#### ANNEX E

(Clause C-8)

# GUIDELINES FOR FIRE DRILL AND EVACUATION PROCEDURES FOR HIGH RISE BUILDINGS (ABOVE 15 m IN HEIGHT)

#### E-1 INTRODUCTION

In case of fire in a high rise building, safe evacuation of its occupants may present serious problems unless a plan for orderly and systematic evacuation is prepared in advance and all occupants are well drilled in the operation of such plan. These guidelines are intended to assist them in this task.

#### E-2 ALARMS

Any person discovering fire, heat or smoke shall immediately report such condition to the fire brigade, unless he has personal knowledge that such a report has been made. No person shall make, issue, post or maintain any regulation or order, written or verbal, that would require any person to take any unnecessary delaying action prior to reporting such condition to the fire brigade.

#### E-3 DRILLS

E-3.1 Fire drills shall be conducted, in accordance with the Fire Safety Flan, at least once every three months for existing outldings during the first two years. Thereafter, fire drills shall be conducted at least once every six months.

E-3.2 All occupants of the building shall participate in the fire drill. However, occupants of the building, other than building service employees, are not required to leave the floor or use the exits during the drill.

E-3.3 A written record of such drills shall be kept on the premises for a three years period and shall be readily available for fire brigade inspection.

#### E-4 SIGNS AND PLANS

#### E-4.1 Signs at Lift Landings

A sign shall be possed and maintained in a conspicuous place on every floor at or near the lift landing in accordance with the requirements, indicating that in case of fire, occupants shall use the stairs unless instructed otherwise. The sign shall contain a diagram showing the location of the stairways except that such diagram may be omitted, provided signs containing such diagram are posted in conspicuous places on the respective floor.

A sign shall read "IN CASE OF FIRE, USE STAIRS UNLESS INSTRUCTED OTHERWISE". The lettering shall be at least 12.5 mm block letters in red and white

background. Such lettering shall be properly spaced to provide good legibility. The sign shall be at least 250 mm  $\times$  300 mm, where the diagram is also incorporated in it and 62.5 mm  $\times$  250 mm where the diagram is omitted. In the latter case, the diagram sign shall be at least 200 mm  $\times$  300 mm. The sign shall be located directly above a call button and squarely attached to the wall or partition. The top of the sign shall not be above 2 m from the floor level.

#### E-4.2 Floor Numbering Signs

A sign shall be posted and maintained within each stair enclosure on every floor, indicating the number of the floor, in accordance with the requirements given below.

The numerals shall be of bold type and at least 75 mm high. The numerals and background shall be in contrasting colours. The sign shall be securely attached to the stair side of the door.

#### E-4.3 Stair and Elevator Identification Signs

Each stairway and each elevator back shall be identified by an alphabetical letter. A sign indicating the letter of identification shall be posted and maintained at each elevator landing and on the side of the stairway door elevator landing and on the side of the stairway door from which egress is to be made, in accordance with the requirements given below:

The lettering on the sign shall be at least 75 mm high, of bold type and of contrasting colour from the background. Such signs shall be securely attached.

# E-4.4 Stair Re-entry Signs

A sign shall be posted and maintained on each floor within each stairway and on the occupancy side of the stairway where required, indicating whether re-entry is provided into the building and the floor where such re-entry is provided, in accordance with the requirements given below:

The lettering and numerals of the signs shall be at least 12.5 mm high of bold type. The lettering and background shall be of contrasting colours and the signs shall be securely attached approximately 1.5 m above the floor level.

E-4.5 Fire command station shall be provided with floor plan of the building and other pertinent information relative to the service equipment of the building.

#### E-5 FIRE SAFETY PLAN

- E-5.1 A format for the Fire Safety Plan shall be as given in E-8.
- E-5.2 The applicable parts of the approved Fire Safety Plan shall be distributed to all tenants of the building by the building management when the Fire Safety Plan has been approved by the Fire Authority.
- E-5.3 The applicable parts of the approved Fire Safety Plan shall then be distributed by the tenants to all their employees and by the building management to all their building employees.
- E-5.4 Where the owner of the building is also an occupant of the building, he shall be responsible for the observance of these rules and the Fire Safety Plan in the same manner as a tenant.
- E-5.5. In the event there are changes from conditions existing at the time the Fire Sofety Plan for the building was approved, and the changes are such so as to require amending the Fire Safety Plan, within 30 days after such changes, an amended Fire Safety Plan shall be submitted to the fire brigade for approval.

