
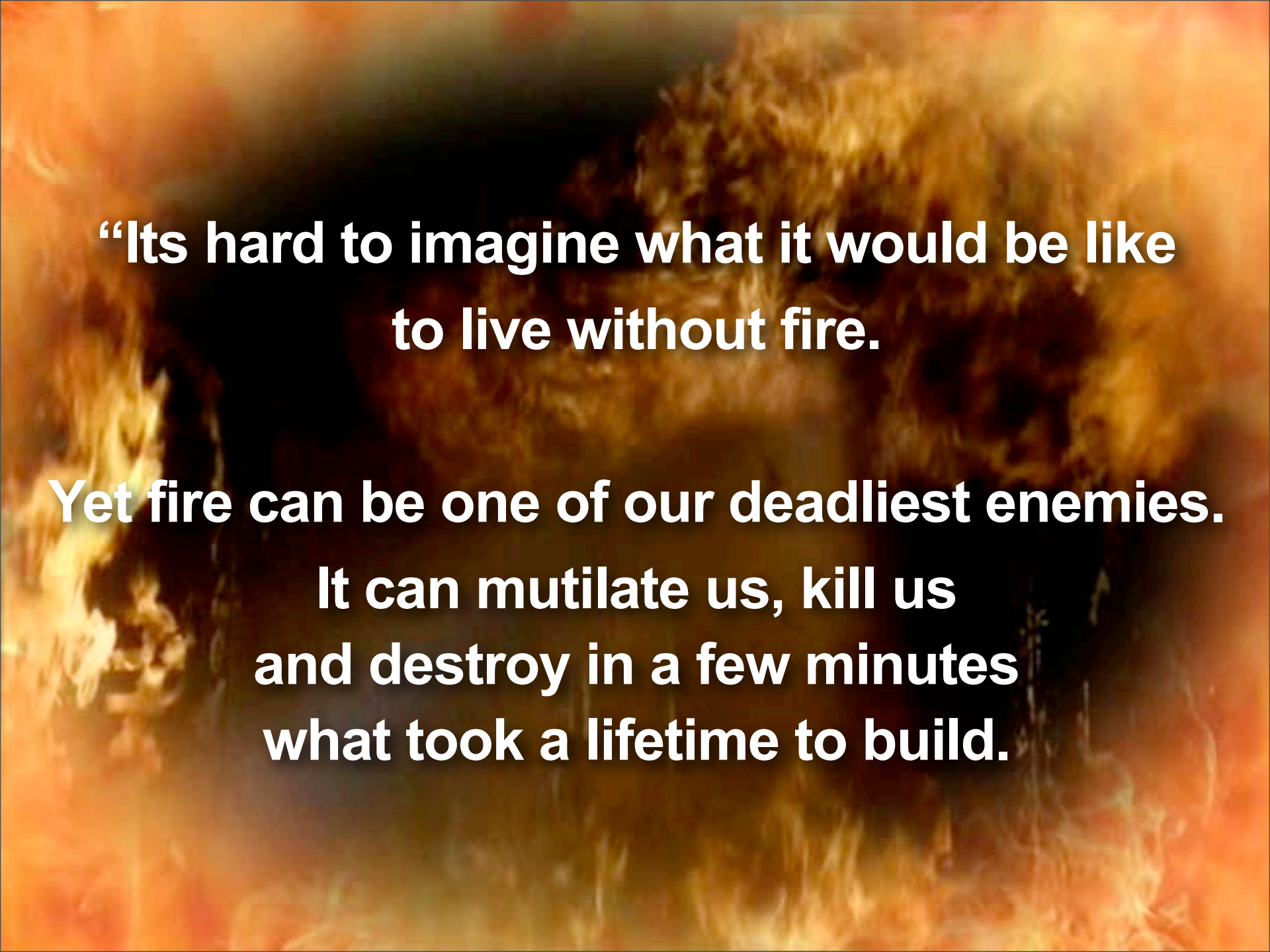


70% of fires
in the world
are Class A & B



***Fires must be eliminated
within the first **5** minutes
to prevent from spreading.***



**“Its hard to imagine what it would be like
to live without fire.**

Yet fire can be one of our deadliest enemies.

