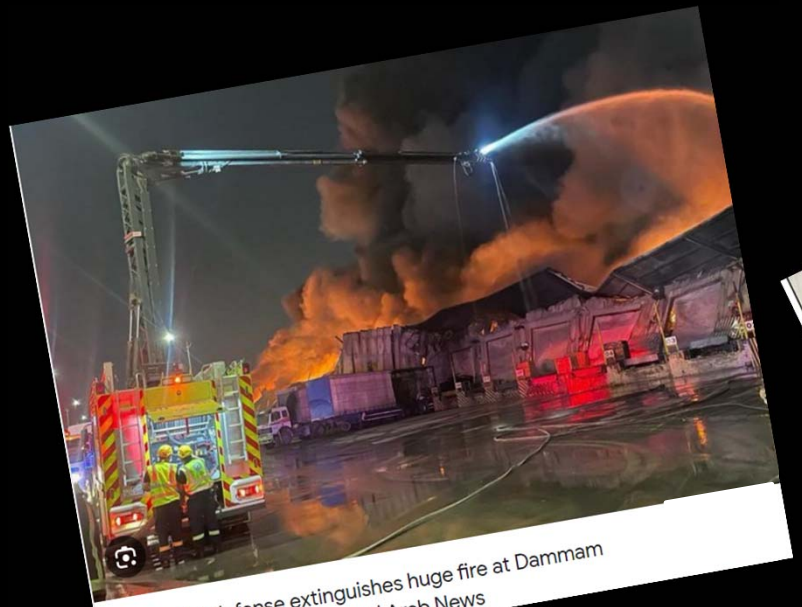
Objectives

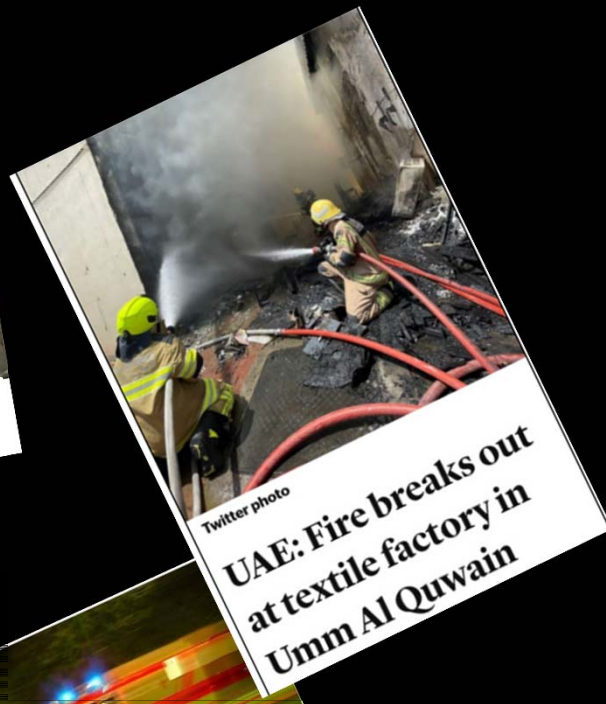
Why do you need this training?

The Fire Safety Awareness Course has been designed **to give all employees the necessary information, knowledge and training** for you to be competent in basic fire safety.

10 dead in fire at Saudi Aramco compound | Al Arabiya



Saudi civil defense extinguishes huge fire at Dammam factory, no injuries reported | Arab News

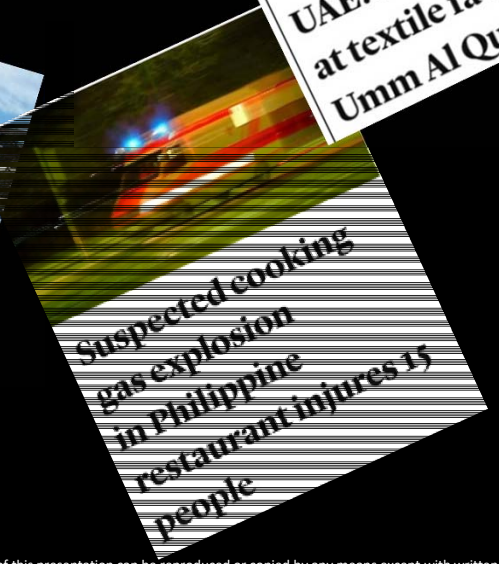


Twitter photo

UAE: Fire breaks out at textile factory in Umm Al Quwain

Major fire erupts at a warehouse outside of Los Angeles
ABC News

Fire fighters investigate cause of fire at GCC building – FBC News



Suspected cooking gas explosion in Philippine restaurant injures 15 people

Fire Accidents According to the fire and causes Type for the year 1436A.H. 2015

حوادث الحريق حسب نوع المحترق والأسباب لعام 1436هـ

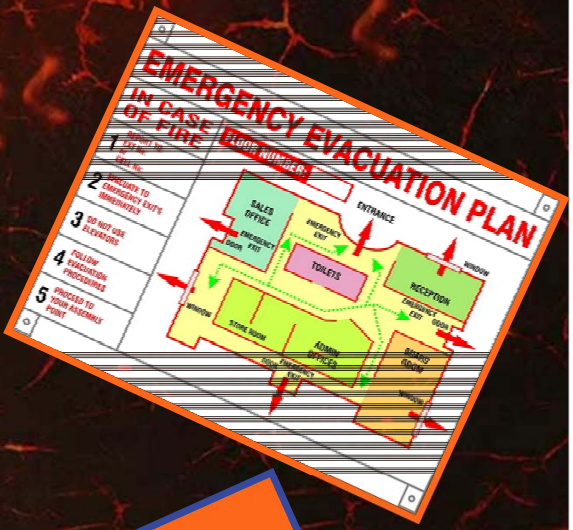
Table 5 - 18 جدول 5 - 18

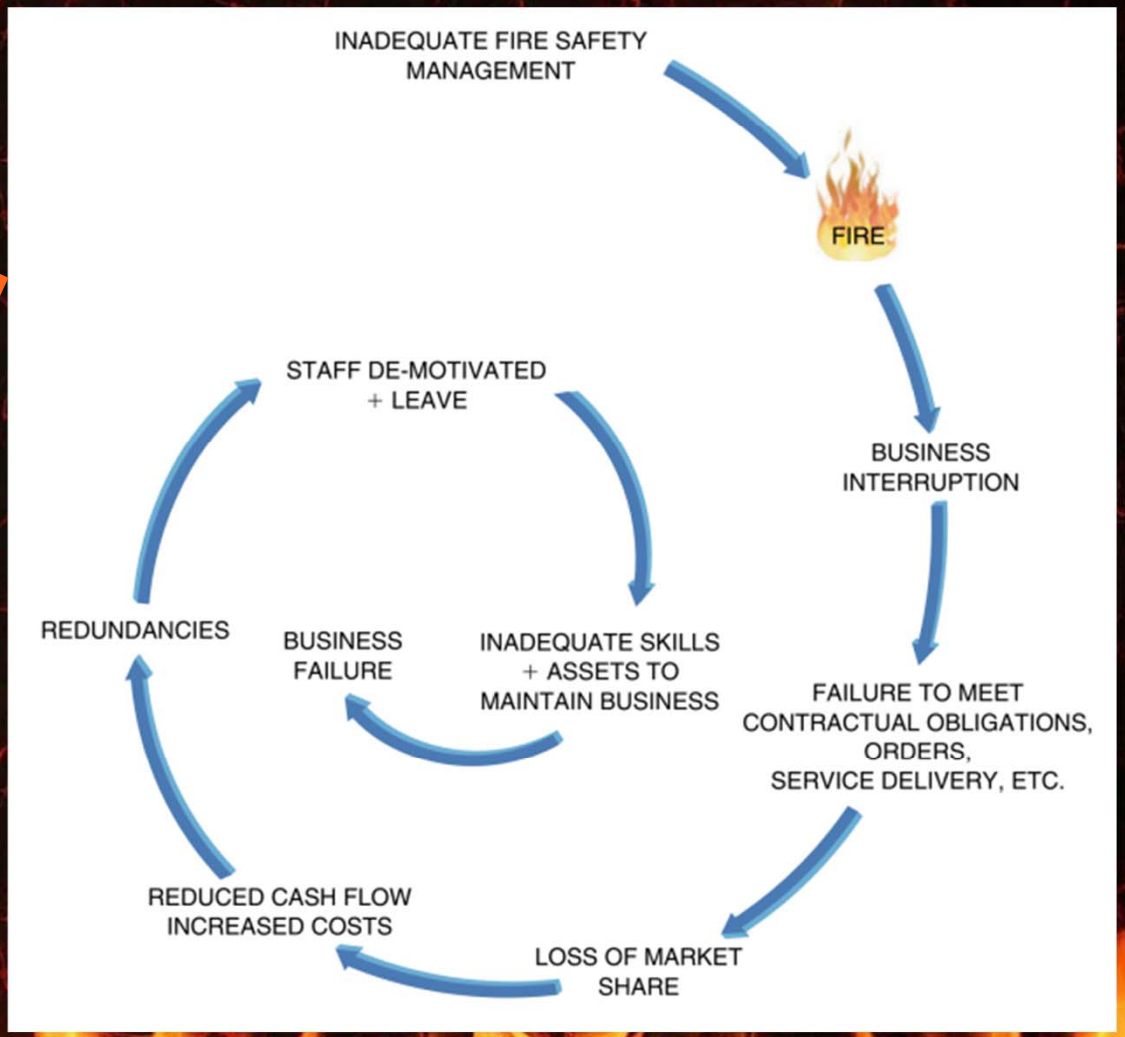
Type of the fire	causes							الأسباب								نوع المحترق
	المجموع Total	أخرى Others	تحت الإجراء Undecided	التخلص من النفايات والمخلفات Getting rid of garbage and waste	جنائي Criminal	تفاعل مواد كيميائية Chemical reaction	الانفجار الغازي أو ألغباري Dusty or gaseous explosion	ظواهر طبيعية قدرية Natural phenomena	اشتعال ذاتي Spontaneous inflammation	تسرب مواد بترولية Petroleum substances age leak	احتراق وسائل النقل Transportation burning	احتراق مواقد Stoves burning	مصدر حراري متوهج وبطيء Slow and flawing heat source	عبث أطفال Children play	التماس كهربائي Electric Shock	
Residence	16080	302	105	191	371	24	25	14	17	175	5	2168	1028	1967	9688	السكنية
Agriculture and animals	3472	5	29	669	111	0	1	30	13	10	8	19	557	1794	226	زراعيه وحيوانيه
Commercial stores	2560	57	17	15	52	5	10	1	10	52	0	715	227	76	1323	محلات تجاريه
Petroleum Facilities	270	3	4	4	15	2	2	2	1	117	5	3	24	18	70	المنشات البترولية
Industrial	344	1	13	9	14	6	2	3	3	16	6	3	99	17	152	الصناعية
Factories	164	5	12	5	3	3	0	1	4	7	2	3	28	4	87	المصانع
Entertainment	440	3	6	11	14	0	0	0	0	7	0	46	66	80	207	الترويحية
Health	167	9	5	4	6	1	1	0	3	1	0	1	14	5	117	الصحية
Warehouses and storing	460	4	29	17	33	2	1	2	3	4	0	7	97	57	204	المستودعات والتخزين
Education	746	60	13	27	29	2	0	1	0	5	1	14	34	48	512	التعليمية
Transportation	9671	150	250	7	975	5	6	9	25	548	4366	10	236	356	2728	وسائل النقل
Government Institutions	610	15	13	16	38	6	3	0	2	10	2	9	48	28	420	الدوائر الحكومية
Private Establishments	363	10	13	5	23	2	2	1	1	11	1	13	43	12	226	المؤسسات والشركات الأهلية
Electric Accidents	3749	47	49	3	8	0	1	4	9	8	3	0	19	17	3581	الحوادث الكهربائية
Heavy equipments	145	1	4	0	9	2	0	0	0	17	42	0	7	8	55	المعدات الثقيلة
Garbage's and waste	11790	39	7	2560	48	1	0	3	14	4	5	3	1349	7704	53	النفايات والمخلفات
Others	750	667	4	5	1	2	0	0	0	7	18	5	2	7	32	أخرى
Total	51781	1378	573	3548	1750	63	54	71	105	999	4464	3019	3878	12198	19681	المجموع

