

0

Community Emergency Response Team


- 🧑 Personal safety is ALWAYS the number one priority
- 🧑 Show up prepared
 - Wear appropriate clothing and footwear, have WATER
 - Wear PPE – your personal protective equipment ...gloves, helmet, goggles, mask, boots, etc.
 - Have at least one communications device: cell, radio, etc.
- 🧑 Work as a team
- 🧑 Size-up - maintain situational awareness
- 🧑 The CERT goal is to do the
Greatest Good for the Greatest Number
- 🧑 *Hope for the best but plan for the worst!*

Visual UHF.1 Contra Costa CERT Coalition 73


This slide contains a list of seven key points for the Community Emergency Response Team. Each point is preceded by a person icon. The points are: 1. Personal safety is ALWAYS the number one priority. 2. Show up prepared, with sub-points: Wear appropriate clothing and footwear, have WATER; Wear PPE – your personal protective equipment ...gloves, helmet, goggles, mask, boots, etc.; Have at least one communications device: cell, radio, etc. 3. Work as a team. 4. Size-up - maintain situational awareness. 5. The CERT goal is to do the **Greatest Good for the Greatest Number**. 6. *Hope for the best but plan for the worst!*. The slide also features a footer with the text 'Visual UHF.1 Contra Costa CERT Coalition 73'.

1


Unit Objectives



Identify and reduce potential hazards from fire, utility, and hazardous materials at home and in the community



Explain the role CERTs play in fire safety and response, including the CERT size-up process and minimum safety precautions



Extinguish a small fire using a fire extinguisher

Visual UHF.2

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2


UTILITIES

Locating and Managing Utilities
Following a Disaster

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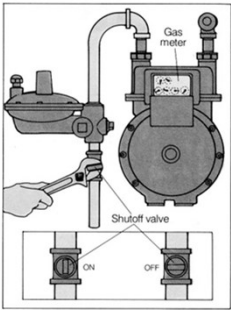
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Utilities

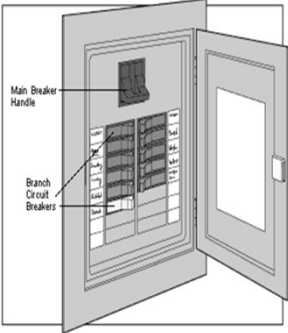


Locate and label gas, electricity and water shutoffs


GAS SHUTOFF



ELECTRICAL PANEL



WATER SHUTOFF




Visual UHF.4

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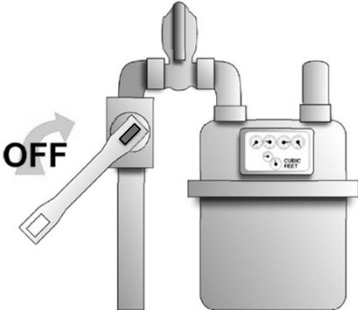
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4


Utilities



Keep a gas shutoff wrench or crescent wrench near, but not on the gas shutoff valve







Visual UHF.5

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5

3

Utilities

Automatic Gas Shutoff Valve



- Two types:
 - Excess flow
 - Quake triggered, approximate magnitude 5.5
- Installed by a licensed plumber

Visual UHF.6

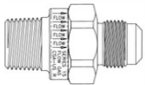
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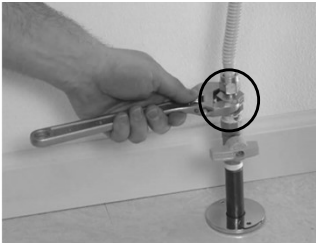
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6

Utilities

Appliance Gas Excess Flow Shutoff Valve





- Placed between line valve and flex line to appliance
- Sized based on BTU per hour of appliance
- One valve for each appliance
- Installed by homeowner or a licensed plumber


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House Electrical Service Drop



- A Service Drop is an electrical line that carries energy from the power pole to the house.