**It can mutilate us, kill us
and destroy in a few minutes
what took a lifetime to build.**



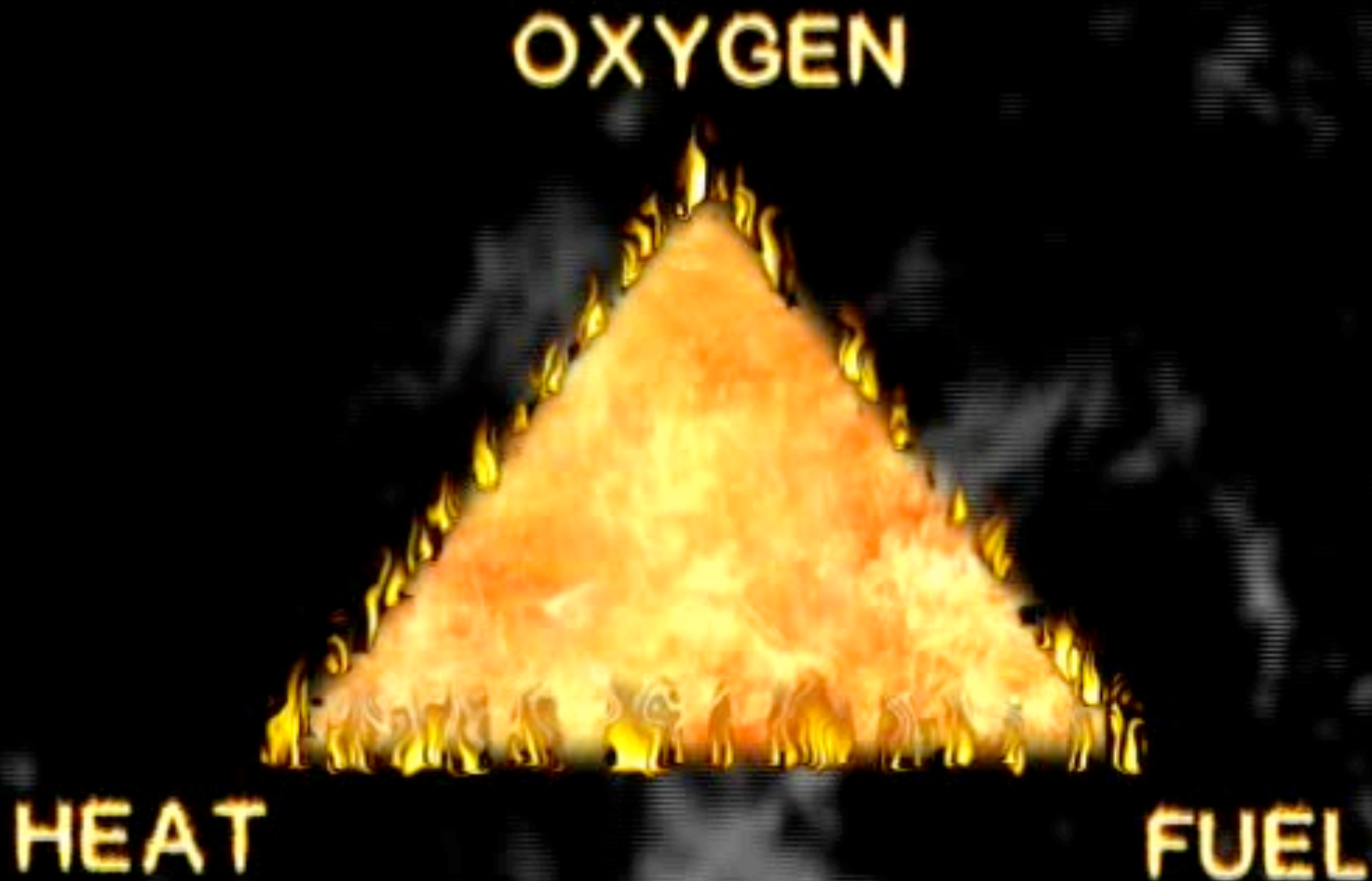
3 Elements
of
FIRE

OXYGEN



HEAT

FUEL



Fire involves a chemical reaction between combustible fuel species and oxygen from the air.

class

paper
cloth
wood
rubber
plastic



class

oils
gasoline
kitchen greases
paints
solvents
charcoal lighter
kerosene
diesel fuel



class

The background is a collage of four circular images. The top-left image shows a person in a blue shirt. The top-right image shows a person in a plaid shirt. The bottom-left image shows a hand holding a wire. The bottom-right image shows a hand holding a metal pipe.