Source : General Directorate of Civil Defense.ًstat.deptً

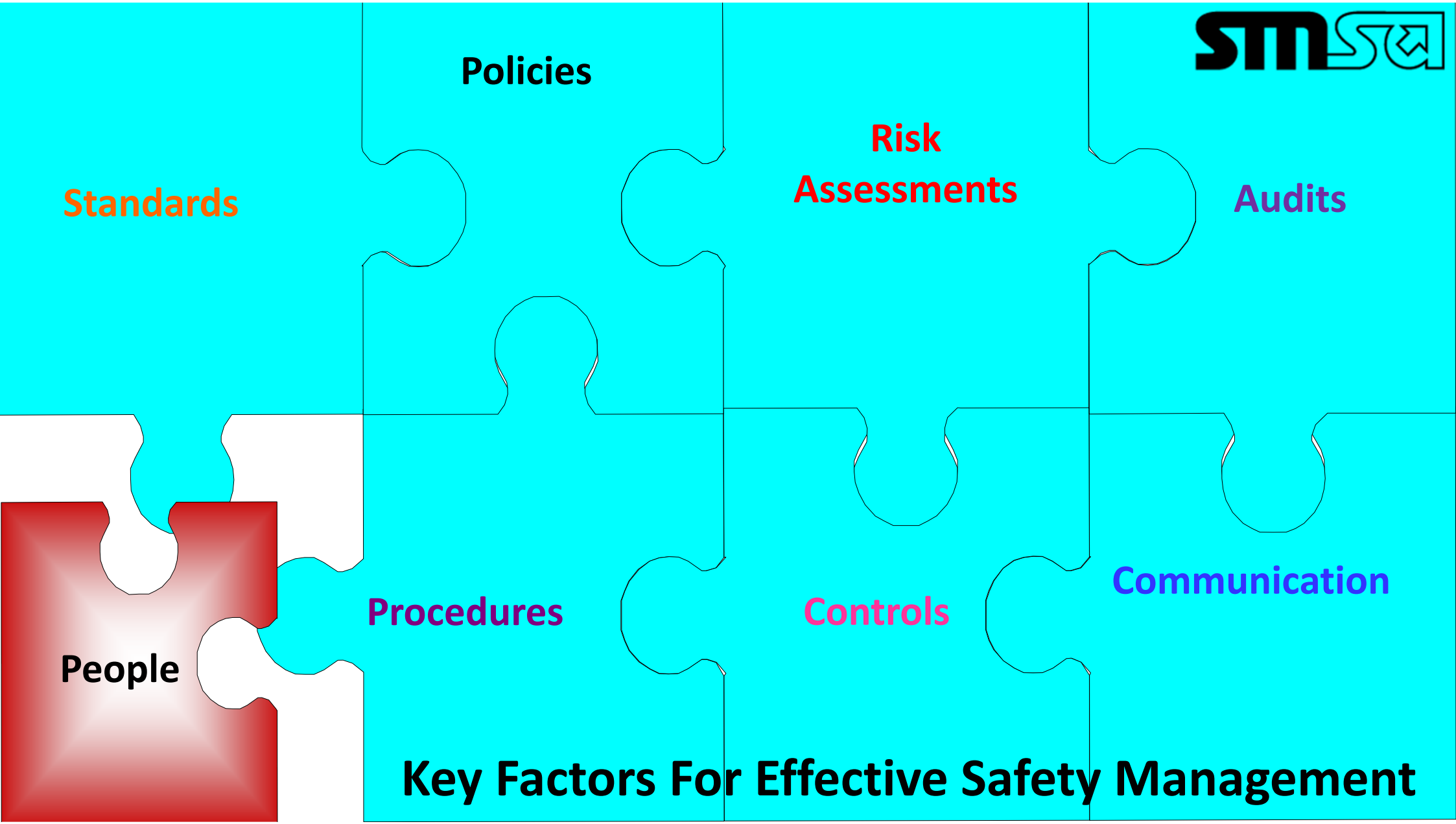
المصدر: المديرية العامة للدفاع المدني إدارة الإحصاء

Fire Safety Foundation





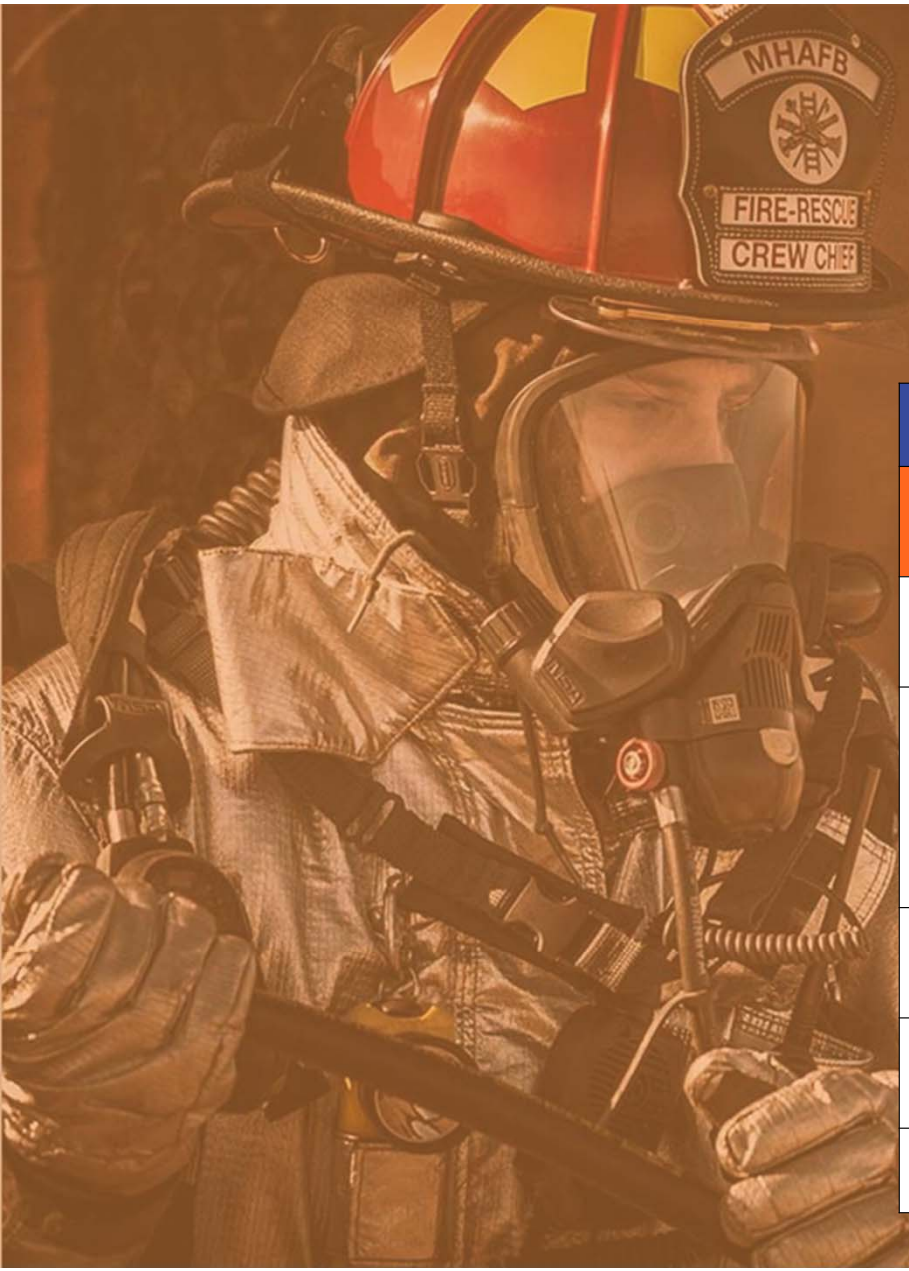
Business case for managing fire safety


Policies
Standards
Risk
Assessments
Audits
People
Procedures
Controls
Communication
Key Factors For Effective Safety Management

Types of Fire

1. **Natural:** Fires which are considered as natural are basically fires generated by earthquake, volcanic eruption and lightning

2. **Man-made:** Fires caused by human / machine errors are considered as man-made fires.



