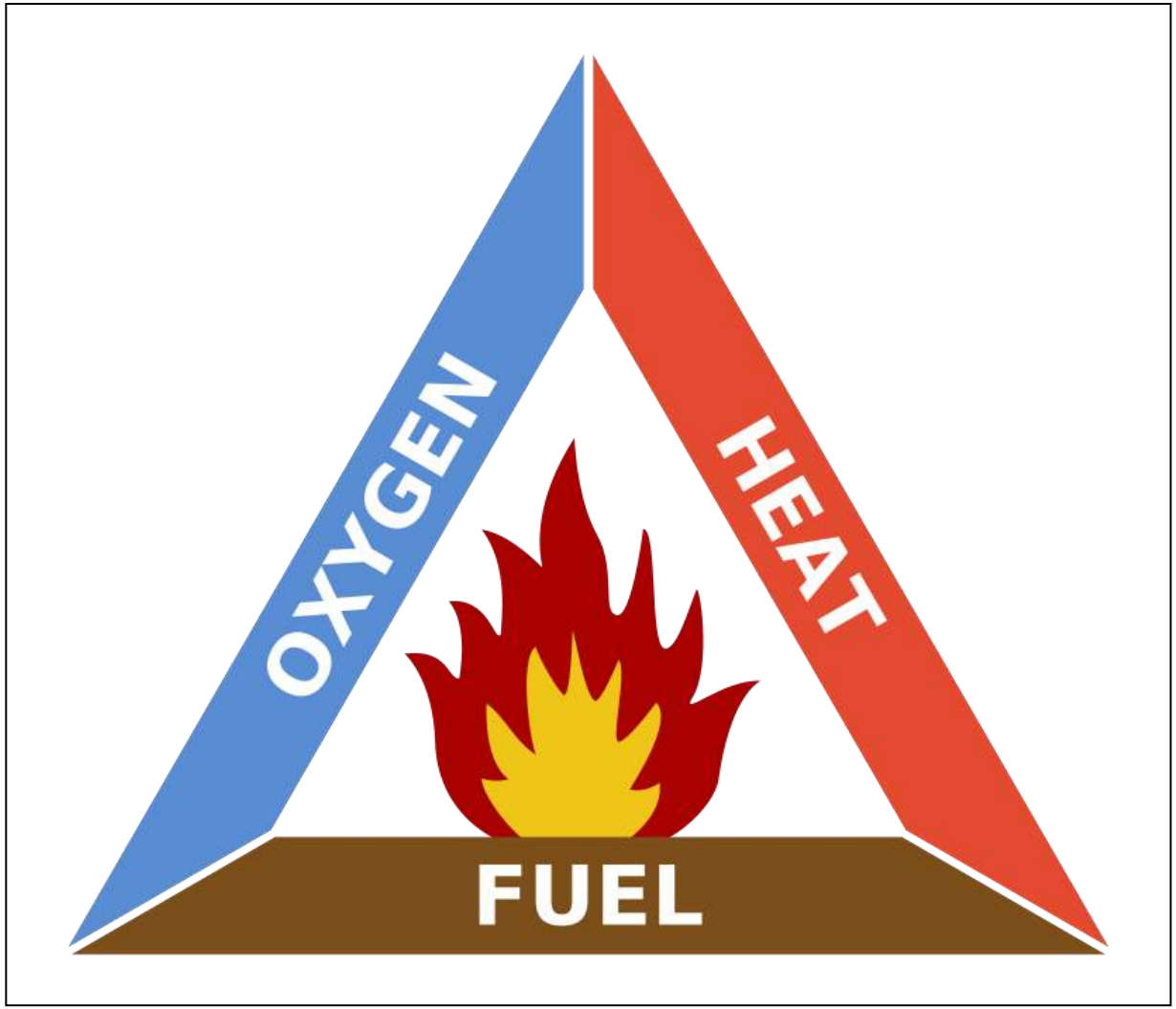
Fire Suppression and Containment

Fire and the Human Body

º C	º F	Response
37	98.6	Normal human oral/body temperature
44	111	Human skin begins to feel pain
48	118	Human skin receives a first degree burn injury
55	131	Human skin receives a second degree burn injury
62	140	A phase where burned human tissue becomes numb
72	162	Human skin is instantly destroyed
250	482	Charring of natural cotton begins
250	482	Synthetic fabrics melt (Polyester, Nylon)
>600	>1112	Temperatures inside a post-flashover room fire

Wear only natural fiber clothes (wool or cotton) fighting fires.