**wiring
fuse boxes
motor
power tools
appliances**

class

metals:
aluminum
magnesium
titanium



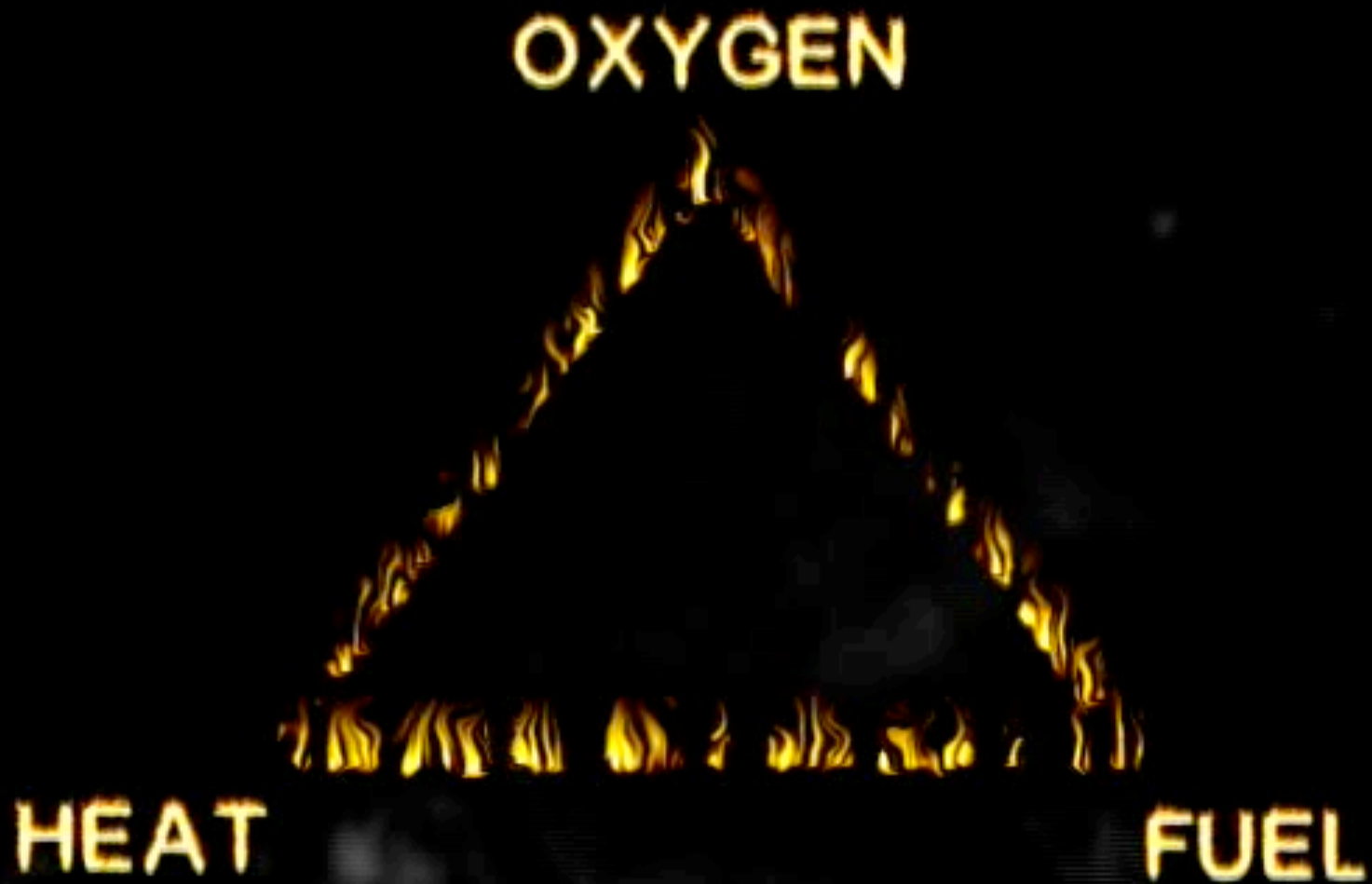


OXYGEN

HEAT

FUEL

eliminate ONE of these three elements...