Classes of Fire

Comparison of Fire Classes				
American	European	Australian / Asian	Fuel / Heat Source	Examples
Class A	Class A	Class A	Ordinary combustibles	paper, wood, plastic, cloth
Class B	Class B	Class B	Flammable liquids	gasoline, kerosene, alcohol
	Class C	Class C	Flammable gases	butane, propane, acetylene
Class C	Class F/E	Class E	Electrical equipment	short circuit, overloading, overheating
Class D	Class D	Class D	Combustible metals	magnesium, titanium, sodium
Class K	Class F	Class F	Cooking oil or fat	olive oil, lard, butter

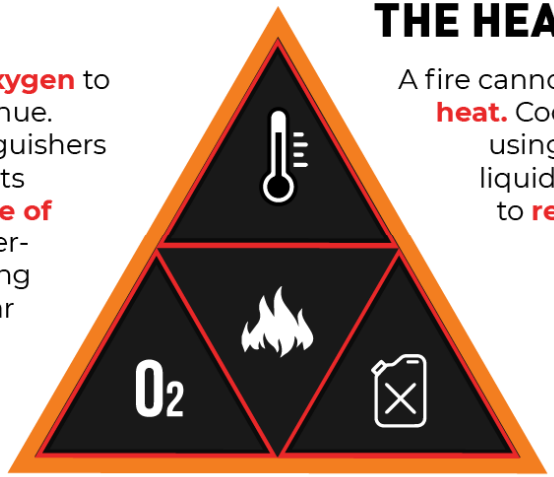
What is a Fire?

FIRE TRIANGLE EXPLAINED

What is fire made of and how do you fight it?

OXYGEN

A fire needs **oxygen** to start and continue. Most fire extinguishers and fire blankets **deprive the fire of oxygen** by covering or dispersing the oxygen near the fire.



THE HEAT SOURCE

A fire cannot grow without **heat.** Cool down the fire using foam or other liquids or substances to **reduce the heat.**

THE FUEL

A fire cannot ignite without an object or material present to enable and keep it burning. **Remove the fuel source** to keep the fire from burning further.

What is a Fire?

FIRE EXTINGUISHERS

- A portable or hand held cylindrical pressure vessel
- Metal container / device
- An active fire protection device
- It holds a rechargeable agent/medium that assists with the extinguishing of fire

FIRE HOSE REEL

A fire hose reel is a fire fighting equipment used to extinguish fires using pressured water. The frame is a cylindrical shaped spindle that is used to roll or unroll a 30m PVC hose and nozzle. Fire hose reels are generally permanently fixed to a wall in a specific location; however, occasionally they are portable and attached to a truck, trailer or cart.

FIRE HYDRANTS

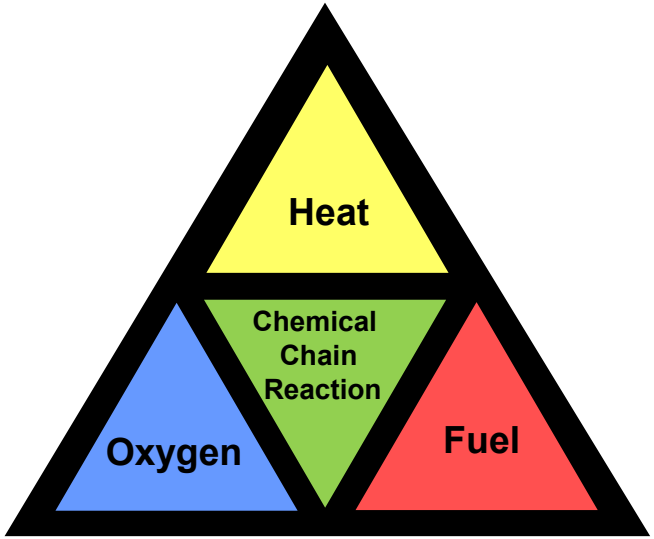
A hydrant is a valve connected to the water main which allows fire services and authorised users' access to the main water supply.
Hydrants are located just a couple of feet underground on either a road or pathway and have a cover known as a surface fitting.

FIRE TRIANGLE

A fire triangle is a standard, simple triangle illustrating the three elements (fuel, oxygen and heat) that are required in order to produce a chemical reaction (FIRE). Remove an element an extinguish the fire.

Fire Tetrahedron

Research has added a fourth side to the fire triangle concept resulting in the development of a new model called the 'Fire Tetrahedron'

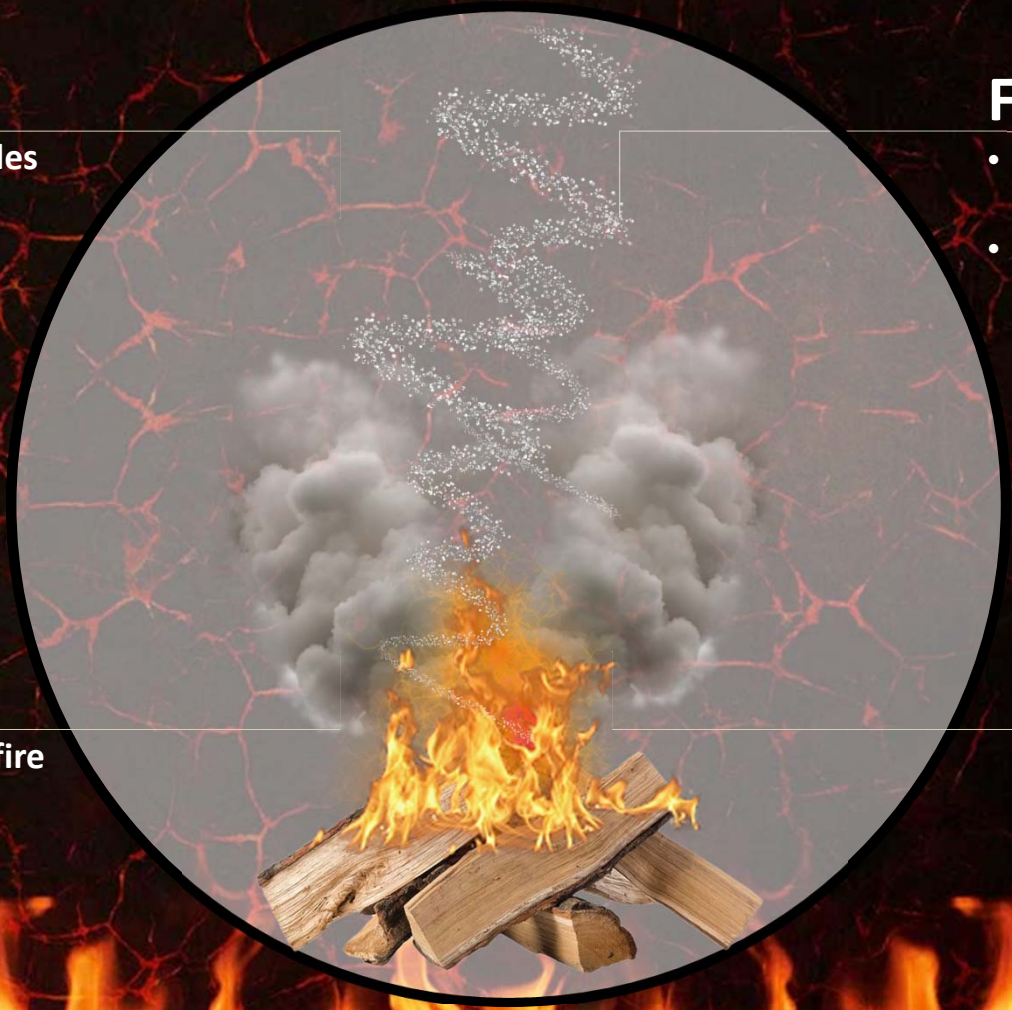


The fourth element involved in the combustion process is referred to as the 'chemical chain reaction'. Specific chemical chain reactions between fuel and oxygen molecules are essential to sustain a fire once it has begun.

Products of Combustion

Smoke

- Unburned, finely divided particles of soot
- Contents vary depending of the exact material that is burning
- Causes suffocation



Fire gases

- Evolved from fuel during process of combustion
- Most gases evolved are toxic to humans

Heat

- Responsible for the spread of fire
- Causes burn, dehydration, exhaustion and/or injury to respiratory tract

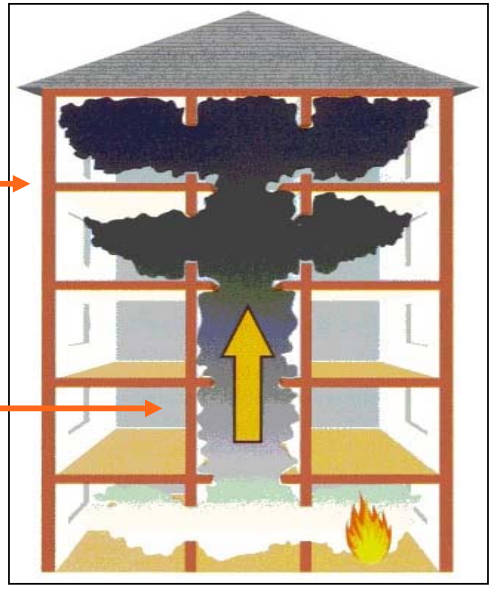
Flame

- The visible luminous body of burning gas
- When burning gas is mixed with proper amounts of oxygen, becomes hotter and less luminous