Fire Chemistry



Removing any one stops the fire.

Classes of Fires

Class	Material	Memory Aid
A	Paper, Wood, Cloth	Almost All fuels, leaves Ash.
B	Oil, Gasoline	comes in Barrels
C	Electric	uses Current
D	Combustible metals. (Magnesium)	
K	Kitchen grease	Kitchen

Fire Extinguishers

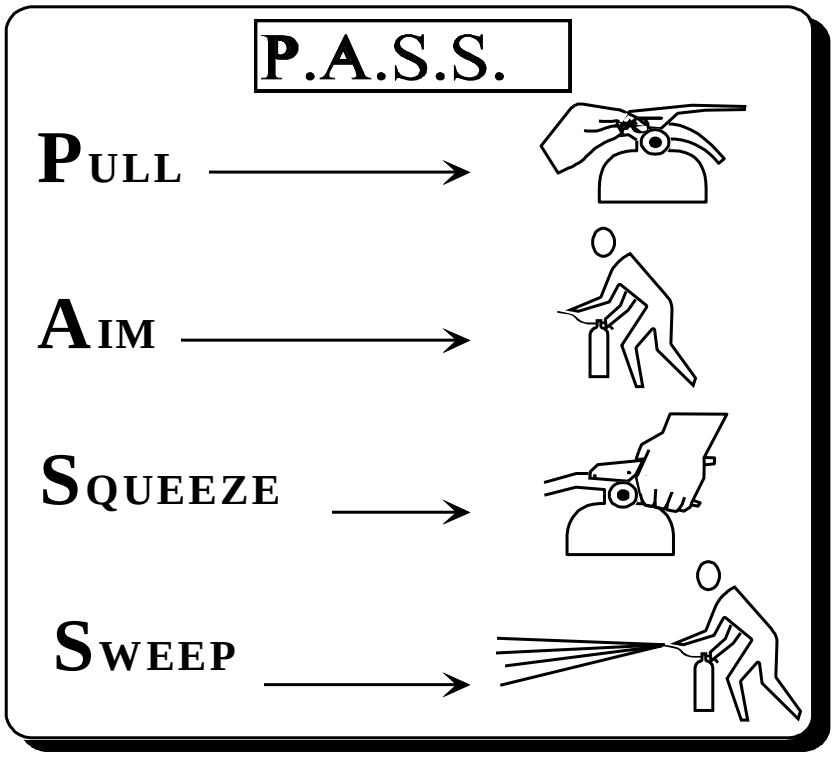
Class	Material	Extinguisher
A	Paper, Wood, Cloth	
B	Oil, Gasoline	
C	Electric	
D	Combustible metals. (Magnesium)	
K	Kitchen grease	

Labled "Water" if red.

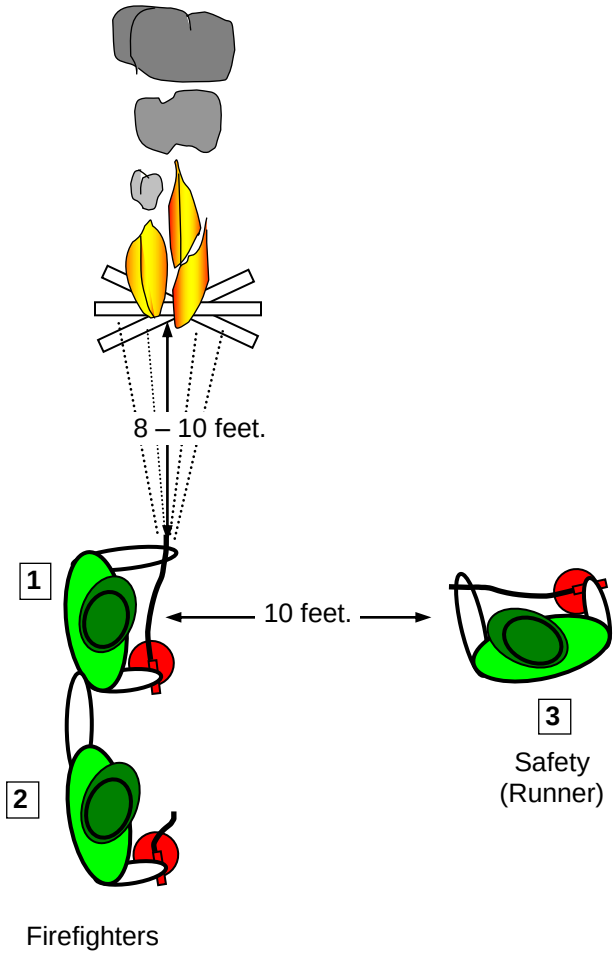
n-A:nn-B:C.

