



**SCDF**  
The Life Saving Force

# Kitchen Exhaust Duct (KED) Requirements



# Scope :

- Objectives
- Introduction
- Fire Safety Concerns
- KED Requirements
- Enforcement
- Conclusion



# Objectives

- Why we need to impose requirement on KED?
- How it is related to FSM?



# Introduction

- **Fire Safety Investigation**



Blk 851 Jurong West Street 81, COFFEE SHOP ON FIRE !.mp4

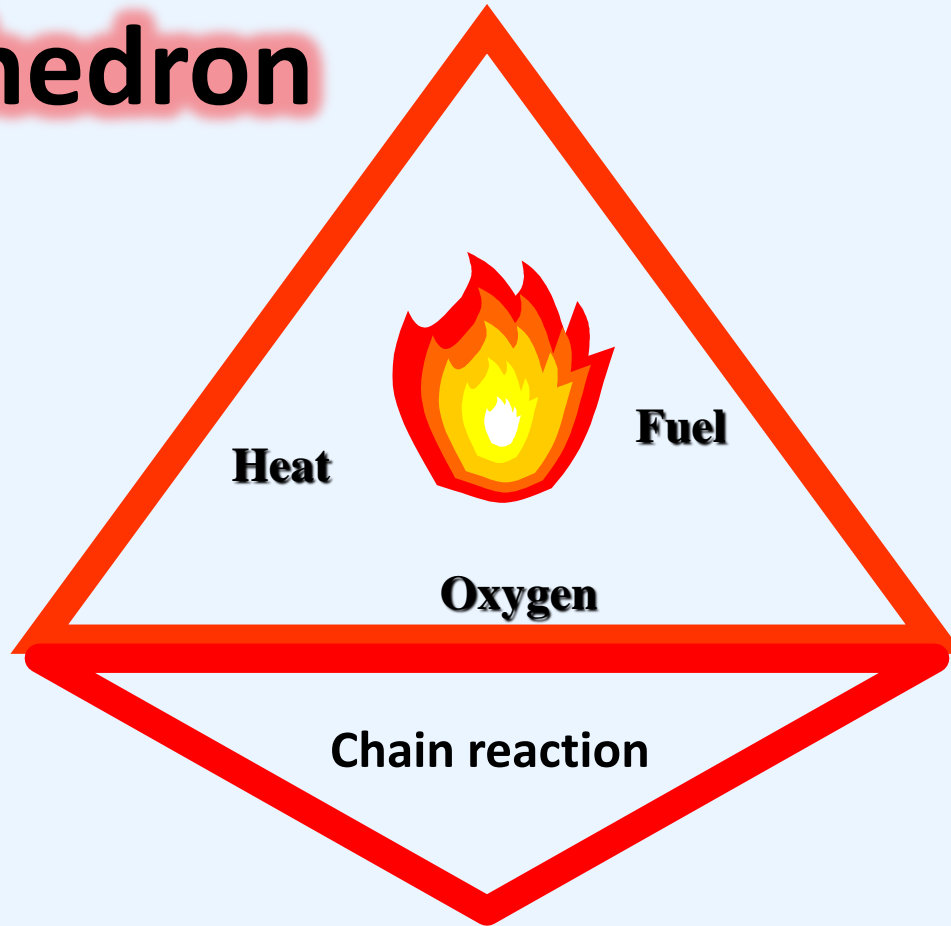
Source of video : YouTube

# Why Fire Occurred ?

- Grease accumulation
- Fire tetrahedron



# Fire Tetrahedron

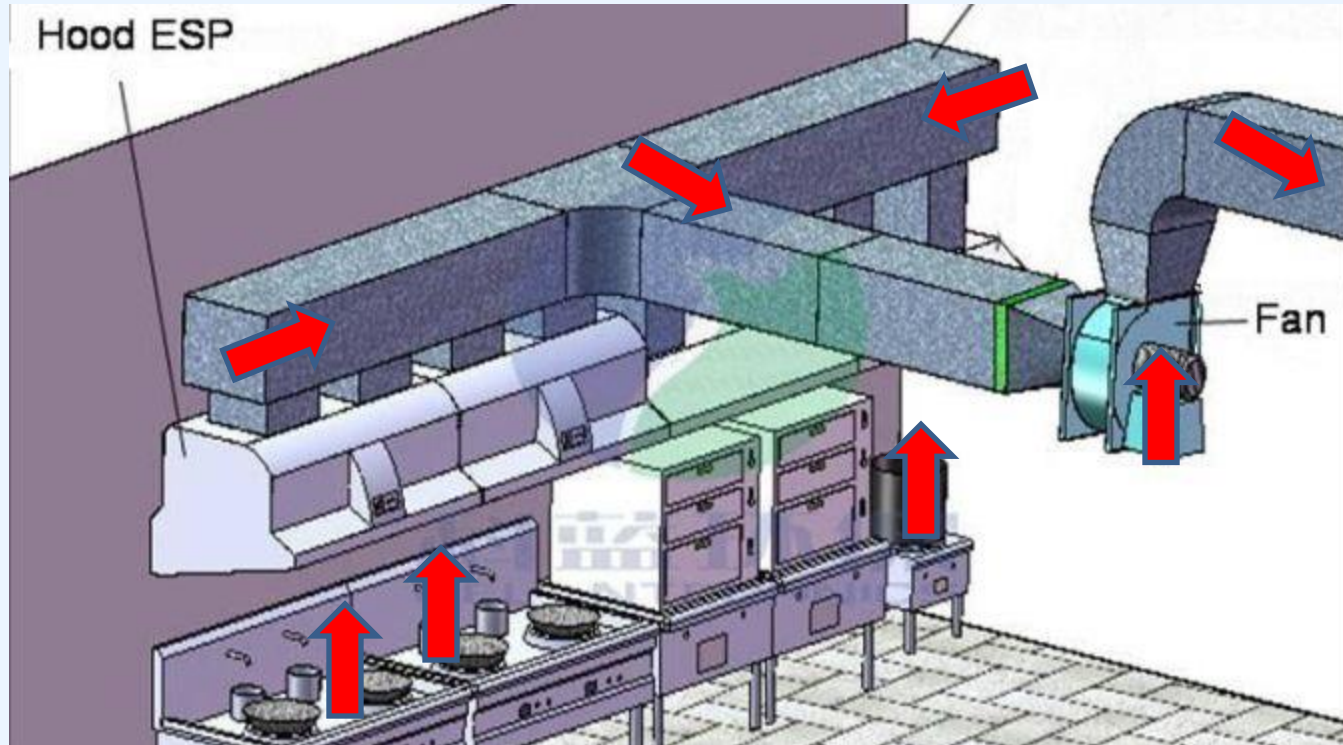


# Common Causes of Fire

- Unattended cooking
- Malfunction of cooking equipment
- Tossing cooking style
- Over heated cooking



# Where is the Grease Residual ?





# Fire Safety Concerns

- Why is there a need for such requirements?
- What are the concerns?