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Electrical Service Devices




Electrical
Meter




Service
Disconnect



Generator
Manual
Transfer
Switch



Breaker Panel



Breaker Panel with Tesla Powerwall,
Grid-tied Solar Controller and
Transfer Switch

Visual UHF.9


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9

Electrical Sub-Panel


Sub-Panels




Sub-panel acts as a waypoint between the main service panel and branch circuits down the line



Saves money during construction



May be found in utility closets, add-ons, laundry rooms




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10

Curb Box – Water Supply Shutoff





Shutoff here at the supply valve in case of broken sprinkler or construction work



Visual UHF.11


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House Water Shutoff

A black and white photograph showing a water shutoff valve on a wall. A white arrow points to the valve handle, which is a small, round, metallic knob. The valve is connected to a pipe with a flexible braided hose. The wall is made of light-colored siding.

A silhouette of a city skyline with various buildings of different heights.

Visual UHF.12


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HAZARDOUS
MATERIALS


Identifying and Managing
Hazardous Materials Before and
Following a Disaster


A silhouette of a city skyline with various buildings of different heights.


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Home Chemistry

 When storing chemicals, use the acronym
L. I. E. S.

 **L**imit, **I**solate, **E**liminate, **S**eparate

 Store gasoline safely






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14

L. I. E. S.

 Some common household chemicals that should never be mixed or stored together:

- Bleach with Acid Toilet Bowl Cleaners
- Bleach with Vinegar
- Bleach with Ammonia
- Highly Alkaline Products with Highly Acidic Products

 Drain cleaners are frequently made from sodium hypochlorite which is chlorine bleach. Other common ingredients are acids like hydrochloric and sulfuric and caustic chemicals such as lye and caustic soda

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15

Getting Rid of Chemicals

Need to get rid of 'stuff' ?

- 👤 Household hazardous waste disposal is possible for residents, normally AT NO CHARGE, at many places in the Bay Area. For the nearest location, search the web for "Household Hazardous Waste"
- 👤 Fire extinguishers that are no longer in use are considered Hazardous Waste by Federal Law and must be taken to a hazardous waste disposal site. Most fire departments cannot accept used extinguishers

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Should I Eat / Drink That ?

👤 Poison Control

- Toddler, dog or you eat pills?
 - People – (800) 222-1222 (free) Poison.org
 - Animals – (888) 426-4435 (not free, \$65.00)

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Old Drugs

Disposal of unused medications / old pills

- Disposal of pharmaceuticals into sewers has become a serious public health concern. It can allow medications to make their way into regional water sources by passing through wastewater treatment plants
- There is disagreement between the FDA and most local sanitary districts. **Most local districts say do not flush**
- Many local law enforcement offices and pharmacies have collection boxes for unwanted drugs





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Hazardous Materials



- Are toxic to humans, animals or the environment through absorption, inhalation, injection or ingestion

THE GOLDEN RULE OF HAZMAT: If you have not yet identified the substance, treat it like it's **ETHYL METHYL NASTY STUFF**. Stay away from it. Don't poke it, look at it the wrong way or insult it. Report your finding and let professionals handle the rest.

Visual UHF.19


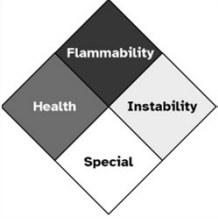
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Hazardous Materials

Building Placards



Blue = Health
Red = Flammability
Yellow = Instability
White = Special hazard

4 = Severe Hazard
3 = Serious Hazard
2 = Moderate Hazard
1 = Slight Hazard
0 = Minimal Hazard
W = Use NO WATER
OX = Oxidizer
SA = Simple Asphyxiant

Visual UHF.20



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Hazardous Materials

Examples of building placards



The NFPA 704 diamond provides information to first responders and are typically located outside buildings, on doors, or on tanks, and visible to emergency responders during spill or fire.