Sq Ft

Fire Extinguisher Procedure



Fire Suppression in Teams



Roles

[1] and **[2]** fight the fire.
[3] extinguishes **[1]** or **[2]** if necessary. [3] could be Runner.
[4] supplies fresh extinguisher where needed. [4] could be IC.

Procedure

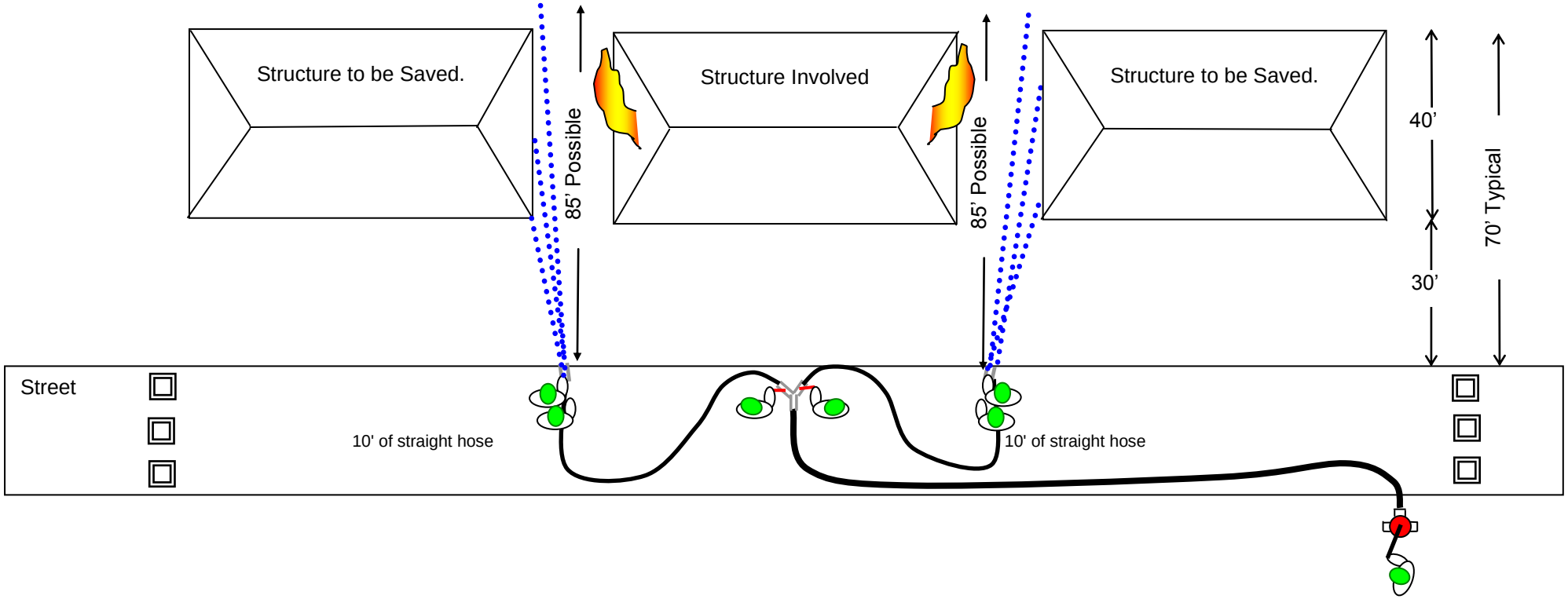
IC **[4]**:

- ☐ Determine type material burning and select extinguishers.
- ☐ Size-up area. Determine if safe to approach.
- ☐ Position Teams upwind, up stream on Flanks of fire.