# KED Fires Statistics (2009-2015)

2009	2010	2011	2012	2013	2014	2015
12	15	16	12	16	18	21





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Burnt  
Through

LPG  
storage  
Cabinet

Picture taken within the unit, looking at the burnt-through-duct



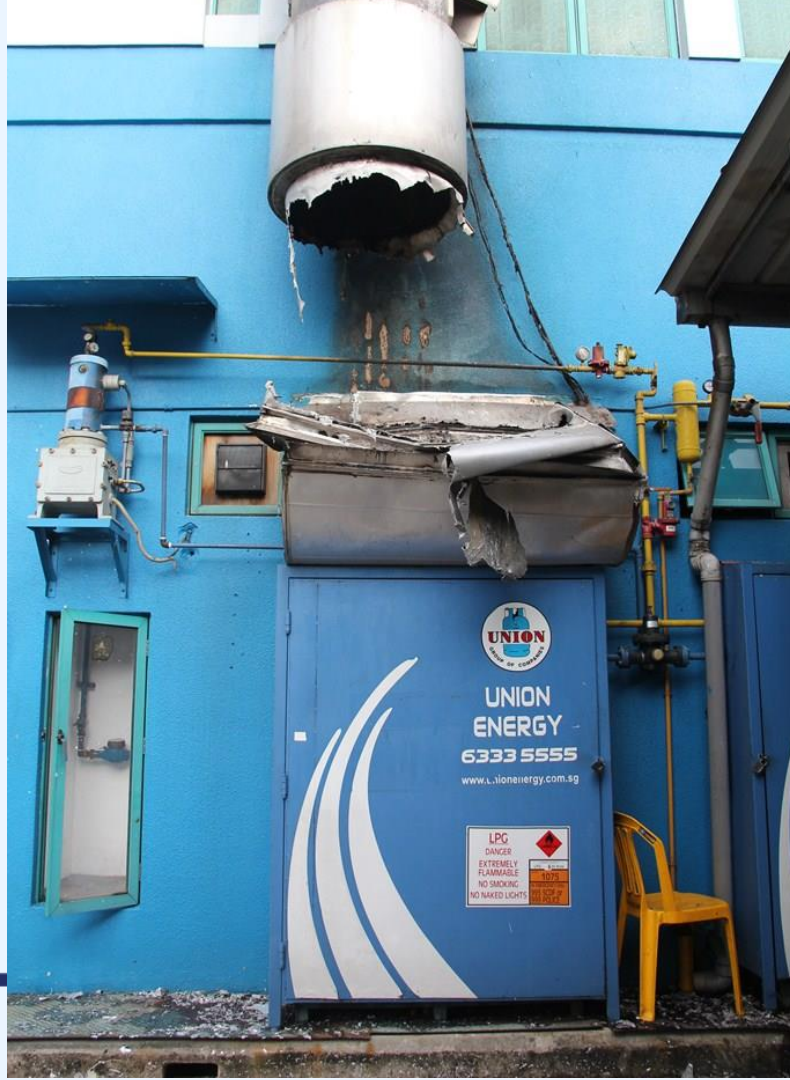
**HDB's unit  
window to  
KED - 300mm**





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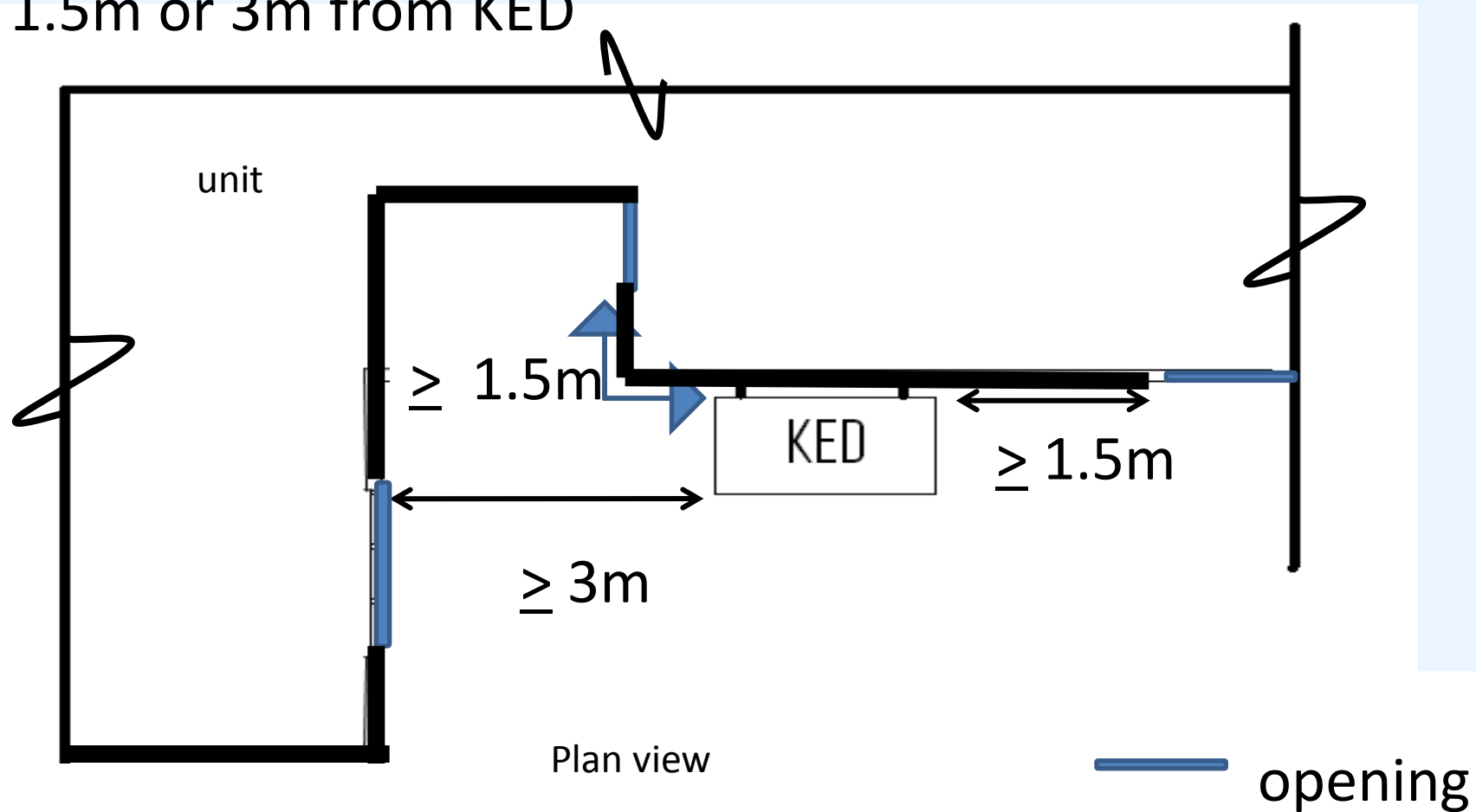