Dangers of Fire

Ever-deepening layer of smoke

Smoke rises



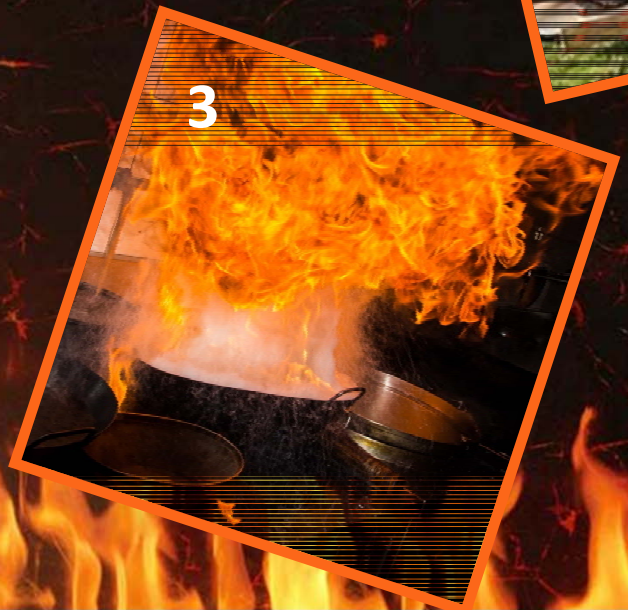
Main Causes of Fire in the Workplace

1 Refuse/Rubbish

Accumulating in work/storage areas

2 Electricity

Neglect and misuse of wiring and electrical appliances



3 Cooking

Kitchens in offices provide both opportunities for the fire to start and materials on which it can feed

4 Smoking

Carelessly discarded cigarettes, matches, inadequate ashtrays

Main Causes of Fire in the Workplace

5 Heating appliances

Portable heaters can be knocked over, poorly sited or inadequately guarded. All heaters could overheat if obstructed.

6 Arson

By mischievous children and adult fire raisers, facilitated by ineffectively secured buildings

7 Combustible materials

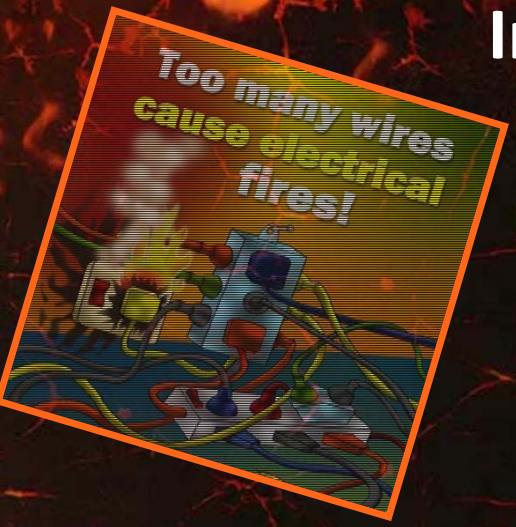
Flammable liquids, glues and solvents are all liable to combust unless stored and used properly. Hazardous materials such as paints, solvents, adhesive, chemicals should be included in this category

8 Specific hazards

Machinery in dusty environments, heated equipment (e.g. soldering irons), blow lamps, cutting and welding equipment, flammable liquids

Fire Prevention

In order to prevent fire it is important to:



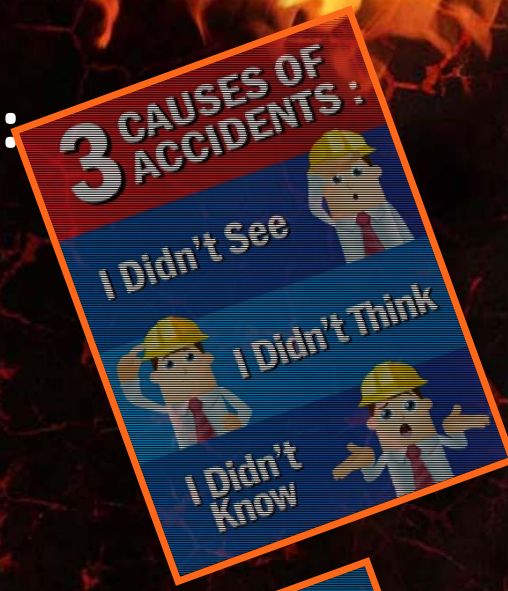
Check and maintain all machines and equipment regularly

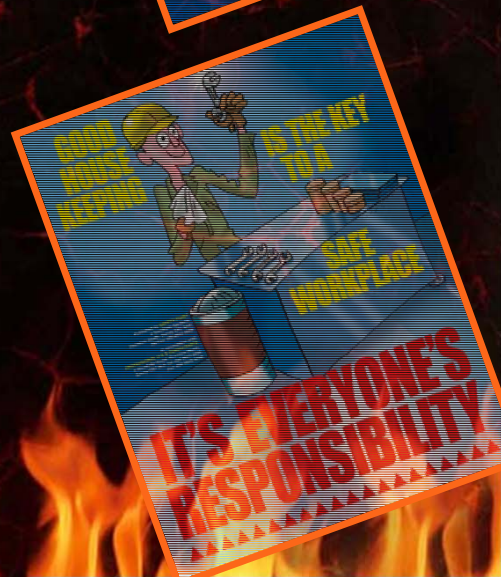
Good housekeeping and general cleanliness.
Remove/properly store combustible materials and
Define areas for work and rest

Fire prevention equipment must be installed and operational

Sound fire prevention practices are based upon the principle of keeping fuel and ignition sources apart.

Fire prevention is everyone's responsibility





Housekeeping

Good housekeeping habits are an important part of a safe workplace.

Why is good housekeeping important?

- To reduce amounts of flammable and combustible materials.
- To reduce ignition hazards.
- To ensure safe emergency evacuation of occupants.
- To allow for quick emergency response

Housekeeping Guidelines

- Work areas, aisles, walkways, stairways, and equipment should be kept clear of loose materials, trash, scraps, etc.
- Never block aisles, fire exits, emergency equipment, or alarm pull stations with equipment or materials.
- Avoid build up of combustible trash and waste such as paper, wood, cardboard, etc.
- Keep use and storage of flammables and combustibles to a minimum.
- Clean up all spills such as grease, oil, or water immediately. A delay could result in accidents.

Housekeeping Guidelines

"Obstructed extinguisher, wedged open "Fire Door" and can you find the break glass fire alarm call point?"

"Poor arson defence and compromise of means of escape"

Storage Guidelines

Improper Mechanical Room Storage

Improper Storage in front of Electrical Panel

Maintain at least a 3ft clearance from heating surfaces, air ducts, heaters, and lighting fixtures.

Storage of combustible materials in mechanical rooms is prohibited.

No storage is allowed in corridors and stairwells.

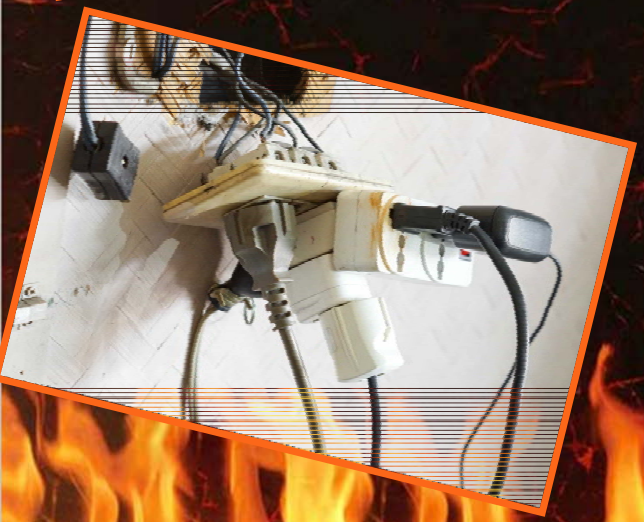
A cluttered hallway could slow down emergency evacuation. Storage must not exceed 18 inches below sprinkler heads or smoke detectors. Storage that breaks this rule may prevent sprinkler heads from fully covering room during a fire.

A simulated example of how storage can protrude into 18 inch plane below sprinkler heads.

All storage must be at least 3 ft from electrical panels. In some emergency situations it will be necessary to access these panels quickly.

Electrical Fire Safety

Electrical hazards are the cause of numerous workplace fires. Faulty electrical equipment or misuse of equipment produces heat and sparks that serve as ignition sources in the presence of flammable and combustible materials.



Examples of common ignition hazards

- Overloading circuits
- Use of unapproved electrical devices
- Damaged or worn wiring

Electrical Fire Safety

Extension cords

Extension cords are only approved for temporary use. Get a permanent solution.

When using extension cords check for defaults such as frays, brittleness, or broken wires.

Never place extension cords in high traffic areas where they can be damaged by being stepped on or run over by equipment.

Never use three prong adapters that allow a three pronged plug to plug into a two prong outlet.

Never daisy chain or piggy back multi-plug strips and electrical cords (plugging strips and cords into each other).

Avoid the following improper and hazardous practices

Multi-plug strips

Should only be used for office equipment such as computers, printers, and fax machines.

Other common items such as microwaves, refrigerators, and copy machines must be plugged directly into wall outlets. This is a Health & Safety requirement.

Multi-plug strips should have a fuse or circuit breaker and be approved.

Computer Monitor Fire

A computer monitor left on over a weekend caused this fire resulting in $100,000 damage.

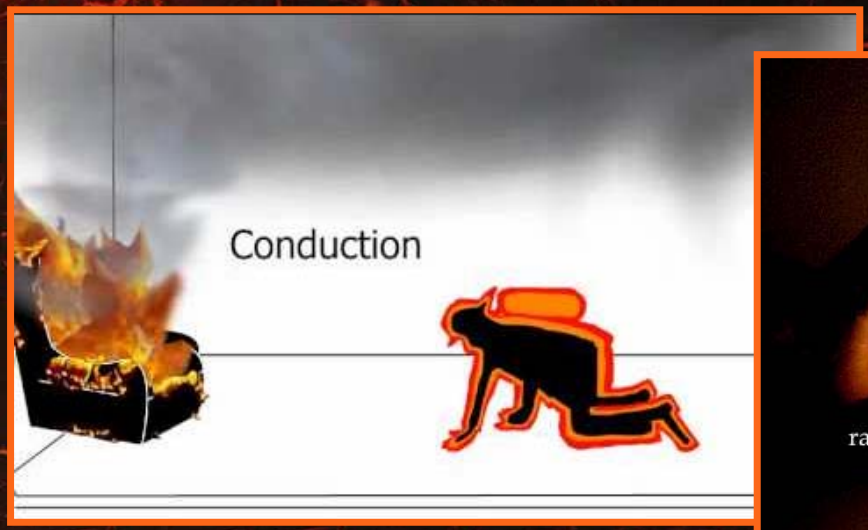
TURN OFF electrical appliances such as COMPUTER EQUIPMENTS and AIR CONDITIONING at the end of the work shift each day.