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Hazardous Materials Identification

Global Harmonized System on Containers



Skull and Crossbones
Acute toxicity via oral, dermal, or inhalation



Flame Over Circle
Oxidising substances



Health Hazard
Aspiratory or respiratory hazard, carcinogenicity, mutagenicity



Environment
Hazardous to the environment



Exploding Bomb
Explosives, self-reactive substances, organic peroxides



Gas Cylinder
Compressed, liquefied, or dissolved gases



Flame
Flammable, pyrophoric, self-heating substances, water reactive



Corrosion
Corrosive, skin damage, eye damage



Exclamation Mark
May cause immediate health effect - eye, skin, respiratory

HazCom GHS labels that are on chemical containers provide information about hazards to workers using hazardous chemicals under normal conditions of use.

Visual UHF.22


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HazMat in Storage

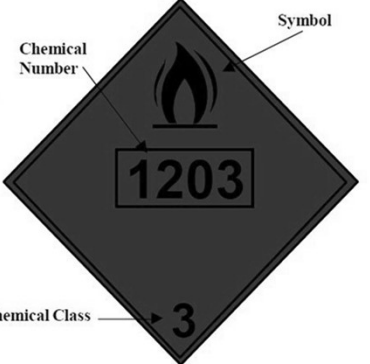
UN and NA Placards



Symbol

Name

Chemical Class



Symbol

Chemical Number

Chemical Class

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HazMat in Transit

Vehicle Placards

Orange	Red	White	Red	Red & White	
Red & White	Blue	Yellow	White	Yellow & White	Black & White

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Hazardous Materials

🚒 Example of vehicle placard



Chemical code 1203 is Gasoline

Visual UHF.25




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Hazardous Materials Response

Most important: Remember **S. I. N.**

-  **S**afety: Safety is the Number 1 priority
-  **I**solate: Keep people out of the area
-  **N**otify: Get help, document what you see




Visual UHF.26

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Hazardous Materials



Remember:

All hazardous material placards are a stop sign for CERT volunteers!

Visual UHF.27


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Hazardous Materials

👤 Question: Who carries hazardous materials on a regular basis and does not have to have placards on their vehicles?




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Hazardous Materials

👤 Answer:



Visual UHF.29 **Contra Costa CERT Coalition** 73

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FIRE SAFETY

Reducing Fire Hazards and
Putting Out Fires

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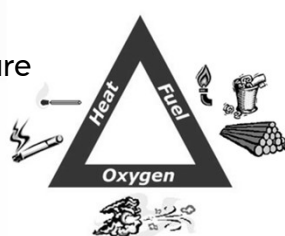
The Fire Triangle

Three things must be present at the same time to produce fire:

1. **Oxygen** to sustain combustion
2. **Heat** to reach ignition temperature
3. **Fuel** or combustible material

Together, they produce the chemical reaction that is fire

Take away any one of these things and the fire will be *extinguished*




Visual UHF.31

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Flashover Video




Visual UHF.32


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Reduce Fire Hazards

 Never leave a pan
unattended

 If things go wrong,
don't panic !

 Turn off the heat
if it is safe to do




Visual UHF.33


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Reduce Fire Hazards

 NEVER use water on oil or grease

 Use a cookie sheet to smother flames

 Put a lid or slide the cookie sheet over the top of the pot



PUT A LID ON IT


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Reduce Fire Hazards

 Don't be a "pack rat"



©www.komar.org



Stuff = fuel for a fire

Visual UHF.35

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Reduce Fire Hazards

HOMEOWNER ASLEEP

HEATER TOO CLOSE TO BED

UNDERSIZED EXTENSION CORD

3 feet from the heat

Visual UHF.36

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Reduce Fire Hazards

Avoid the “electrical octopus”

A close-up photograph of a standard wall outlet. Several electrical cords are plugged into the outlet, creating a cluttered and potentially unsafe situation. Smoke is visible rising from the outlet, indicating a fire hazard.