# KED Requirements

1. Setback is needed from the KED when it runs outside an eating establishment/industrial unit.



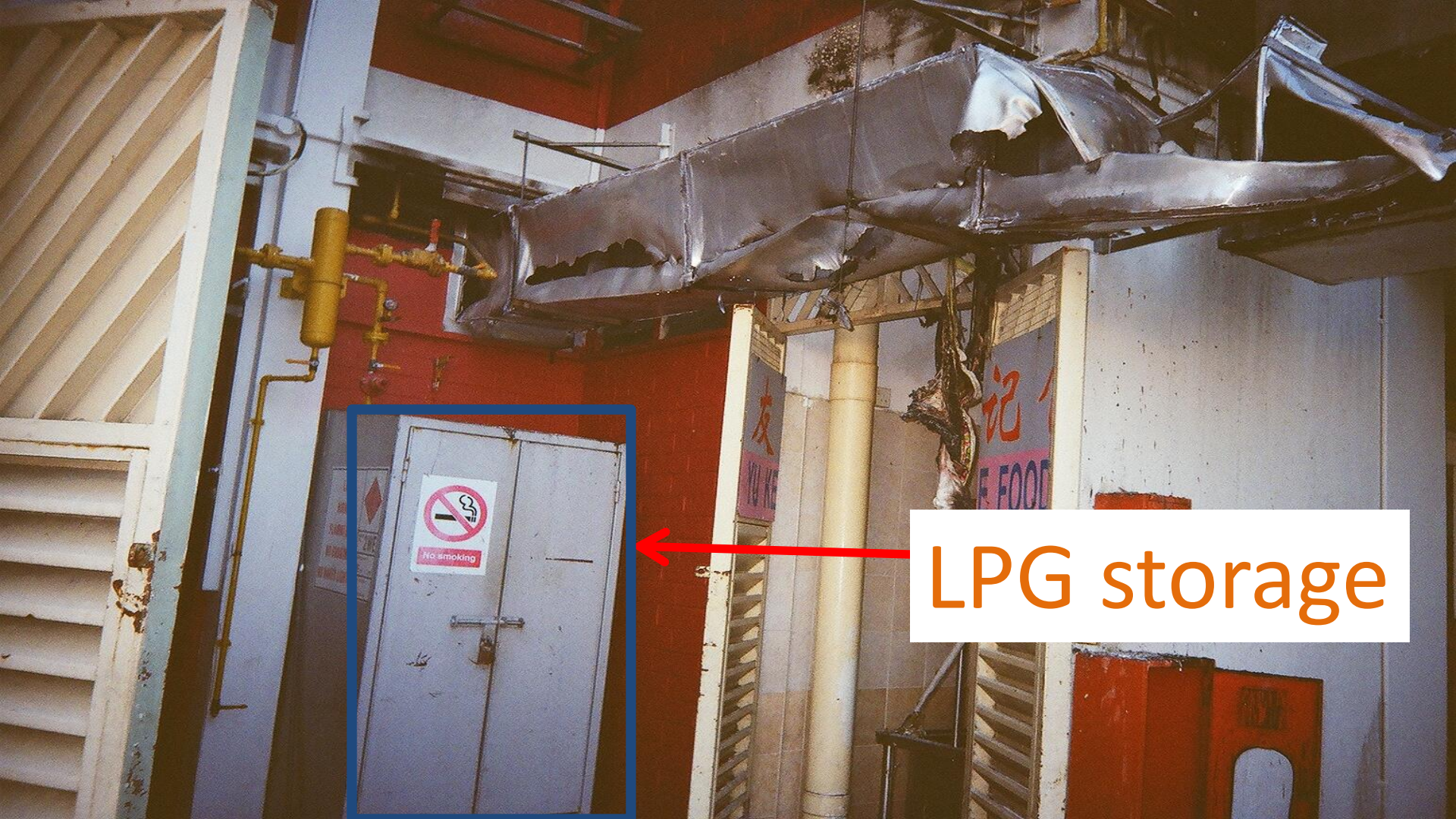
- No unprotected openings of occupied area within 1.5m or 3m from KED