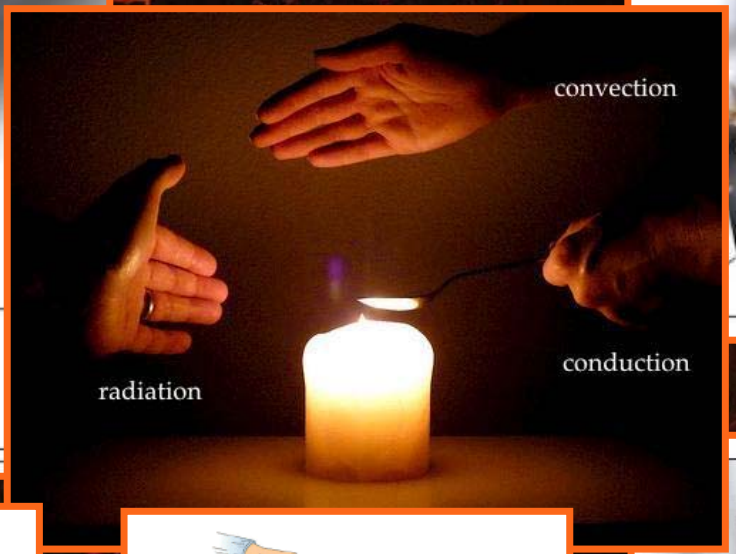
Fan Fire

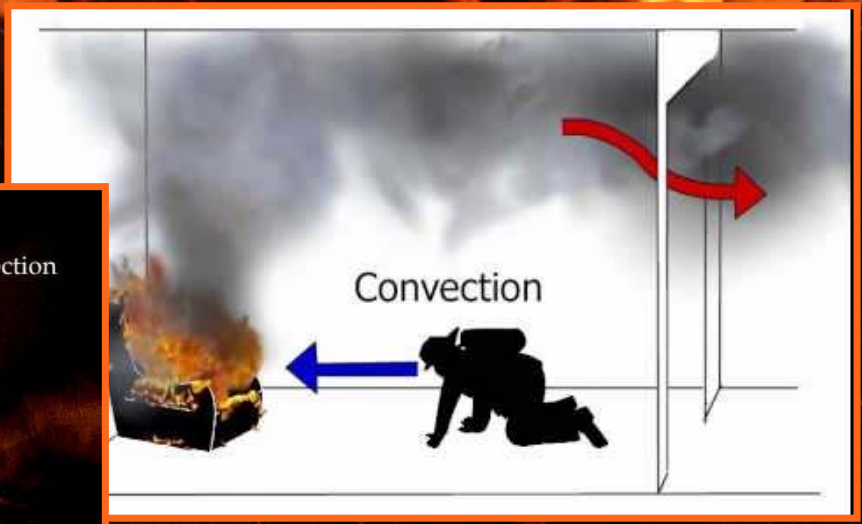
Wall mounted fan was left on over the weekend resulted in a fire which caused damage in excess of $20,000

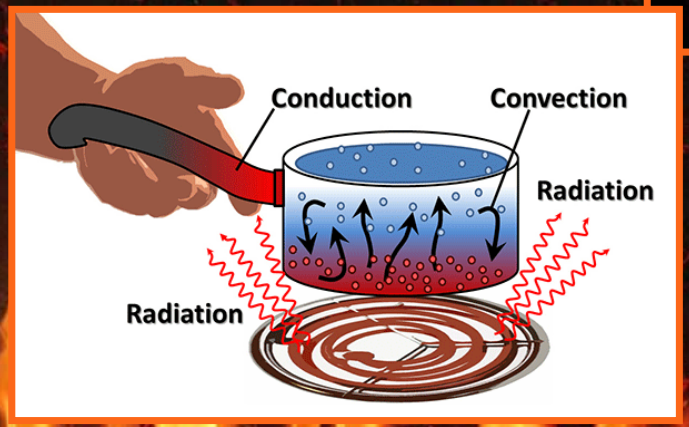
Turn off electrical appliances including fans and computer equipment at the end of the work shift each day to reduce the chance of a fire.

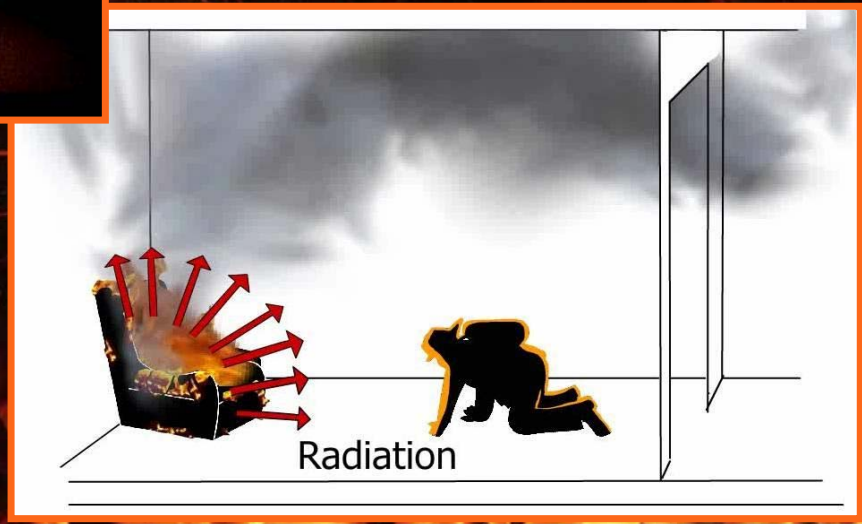
How Fire Spreads











Fire Protection GOALS

Fire protection has three major goals:

Life Safety - the minimum standard used in fire and building codes; to protect people from injury and to prevent loss of life

Property Protection – to prevent property loss and damage.

Continuity of Operations - this is to assure that work operations will continue and prevent the interruption of our services to our customers.

Fire prevention refers to everything related to the prevention, detection, and extinguishment of fire; and reduction of losses.

What's a Fire Door?

Fire doors are designed to withstand fire, heat and smoke for a period of 20 minutes to 3 hours.

Did you know that corridor office doors are fire doors and should have a 20 minute rating?

Fire Doors are required to be self closing:
Fire doors should have a door closure that pulls doors completely shut after the door has been opened

Have Positive latching: a positive latch locks a door in place so it can swing open freely.

3 Reasons not to Wedge Open a Fire Door

For the safety of your buildings occupants. If a fire occurs in a location where the fire door has been wedged, smoke and heat will travel freely into exit corridors hindering or preventing occupant evacuation.

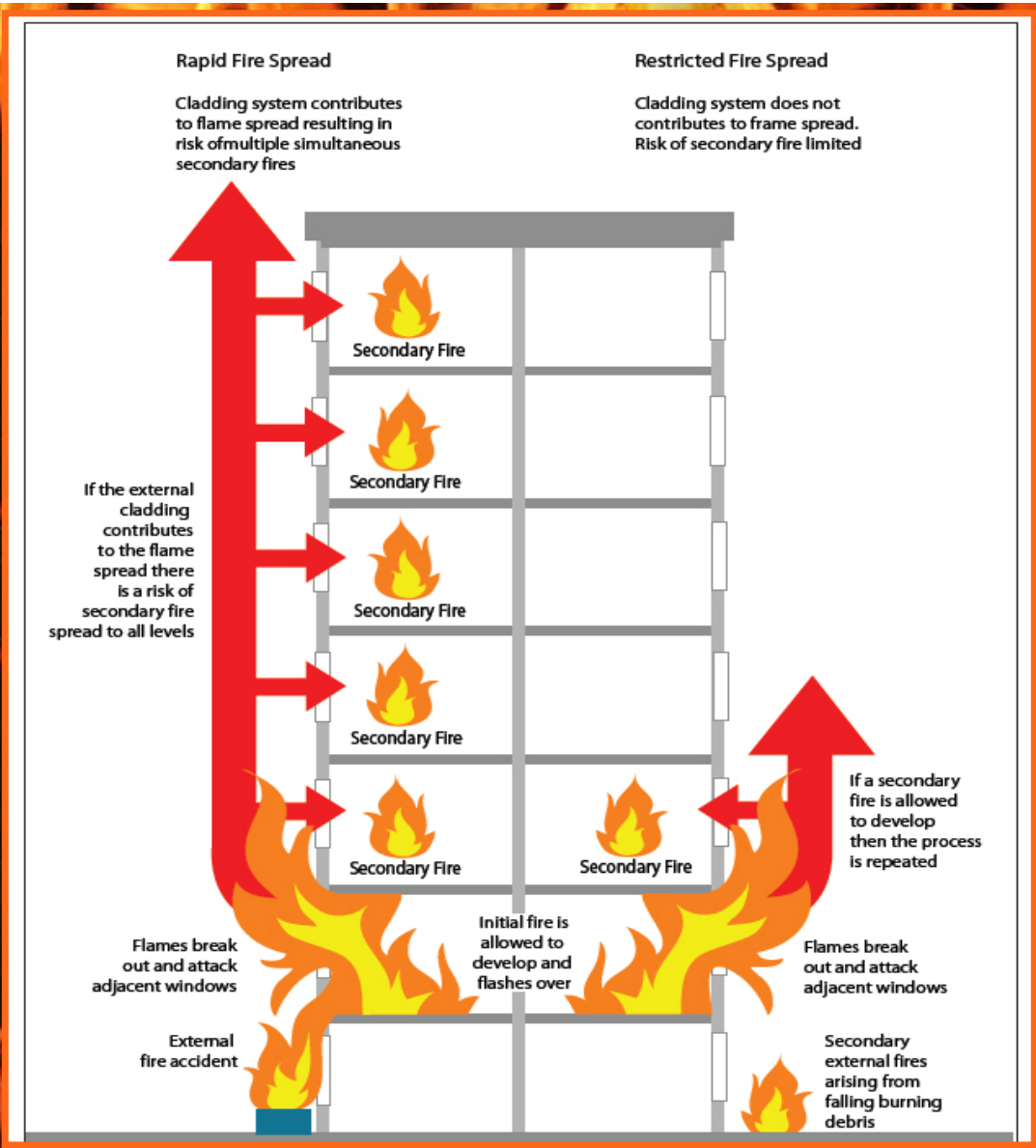
Periodically the Civil Defense inspects our buildings and may not renew our license, issue a letter to SMSA & they could fine us.