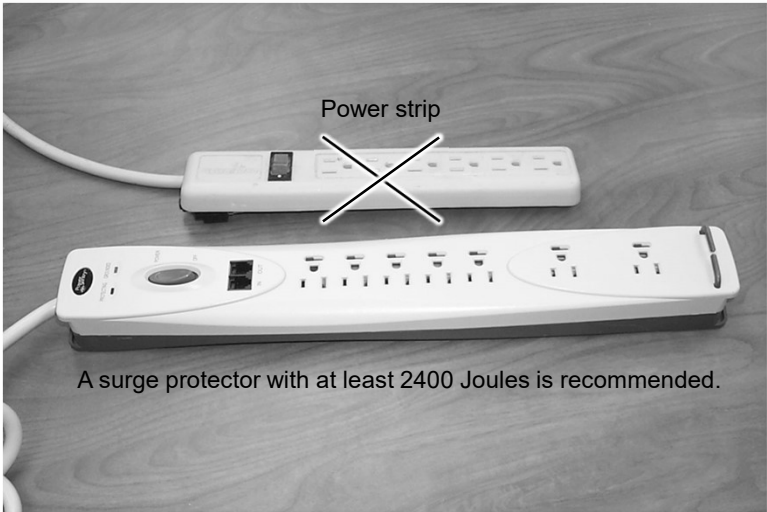
Visual UHF.37

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Reduce Fire Hazards



A surge protector with at least 2400 Joules is recommended.


Visual UHF.38

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Reduce Fire Hazards



Be “firewise” around your home
and neighborhood
www.firewise.org

Visual UHF.39


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Natural Gas, Carbon Monoxide and Propane

- 🔊 Natural gas is *lighter* than Air
 - Accumulates near the ceiling
- 🔊 Carbon Monoxide (CO) is *almost same* as Air
 - Diffuses into the air
 - Rises slowly in warm air currents
- 🔊 Propane is *heavier* than Air
 - Accumulates near the floor
- 🔊 All are Asphyxiants and displace oxygen in the lungs and blood





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Smoke and CO Detectors

- 🔊 Most house fire victims die from smoke or toxic gases
- 🔊 Install carbon monoxide detector
 - CA State Law effective July 1, 2011
 - CO results from incomplete burning of organic matter including all petroleum products
 - Gasoline
 - Natural gas
 - Propane
- 🔊 Test batteries for natural gas and carbon monoxide detectors every month
 - Change batteries every 6 months
 - New models have 10 year batteries



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Fire Detection - Smoke Detectors



Is one enough?

PLACE ONE SMOKE ALARM ON EVERY FLOOR AND IN EVERY SLEEPING ROOM

MULTI-STORY



SINGLE LEVEL - 1 Floor



Visual UHF.42

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Fire Safety

Plan and practice 2 fire escape routes

Once you're out, stay out !

Don't go back in



Visual UHF.43

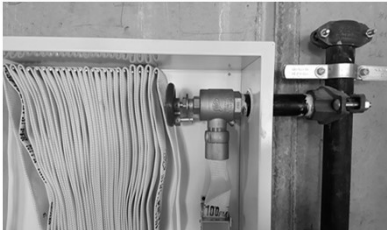
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Fire Suppression Resources

- Local fire department
- Fire alarm systems
- Sprinkler systems
- Interior wet standpipes with hose
- Portable fire extinguishers



Visual UHF.44

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CERT Fire Size-up

- Size-up is the on-going evaluation of problems confronted within any emergency situation
- Size-up starts with the recognition of the emergency and continues until the emergency is under control. This process is carried out many times and by many different individuals at each emergency event
- The responsibility for size-up initially lies with the first responder that arrives on scene


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All CERT Size-up



**REMEMBER:
ALL CERT
SIZE-UP IS A
CONTINUAL
PROCESS**


Visual UHF.46

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All CERT Size-up



360° SCAN – all around and everything above ground


Visual UHF.47


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CERT Fire Size-up

 Can my buddy and I escape?

 Helps CERT volunteers decide:

➤ Whether to attempt to suppress a fire

➤ A plan of action

 Answer these questions:

➤ Do my buddy and I have the right equipment?

