



Malaysia

Kawalselia Keselamatan Kelengkapan Elektrik

Seminar Mempertingkatkan Keselamatan Elektrik
Secara Berkesan 2018

by
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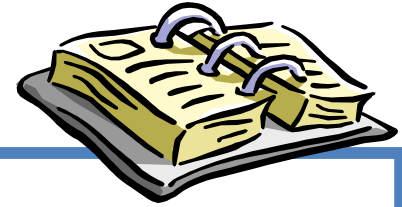
- Malaysian's Legislations on Electrical Appliances
- Regulated Electrical Appliances
- Process Flow for The Importation of Electrical Appliances
- Regulatory Requirements related to National Differences
- Statistics
- Challenges to Ensure Safety of Electrical Appliances
- Penalty

Roles of Energy Commission (EC) - as a Regulator of EEE

Safety Regulation

- To protect the public from dangers arising from the generation, transmission, distribution and supply and use of electricity and the supply and use of piped gas.

Act & Regulation



- Sec 4(l), Electricity Supply Act 1990 – to prescribe the minimum standards & specifications & appraise & approve, where necessary, any electrical installation or equipment;
- Regulation 97(1), Electricity Regulations 1994 – Certificate of Approval is required to manufacture, import, display, sell or advertise for electrical equipment;
- Regulation 98, Electricity Regulations 1994 – Marking or labelling of approved equipment; and
- Schedule IV, Part II, Customs (Prohibition of Imports) Order 2012, Customs Act 1967 – List of electrical goods that required EC permit.

Under the Malaysian Electricity Regulations 1994

- ❖ A **Certificate of approval (COA)** is required for the importation or manufacturing of electrical appliances or equipment.



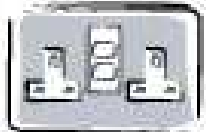



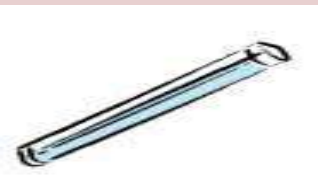

The type of appliances or equipments refer to are as follows:

- any domestic equipment;
- any low voltage equipment which is usually sold direct to the general public; or
- any low voltage equipment which does not require special skills in its operation,

- ❖ **Approved electrical appliances or equipment are required to be affixed with safety labels before being sold to public.**

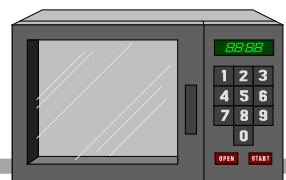


List of 34 Categories of Electrical Appliances Requiring CoA & Labeling


No	Category Equipment	National Standard
1.	Plug Top /Plug 	MS 589-1, 1577, 1578 MS IEC 60320-1,-2-2 MS 589-3, 1144 MS IEC 60998-1,-2-1,-2-2,-2-3,-2-4, MS 1873, -22
2.	Switch & Dimmer 	MS IEC 60669-1,-2-1,-2-2,-2-3 MS IEC 61558-1,-2-8
3.	Socket Outlet 	MS 589-2, 1577, 1579, 1141 MS IEC 61558-1, -2-5
4.	Lampholder / StarterHolder 	MS IEC 60400
5.	Ceiling Rose 	MS 770, MS IEC 60238
6.	Bayonet Cap & Multiways Adaptor 	MS 769, IEC 61184
7.	Lamp fitting  	MS IEC 60598-1,-2-1,-2-2 MS IEC 60155, 60968, 60969 MS IEC 61347-1,-2-13 MS IEC 60838-1,-2-2 MS IEC 62031,62776,62560