# E-6 FIRE COMMAND STATION

A Fire Command Station shall be established in the lobby of the building on the entrance floor. Such command station shall be adequately illuminated.

# E-7 COMMUNICATIONS AND FIRE ALARM

A means of communication and fire alarm for use during fire emergencies shall be provided and maintained by the owner or person in charge of the building

#### E-8 FIRE SAFETY PLAN FORMAT

#### E-8.1 Building Address

# E-8.2 Purpose and Objective

# E-8.2.1 Purpose

To establish method of systematic, safe and orderly evacuation of an area or building by its occupants in case of fire or other emergency, in the least possible time, to a safe area by the nearest safe means of egress; also the use of such available fire appliances (including sounding of alarms) as may have been provided for controlling or extinguishing fire and safeguarding of human life.

#### E-8.2.2 Objective

To provide proper education as a part of continuing employee indoctrination and through a continuing

written programme for all occupants, to ensure prompt reporting of fire, the response of fire alarms as designared, and the immediate initiation of fire safety procedures to safeguard life and contain fire until the arrival of the fire brigade.

#### E-3.3 Fire Safety Director

- a) Name
- b) Regularly assigned employment Title
- c) Regularly assigned location
- d) How is he notified when at regular location?
- e) How is he notified when not at regular location?
- f) Normal working hours
- g) Duties of Fire Safety Director (see E-9.1)

#### E-8.4 Deputy Fire Safety Director

- a) Name
- b) Regularly assigned employment Title
- c) Regularly assigned location
- d) How is he notified when at regular location?
- e) How is he notified when not at regular location?
- f) Normal working hours
- g) Duties of Deputy Fire Safety Director (see E-9.2)

#### E-8.5 Fire Wardens and Deputy Fire Wardens

- a) Are their names on Organization Charts for each floor and/or tenancy?
- Submit typical completed Organization Chart for Fire Drill and Evacuation Assignment.
- c) Duties of Fire Wardens and Deputy Fire Wardens (see E-9.3).

# E-8.6 Building Evacuation Supervisor

- a) Name
- b) Regularly assigned employment Title
- c) Regularly assigned location
- d) How is he notified when at regular location?
- e) How is he notified when not at regular location?
- Normal working hours
- g) Duties of Building Evacuation Supervisor (see E-9.4).

# E-8.7 Fire Party

- a) Submit a completed Organization Chart for Fire Parties naming person in charge, and his title in the building.
- Indicate standards of selection from building employees based on background and availability.

- c) How are they notified?
- d) How are they notified when they are not at their regular locations?
- e) Means of responding
- Duties of each member of Fire Party (see E-9.5).

#### E-8.8 Occupants Instructions

Distribution of instructions to all tenants, tenents' employees and building employees (see E-9.6).

#### E-8.9 Evacuation Drills

- a) Frequency of drills
- b) How conducted?
- c) Participation: Who participated? How?
- d) Controls and supervision
- c) Recording of details of drills

#### E-8.10 Fire Command Station

- a) Location
- b) Requirements
  - 1) Adequate illumination
  - Adequate communication to mechanical equipment room and elevator control room on each floor
  - 3) Copy of Fire Safety Plan
  - 4) Copy of Building Information Form
  - Representative floor plans showing location of signs, floor remote station, tocation of signs, floor remote station, communications, etc.

#### E-8.11 Signs

- a) Signs at elevator landings, Floor diagrams
- b) Floor numbering
- c) Stairway identification
- d) Elevator identification
- e) Stair re-entry

E-8.12 Fire Prevention and Fire Protection Programme (see E-9.7).

- E-8.13 Building Information Form (see E-9.8).
- E-8.14 Representative Floor Plan (see E-9.9).
- E-8.15 Fire Safety Plan Prepared by (see E-9.10).
  - a) Date when prepared.
  - b) Date when revised.

#### E-9 DUTIES

#### E-9.1 Fire Safety Director's Duties

E-9.1.1 Be familiar with the written Fire Safety Plan providing for fire drill and evacuation procedure in accordance with orders on the subject.