# KED Requirements

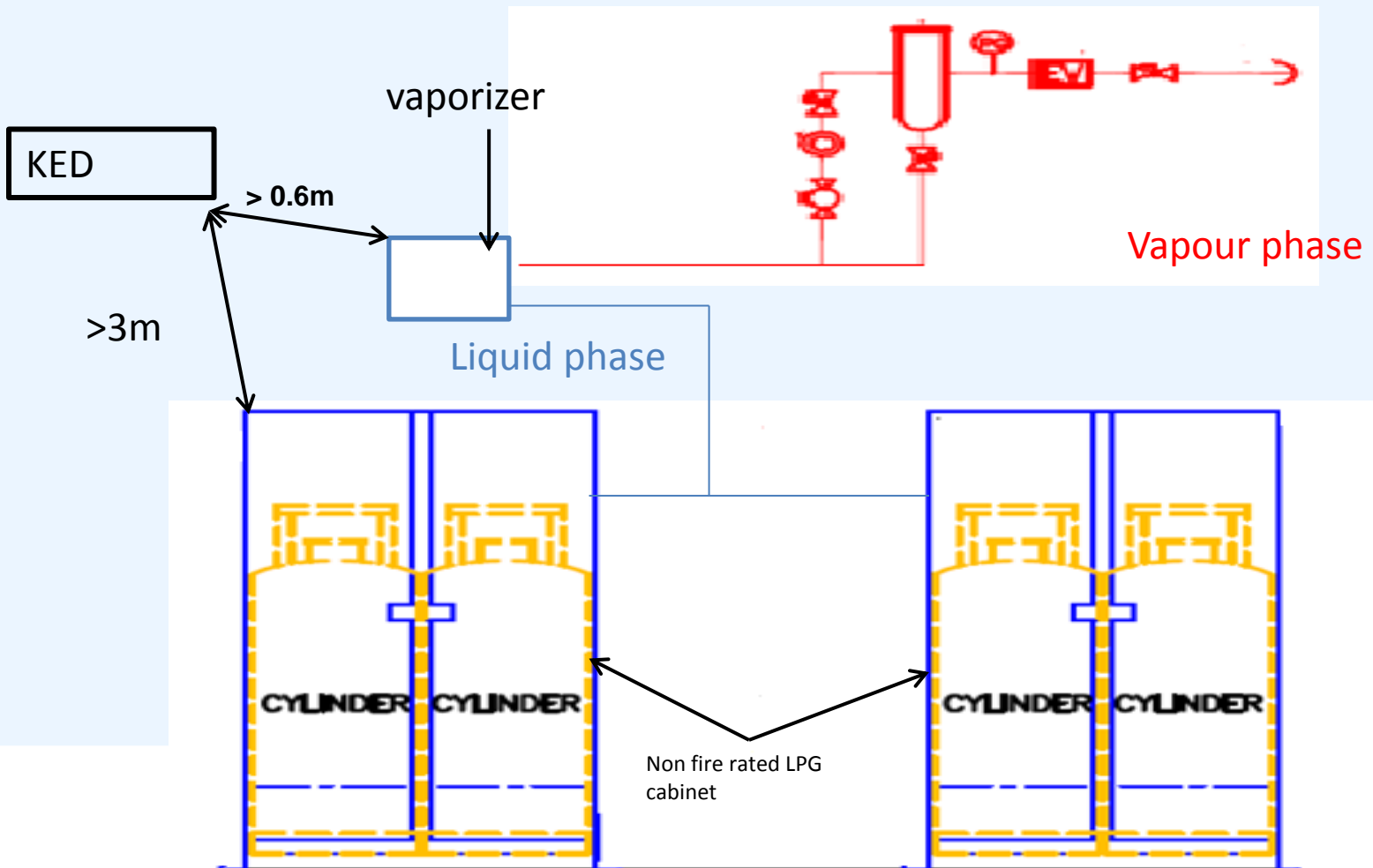
- 1. Setback is needed from the KED when it runs outside an eating establishment/industrial unit.**
- 2. Non fire rated KED shall be located minimum 3m away from LPG cylinders and pipe work. It shall not be located directly above LPG storage cabinet.**