List of 34 Categories of Electrical Appliances Requiring CoA & Labeling

No	Category Equipment	National Standard
8.	Capacitors for fluorescent lamp	MS IEC 61048, 61049
9.	Ballasts / Control Gear	MS IEC 61347-1, -2-3, -2-8, MS141-2, MS IEC 60929, 61000
10	Circuit breaker:- RCD, MCB, Fuse	MS IEC 61008-1,-2-1, -2-2 MS IEC 61009-1,-2-1, -2-2 MS IEC 60898-1,-2, MS IEC 60269-1,-2,-3 MS IEC 60947-1, -3
11	Portable Luminaire Lamp	MS IEC 60598-1, -2-4, -2-8, -2-12
12	Kettle including heating element	MS IEC 60335-2-9,-2-12,-2-13, -2-15,-2-36 MS 1597-2-21,24,35
13	Kitchen Machine -Food mixer/blenders	MS IEC 60335-1, -2-14
14	Toasters / Oven	MS IEC 60335-1, -2-6, -2-9, -2-25



List of 34 Categories of Electrical Appliances Requiring CoA & Labeling

No	Category Equipment	National Standard
15	Rice Cooker 	MS IEC 60335-1, -2-15
16	Refrigerator 	MS IEC 60335-1, MS 1597-2-24
17	Immersion Water Heater	MS IEC 60335-1, -2-73, -2-74
18	Water Heater – Storage / Instantaneous	MS IEC 60335-1 MS 1597-2-35, -2-21
19	Washing Machine 	MS IEC 60335-1, -2-4, -2-11, -2-43 MS 1597-2-7, -2-5
20	Fan 	MS IEC 60335-1, -2-31, -2-65, -2-98 MS 1597-2-80, MS 1220
21	Hand Operated – Hairdryer/Skin Care 	MS IEC 60335-1, -2-23
22	Iron 	MS IEC 60335-1, -2-3, -2-85
23	Shaver 	MS IEC 60335-1, -2-8
24	Vaporiser - Mosquito mat / Aroma 	MS IEC 60335-1, -2-101
25	Vacuum Cleaner 	MS IEC 60335-1, -2-2

List of 34 Categories of Electrical Appliances Requiring CoA & Labeling

No	Category Equipment	National Standard
26	Hi – Fidelity set 	MS IEC 60065
27	Video & Visual Display Unit - TV 	MS IEC 60065
28	Audio & Video Player Unit – VCD, DVD 	MS IEC 60065
29	Massager 	MS IEC 60335-1, -2-32
30	Air Conditioner <32,000 btu/hr 	MS IEC 60335-1, MS I597-2-40
31	Christmas Light 	MS IEC 60598-1, -2-20
32	Domestic Power Tools 	MS IEC 60745-1, -2-1,-2-3,-2-4,-2-5,-2-7, -2-11, -2-14, -2-15, -2-17 MS IEC 60335-1, -2-79, -2-28, -2-45
33	Adapter / Charger 	MS IEC 60335-1, -2-29, -2-8 MS IEC 60950-1, 60065 MS IEC 61558-1, -2-6, -2-7, -2-17
34	Wires/Cables/Cords (0.5mm-35mm) 	MS 2112-2, -3, -4

REGULATORY REQUIREMENTS RELATED TO NATIONAL DIFFERENCES

shall be subjected to tests under tropical conditions as specified in the related standards

No	Items	Requirements
1	Nominal Voltages Low voltage supply	230/400V (+10%, -6%) - MS IEC 60038.
2	Nominal Frequency	50Hz is allowed to fluctuate at $\pm 1\%$
3	Plug Top	<p>3 Pole Power Plug MS 589 / BS 1363</p> <p>2 Pole Power Plug MS 1578 / BS EN 50075</p>
4	Power supply cord	<p>MS2112-5 or BS EN 50525-2-11 or IEC 60227-5 (PVC insulated – flexible cords) ;</p> <p>MS 2127-4 or BS EN 50525-2-11 or IEC 60245-1 & IEC 60245-4 (Rubber insulated - flexible cables/cords)</p>
5	Class I and class II Equipment	Fig.1 for Class I and Fig.2 for Class II as symbol.



