

**CONCORDE HOTEL, SHAH ALAM, SELANGOR****5 OCTOBER 2017 (THURSDAY)****KSL HOTEL & RESORT, JOHOR BAHRU****31 OCTOBER 2017 (TUESDAY)****OVERVIEW**

The Department of Standards Malaysia (Standards Malaysia) a government agency under the Ministry of Science, Technology and Innovation (MOSTI) has established the Working Group (WG) for the Flammable Refrigerant System. The group has developed MS 2678:2017 Flammable Refrigerant System – Code of Practice which will be the guideline for stakeholders and industries for the usage of the flammable refrigerants including design, construction, testing, marking, documentation, installation site, operation, maintenance, repair and recovery in the air conditioning and refrigeration sector.

Nowadays, air conditioning and refrigeration are the most important appliances in Malaysia for comfort, precision use and etc. The working fluids in the refrigeration system are fluorocarbon based (R22, R134a, R410a, R404a) which are well known ozone depleting potential (ODP) and/or global warming potential (GWP) substances. As an alternative, the HVAC industry has looked towards new refrigerants with zero ODP and lower GWP. These new refrigerants can deliver good energy efficiency with potential energy savings but tend to have flammable issues associated with their physical and chemical characteristics as well as pressure and temperature of system during operation.

Hence, there is need to mitigate the possible hazard to persons, property and the environment from refrigerating system using such flammable refrigerants. Recognising this situation, Standards Malaysia has gathered experts in the field to develop Malaysian Standards (MS) 2678: 2017, Flammable Refrigerant System- Code of Practice. This MS specifies the requirement for the safety of person and property, handling requirement for certified personnel, provide guidance for the protection of the environment, procedures for the design, construction, testing, marking, documentation, installation site, operation, maintenance, repair and recovery in the air conditioning and refrigeration sector in Malaysia.

**OUR OBJECTIVES**

- ◆ To provide knowledge about the needs toward using the flammable refrigerant system in Malaysia.
- ◆ To apply the Malaysian Standard, MS 2678:2017 in real application of flammable refrigerants.
- ◆ To encourage participation from the private and public sectors in standardising activities related to use of flammable refrigerant .

Supported by:



Centre of Skills Excellence in  
HVAC Technology  
Industrial Training Institute  
Kepala Batas Penang  
Manpower Department  
Ministry of Human Resources  
Malaysia



Fire and Rescue  
Department of  
Malaysia



Malaysia Air Conditioning &  
Refrigeration Association

Time	Subject
8.30 am	Registration
9.00 am	<b>Opening Remarks</b> YBhg. Datuk Fadilah Baharin Director General, Department of Standards Malaysia
09.15 am	<b>Paper 1: Working on Flammable Refrigerant-Advice to Safety Precaution and Practice in Malaysia</b> Yg. Brs Dato' TPjB Haji. Zurkarnain Mohd Kassim Jabatan Bomba dan Penyelamat Malaysia Member of Working Group on Flammable Refrigerant System
10.00 am	<b>Tea Break</b>
10.30 am	<b>Paper 2: Overview of MS 2678:2017 -Code of Practice</b> Ir. Chen Thiam Leong ASHRAE Malaysia Chapter Chairman of Working Group on Flammable Refrigerant System
11.30 am	<b>Paper 3: MS 2678:2017-General Design, Installation &amp; Operation</b> Ir. Au Chong Hun Association of Consulting Engineers Malaysia Member of Working Group on Flammable Refrigerant System
12.15 pm	<b>Paper 4: MS 2678:2017-Maintenance Practice, Training and Certified Personnel</b> Mr. Azman Hussin Institut Latihan Perindustrian, Kepala Batas, Penang Member of Working Group on Flammable Refrigerant System
1.00 pm	<b>Lunch</b>
2.15 pm	<b>Paper 5: Flammable Refrigerant Properties</b> Mr. Mohd Zaki Mohamed University Kuala Lumpur Malaysia Member of Working Group on Flammable Refrigerant System
3.00 pm	<b>Paper 6: Case Study of A2L Class Flammable Refrigerant Split Unit System</b> Dr. Chin Wai Ming DAIKIN Research & Development (M) Sdn Bhd Member of Working Group on Flammable Refrigerant System
3.45 pm	<b>Paper 7: Case Study of A3 Class Flammable Refrigerant Chiller System</b> Mr. Ng. Siek Khai ENER-SAVE Sdn Bhd Member of Working Group on Flammable Refrigerant System
4.15 pm	<b>Q&amp;A Session</b> Moderator: Ir. Chen Thiam Leong Panelist: All Speaker
4.30 pm	<b>Refreshment and End of Seminar</b>