..... and the fire will be extinguished!

THE WATER MIST PRINCIPLE

Basic Principle

WATER

discharged at

HIGH PRESSURE

through

SPECIAL NOZZLES

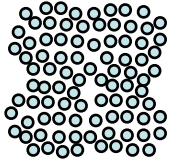
resulting in

VERY SMALL DROPLET SIZE

and

HIGH DISCHARGE SPEED

HDL-250



20- 50 microns

1000 times
faster cooling



WATERMIST

100- 150 microns

40 times
faster cooling

300-400 microns

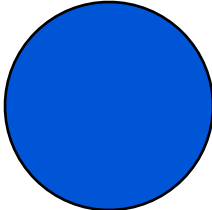
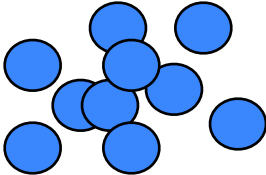
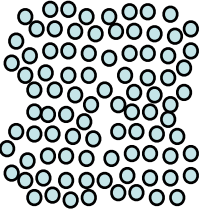
14 times
faster cooling

Lower the average droplet size:

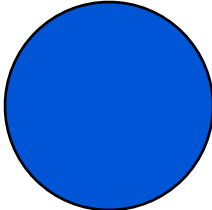
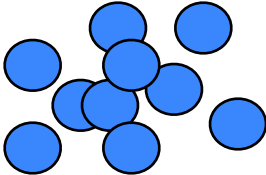
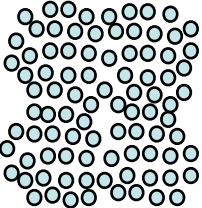
- **More the surface area**, and
- **Greater the cooling** for the fire, as the heat is taken in as latent heat of vaporization.

* Compared to 5000 micron droplets

THE DROPLET SIZE

		No. of drops	Drop size (average)	Surface area	Vaporization
	Sprinkler	1	>1000 μ m		
	Class 2/3 Mist	40	300 μ m		
	Water Mist	8000	20~50 μ m		

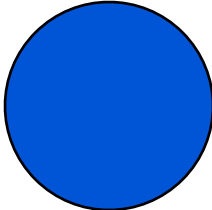
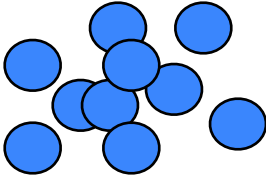
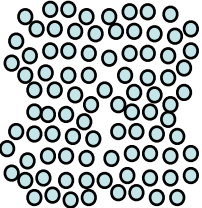
THE DROPLET SIZE

		No. of drops	Drop size (average)	Surface area	Vaporization
	Sprinkler	1	$>1000 \mu\text{m}$	1	
	Class 2/3 Mist	40	$300 \mu\text{m}$	10	
	Water Mist	8000	$20\sim50 \mu\text{m}$	400	