Fig.1



Fig.2

No	Items	Requirements
6	Safety labels requirements	SIRIM-ST Label for Imported Equipment/PCS

a) Sticker Type



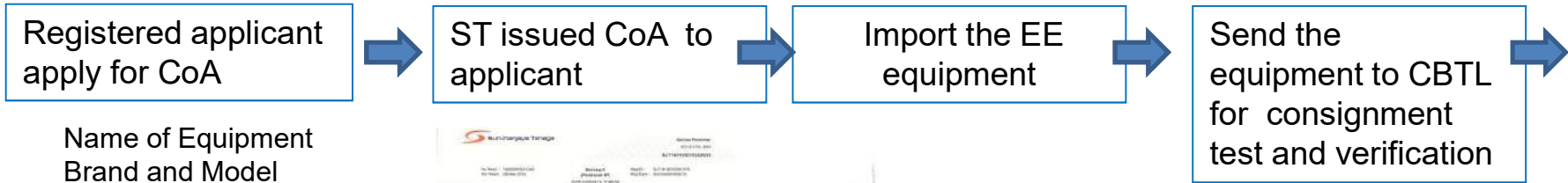
b) Emboss Type



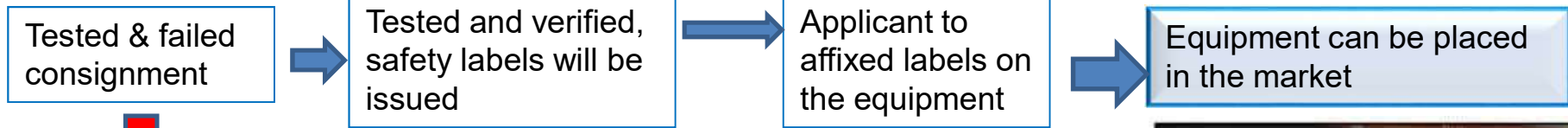
SIRIM
 CERTIFIED TO YY : XXXX
 CERTIFICATION NO:xxxxxxxx
 SIRIM-ST Label Licensing Programme

SIRIM Certification Mark

Process flow for the importation/manufacturing of electrical & electronic equipment



Name of Equipment
Brand and Model
Type test report



Return to origin /
dispose equipment



Recognised Test Report/ Certificate



Type test report shall be produced by any of the following laboratories:-

- ✓ Sirim Berhad / accredited lab under Laboratory Accreditation Scheme of Malaysia (SAMM) by DSM;
- ✓ Lab under IECEE CB Scheme which CB test report need to be accompanied by CB test certificate;
- ✓ Lab which are accredited by the accreditation body that have signed the APLAC MRA or ILAC MRA;
- ✓ Lab listed as Designated Testing Laboratory (DTL) under ASEAN EEE MRA