➤ Are there other hazards?

➤ Is the building structurally damaged?

➤ Can my buddy and I fight the fire safely?

Remember: The safety of individual CERT members is always the top priority

Visual UHF.48


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CERT Fire Size-up Checklist


Step 1: Gather Facts


 Does the time of day or week impact fire suppression?

 Will weather conditions affect the fire situation?

 What type of structure is involved?

 Is the structure occupied?

 Are there special considerations?

 Are any other hazards likely to be involved?

Visual UHF.49


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CERT Fire Size-up Checklist


Step 2: Assess and Communicate the Damage


 Do a 360° inspection, up, down and around

 Are normal communication channels functioning?

Step 3: Consider Probabilities

 Are there potential life-threatening hazards?

 Does the fire's path jeopardize other areas?

 Is there a high potential for more disaster activity that will impact personal safety?

Visual UHF.50


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CERT Fire Size-up Checklist


Step 4: Assess Your Own Situation

 What resources are available?


 What equipment is available?

Step 5: Establish Priorities

 Can fire suppression be safely attempted by CERT?

 Are there other, more pressing needs at the moment?

Step 6: Make Decisions

 Where will deployment of available resources do the greatest good while maintaining an adequate margin of safety?

Visual UHF.51


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CERT Fire Size-up Checklist


Step 7: Develop a Plan of Action

 Determine how many personnel and other resources should be deployed

Step 8: Take Action

Step 9: Evaluate Progress

 Continually size-up

 Adjust plan as needed

Visual UHF.52


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CERT Fire Size-up Checklist

The Mental Management of Emergencies

 Responders panic because:

- They do not know or remember exactly how they are supposed to respond
- They are not aware of their own impaired decision-making when their adrenaline takes over
- They have been working too many hours and they have forgotten what it is like to make calm decisions
- Stress drains serotonin and dopamine to levels that impair cognitive thinking

Visual UHF.53


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CERT Fire Safety


“CERTS Don’t Get Hurt”

 Use **P**ersonal **P**rotective **E**quipment (**PPE**)

 Have a communications plan

 Have a backup team

 Have two ways to exit





Visual UHF.54


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CERT Fire Safety

 Put out small fires, this size 

 Prevent additional fires





 Shutoff utilities after a disaster to prevent fires

Visual UHF.55

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Fire Suppression Don'ts

 Don't get too close

 Don't try to fight a fire alone

 Don't try to suppress large fires

 Don't enter smoke-filled areas



Visual UHF.56


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CERT Fire Safety

Use the buddy system for all CERT activities, especially fire safety!



11/09/2006




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Fire Fuels

 Fuels are things that will burn

 There are three main classifications of fuels

➤ Two more for commercial environments











Visual UHF.58

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Classification of Fuels

		Ordinary Combustibles	Wood, Paper, Cloth, Etc.
		Flammable Liquids	Grease, Oil, Paint, Solvents
		Live Electrical Equipment	Electrical Panel, Motor, Wiring, Etc.
		Combustible Metal	Magnesium, Aluminum, Etc.
		Commercial Cooking Equipment	Cooking Oils, Animal Fats, Vegetable Oils

Visual UHF.59



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Fire Extinguisher Types

Standard ABC Extinguishers

	Water	Foam	Dry Chemical	Carbon Dioxide	Wet Chemical	Clean Agent (Halogenated)	Dry Powder
 							
A Ordinary Combustible Materials	✓	✓	✓*	✗	✓	✓*	✗
B Flammable Liquids and Gases	✗	✓	✓	✓	✗	✓	✗
C Energized Electrical Equipment	✗	✗	✓	✓	✗	✓	✗
D Flammable Metals	✗	✗	✗	✗	✗	✗	✓
K Cooking Oils and Greases	✗	✗	✗	✗	✓	✗	✗

* not all models work on Class A fires


Visual UHF.60

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Choosing a Fire Extinguisher