Very large total surface area



THE DROPLET SIZE

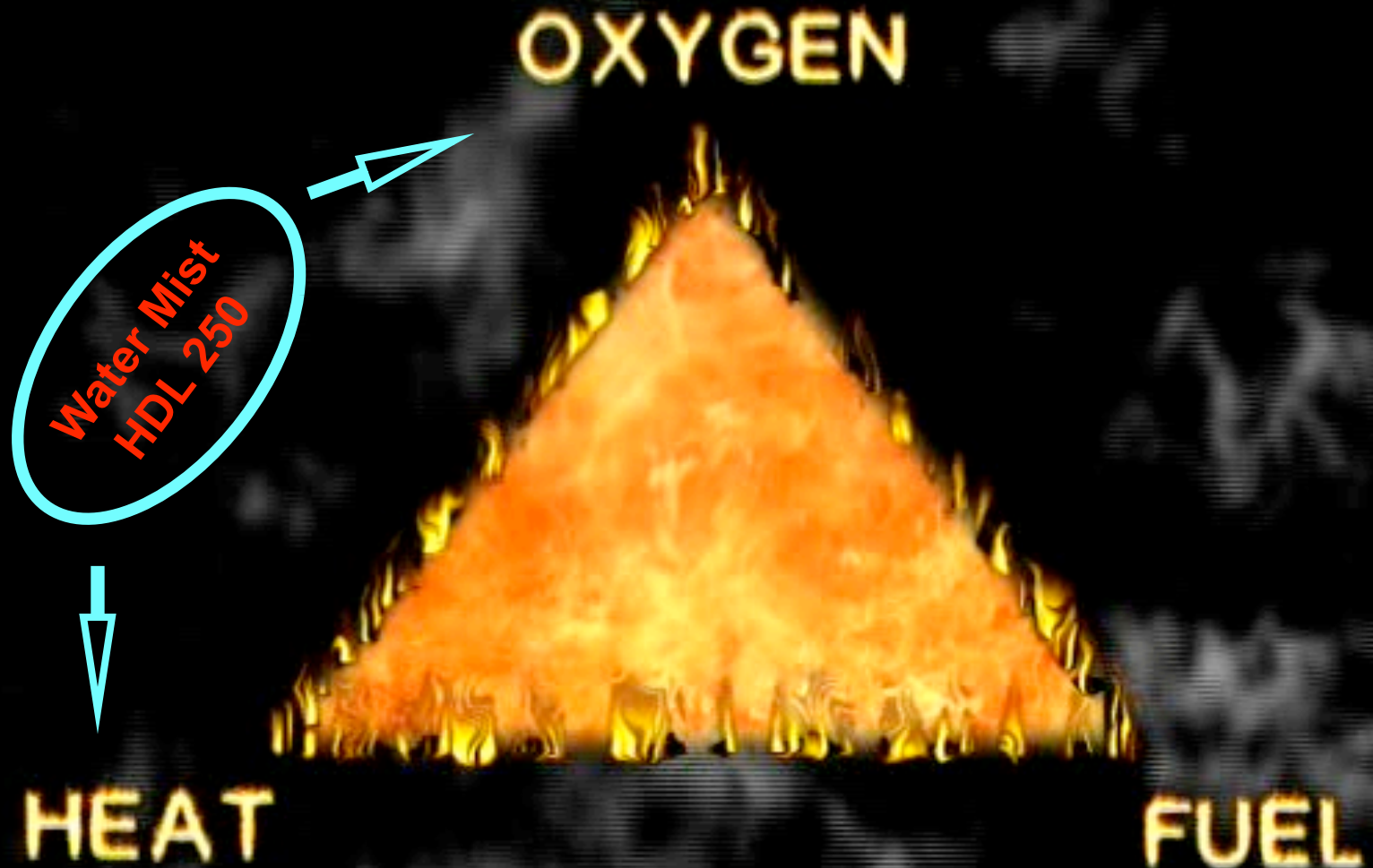
		No. of drops	Drop size (average)	Surface area	Vaporization
	Sprinkler	1	>1000 μm	1	1 sec
	Class 2/3 Mist	40	300 μm	10	0.1 sec
	Water Mist	8000	20~50 μm	400	0.003 sec