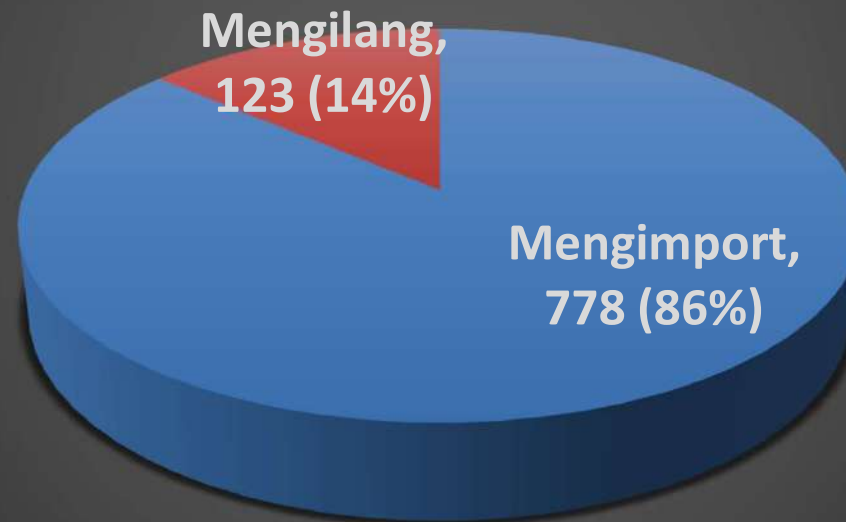
STATISTICS



Statistik Keseluruhan 2010-2017

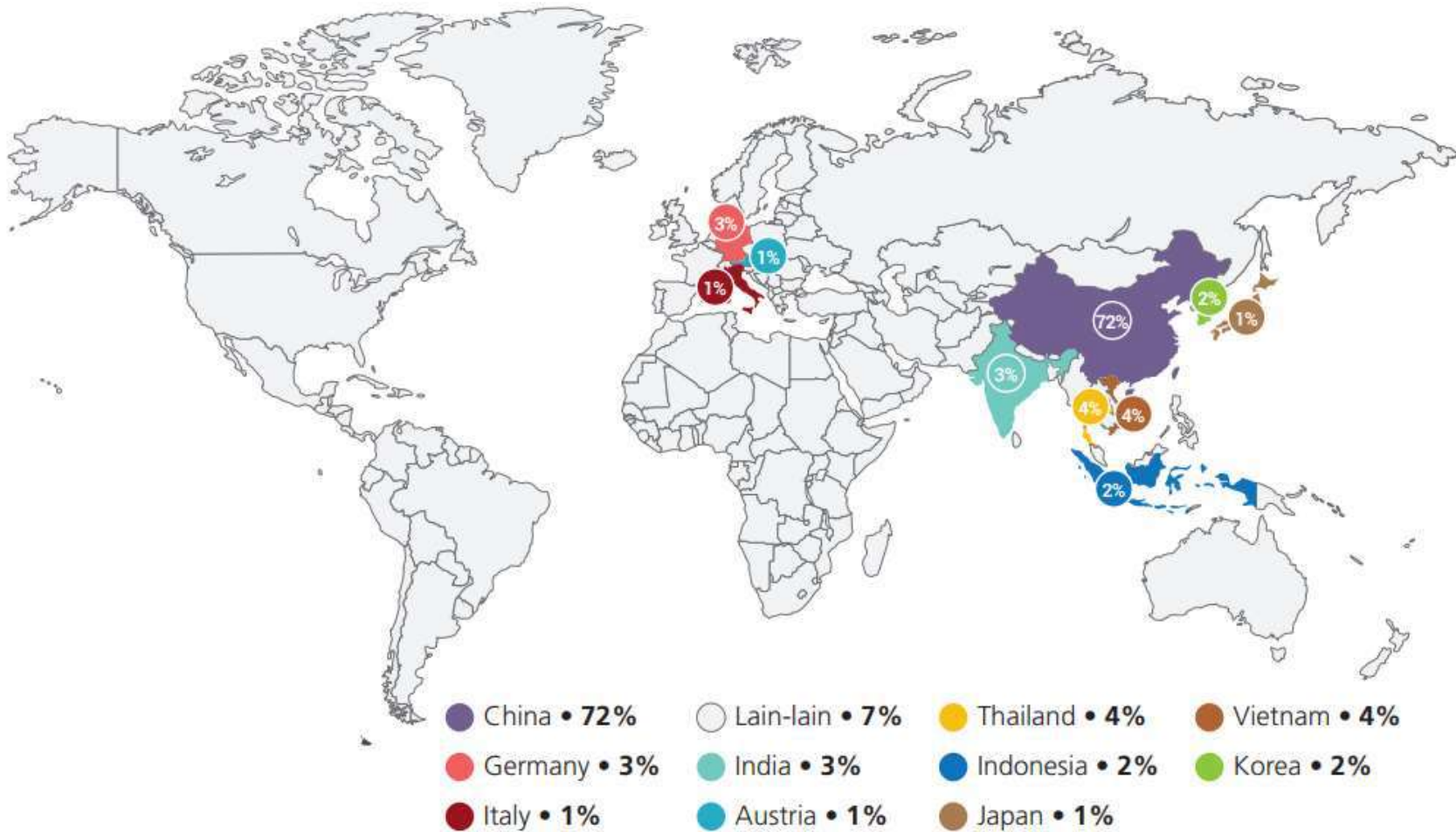
TAHUN	PERAKUAN KELULUSAN (PK)			Jumlah	PEMBAHARUAN (PK)		Jumlah	Surat Pelepasan
	Import	Kilang	Pameran		Import	Kilang		
2010	507	145	2	654	216	111	327	152
2011	3,557	1,186	36	4,779	1,846	818	2,664	859
2012	3,597	1,069	17	4,683	1,988	1,053	3,041	1,297
2013	5,447	1,276	6	6,729	1,923	926	2,849	1,820
2014	7,539	1,927	29	9,495	1,739	806	2,545	1,990
2015	7,415	1,413	62	8,890	3,015	1,304	4,319	2,048
2016	8,085	1,306	31	9,422	3,124	1,192	4,316	2,425
2017	7,324	1,304	16	8,644	3,487	1,323	4,810	2,933