 Typical ABC Fire Extinguisher specifications

Size	2.5	5	10
Height	14.87	15.25	18.94
Width	5.5	7.25	7.75
Depth	3	4.25	5.25
Weight Pounds	5.8	10.4	13.3
Nominal Discharge Time	9.5	14	22
Discharge Range, Feet	10-15	12-18	16-20
Rating	1-A:10-B:C	3-A:40-B:C	4-A:80-B:C

Source - Badger Fire Protection

Visual UHF.61

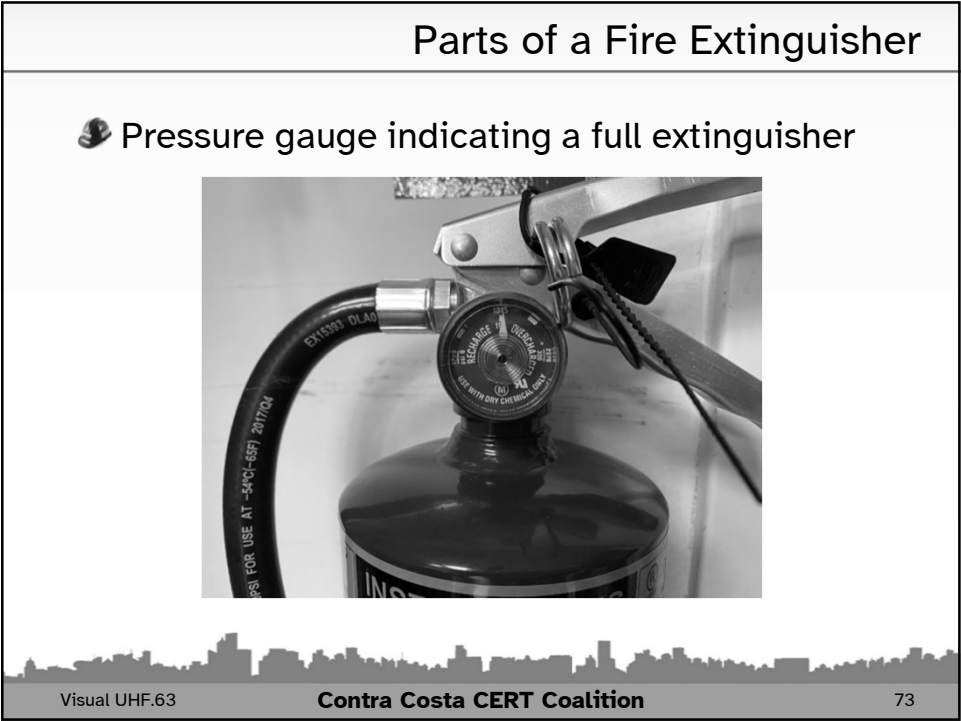
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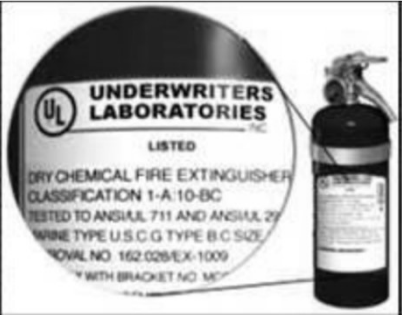
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Fire Extinguisher Rating / Labeling

 Labels show the class of fire and the amount of extinguishing agent.

➤ 1A is equivalent to 1.25 gallons of water

➤ 10B can cover roughly 10 square feet




Visual UHF.64

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Maintenance of Fire Extinguishers



Every six months, turn them over a few times to prevent caking of the powder

Fire extinguisher manufacturers agree that this is not needed and may, in fact, be harmful

Visual UHF.65

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Maintenance of Fire Extinguishers

🔧 Replace if 10 years or older

➤ Most extinguishers do not have a date code. Use a marker and put your purchase date on the bottom.