- E-9.1.2 Select qualified building service employees for a Fire Party and organize, train and supervise such Fire Brigade.
- E-9.1.3 Be responsible for the availability and state of readiness of the Fire Party.
- E-9.1.4 Conduct fire and evacuation drills.
- E-9.1.5 Be responsible for the designation and training of a Pire Warden for each floor, and sufficient Deputy Pire Wardens for each tenancy in accordance with orders on the subject.
- E-9.1.6 Be responsible for a daily check for the availability of the Fire Wardens, and see that up-to-date organization charts are posted.

NOTE — If the number of Fire Wardens and Deputy Fire Wardens in the building is such that it is impractical to individually contact each one daily, a suggested method to satisfy the requirements is to make provisions for the Fire Warden, or a Deputy Fire Warden in the absence of the Fire Warden, to notify the Fire Safety Director when the Fire Warden or required number of Deputy Fire Wardens are not available. In order to determine the complance by the Fire Warden and Deputy Fire Wardens, when this method is used, the Fire Safety Director shall make a spot check of several different froots each day.

E-9.1.7 Notify the owner or some other person having charge of the building when any designated individual is neglecting his responsibilities contained in Fire Safety Plan. The owner or the other person in-charge of the building shall bring the matter to the attention of the firm employing the individual. If the firm fails or the time employing are murviously, if the firm tans to correct the condition, the Fire Department shall be notified by the owner/person in-charge of the building.

E-9.1.8 In the event of fire, shall report to the Fire Command Station to supervise, provide for and coordinate:

- a) Ensure that the Fire Department has been notified of any fire or fire alarm.
- Manning of the Fire Command Station.
- Direction of evacuating procedures as provided in the Fire Safety Plan.
- d) Reports on conditions on fire floor for information of Fire Department on their arrival.
- e) Advise the Fire Department Officer in-charge in the operation of the Fire Command Station.

**E-9.1.9** Be responsible for the training and activities of the Building Evacuation Supervisor.

### E-9.2 Deputy Fire Safety Director's Duties

E-9.2.1 Subordinate to the Fire Safety Director.

E-9.2.2 Perform duties of Fire Safety Director in his absence.

# E.9.3 Fire Wardens and Deputy Fire Wardens Duties

The tenant or tenants of each floor shall, upon request of the owner or person in charge of buildings, make responsible and dependable employees available for designation by the Fire Safety Director as Fire Warden and Deputy Fire Wardens.

**E-9.3.1** Each floor of a building shall be under the direction of a designated Fire Warden for the evacuation of occupants in the event of fire. He shall be assisted in his duties by the Deputy Fire Wardens A Deputy Fire warden shall be provided for each tenancy. When the floor area of a tenancy exceeds 700 m<sup>2</sup> of occupiable space, a Deputy Fire Warden shall be assigned for each 700 m<sup>2</sup> or part thereof.

**E-9.3.2** Each Fire Warden and Deputy Fire Warden shall be familiar with the Fire Safety Plan, the location of exits and the location and operation of any available fire alarm system.

**E-9.3.3** In the event of fire, or fire alarm the Fire Warden shall ascertain the location of the fire, and direct evacuation of the floor in accordance with directions received and the following guidelines:

- The most critical areas for immediate evacuation are the fire floor and floors immediately above.
  - Evacuation from the other floors shall be instituted when instructions from the Fire Command Station or conditions incicate such action. Evacuation shall be via uncontaminated stairs. The Fire Warden shall try to avoid stairs being used by the Fire Department. If this is not possible, he shall try to attract the attention of the Fire Department Personnel before such personnel open the door to the fire floor.
- Evacuation to two or more levels below the fire floor is generally adequate. He shall keep the Fire Command Station informed regarding his location.
- Fire Wardens and their Deputies shall see that all occupants are notified of the fire, and that they proceed immediately to execute the Fire Safety Plan.
- The Fire Warden on the fire floor shall, as soon as practicable, notify the Fire Command Station of the particulars.
- e) Fire Wardens on floors above the fire shall, after executing the Fire Safety Plan, notify the Fire Command Station of the means being used for evacuation and any other particulars.
- In the event that stairways serving fire floor.

and/or floors above are unusable due to contamination or cut off by fire and/or smoke or that several floors above fire involve large numbers of occupants who must be evacuated, consideration may be given to using elevators in accordance with the following:

- If the elevators servicing his floor also service the fire floor, they shall not be used. However, elevators may be used if there is more than one bank of elevators, and he is informed from the Fire Command Station that one bank is unaffected by the fire.
- If elevators do not service the fire floor and their shafts have no openings on the fire floor, they may be used, unless directed otherwise.
- Elevators manned by trained building personnel or firemen may also be used.
- 4) In the absence of a serviceable elevator, the Fire Worden shall select the safest stairway to use for evacuation on the basis of the location of the fire and any information received from the Fire Command Station. The Fire Warden shall check the environment in the stairs prior to entry for evacuation. If it is affected by smoke, alternative stair shall be selected, and the Fire Command Station notified.
- The Fire Warden shall keep the Fire Command Station informed of the means being employed for evacuation by the occupants of his floor.
- g) Ensure that an alarm has been transmitted.

