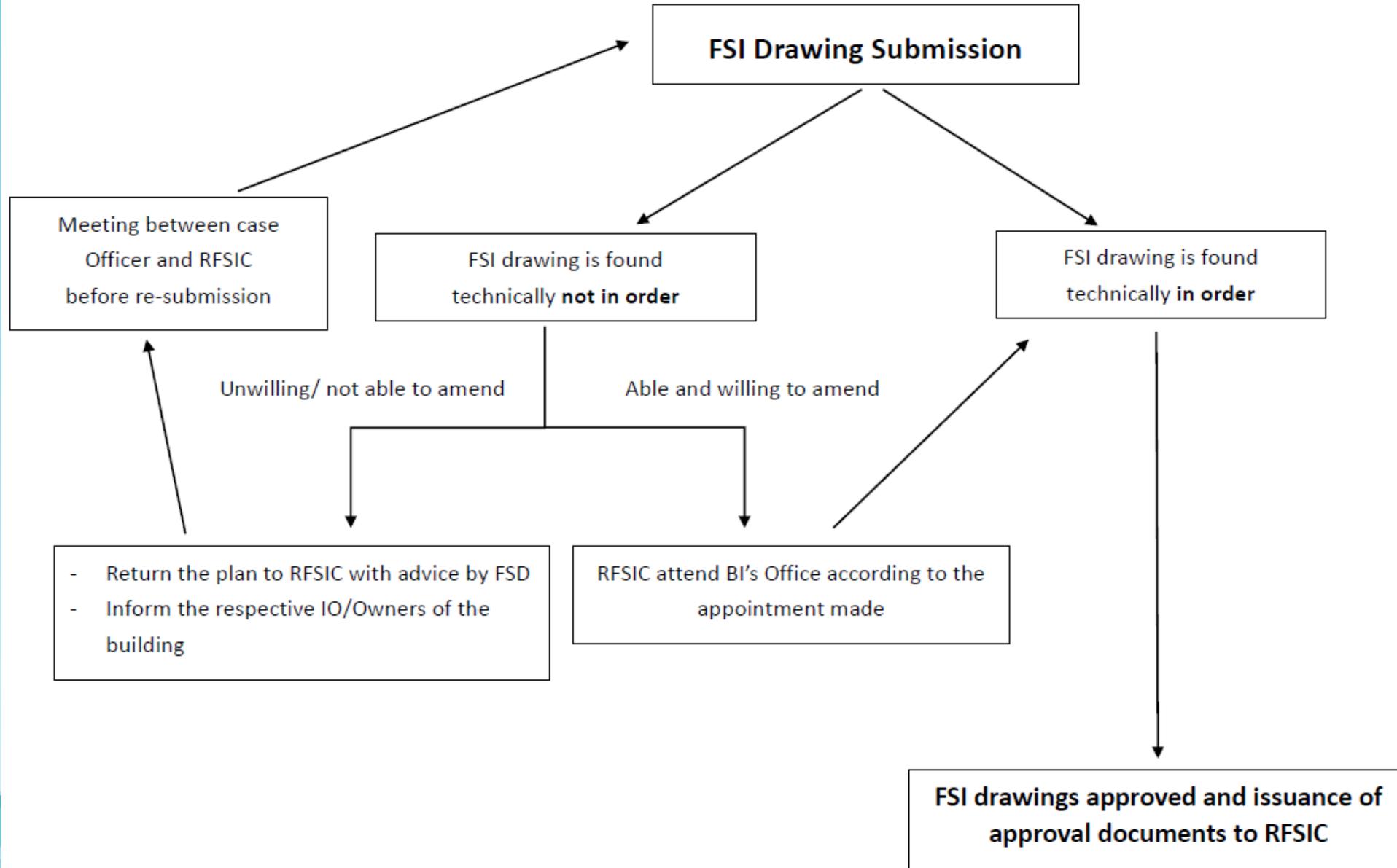


FSI Drawings Submission

CAP. 572

Processing of FSI Drawings submission Cap 502 / Cap 572



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]
- Rules of the FOC (29th Edition)/ LPC Rules
- Relevant FSD Circular Letters