LPG storage





# KED Requirements




- 1 Setback is needed from the KED when it runs outside of an eating establishment/industrial unit.
- 2 Non fire rated KED shall be located minimum 3m away from LPG cylinders and pipe work. It shall not be located directly above LPG storage cabinet.

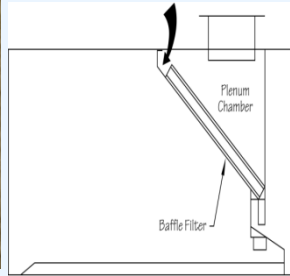
**3 The exhaust ducts and kitchen hoods (*including the interior*) shall be degreased and cleaned at least once every 12 months. The work shall be carried out by a specialist and the records of cleaning and degreasing shall be kept by the owner/operator for verification by relevant authority.**



# Maintenance Guide

- “When” to clean & “Where” to measure

Standard	When should Duct be to Clean	Acceptable cleanliness	Instrument
NFFPA 96 (US)	Average thickness of surface grease > <b>2000 <math>\mu\text{m}</math></b> (0.078 inch/0.19812mm )	< 50 $\mu\text{m}$ (0.002 inch/ 0.0508mm)	  Depth Gauge Comb
TR 19 (UK)	Average thickness of surface grease > <b>200 <math>\mu\text{m}</math></b> (0.0078 inch/0.19812mm)	< 50 $\mu\text{m}$ (0.002 inch/ 0.0508mm)	 Wet Film Thickness Gauge



- Where to measure, where practicable**
- (1) Canopy / Extract plenum behind filters
  - (2) Duct 1 metre from canopy
  - (3) Duct 3 metre from canopy
  - (4) Duct midway between canopy and fan
  - (5) Duct upstream of fan
  - (6) Discharge duct downstream of fan

# Tell-tale Sign

Leaking Hood – 2 nos of large plastic containers placed under the hood to collect grease.





# Telltale sign

Leaking Ducts  
(running above  
kitchen area) -  
Plastic bottles  
placed under  
the duct to  
collect grease.