Perakuan Pendaftaran Mengilang dan Mengimport Kelengkapan Elektrik tahun 2017

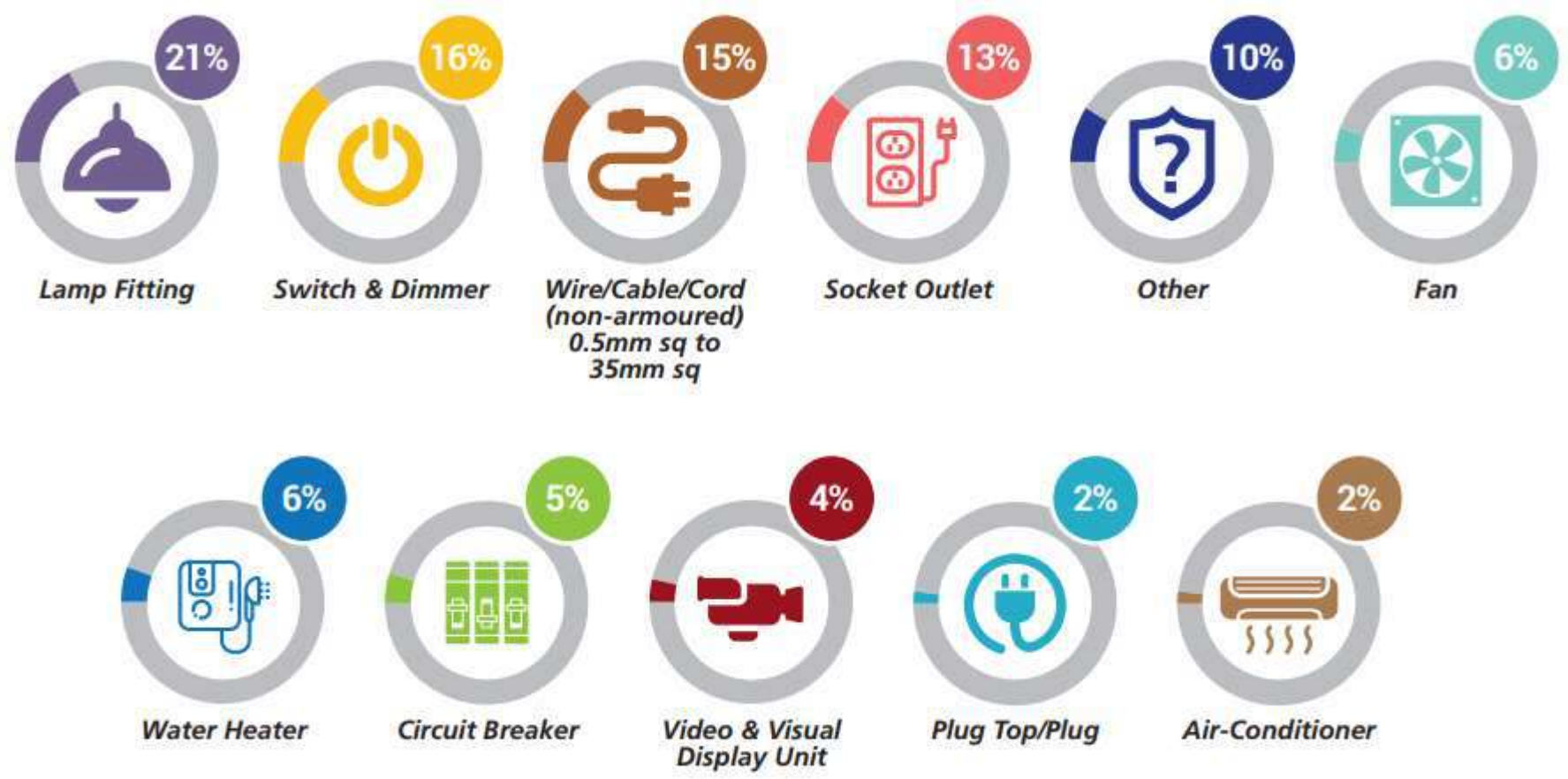


■ Mengimport ■ Mengilang

Negara-negara Pengimport Kelengkapan Elektrik Terkawal ke Malaysia bagi Tahun 2016