Very large total surface area

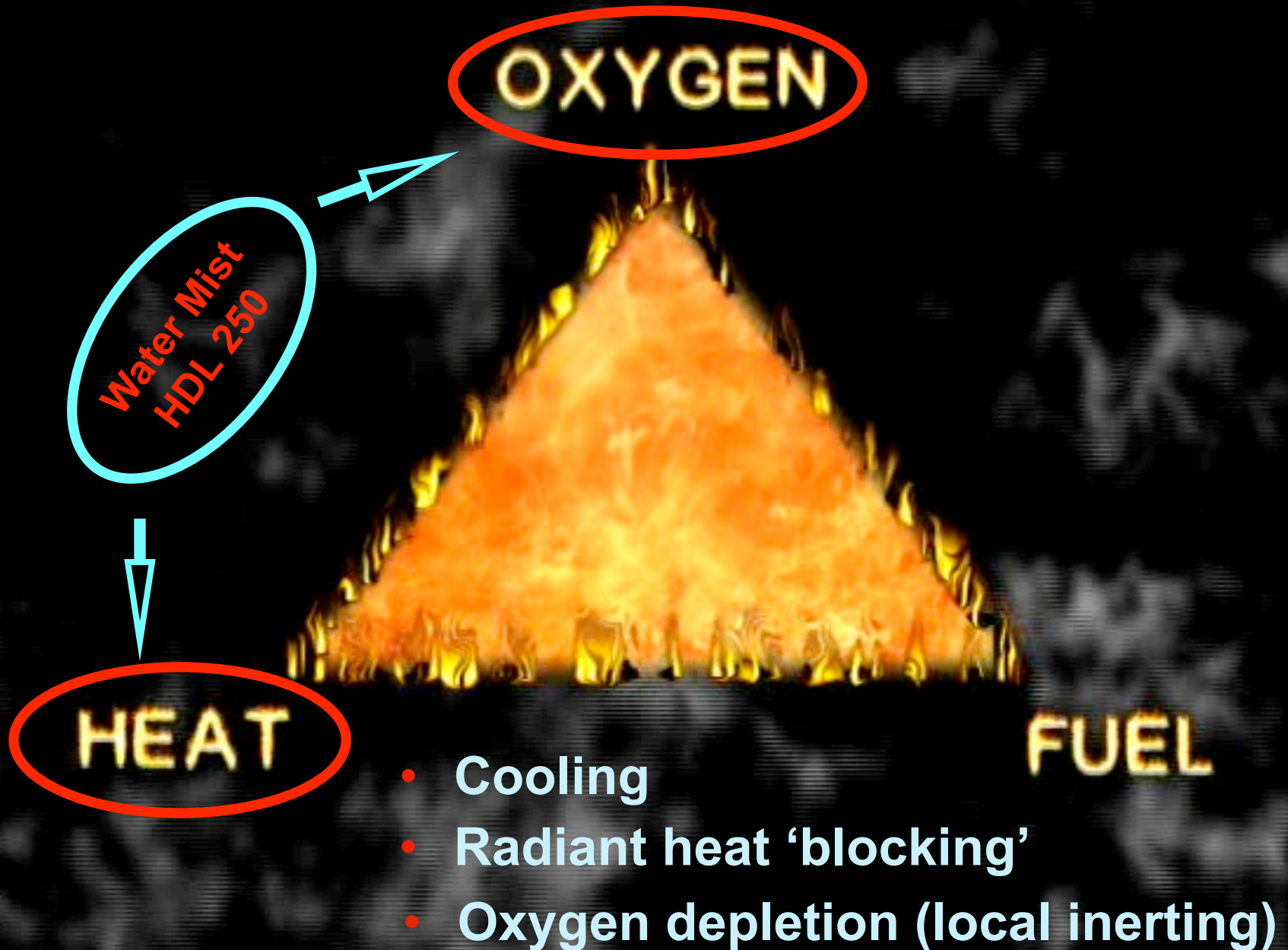
Very fast vaporization



HOW THE HDL 250 WORKS..



HOW THE HDL 250 WORKS..