# E-9.3.4 Organization Chart for Fire Drill and Evacuation Assignment

A chart designating employees and their assignments shall be prepared and posted in a conspicuous place in each renancy and on each floor of a tenancy that occupies more than one floor and a copy shall be in the possession of the Fire Safety Director.

E-9.3.5 Keep available an updated listing of all personnel with physical disabilities who cannot use stains unaided. Make arrangements to have these occupants assisted in moving down the stairs to two or more levels below fire floor. If it is necessary to move such occupants to a still lower level during the fire, move them down the stairs to the uppermost floor served by an uninvolved elevator bank and then remove them the street floor by elevator. Where assistance is required for such evacuation, notify Fire Safety Director.

- **E-9.3.6** Provide for Fire Warden identification during fire drills and fires, such as using armband, etc.
- **E-9.3.7** Ensure that all persons on the floor are notified of fire and all are evacuated to safe areas. A search must be conducted in the layetories to ensure all are out. Personnel assigned as searchers can promptly and efficiently perform this duty.
- E-9.3.8 Check availability of applicable personnel on Organization Chart and provide for a substitute when the position on a chart is not covered.
- **E-9.3.9** After evacuation, perform a head count to ensure that all regular occupants known to have occupied the floor have been evacuated.
- **E-9.3.10** When alarm is received, the Fire Warden shall remain at a selected position in the vicinity of the communication station on the floor, in order to maintain communication with the Fire Command Station and to receive and give instructions.

#### E-9.4 Building Evacuation Supervisor's Duties

A building Evacuation Supervisor is required at all times other than normal working or business hours when there are occupants in the building and there is no Fire Safety Director on duty in the building.

- E-9.4.1 He should be capable of directing the evocuation of the occupants as provided by the Fire Safety Plan.
- E-9.4.2 During fire emergencies, the primary responsibility of the Building Evacuation Supervisor shall be to man the Fire Command Station, and the direction and execution of the evacuation as provided in the Fire Safety Plan. The Building Evacuation Supervisor's training and related activities shall be under the direction of the Fire Safety Director in secondance with these rules, and the Fire Safety Plan. Such activities shall be subject to Fire Department control.

### E-9.5 Fire Party Duties

On receipt of an alarm for fire the Fire Party shall:

- a) report to the floor below the fire to assit in evacuation and provide information to the Fire Command Station.
- after evacuations of fire floor, endeavour to control spread of fire by closing doors, etc.
- e) attempt to control the fire until arrival of the Fire Department, if the fire is small and conditions do not pose a personal threat.
- leave one member on the floor below the fire to direct the Fire Department to the fire location and to inform them of conditions.

- e) on arrival of the Fire Department, the Fire Party shall report to the Fire Command Station for additional instructions.
- f) have a member designated as runner, who shall know the location of the nearest telephone, and be instructed in its use. Such member shall immediately upon receipt of information that there is a fire or evidence of fire, go to the telephone, transmit an alarm and await the arrival of the Fire Department and direct such department to the fire.
  - NOTE A chart designating employees and their assignments shall be prepared.

#### E-9.6 Occupant's Instructions

- a) The applicable parts of the approved Fire Safety Plan shall be distributed to all tenants of the building by the building management when the Fire Safety Plan has been approved by the Fire Commissioner.
- b) The applicable parts of the approved Fire Safety Plan shall then be distributed by the tenants to all their employees and by the building management to all their building employees.
- All occupants of the building shall participate and cooperate in carrying out the provisions of the Fire Safety Plan.

#### E-9.7 Fire Prevention and Fire Protection Programme

- a) A plan for periodic formal inspections of each floor area, including exit facilities, fire extinguishers and house keeping shall be developed. A copy of such plan be submitted.
- Provision shall be made for the monthly testing of communication and alarm systems.