Reduce or prevent damage to property, personal belongings, etc. Keeping your door shut will keep out smoke or fire originating in other locations.

Compartmentalization

Buildings are designed to prevent fire, heat, and smoke from spreading beyond locations of origination

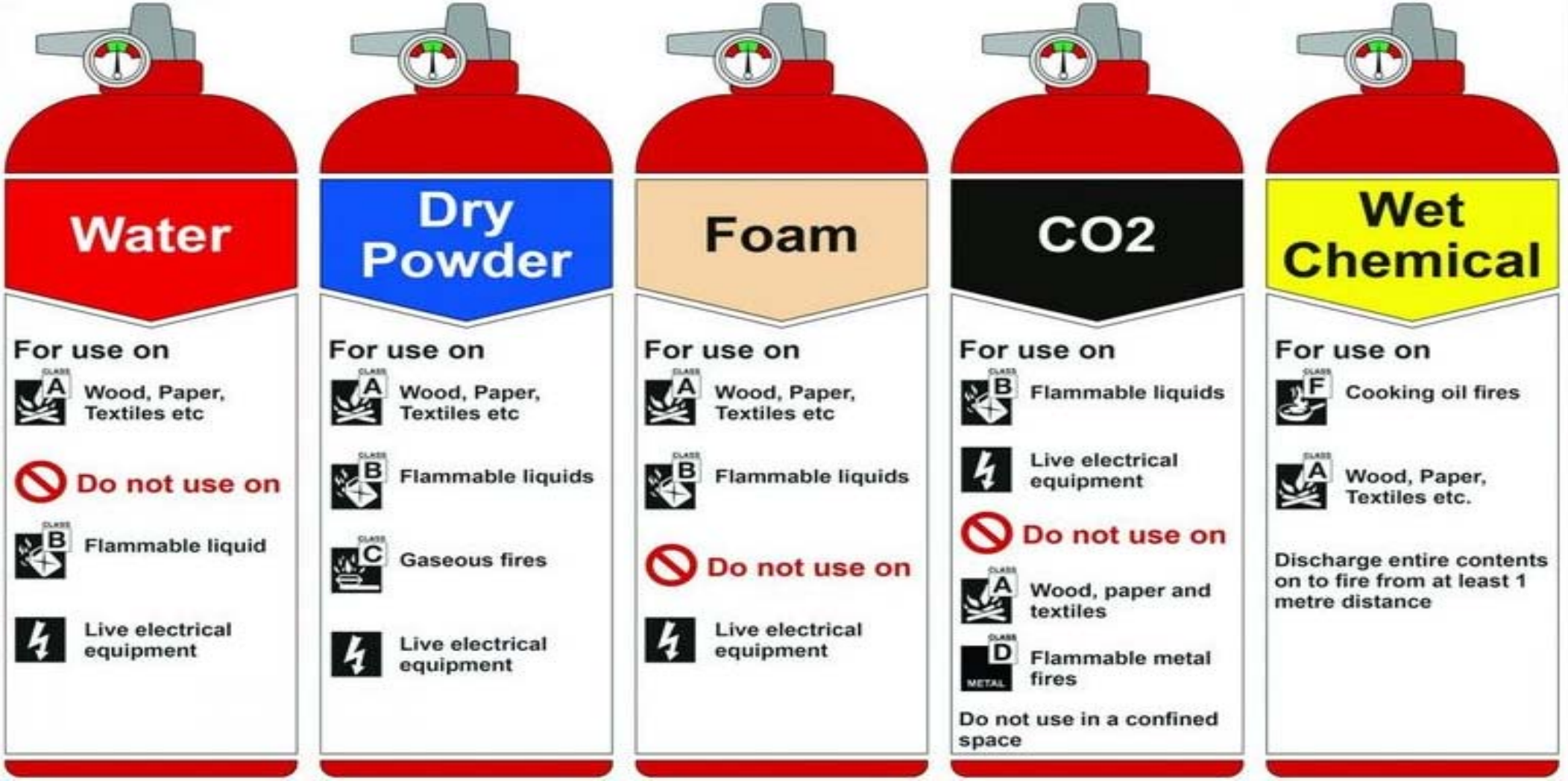
Building elements such as fire walls, fire dampers, and fire doors, are designed to seal off one location from the next. This system is called compartmentalization



Ceiling, Floor, Wall Penetrations: All areas should be properly sealed to prevent the escape of fire, heat and smoke. Common penetrations include holes in walls, around ducts, pipes, etc. These types of penetrations should be sealed with appropriate fire-stopping material

A lack of adequate fire stopping measures can lead to a ‘chimney effect’ which aids the spreads of a fire

Using The Correct Fire Extinguisher



Water

For use on

- Class A — Wood, Paper, Textiles etc
- Class B — Flammable liquid
- Live electrical equipment

Do not use on

Dry Powder

For use on

- Class A — Wood, Paper, Textiles etc
- Class B — Flammable liquids
- Class C — Gaseous fires
- Live electrical equipment

Foam

For use on

- Class A — Wood, Paper, Textiles etc
- Class B — Flammable liquids
- Live electrical equipment

Do not use on

CO2

For use on

- Class B — Flammable liquids
- Live electrical equipment

Do not use on

- Class A — Wood, paper and textiles
- Class D Metal — Flammable metal fires

Do not use in a confined space

Wet Chemical

For use on

- Class F — Cooking oil fires
- Class A — Wood, Paper, Textiles etc.

Discharge entire contents on to fire from at least 1 metre distance

Fire Suppression Equipment

Fire Hydrants

Fire Buzzer

Smoke Detector

Fire Panel

Sprinkler System

Fire Hose Cabinet

Fire Bell

Warning Light

Fire Pump

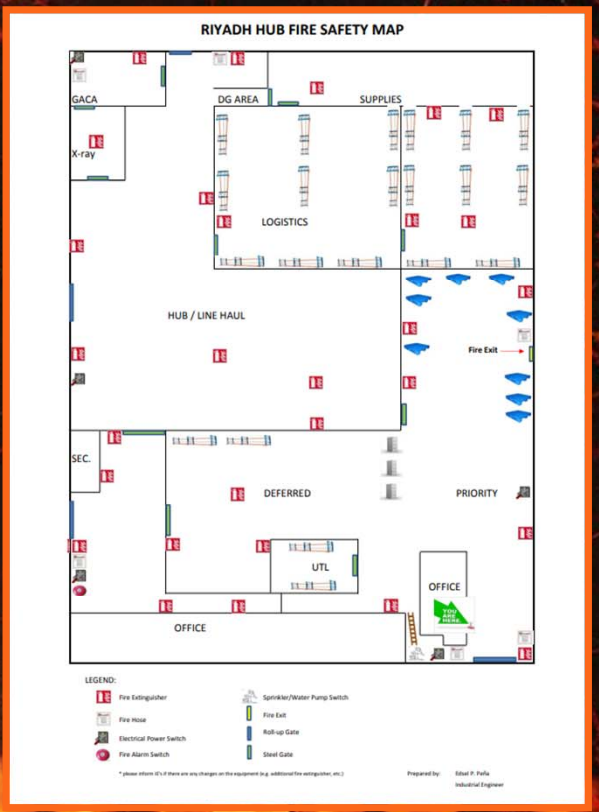
Break Glass Unit

Fire Signages

Ensure required signages are displayed

Ensure damaged signages are replaced

Notice Board Requirements



Fire Evacuation Procedure
Owner/Department: QRM

This premise is equipped with smoke detection, heat detection, fire hoses and fire extinguishers.

ON HEARING THE CONTINUOUS SOUND OF THE ALARM, ALL PERSONNEL MUST, CO-OPERATE WITH THE FIRE MARSHALL AND/ OR CHIEF FIRE MARSHALL, AND EVACUATE THE PREMISES IN AN ORDERLY MANNER USING THE NEAREST FIRE ESCAPE ROUTE WITHOUT DELAY - REGARDLESS OF THEIR POSITION WITHIN THE ORGANISATION.

CHIEF FIRE WARDEN RESPONSIBILITIES

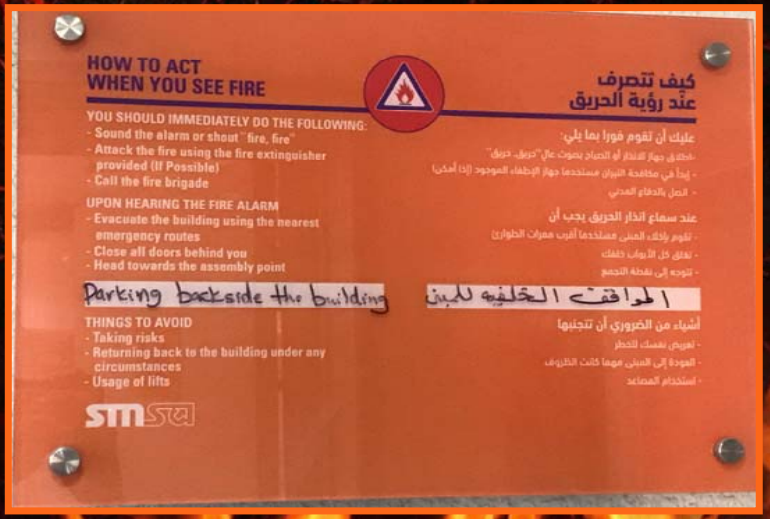
It is the responsibility of the Chief Fire Warden to ensure that the Fire Brigade have been informed and will liaise with the Fire Marshalls at the back of the building, to ensure the building has been completely evacuated. It must be noted that only the Chief Fire Warden and /or the Fire Brigade can give permission for staff to re-enter the premises. The Chief Fire Warden is also responsible for giving the Fire Brigade the company information pack which has the following contents: Plan of the building detailing electrical cut off points and locations of all fire fighting appliances.