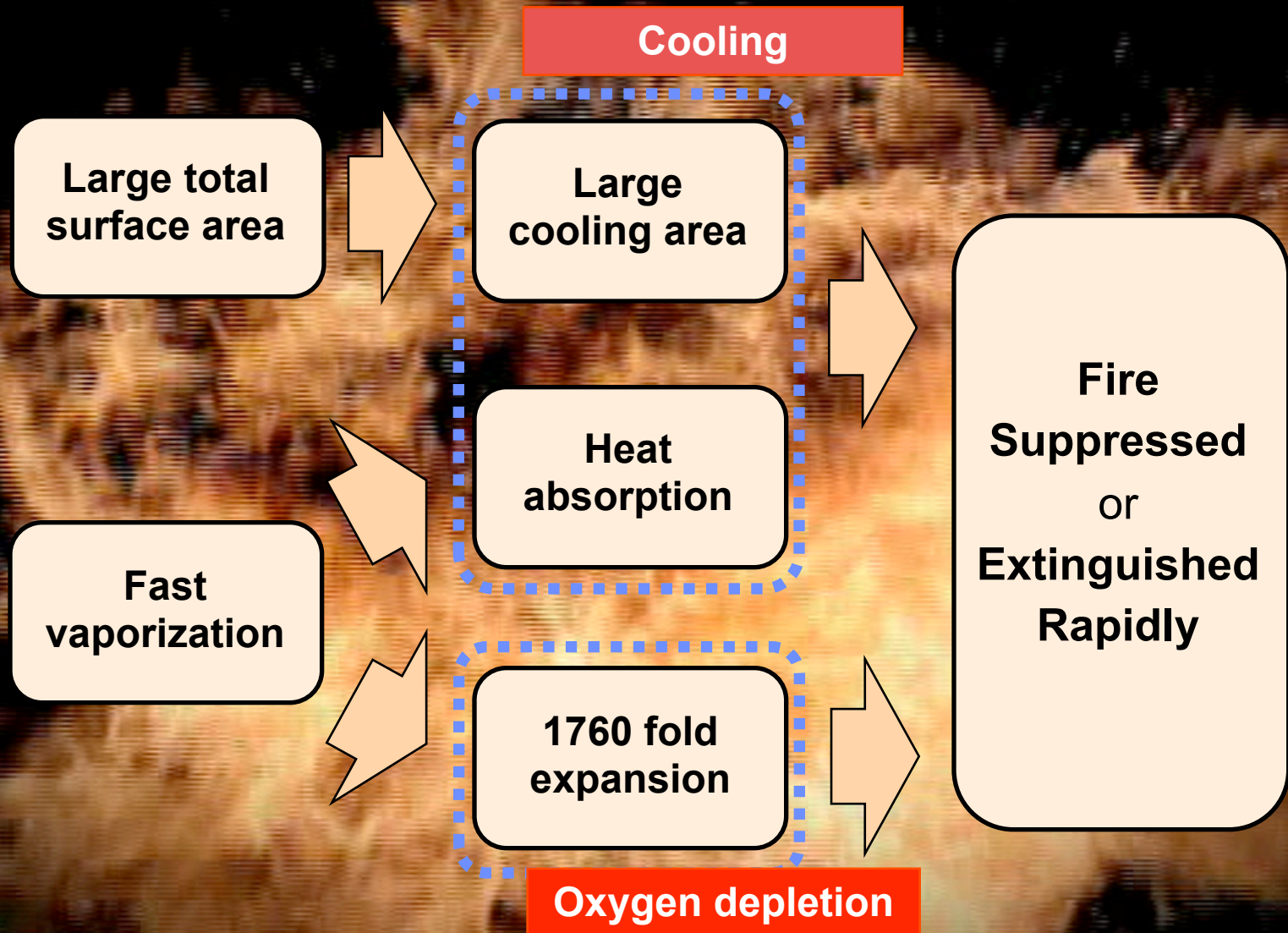
IN SUMMARY



**Large
cooling area**

**1760 fold
expansion**

IN SUMMARY















FIRE & SECURITY 2008



25 SECONDS FLAT!

FIRE & SECURITY 2008







DERTZEN® **FIRE-TEC**

HDL 250





**DERTZEN®
FIRE-TEC**

HDL-250/200



Technical Data:

- | | |
|-----------------------|--|
| Dimensions | 980X560X960 mm or smaller |
| Weight | 156 kg |
| Drive | 2 Cylinder 4 stroke gasoline engine 13.2 kW |
| Start | Electric; Recoil rope for emergency starts |
| Pump | 200 or 250 bar, 20 to 50 microns mist, plunger type |
| Hose | 60 m high-pressure hose (600 bar) |
| Water Tank | <i>Integral</i> 125 liters (5") |
| Foam agent injection | - Serial |
| Extinguishing Pistol: | Duplex for Spray & low expansion foam, or
Triple Rapid Attack for spray, throw & low expansion foam |
- Medium Expansion Attachment for 40 – 100 times foam expansion rate
 - Gasoline, Diesel, Electric Drives; and other options.
 - **ALSO EXPLOSION-PROOF FOR OIL & GAS or VOLATILE AREAS**



Biological oil removal agent



SUGGESTED ACCESSORIES



SLUDGE PUMP ATTACHMENT

For emptying pools of water or sludge from 5 meters below through a 1 1/2" hose. Particles / stones of up to 20-mm will also be sucked out!



FOG NAIL

For use on fires behind false ceilings without waiting to tear the ceiling down. Also for fires in cotton bales, etc.



'TRIPLEX' ASSAULT GUN

Just rotate to change from 'mist' to 'foam' to 'throw'.

**One of the best ways to fight fires
is to have an
*“Effective First Response System –
‘in-house’.”***

OERTZEN®

Thank you!