🔧 Replace with a metal head, not plastic



Where to buy or service? Look in the yellow pages

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How to Use a Fire Extinguisher

Pull

Aim

Squeeze

Sweep



Visual UHF.67


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How to Use a Fire Extinguisher


1 Pull the pin




2 Aim at the base of the fire



3 Squeeze the handle



4 Sweep from side to side




Visual UHF.68

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How to Use a Fire Extinguisher




Size-up fire before you decide to fight it. Be upwind!



Before approaching a fire, have pins pulled on both extinguishers (yours and your buddy's)



Test the extinguishers before approaching any fire to be sure they work



LEAD

:: BUDDY


COMMAND


RESPONSE

Ready :: Ready

Going in :: Going in

Backing out :: Backing out





Communicate!

Visual UHF.69


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How to Use a Fire Extinguisher



- Start using the extinguisher from a safe distance away, about 8 feet and then move forward
- Keep about 6 feet between you and the fire


Visual UHF.70

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Firefighting Resources



What if you don't have an extinguisher?

Try "creative" resources or confinement

Flow at 40 PSI


100 Foot Hose


1/2" Hose 6 GPM

5/8" Hose 11 GPM

3/4" Hose 18 GPM

Double the length – Half the flow



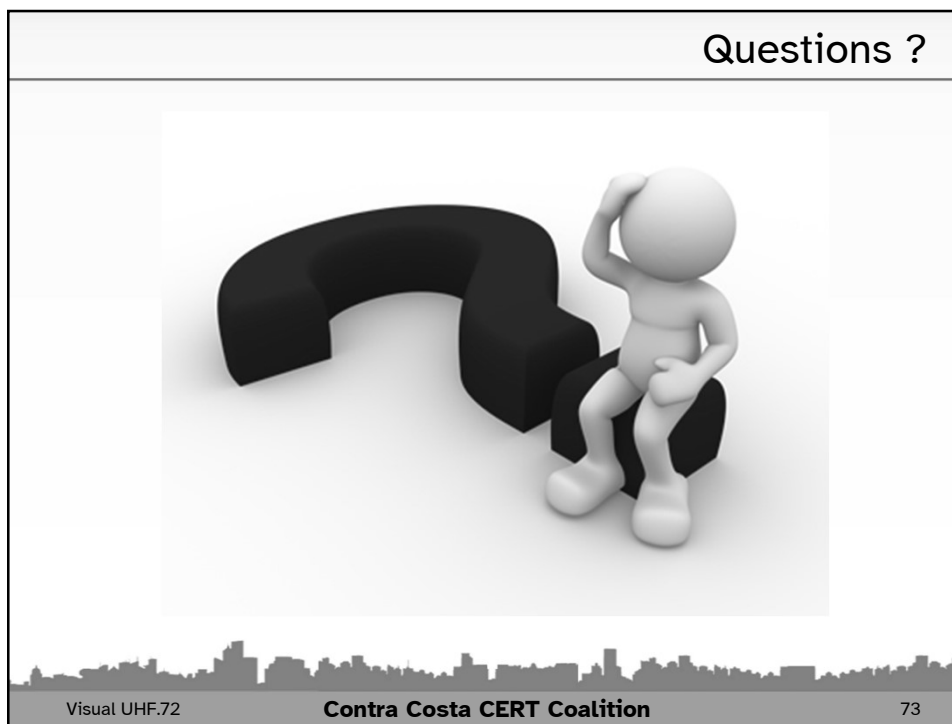


Visual UHF.71

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Takeaways

-  **Utilities** – locate and shutoff as needed
-  **Hazardous Materials**
 - L.I.E.S. - Limit, Isolate, Eliminate, Separate
 - Placards, Building, Global Harmonized, Vehicle
 - S.I.N. – Safety, Isolate, Notify
-  **Fire**
 - Reduce Hazards – Detect
 - Firewise USA® – Protect Your Home
 - Size-Up
 - Fire Extinguishers

Visual UHF.73 Contra Costa CERT Coalition 73

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