# **B-9.8 Building Information Form**

It shall include the following information:

- a) Building address ......Pin Code......
- b) Owner or person in-charge of building Name, Address and Telephone Number.
- Fire Safety Director and Deputy Fire Safety Director's Name and Telephone Number.
- d) Certificate of occupancy. Location where posted, or duplicate attached.
- e) Height, area, class of construction.
- Number, type and location of fire stairs and/ or fire towers.
- Number, type and location of horizontal exits or other areas of refuge.
- Number, type, location and operation of elevators and escalators.

- Interior fire alarms, or alarms to central stations.
- k) Communications systems and/or walkie talkie, telephones, etc.
- m) Standpipe system; size and location of risers, gravity or pressure tank, fire pump, location of siamese connections, name of employee with certificate of qualification and number of certificate.
- sprinkler system; name of employee with Certificate of Fitness and certificate number.
   Primary and secondary water supply, fire pump and areas protected.
- p) Special extinguishing system, if any, components and operation.
- q) Average number of persons normally employed in building. Daytime and night time.
- Average number of handicapped people in building. Location. Daytime and night time.
- Number of persons normally visiting the building. Daytime and night time.
- t) Service equipment such as:
  - Electric power, primary, auxiliary;
  - Lighting, normal, emergency, type and location:
  - Heating, type, fuel, location of heating unit;
  - Ventilation with fixed windows, emergency means of exhausting heat and smoke;
  - Air-Conditioning Systems Brief description of the system, including ducts and floors serviced:
  - Refuse storage and disposal;
  - Fire fighting equipment and appliances, other than standpipe and sprinkler system; and
  - 8) Other pertinent building equipment.
- Alterations and repair operations, if any, and the protective and preventive measures necessary to safeguard such operations with attention to torch operations.
- V) Storage and use of flammable solids, liquids and/or gases.
- Special occupancies in the building and the proper protection and maintenance thereof.
   Places of public assembly, studios, and theatrical occupancies.

# E-9.9 Representative Floor Plan

A floor plan, representative of the majority or the floor designs of the entire building, shall be at the Cummand Post, in the main lobby, under the authority of the Fire

Safety Director. One copy of a representative floor plan shall be submitted to the Fire Department with the Fire Safety plan.

#### E-9.10 Fire Safety Plan

In planning, evaluate the individual floor layouts, the population of floors, the number and kinds of exits, the zoning of the floor by area and occupants. Determine the movement of traffic by the most expeditious route to an appropriate exit and alternative route for each zone, since under fire conditions one or more exits may not be usable. This format is to be used in the preparation of the Fire Safety Plan. Nothing contained in this Fire Safety Plan format is to be construed as all inclusive. All rules and other requirements are to be fully complied with.

#### E-9.11 Personal Fire Instruction Card

All the occupants of the building shall be given a Personal Fire Instruction Card giving the details of the floor plan and exit routes along with the instruction to be followed in the event of fire. A typical Personal Fire Instruction Card shall be as follows:

# PERSONAL FIRE INSTRUCTION CARD

SEAL

# NAME OF THE ORGANIZATION ADDRESS OF THE ORGANIZATION

NAME:
DESIGNATION:
FLOOR NO.:
DATE:

# FIRE WARDEN

#### INSTRUCTIONS

# FOR YOUR OWN SAFRTY YOU SHOULD KNOW

- Two push button fire alarm boxes are provided per floor. You should read the operating instructions.
- You should read the operating instructions on the body of the fire extinguishers provided on your floor.
- The nearest exit from your table.
- Your assembly point on ground floor (check with your Fire/Deputy Fire Warden).
- FOR YOUR OWN PROTECTION YOU SHOULD REPORT TO YOUR FIRE/ DEFUTY FIRE WARDEN

- a) If any exit door/route is obstructed by loose materials, goods, boxes, etc.
- b) If any staircase door, lift lobby door does not close automatically, or does not close completely.
- If any push button fire alarm point, or fire extinguisher is obstructed, damaged or apparently out of order.

# IF YOU DISCOVER A FIRE

- Break the glass of the nearest push button fire alarm and push the button.
- Attack the fire with extinguishers provided on your floor. Take guidance from your Wardens.

Evacuate if your Warden asks you to do so.