Documents to be provided in the submission

- **Consent / Authorization / Nomination letter(s)** from the Incorporated Owners (I.O.) / Owner(s)
- Complete and accurate information on **Form FSI/314C**
- **Approved building plans from Buildings Department (BD)**
 1. New FS water tank(s)
 2. Partitioning of existing water tank(s) to serve as FS water tank
 3. Pump support/enclosure ... etc

Documents to be provided in the submission

- Confirm with Water Supplies Department (WSD) on “**minimum water pressure**” available from the water town mains
 - Improvised Sprinkler System (Direct-feed type)
 - Improvised Hose Reel System (Direct-feed type)
 - Improvised Fire Hydrant/Hose Reel System (Direct Pumping Design)
 - Improvised Hose Reel System (Direct Pumping Design)

Documents to be provided in the submission

- Letter of consent from Incorporated Owners / Owner(s) on the **location(s) of FS installations which involved portion(s) of the building under common ownership or owned by another party**

Such FS installations may include the followings:

1. FS Inlet / Sprinkler Inlet
 2. New FS water tank(s)
 3. New transfer / up-feed water tank
 4. FS pump(s) / sprinkler pump(s) / transfer water pump(s)
 5. FS pipe / sprinkler distribution pipe / sprinkler control valve ... etc.
- 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

- Catalogue of particular equipment (if applicable)
 - Backflow preventer
 - Pilot-operated type pressure reducing valve

Application for Relaxation of FS Installation

- Spatial, and/or other constraints (**justifications including site photos** should be provided):-
 1. FS / Sprinkler Inlet(s) at principal face of building facing the main road or EVA
 2. Hose reel, alarm bell and MFA call point in common areas immediately outside the occupied units/areas on that floor
 3. MFA panel at main entrance (unavailable of caretaker/management office)

Requirements of FSI Drawings (General)

- Complete set of submission shall include **Diagrams of Piping schematic, Control Wiring schematic, Electrical schematic** and **FSI 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 lot boundary**
- **Do not colour the pipes for water supply system**
- Ensure that the **means of escape (MoE) would not be 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(s) on that floor
- Hose reel, MFA call point and fire alarm bell should be installed **inside** each non-domestic unit (such as shops on ground floor)

Requirements on FSI Drawings (FH/HR)

- 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) written agreement submitted by shop owner(s)
 - c) the hose reel and MFA call point are accessible to the shops at all times **without hindering** by any types of lockable gate

Requirements on FSI Drawing Submission

Improvised Sprinkler System

- **Design point(s)** for friction loss not exceeding **500 mbar** shall be indicated on the FSI layout plan for hydraulic calculation using pre-calculated method
- **Pipe size** shall be designed 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 lot boundary** which can be **readily accessible by firefighting personnel**

Requirements on FSI Drawing Submission

Improvised Hose Reel System – Direct-feed Type

(in connection with the FSD Circular Letter No. 2/2016)

- Backflow preventer shall be approved by WSD
- Equipment catalogue of backflow preventer shall be provided in the submission
- Hydraulic calculations for the improvised hose reel system shall be incorporated as supporting document

Requirements on FSI Drawing Submission

Improvised FH/HR System and Improvised HR System

(Direct Pumping Design)

(in connection with the FSD Circular Letter No. 4/2023)

- Backflow preventer shall be approved by WSD
- Pilot-operated type pressure reducing valve (PRV) shall be approved by WSD and FSD
- Equipment catalogue of backflow preventer and pilot-operated type PRV shall be provided in the submission
- Cavitation analysis in PRV should be incorporated
- Hydraulic calculations for the improvised FH/HR or improvised HR system (direct pumping design) shall be incorporated as supporting document

Requirements on FSI Drawings (Electrical Schematic)

- All fixed fire pumps, sprinkler pumps, jockey pumps and FS control panel shall be connected to both **primary and secondary source** of power supply through an **automatic changeover switch**
- **Fire resisting cables** to BS 6387 Cat. CWZ or BSEN 60702 shall be used for **new fire service installations**
- **Protection device** for fixed fire / sprinkler pump(s) shall be of **HRC fuse**
- **Starting method** of FS pumps shall be clearly illustrated
- **Rating of protection devices** for new fire service installations shall be clearly specified

Requirements on FSI Drawings (VAC)

