building

>> i) To provide justifications

   ii) An **indication plate** showing the location of the sprinkler inlet and affixed at the **main entrance** of the building
Technical Aspect – Manual Fire Alarm System

i) MFA/FS control panel is not placed at the caretaker’s or management office or main entrance of the building

>>To provide justifications

ii) Fail to arrange manual fire alarm call points in ‘floor zoning’ basis for a new MFA system

iii) Fail to provide fire resisting cables for power supply to fire alarm bells and FS control panel
Technical Aspect – Electrical Power Supply

1. No protection device for secondary power supply or the power rating of protection device not in order

2. Power ratings of protection device and isolator not consistent

3. No isolating device between kWh meter and change-over switch

4. No distribution board is provided for F.S. pump set
Technical Aspect – VAC Control System

i) Fail to state the tripping method (A, B or C)

ii) Fail to provide the required information

- Air flow schematic diagram
- VAC control wiring diagram
- To colour the ventilation fans to be shut down by the VAC control system

FSD Circular Letter No. 4/96 Part I Clause 3.7.2
Structural Appraisal Report (SAR)

Common errors found in SAR submission

i) Only 1 copy of SAR attached

ii) Signature missed

>> 2 copies of signed SAR shall be attached for SAR submission through Building Improvement Divisions

iii) Insufficient justification

>> All common areas shall be considered for seating a new FS water tank and fixed fire pumps
Structural Appraisal Report (SAR)

Common errors found in SAR submission (Cont’d)

iv) **Address** of the subject building is not in line with that as stated in Fire Safety Direction

v) **Utmost size** of the FS water tank

vi) **Type** of the FS water tank (concrete / fibre glass)