# JF YOU HEAR EVACUATION INSTRUCTIONS

- Leave the floor immediately by the south/ north staircase.
- Report to your Warden, at your predetermined assembly point outside the building.
- 3. Do not try to use lifts.
- Do not go to cloakroom.
- Do not run or shout.
- 6. Do not stop to collect personal belongings.
- Keep the lift lobby and staircase doors shut.

Tisle

Code of practice for installation

and maintenance of internal fire

YOUR ASSEMBLY POINT IS .....

#### LIST OF STANDARDS

IS No.

3844:1989

The following list records those standards which are acceptable as 'good practice' and 'accepted standards' in the fulfillment of the requirements of the Code. The standards listed may be used by the Authority as a guide in conformance with the requirements of the referred clauses in the Code.

standards listed may be used by the Authority as a guide in conformance with the requirements of the referred			hydrants and hose reels on premises (first revision)
clauses in the Code.  IS No.	Title	(7) 3614 (Part 1): 1966	Specification for fire check doors: Part 1 Plate, metal covered and rolling type
(1) 3808 : 1979	Method of test for non- combustibility of building materials (first revision)	(8) 12458: 1988	Method of test for fire resistance test for fire stops
(2) 8757:1999	Glossary of terms associated with fire safety (first revision)	(9) 1646 : 1997	Code of practice for fire safety of buildings (general): Electrical installations (second
7673 . 1975	Glossary of terms for fire fighting equipment		revision)
(3) 15394:2003	Fire safety in petroleum refinery and fertilizer plants — Code of	2309 : 1989	Code of practice for protection of building and allied structures against lighting (second revision)
(4) 8758:1993	Practice  Recommendations for fire  precautionary measures in the	(10)	Specification for fire dampers for air conditioning ducts (under preparation)
	construction of temporary structures and PANDALS (first revision)	(11) 11360 : 1985	Specification for smoke detectors for use in automatic electrical fire alarm system
(5) 3809:1979	Fire resistance test of structure	(12) 659 : 1964	Safety code for air-conditioning
1641 : 1988	(first revision)  Code of practice for fire safety of buildings (general): General principles of fire grading and	(13) 1649 : 1962	Code of practice for design and construction of flues and chimneys for domestic heating appliances (first revision)
15103 : 2002	classification (first revision)  Specification for fire resistant steel	1642 : 1989	Code of practice for safety of buildings (general): Details of construction (first revision)
(6) 9668:1990	Code of practice for provision and maintenance of water supplies and fire fighting	(14) 12777 ; 1989	Fire safety-flame-spread of products — Method for classification

IS No.	Title	IS No.	Title
(15) 1642 : 1989	Code of positive for tire rafety of buildings (general): Details of construction (first revision)	904 : 1983	Specification for revolving branch pipe for fire fighting (third revision)
1643 : 1988	Code of practice for the safety of buildings (general): Exposure bazard (first revision)	907 : 1998	Specification for suction strainers, cylindrical type for tire lighting purpose (second revision)
1644 : 1988	Once of practice for the safety of buildings (general): Exit requirements and personal	905 : 1975	Specification for fire hydrant, stand posttype (second revision)
	hazard (firer nevision)	909 : 1992	Specification for underground fire hydrant: Sluice valve type
(li6) 9157 : 1930	Saidy colours and enfort signs		(flored revision)
12349 : 1988 12407 : 1988	Fire protection — Safety sign Grouphic symbols for fire potentian plan	910 : #9ND	Specification for combined key- for hydrant, hydrant cower and lower valve (second covision)
(17) 2175 - 1988	Specification for heat sensitive fire detectors for mac in:	926 : 1985	Specification for firercan's axe (second revision)
	automatic fire alarm system (second revulon)	927 : 1981	Specification for fire hooks (second revision)
11360 : 1985	Specification for smoke detectors for use in automatic electrical fire alarm system	92K : 1084	Specification for fire belis (ascend revision)
(18) 2189 : 1999	Code of gractice for selection, installation and maintenance of automorio fire detection	957 : 1981	Specification for washers for water fittings for fire fighting purposes (second revision)
	and alarm system (second security)	939 : 1977	Specification for snatch block for use with fibre rope for fibe brigade use (first variation)
(19) 636 : 1988	Non-percolating thexible fire fighting delivery hose (third newlater)	940 : 1989	Specification for portable fire exchanguasher, water type (gas cauridge) (than revision)
884: 1985	Specification for first-aid hose reel for fire lighting (first realized)	941 : 1985	Specification for blowers and exhauster for fire fighting (second revision)
901 : 1988	Specification for couplings, double male and double fronte instantaneous pattern for fire lighting (views) revision)	942 - 1982	Functional requirements for 275- Wester portable pump set for fine fighting (second revision)
902:1992	Specification for saction have couplings for fire fighting purposes (fitted revision)	943 : 1979	Functional requirement for 680- limin trailer pump for fine brigade ser (second revision)
909: 1993	Specification for fire hose delivery couplings, branch pipe, nozzies and nozzie spaner	944 : 1979	Functional requirement for 1800-Main trailer pump for fine brigade use (second architen)
904:1963	(fourth revision)  Specification for (wa-way and three-way saction collecting	947 : 1985	Productional requirement for towing tender for trailer fire pump for fire brigade use (time analytics)
	heads for fine lighting purposes (second serials)	948 : 1983	Functional requirement for water sender, Type A, for the brigade
905 : 1980	Specification for delivery breachings, dividing and		use (second revision)
	celecting, instantaneous pattern for fire fighting purposes (sevens)	949 : 1985	Functional pequirement for emergency (rescue) tender for fire
	ravisiou)		brigade use (second revision)