- **Schematic air flow diagram** showing the air-side arrangement should be incorporated
- **All MVAC equipment** shall be shown on the **FSI layout plans** and the **schematic diagram**, whilst the MVAC equipment under VAC control should be **coloured**
- **Designed flow capacities** of MVAC equipment should be indicated
- **Method(s) for VAC control system** shall be stated
- The **manual override switch** and **fire alarm control panel** should be indicated on the schematic of VAC control system
- **Location** of manual override switch and FS main panel should be indicated on the layout plan

FSI Drawings Submission & Vetting (Result)

- **Not approved cases**

1. The contractor/consultant would be notified of the result with comments
2. I.O. / Owner(s) would be notified of the result

- **Accepted / Approved cases**

1. **Minor amendments** may be arranged for FSIC / Consultant accordingly
2. **Fire Certificate** (F.S. 161) on approval of FSI Drawings would be issued to FSIC / Consultant
3. I.O. / Owner(s) would be notified of the result

General Aspect – Use of Form

Out-dated
FSI/314C

FSI/314C

To : Director of Fire Services
(Attn: Building Improvement and Support Division)

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 Practices, as may be applicable, e.g. :-

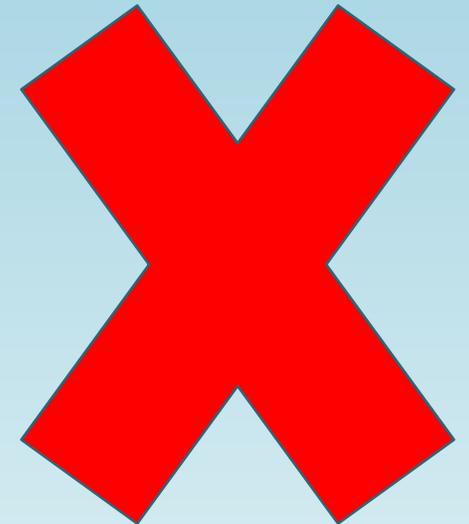
- * Rules of Loss Prevention Council for Automatic Sprinkler Installation
- * Fire Offices' Committee for Automatic Sprinkler Installation (29th Edition)
- * Code of Practice for Minimum Fire Service Installations and Equipment, Fire Services Department

Signed _____

(Full Name of FSI Contractor/Consultant)

Date _____

*To be deleted as appropriate



>>Forms can be downloaded from FSD web Site<<

The image shows a screenshot of the Hong Kong Fire Services Department (FSD) website. On the left, there is a vertical navigation menu with the following items: Electronic Services, FAQ, Links, Retired Members' Information, and Contact Us. The 'Contact Us' menu is expanded, showing a list of options: General Enquiries, Distribution of Fire Station / Ambulance Depot, Visit to FSD Premises, Visit to the Fire and Ambulance Services Education Centre cum Museum, and Downloadable Forms. The 'Downloadable Forms' option is circled in red, and a blue callout box with the text 'click here to next page' and an arrow points to it. The main content area is divided into three sections: 'What's New' (with a date of 02/07/2024 for 'Rescuers (Issue 2 of Year 2024)' and 19/06/2024 for 'Hong Kong Fire Services Department Review 2023'), 'Hot Information' (with three featured items: 'The Amended Dangerous Goods Ordinance' effective March 31, 2022; 'Safety Tips for Travellers' booklet; and 'Station Officer (Operational) - Year-round Recruitment'), and 'FSD Information' (with two featured items: 'Rank Markings' and 'Hong Kong Fire Services Department Volunteer Team'). A map of Hong Kong is visible at the bottom of the 'What's New' section.