**WHO SHOULD ATTEND**

**Manufacturer / Traders / Contractors / Engineers**  
**Enforcement Bodies / Government Agencies / Academia**

Login to register: [www.sirimsts.my](http://www.sirimsts.my)/Fax: 60 3 5510 8830Tel: 60 3 5544 6329/ [zarinahb@sirim.my](mailto:zarinahb@sirim.my)Tel: 60 3 5544 6311 / [zakiiah@sirim.my](mailto:zakiiah@sirim.my)Tel: 019-5589052 / [zamzuri@jtm.gov.my](mailto:zamzuri@jtm.gov.my)Tel: 019-4140994 / [sofiuddin@jtm.gov.my](mailto:sofiuddin@jtm.gov.my)Tel: 019-4427581 / [erwandy@jtm.gov.my](mailto:erwandy@jtm.gov.my)**FEES:**

RM 200/pax

(Includes a copy of MS 2678:2017)





## SPEAKERS PROFILE



TPJB Dato' Haji Zurkarnain Bin Mohd Kassim is an Assistant Director General of Fire Operation and Rescue Division, Fire and Rescue Department of Malaysia, Putrajaya. He graduated from University of Malaya with Degree in Chemical Engineering and further his study at Ulster University, United Kingdom in Fire Safety Engineering. He began his carrier with Fire and Rescue Department of Malaysia as a Fire Superintendent Officer. Along his career in the Department, Dato Haji Zulkarnain has been acting as a Commandant of Fire Training Centre, Head of Fire Prevention Division, Director of Malaysian Fire Rescue at Kedah and Perak State, Head of Operation Division, Head of Training Division and Head of Planning and Research Division. When flammable refrigerant was introduced by industries as a cooling agent in air conditioning system, Dato Haji Zurkarnain presently acting as a Head of Planning and Research Division. Therefore, he was appointed to do a research about the flammability and safety. He has initiate SIRIM and Department of Standard Malaysia to develop a Malaysia Standard and joined as a Working Group member for the Malaysian Standard on Flammable Refrigerant System-Code of Practice.



Ir. Chen Thiam Leong is a building services consultant with 40 years' experience and is involved in the development of numerous Malaysian Standards. He served in various National Steering Committees on Energy, Photo-voltaic & CFCs and acted as a National Expert on HCFC Phase-Out. Ir. Chen regularly lectures in the international circuit under the ASHRAE Distinguished Lecturer Program and first introduced Hydrocarbon refrigerants to the local industry in 2000. Ir. Chen is a Past President of ACEM, IFEM and ASHRAE Malaysia Chapter, and is Advisor to MACRA and BASAM. In recognition of his contribution to the engineering fraternity, Chen was honoured with the ACEM Gold Medal Award in 2010.



Ir. Au Chong Hun is a building services consultant and holds an Honours Degree in Mechanical Engineering from University of Malaya. He has diverse experience in a wide range of projects such as offices, institutional building, university campus, residential developments, mall, museum, warehouse, factories and infrastructure planning. He has also successfully led the implementation of sustainable strategies for a number of GBI Platinum and Gold buildings. He is a member in the Technical Committee for Fire Properties of Building Material and a Working Group member for the Malaysian Standard on Fixed Aerosol Fire Extinguisher System and Flammable Refrigerant System-Code of Practice.