Peratusan Kategori Kelengkapan Elektrik yang dikilang di Malaysia bagi Tahun 2016



Challenges

- Different countries may required different set of supply parameter or national deviation (voltage, frequency and **plug top configuration**).



Item	Category	Detail of Equipment	Standards	
			Domestic	Relevant International
1	PLUG TOP/PLUG (15A and below)	Flat Non-Rewirable Two Pole Plug with supply cord (max. 2.5A)	MS 1578:2003	BS EN 50075:1991
		13 A Fused Plug	MS 589-1:2011	BS 1363:PT.1: 1995
		15 A Plug	MS 1577:2003	No corresponding international standard

Market Surveillance

- Sub-standard, counterfeit, unapproved electronic equipment or equipment with fake safety labels in the market may caused internal components overheated or harmful to users.



Approved label



Fake label



OPERASI PENGUATKUASAAN KELENGKAPAN ELEKTRIK DI KEDAI AKSESORI TELEFON



OPERASI PENGUATKUASAAN KELENGKAPAN ELEKTRIK DI KEDAI AKSESORI TELEFON



- Household electrical products which are normally connected to power socket outlet have become hybrid products which can be remotely controlled or operated by itself. Such products may fall under **electrical products, electronics products** or **communication products**.
- Thus, the hybrid product need to get the approval from 2 (two) authorities.



Vacuum cleaner

+

electronic devices = remote control machine



Disposal of Unsafe Electrical Equipment

- 1) Activity of disposal 100 units *Cordless Water Kettle* at Menglembu Perak on 28 September 2017





2) Disposal of 200 units *Rice Cooker* at Puchong, Selangor on 21 November 2017

3) Activity of disposal 10 units *Build-in oven* at Puchong on 24 January 2018





4) Activity of disposal 4 units *Washing Machine* at Petaling Jaya on 30 January 2018

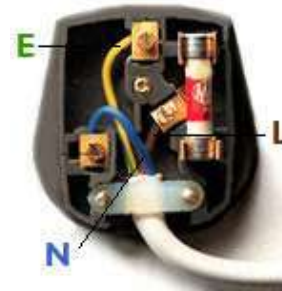
AVOID ELECTRICAL HAZARDS

- ♥ Knowing the electrical wiring code

LIVE (L) - Coklat

NEUTRAL (N) - Biru

EARTH (E) - Hijau / Kuning Hijau



- ♥ Obtain an electrical contractor registered with ST for additional works or repairs on the electrical wiring.

- ♥ Use approved and appropriate protection circuit breaker such as RCCB, RCBO & MCB.

- ♥ Ensure to purchase and use electrical equipment approved by ST and labelled with SIRIM-ST