Fire Service Installation Contractor (FSIC)

| Item | File |
|---|---|
| Registered Fire Service Installation Contractor (FSIC) Application for Change of Particulars |  |
| Application for Registration as a Fire Service Installation Contractor Class 1 and/ or Class 2 |  |
| Application for Registration as a Fire Service Installation Contractor Class 3 |  |
| Fire Service Installation Schematic Drawings / As-fitted Layout Drawings (FSI/314) (Note 1) |  |
| Fire Service Installation Plans (FSI/314A) (Note 1) |  |
| Fire Service Installation Plans for Prescribed Commercial Premises / Specified Commercial Buildings (FSI/314B) (Note 1) |  |
| Fire Service Installation Plans for Composite Building / Domestic Building (FSI/314C) (Note 1) |  |
| Fire Service Installation Plans for Industrial Building (FSI/314D) |  |
| Consent Form for FSI314 Smoke Control Systems |  |
| Application for Inspection and Testing of Fire Service Installations and Equipment |  |
| Report Form for Open Kitchen Unit and Windowless Kitchen/Toilet |   |

click here to access



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 Practices, as may be applicable, e.g. :-

- * Rules of Loss Prevention Council for Automatic Sprinkler Installation
- * Fire Offices' Committee for Automatic Sprinkler Installation (29th 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 FSI/314C

Inappropriate items

- i) BI office division number is not specified (i.e. 1 or 2)
- ii) **Type** of the subject building is not specified
- iii) **Trade** of the applicant (FSI Contractor / Consultant) is not selected
- iv) Adopted **standards** of FS installations are not specified
- v) **Address** of the subject building is not in line with that as stated in **Fire Safety Direction**

General Aspect – Supporting Documents

- a) **Commonly missed documents**
 - i) **Authorization / 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 connection point** for improvised sprinkler system (direct feed type), improvised HR system (direct feed type), improvised FH/HR system (direct pumping design) and improvised HR system (direct pumping design)
 - iv) Approved building plans from **Buildings Department**

General Aspect – Supporting Documents

- b) Common errors found in Authorization / 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

Common FSI drawings errors

- i) Incorrect scale of FSI layout plans are shown.
- ii) Scale of FSI layout plans are not drawn in 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

FSI Circular Letter No. 4/96 Part I Clause 3.6.1

General Aspect – FSI Drawings

- iv) New F.S. pipes are not **coloured** with appropriate colour code
- v) **Locations** of FS water tank and FS pumps are **not in line with** those as indicated on approved building plans / building record plans
- vi) Location of enlarged part plans (if applicable) are not indicated

Technical Aspect – FH/HR System

Common errors

- 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

Technical Aspect – Improvised HR System (Direct-feed Type)

Common errors

- i) **Advisory letter from WSD on the minimum water pressure available for the building is not provided**
- ii) **Catalogue of backflow preventer is not provided**
- iii) **Hydraulic calculations is not incorporated**

Technical Aspect – Improvised FH/HR System and Improvised HR System (Direct Pumping Design)

Common errors

- i) **Advisory letter from WSD on the minimum and maximum water pressure available for the building is not provided**
- ii) **Catalogue of backflow preventer or Pilot-operated Type PRV is not provided**
- iii) **PRV(s) are not approved or accepted by WSD and FSD**
- iv) **Hydraulic calculations and cavitation analysis of PRV are not incorporated**
- v) **Monitoring gate valves at the upstream and downstream sides of PRVs should be provided. Status of the gate valves should be indicated on the MFA / FS control panel**
- vi) **Flow switch is not incorporated to the system**

Technical Aspect – Automatic Sprinkler System

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

Common errors

- **WSD's advisory letter on minimum water supply pressure and location of connection point is not provided**
 - **Hydraulic calculations are not incorporated on FSI plans**
 - **Design point(s) are not indicated or indicated incorrectly**
- >> **To provide hydraulic calculations (Pre-calculated method)**
- 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

Common errors

- **Non-functional** building sprinkler system is provided (e.g. without connection of any sprinkler heads)
- Sprinkler inlet and anti-pollution valve are not placed at the **main entrance** of the building
 - >> i) To provide justifications (e.g. current site photos and measurement)
 - ii) An **indication plate** showing the location of the sprinkler inlet and anti-pollution valve should be affixed at a prominent position exterior of the building

Technical Aspect – Manual Fire Alarm System

Common errors

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

>> Alternative locations may be accepted if justification can be provided
- 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

Common errors

1. **No protection device** for secondary power supply or the power rating of protection device is not in order
2. **Power ratings** of protection device and isolator are inconsistent
3. **No isolating device** between kWh meter and change-over switch
4. **No pump control panel** is provided for F.S. pump set

Technical Aspect – VAC Control System

Common errors

- 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