Mr. Azman Hussin is a Head of Centre of Skills Excellence in HVAC Technology, Industrial Training Institute, Manpower Department Ministry of Human Resources, Kepala Batas Penang. He has 13 years teaching experience in HVAC skills technology and some years working experiences with HVAC industries. He holds a M. Sc in Renewable Energy (UKM), B. Eng (Hons) in Mechanical Engineering (UTM) and Diploma in HVAC (MFI). In 2014, he has been trained at Germany and certified to handling the natural refrigerants including flammable refrigerant such as propane and isobutene by Deutsche Gesellschaft für Internationale Zusammenarbeit (**GIZ**) in cooperation with the Bundesfachschule Kälte-Klima-Technik (BFS), Germany. With the experience, he has regularly conducted the training to certified personnel in handling flammable refrigerants at Industrial Training Institute Kepala Batas. He also appointed as an advisor to Japanese Natural Refrigerant Study Organization from Tokyo, Japan, and flammable refrigerant working group by SIRIM Malaysia.



Mr. Mohd Zaki has 22 years experience in Mechanical Engineering Technology Education & Technical Vocational training with hands-on in Air Conditioning and Refrigeration industries. He also involved in installation and design of various types of systems, training modules developer and panel expert at international level. He graduates from French Institute of Industrial Refrigeration and HVAC, Conservatoire National des Arts et Métiers (IFFI CNAM) Paris, France with Bachelor Degree major in Design, implementation and maintenance of refrigeration and climate. He involve in phase out HCFC in Malaysia, acting as a Master Trainer by the Department of Environment Malaysia. Presently, he is a Section Head of HVAC Department, University Kuala Lumpur MFI.



Dr. Chin Wai Ming has been with the Japanese Air conditioner R&D Centre for the past 27 years where his expertise is in the performance and reliability testing of air conditioning units. He also has experience in the design and construction of psychrometric test laboratories. Presently, he is in charge of leading the Development Support Division which provides support services to the Product Development activities in the company. He has graduated from University Malaya with a Bachelor's degree in Mechanical Engineering in 1990, and has obtained his PhD doctorate from University Technology Petronas in 2011. He was also appointed as the Technical Consultant to the Technical Working Group on APEC-ASEAN Harmonization of Energy Efficiency Standards for Air-conditioners in 2013. He has also contributed in the Working Group to revise Malaysian Standard MS1525: 2012 and MS 5151: 2011. In 2016, he was appointed by SIRIM as a member of the Working Group to draft a standard on flammable refrigerants MS 2678: 2017.



Mr. Ng Siek Khai is a building service contractor since 2008. He involved in green energy and sustainable activity in Malaysia, Japan and South Korea. He has experience in design and built Hydrocarbon Scroll Chiller for Medical Factory used in Malaysia and energy saving plan for hydrocarbon refrigeration system. He was appointed by SIRIM as a member of the Working Group to draft a standard on flammable refrigerants MS 2678: 2017.

# REGISTRATION FORM

## SEMINAR ON MS 2678:2017

### FLAMMABLE REFRIGERANT SYSTEM –CODE OF PRACTICE

**CONCORDE HOTEL, SHAH ALAM, SELANGOR**

**5 OCTOBER 2017 (THURSDAY)**

Closing Date: 3 October 2017 (Tuesday)

**KSL HOTEL & RESORT, JOHOR BAHRU**

**31 OCTOBER 2017 (TUESDAY)**

Closing Date: 27 October 2017 (Friday)



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Trader		Enforcement Body		Government Agency		Others	

PARTICIPANT(S)						
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1.				<input type="checkbox"/>	<input type="checkbox"/>	
2.				<input type="checkbox"/>	<input type="checkbox"/>	
3.				<input type="checkbox"/>	<input type="checkbox"/>	

**FEES: (RM 200/pax) Includes a copy of MS 2678:2017, seminar material, certificate of attendance, refreshment and lunch .**

\*Price is exclusive 6% GST

Managed By:

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Date: .....

Official Organisation  
  
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**Limited Seats**



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