CHIEF FIRE WARDEN	DEPUTY CHIEF FIRE WARDEN	DUTY RESPONSIBILITIES
Falah Hammad Al Enazi 0552009949	Ahmed Yassin 0550451180	Responsible for ensuring that all Fire Marshalls have reported whether their area is clear or not

FIRE MARSHALL RESPONSIBILITIES

Fire Marshalls are to check their designated area(s) and ensure that all personnel have evacuated the building. Once checks have been made they must immediately proceed to Chief Fire Warden to confirm that their area is clear and then proceed to the designated assembly points.

Section	Fire Marshall	Deputy Fire Marshall	Areas to clear
4th Floor	Syed Irfan Ahmed 0582381390	Amjad Hussain Shah 0592000397	4th Floor offices/ Rooftop/ Cafeteria
3rd Floor	Mohammed Haneef 0560927477	-	3rd Floor offices
2nd Floor	Ibrahim Ali 0500093499	Soliman Ali Askar 0545180211	2nd Floor offices
1st Floor	Mamoun Awad 0554213289	-	1st Floor offices
Ground Floor	Falah Hammad 0552009949	Ahmed Yassin 0550451180	Ground Floor offices & SMSA Service Centre Area
Basement	Abdulkhader Rangrezz 0509189003		Car Park / Mosque
Female Ground Floor	Amjad Al Rashidi		Ground Floor offices / Female Toilet & SMSA Service Centre



Fighting a Fire

1

Your first priority is to protect your Life

2

You should only attempt to fight a fire if it is the size of an office wastepaper bin

3

If you have not extinguished the fire in 60 seconds or at anytime the fire becomes worse GET OUT

ALWAYS:

Assess the fire (Size, location and type)

Select appropriate extinguisher (Read Label)

Know how to operate (Read Label)

Use only one extinguisher then evacuate.

IF IN DOUBT, GET OUT!

REMEMBER

You must never pick up an extinguisher without having first sounded the alarm.

What to do if your clothes catch fire

STOP! **DROP!** **ROLL!**

Don't run around, you'll make the flames worse.

Lie down and roll around. It makes it harder for the fire to spread.

Smother the flames with a heavy material, like a coat or blanket.

Remember, Stop, Drop and Roll!

How To Use Fire Extinguisher - "PASS"

In Case of Fire Remember - "RACE"

Remember the P A S S Word

Pull

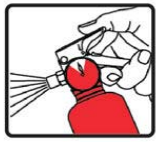
Pull the pin (or other motion) to unlock the extinguisher.

Aim

Aim at the base (bottom) of the fire and stand 6 - 10 feet away.

Squeeze

Squeeze the lever to discharge the agent.



Sweep

Sweep the spray from left to right until the flames are totally extinguished.

PASS

Vs

RACE

IN CASE OF FIRE

RACE

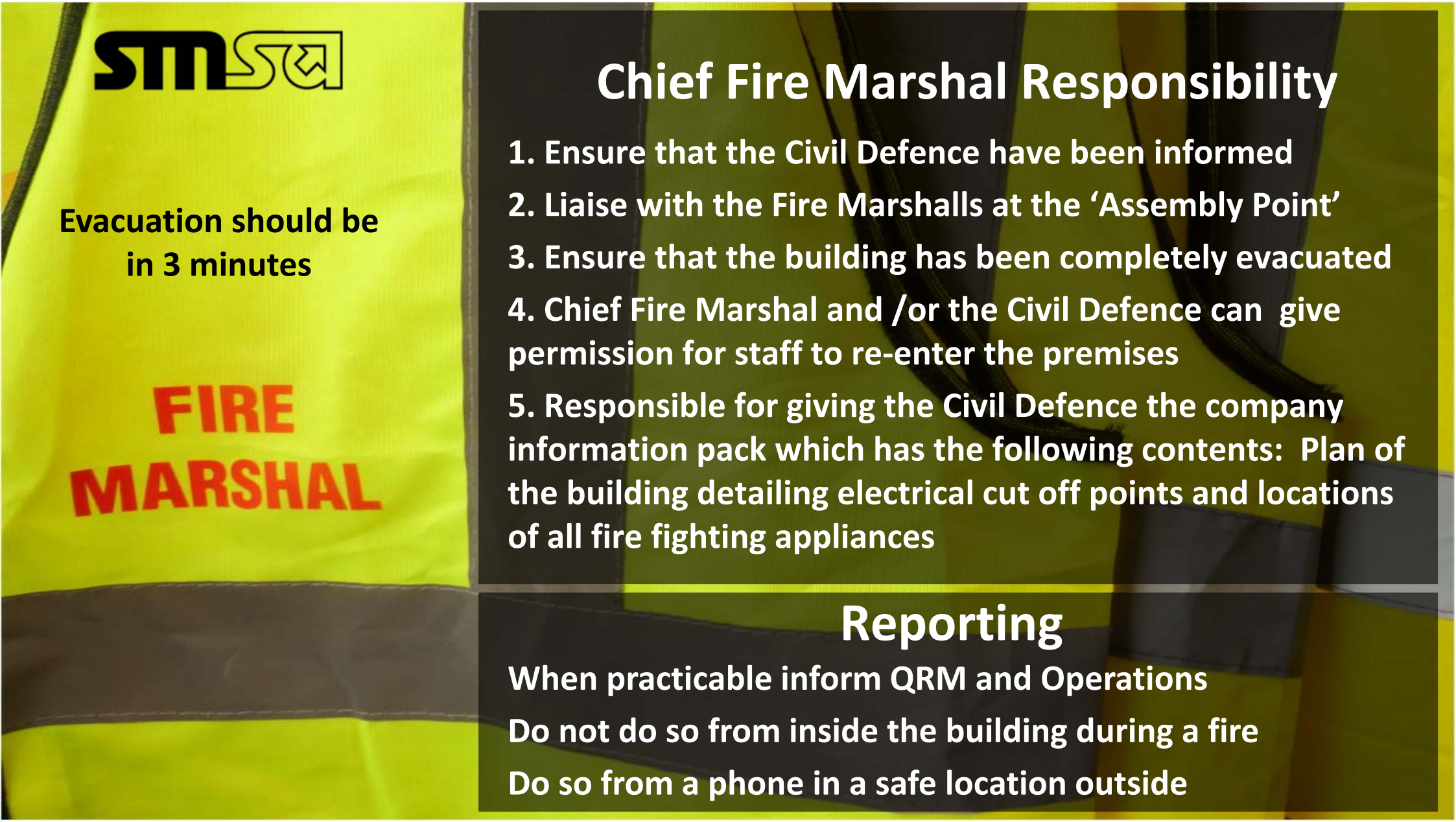
Rescue

Alarm

Contain Fire

Extinguish / Evacuate

REMAIN CALM



Chief Fire Marshal Responsibility

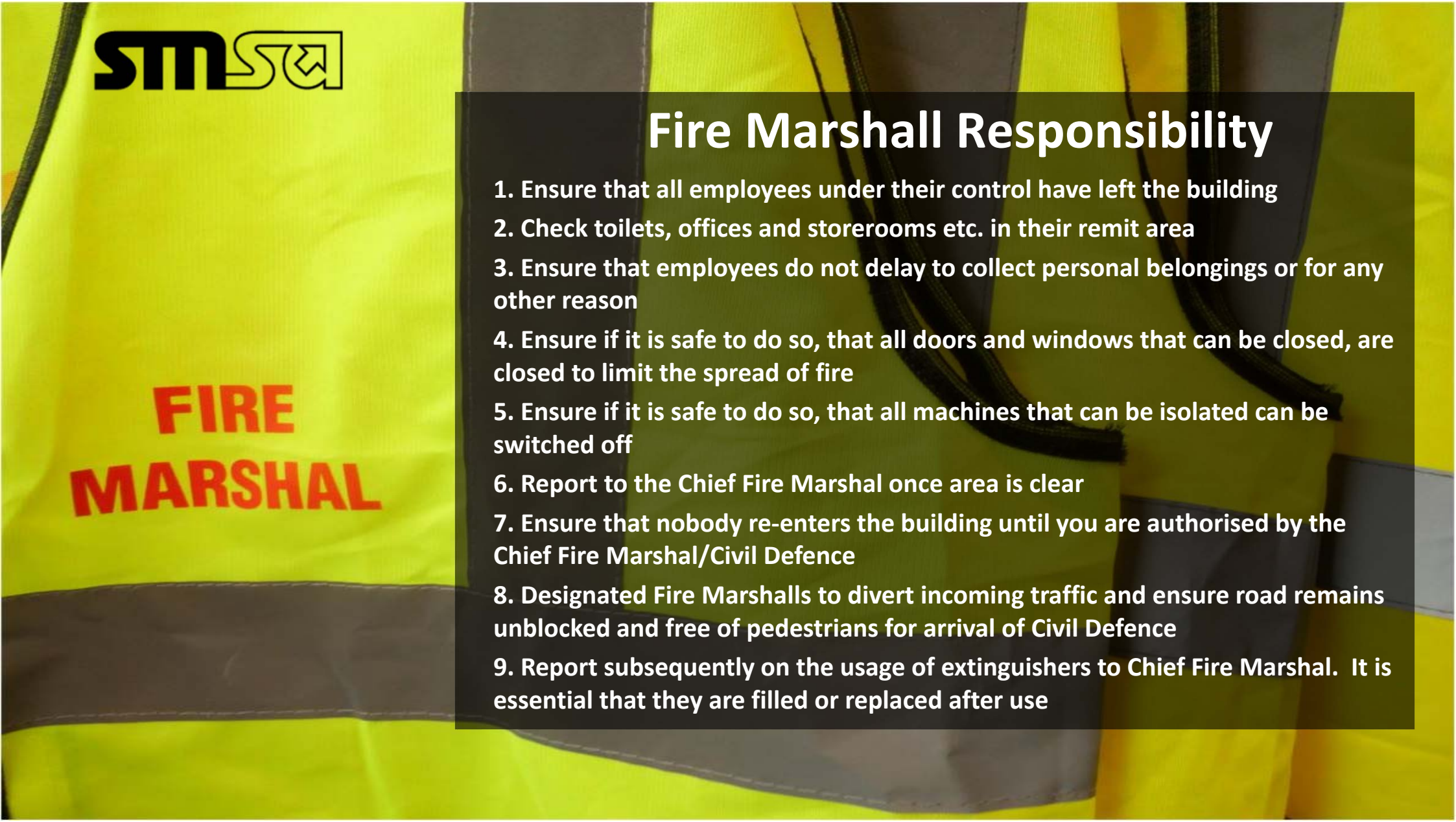
1. Ensure that the Civil Defence have been informed
2. Liaise with the Fire Marshalls at the 'Assembly Point'
3. Ensure that the building has been completely evacuated
4. Chief Fire Marshal and /or the Civil Defence can give permission for staff to re-enter the premises
5. Responsible for giving the Civil Defence the company information pack which has the following contents: Plan of the building detailing electrical cut off points and locations of all fire fighting appliances