Fire Fighter **[1]** calls:	(All must echo to proceed)
1. “Test extinguishers.”	All pull pins and test extinguishers.
2. ”Ready?”	Each Member echoes when ready.
3. “Going in.”	Group moves within 10’ of fire.
4. “Attacking.”	**[1]** Aims, Shoots, Sweeps.
5. “Fire out.” when out.	**[1]** Ceases fighting fire.
6. “Backing out.”	**[2]** leads **[1]** out. **[1]** monitors for fire.
7. “ All Clear?”	All echo “Clear!”

If **[1’s]** extinguisher runs out, **[2]** moves up to fight fire.
[1] get fresh extinguishers from **[4]**.
If third extinguisher runs out, all retreat.

Fire Containment with Water Curtains



Equipment

300' 2 ½" Supply Line (1/2 distance between hydrants.)
1) Gate Wyes (2 ½" x 1 ½" x 1 ½").
2) 5' Attack Hoses.
2) 70 GPM Fog Nozzles.
1) Hydrant Wrench
2) Hose Spanner Wrenches.
4) Ember Hoods & Face Heat Shields.

$1300

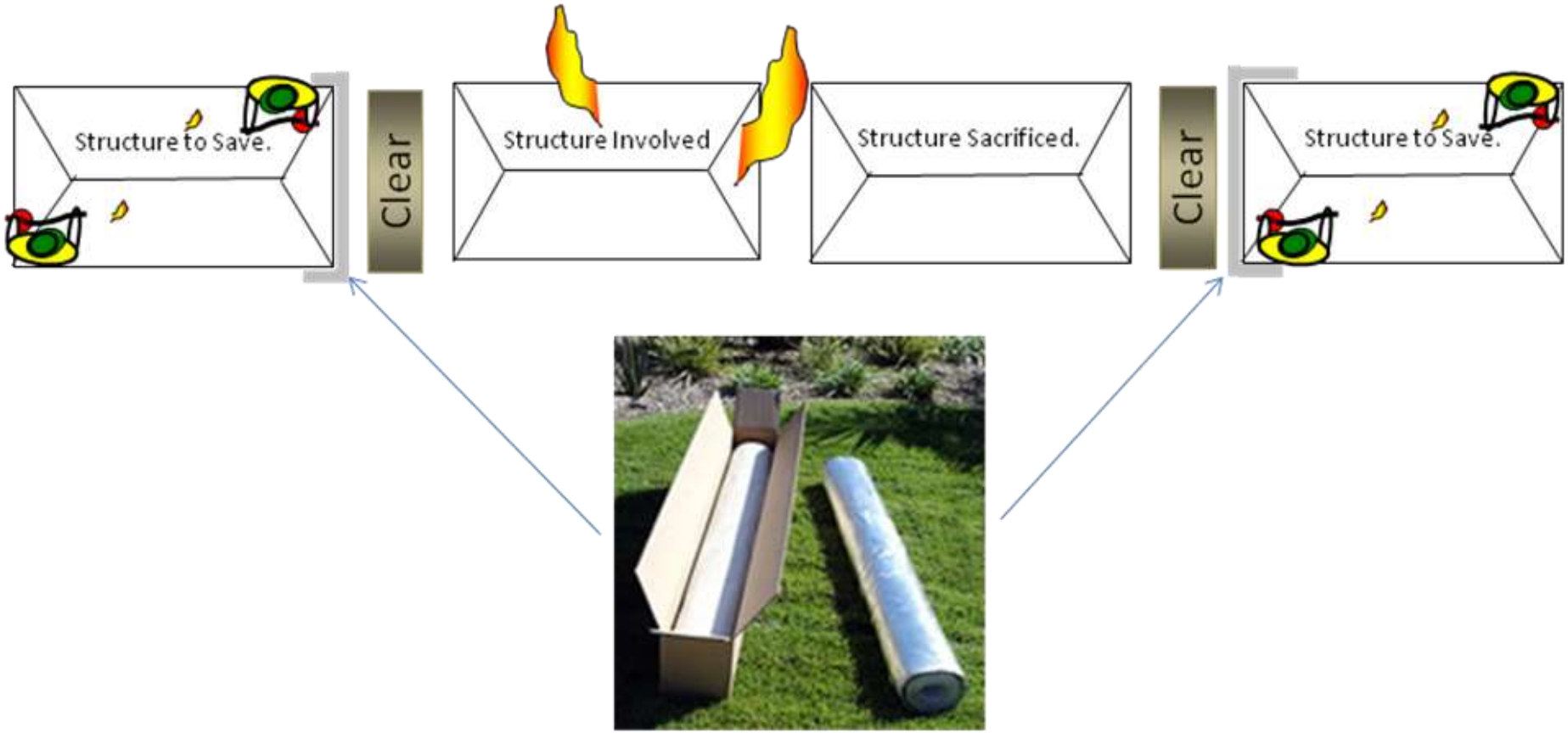
Procedure

1. Have Occupants of adjacent buildings remove window covering & pull furniture away from wall facing fire.
2. Assemble system starting from Hydrant.
3. Firefighters call "Water" when ready.
4. Valve operators open valves S-L-O-W-L-Y.
5. Firefighters open nozzles bail S-L-O-W-L-Y & twist head for widest pattern which reaches building
6. Cool Building-to-Save, especially overhangs.

Water Curtain Procedure

1. Have occupants of adjacent building(s) remove window covering & pull furniture away from wall(s) facing the fire.
2. Assemble the Water Curtain system starting from the hydrant.
3. Firefighters wrap arms around attack hoses. Attackers grips nozzle strongly in one hand and bale (handle) in the other. Stand with one foot forward, shoulder width apart. Firefighters crack nozzles and call for "Water!"
4. Wyes and hydrant operators open their valves S-L-O-W-L-Y so water "walks" to nozzles.
5. Firefighters slowly pull nozzle handles backward and turn nozzle head to create widest stream possible that will still reach furthest end of building(s) to be protected.
   * If Attacker looses control of their hose, Wyes operator closes that "gate".
6. Spray in a Z pattern to cool walls of un-involved building(s), and especially the eves and overhangs, avoiding windows.
7. Also attack the material burning once it becomes visible.
8. Backup Attacker(s) direct stream by moving opposite desired direction of flow.
9. Alternate building being cooled if pressure insufficient to cool both simultaneously. Wyes operators control this by opening one gate and closing the other every x seconds.