# CODE OF PRACTICE FOR ENVIRONMENTAL HEALTH

## 3.3 Ventilation And Air Exhaust Systems

The ventilation and air exhaust systems in a food shop, including the kitchen, shall be designed and operated in accordance to the requirements set out here:

**(e) There shall be regular cleaning and maintenance of the exhausts.**



# NEA's ADVSIORY, JAN 2015

The screenshot shows the NEA website interface. At the top, there is a navigation bar with the NEA logo and the Singapore Government logo. Below this is a search bar and a menu with categories like Weather & Climate, Public Health, Anti-Pollution & Radiation Protection, Energy & Waste, Events & Programmes, Grants & Awards, Training & Knowledge Hub, and Services & Forms. The main content area is titled "Advisories For NEA Food Establishment Licenses" and features a sub-heading "FIRE SAFETY ADVISORY TO PERFORM REGULAR MAINTENANCE OF EXHAUST DUCTING". The text discusses fire incidents in coffee shops and advises on regular maintenance of exhaust systems. A sidebar on the left lists various public health topics, with "Advisories For NEA Food Establishment Licenses" highlighted. The page concludes with a "Thank you" message and a "Back to Top" link.

http://www.nea.gov.sg/public-health/food-hygiene/a... Advisories For NEA Food Es... x

Suggested Sites Scanner HCMS ACE BLS EEMS Google Korea IERSS Hawker Centres Manage...

National Environment Agency  
Safeguard • Nurture • Cherish

Singapore Government  
Integrity • Service • Excellence

Within NEA Search

About NEA Career Newsroom Feedback Sitemap **FAQS** Contact NEA

Weather & Climate Public Health Anti-Pollution & Radiation Protection Energy & Waste Events & Programmes Grants & Awards Training & Knowledge Hub Services & Forms

Smoking

**Food Hygiene**

- Food Hygiene Standards in Singapore
- Information on Food Safety Management System
- Food Hygiene Practices & Guidelines
- Information for Food Handlers
- Information of Food Hygiene Officer
- Straight A's Programme For School Canteens and Food Courts
- Code of Practice on Environmental Health
- Advisories For NEA Food Establishment Licenses**

Hawker Centres

Vector Control

Public Toilets

Public Cleanliness

Potable Water Management

Port Health

Home > Public Health > Food Hygiene > Advisories For NEA Food Establishment Licenses

## Advisories For NEA Food Establishment Licenses

### FIRE SAFETY ADVISORY TO PERFORM REGULAR MAINTENANCE OF EXHAUST DUCTING

SCDF has shared with NEA that every year, there are numerous fire incidents in coffee shops. During the investigation of these fires, the Singapore Civil Defence Force (SCDF) has attributed the fires to excess grease build up cause by poor maintenance of the Kitchen Exhaust systems and the exhaust ducting.

The SCDF advised that these fires can be prevented through regular maintenance of the exhaust systems and ducting. The National Environment Agency (NEA) would like to remind all licensees to ensure that all the exhaust systems and its ducting are maintained at least once a year. During NEA inspections, our officers will check that all equipment, including exhaust system and its ducting, used at your premises are maintained regularly and in good working order. You are also advised to retain the maintenance invoice for verification purposes

We seek your co-operation on this issue. Please contact NEA Call Centre at 1800-2255632 or [Contact\\_NEA@nea.gov.sg](mailto:Contact_NEA@nea.gov.sg) if you have any queries or would like to report such incidents.

Thank you

[Back to Top](#)

# ENFORCEMENT

- ✓ **NFSOs (not FHAN)– fine, court action for non compliance to the SCDF Fire Safety Circular – if operators fail to see that the exhaust ducts (including the interior) and kitchen hoods be degreased and cleaned at least once every 12 months**
- ✓ **The cleaning and maintenance of KED once in 12 months apply to all KED**



# Insurance Matter

- We engaged General Insurance Association (representing 35 insurance companies)
- They informed that they may not specifically ask for KED maintenance/cleaning records at point of insurance contract
- However, owners are expected to follow the regulatory requirement on cleaning and degreasing.



# Conclusion

With the requirements imposed on unprotected opening and degreasing, we can reduce the probability of fire spread through ducting and reduce kitchen exhaust duct fire.