Reporting

When practicable inform QRM and Operations

Do not do so from inside the building during a fire

Do so from a phone in a safe location outside



Fire Marshall Responsibility

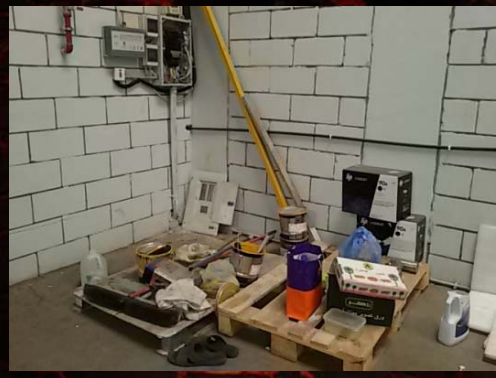
1. Ensure that all employees under their control have left the building
2. Check toilets, offices and storerooms etc. in their remit area
3. Ensure that employees do not delay to collect personal belongings or for any other reason
4. Ensure if it is safe to do so, that all doors and windows that can be closed, are closed to limit the spread of fire
5. Ensure if it is safe to do so, that all machines that can be isolated can be switched off
6. Report to the Chief Fire Marshal once area is clear
7. Ensure that nobody re-enters the building until you are authorised by the Chief Fire Marshal/Civil Defence
8. Designated Fire Marshalls to divert incoming traffic and ensure road remains unblocked and free of pedestrians for arrival of Civil Defence
9. Report subsequently on the usage of extinguishers to Chief Fire Marshal. It is essential that they are filled or replaced after use



مطفأة الحريق
FIRE EXTINGUISHER

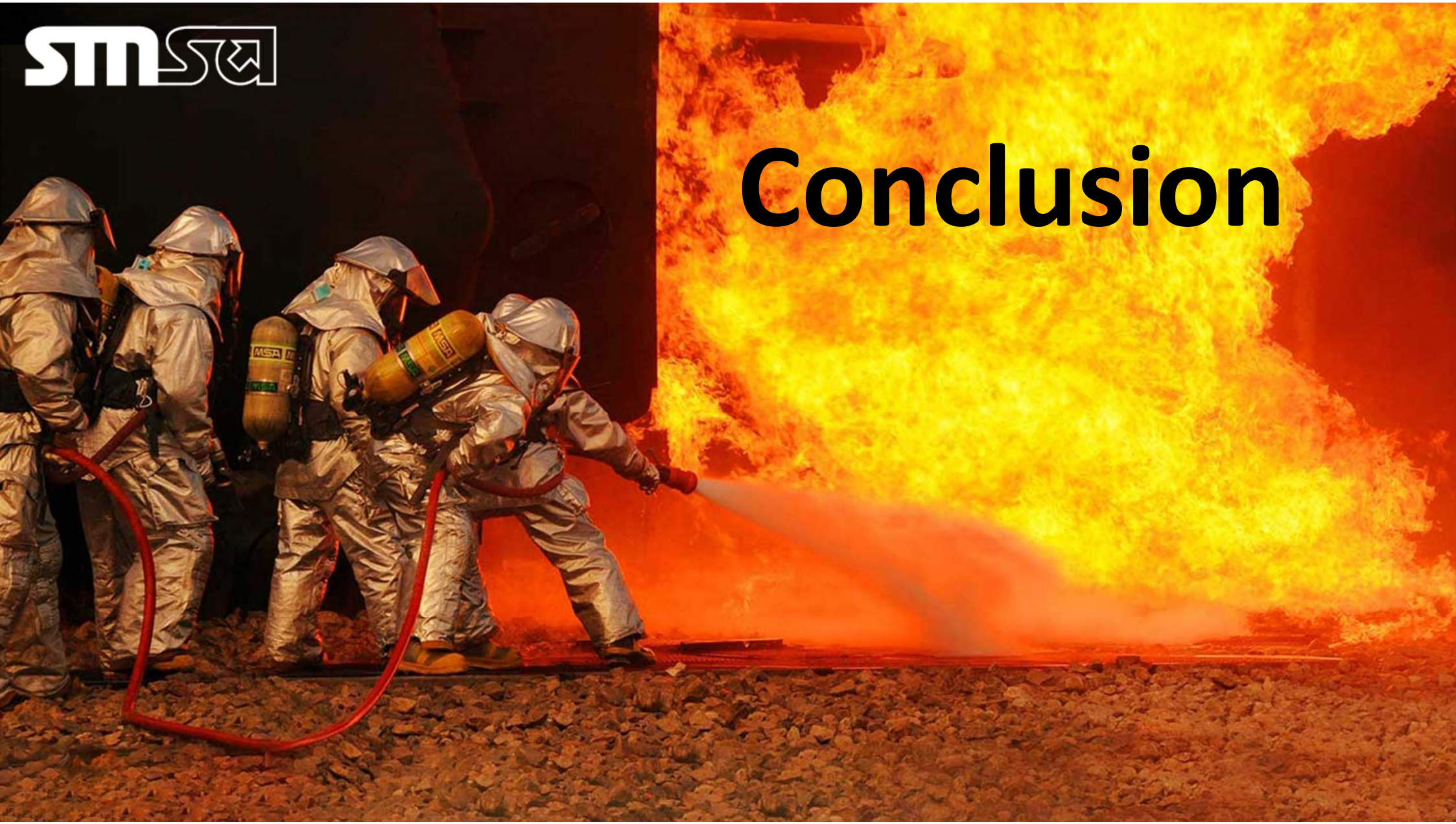

Fire Extinguisher
طفاية حريق




FIRE


FIRE HYDRANT


Emergency Exit
مخرج للطوارئ



Conclusion

Critical Fire Disciplines

1 Fire Exit Routes

Fire Exit Routes in all SSC's , offices and warehouses must be designated with fire exit signs. Routes must be clear of obstructions at all the times. Direction signages leading to the fire exit doors

2 No Smoking Policy

Smoking in SSC's , offices and warehouses is strictly prohibited (only in designated smoking areas)

3 Fire Exit Doors

Fire exit doors must be unlocked during trading or working hours and free from any defect allowing correct operation. Fire exit doors must display FIRE EXIT signage. Fire exit doors must be kept clear of any obstruction internally and externally.

4 Employees

Ensure all your Employees are accounted for

5 Internal Doors

All internal doors must be kept closed in order to prevent the spread of fire in such an event. Any doors required to be open should be fitted with an appropriate magnetic self-closing device automatically activated in the event of a fire. Any doors controlled by means of an electronic access control system must be connected to fire alarm panel in order to facilitate the automatic disabling of the system in the event of a fire

6 Fire Fighting Equipment

All firefighting equipment i.e Extinguishers/fire blankets/hoses must be in a serviceable condition at all times and be professionally inspected every 6 months. Fire Points must be clearly marked. Appropriate fire extinguishing medium should be available in areas appropriate to Fire type risk. I.e Carbon dioxide in electrical fire risk area. Instructions for use of equipment must be available at the fire point. Fire points must be clear of obstructions at all times.

7 Fire Evacuation Plan

A fire evacuation plan must be in place in each SSC, office, Hub and Station. The Plan must clearly indicate action to be taken in the event of a fire, identify designated fire wardens who take responsibility for coordinating evacuation, evacuation muster points. The fire evacuation plan must be practiced once per quarter and have included all staff within the period of 1 year.

8 Daily Fire Hazard inspection

A walk around inspection of all RSC offices Hub and Station must be carried out each morning by the manager or designated person to ensure Fire exit routes are unobstructed, Fire exit doors are unlocked and unobstructed, fire fighting equipment is available and serviceable and there are no fire hazards present. All electrical equipment used in the store must be in a serviceable condition and inspected annually by a qualified electrician.

9 House Keeping / COSHH

All areas must be kept free of rubbish and paper. Cardboard waste from packing boxes and delivery cartons must be controlled and stored during the day in one designated area away from sources of ignition and be removed and disposed at the end of every day. Any substance hazardous to health or flammable materials must be stored in a flameproof locker at all times, including all cleaning chemicals, away from any source of ignition. The correct protective equipment for handling chemicals must be present.

Summary

Fires are often caused due to hazards being overlooked or not dealt with

Identify hazards, remove them and report them

Lives depend on good fire safety discipline in all areas of the business

Comply with the 10 Critical fire disciplines at all times


Fire Drills to be carried out annually
with the Civil Defence


Any
Questions

Thank You!

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