10. Finish by slowly pushing the nozzle handle forward, away from your body and calling "Shutdown". Do not push fast as it will cause hose to jump away from you as water comes to a hard stop. Crack nozzle(s) after water off to relieve pressure in hoses.

Fire Containment with Breaks & Shields



12’ x 60’ Roll

Firezat house heat shield fabric, $750/roll x 2 = $1500.

(Only practical for single-story buildings.)

Fire Break and Shield Procedure

1. Decide where to make your stand. Probably need 20 foot separation to be successful. (Do not make a stand on a Moderate or Heavily Damaged building, or if fire as already reached the end of the building next to the building being considered.)
2. Have occupants of building(s) chosen remove window covering & pull furniture away from wall(s) facing the fire. If they are not there, move to next building.
3. Create a Fire Break by clearing all fuel between fire and building(s) to be protected. (e.g., Chainsaw down & remove hedges and wooden fences.)
4. Place ladder(s) to roof(s) away from the fire.
5. Unroll heat shield on roof along edge of roof.
6. Nail to roof, preferably placing 1x2 material along outer edge of shield, nailing thru 1x2 material and shield into the roof.
7. Flip heat shield over the 1x2 and off roof to drape walls.
8. Position Firefighter on the roof to extinguish firebrands (large flying ember) with ½ second blasts from extinguishers. Firefighters switch position every few minutes to keep cool.
9. IC and runner monitor building(s) being protected for signs if ignition inside and evacuate roof firefighter if this happens.

Hazardous Material Fires

Don't fight a Hazardous Materials Fire.

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If your CERT performed Community/Workplace Preparation Task ii. *Identify and Map Hazards* **(GuideBook, page 19),**

1. **Evacuate the Isolation Area.** **(GuideBook, page 76).**
2. **Warm those in downwind Protect Area to Shelter-in-Place.**

Otherwise, leave the area.

Best Practices.

Prevent fires from starting.

Install automatic gas shutoff valve.

If your home is damaged, shut off Electricity then Gas. (Shut off water is leaking.)

Stop small fires before they become large fires.

A home fire can go from spark to fully-involved in under 10 minutes.

Everyone should have at least two 4-A:60-B:C extinguishers at home.

Place outside front door for CERT used if not needed.

If you can't stand the heat at 10 feet, the fire is too large to fight with extinguishers. Leave.