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IS No.	Titie	IS No.	Title
950 : 1980	Punctional requirements for water tender, Type B for fire	4308 : 1982	Specification for dry powder for fine fighting (first revision)
952: 1986	brigade ass: (sevend revision) Specification for fogunoszla for fire brigade usa (first revision)	4571 : 1977	Specification for aluminium extension ladders for fire brigade use (first no tafou)
955 : 1960	Functional requirements for dry power tender for fire-brigade use (150 kg respectly) (first revision)	4643 : 1984	Specification for section wrenches for fire brigade use (first serieiss)
927:1967	Specification for control van for the brigade	4861 : 1984	Specification for dry powder for fighting fires in burning metals (first sexistes)
1944 (Part I): 197	Functional requirements for 6 electric month sherric Part 1 ac 3 phase 504z, 415 V type (remove sentatoe)	4927 : 1993	Specification for notined flax canvas hose for fire fighting (first artisius)
2097 : 1983	Specification for Joseph making branch pipe (first revision)	4928 : 1985	Specification for delivery valve for centrifugal pump outlets (first sevicies)
2171 : 1999	Specification for portable fire extinguishers, dry powder (cartridge type) (thank revision)	4947 (4983	Specification for gas contridges for use in fire extinguishers (Second revision)
2175 : 1966	Specification for hear sensitive fire detectors for use in automatic detectors for use in automatic fire alarm system (council contains)	4969 (Part 1) : 2094	Specifications for multipurpose aqueous film forming toam liquid concentrate for extinguishing hydrocarbon and poler subscut fires (third
2298 : 1977	Specification for single-barrel stirrup oursp for fire fighting	4989	covision() Specification for four concentrate
2545 : 1974	purpose (housed embles)  Specification for galvanized mild atest fire booker (first embles)	(Prot 3) : 1984	(compound) for producing mechanical form for fire fighting: Part 2 Aqueous film forming form (ATTP)
2596 : 1974	Punctional requirements for 1 125 Pmin light fire engine (first certaion)	(Pat 3): 1987 5131 : 1986	Pleare protein fears.  Specification for dividing
2745 : 1983	Specification for non-matal halmet for figures and civil	-444	breeching with control, for fire brigade use (first sauktion)
	defence personnel (record emission)	5290 : 1993	Specification for landing valve ( <i>Wird reviews</i> )
2871:1983	Specification for branch pipe, universal for fire flighting	5490 : 1985	Specification for quick release knife (first revision)
2878:2004	perpases (jiest syrialism)  Specification for fire callinguisher, carbon-dioxide	5505 : 1985	Specification for multi-slight rescue axe (non-wedging) (first revision)
	type (portable and troiley mounted) (third revision)	5612	Specification for hose-clamps and hose bundages for fire brigade use:
2930 : 1980	Panetional requirements for hose laying tender for fire	(Part 1): 1977	Hose alampe (first revision)
	brigade use (first sauktion)		Hose bundages (first revision)
3582 : 1984	Specification for basket strainers for fire flighting purposes (cylindrical type) (first revision)	5714 : 1981	Specification for hydrant, stand- pipe for fire fighting (first revision)

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