SIRIM
CERTIFIED TO YY : XXXX
CERTIFICATION
NO:xxxxxxx
SIRIM-ST Label

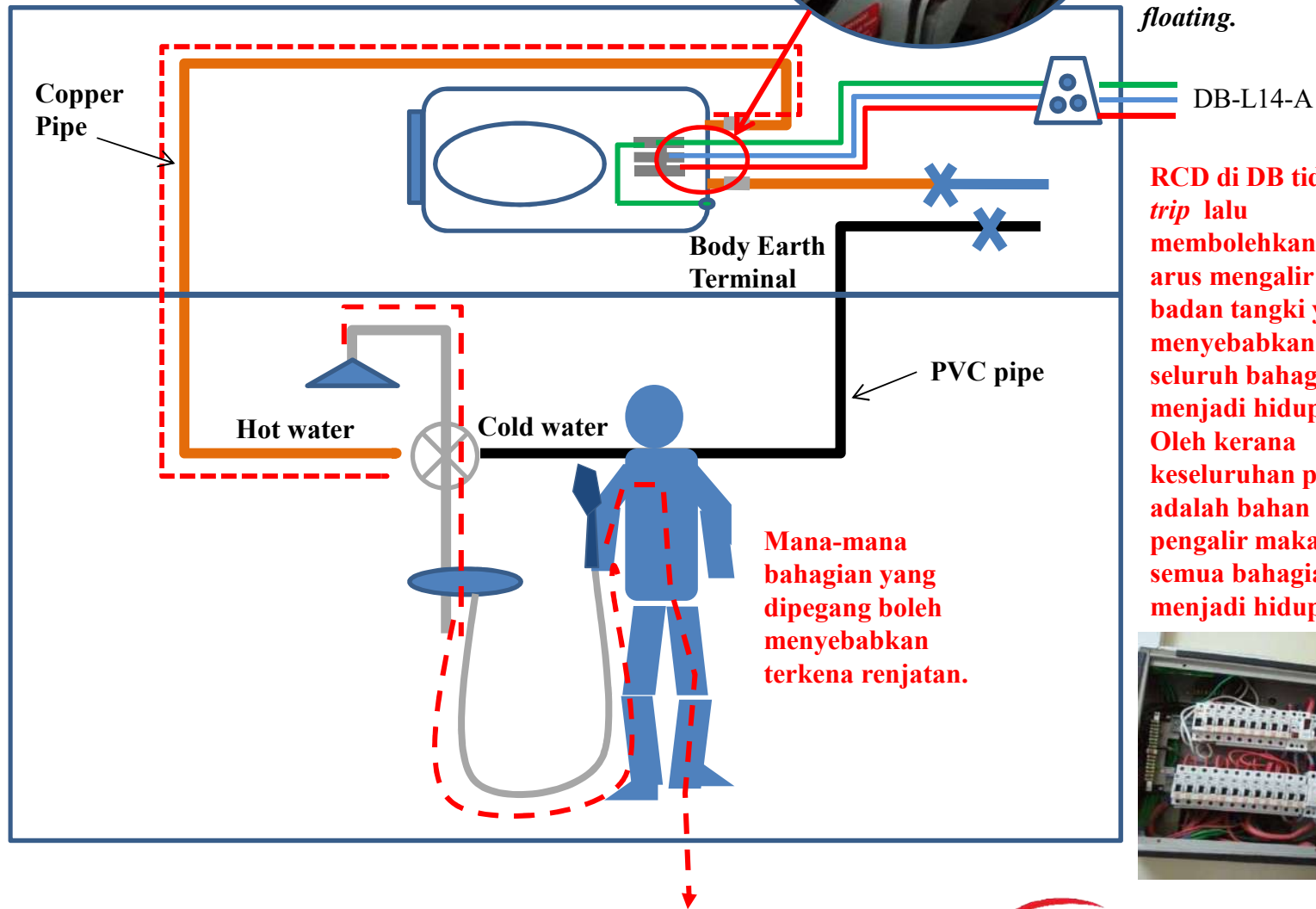


Licensing Programme
Suruhanjaya Tenaga
Energy Commission

Menurut pemilik premis, pemanas air ini baru dipasang pada menggantikan yang lama . Bekalan dari punca soket 15A disambung dengan menggunakan *flexible wire* 1.25mm². Sepatutnya saiz wayer 2.5mm² atau lebih digunakan bagi menampung beban 2.5-3kW. Di *distribution board* (DB) tiada Pemutus Arus Baki (PAB) khusus untuk pemanas air ini.



Terminal N & E *overheated* menyebabkan kedua-dua wayer putus dan *floating*.



RCD di DB tidak *trip* lalu membolehkan arus mengalir ke badan tangki yang menyebabkan seluruh bahagian menjadi hidup. Oleh kerana keseluruhan paip adalah bahan pengalir maka semua bahagian menjadi hidup.

Mana-mana bahagian yang dipegang boleh menyebabkan terkena renjatan.



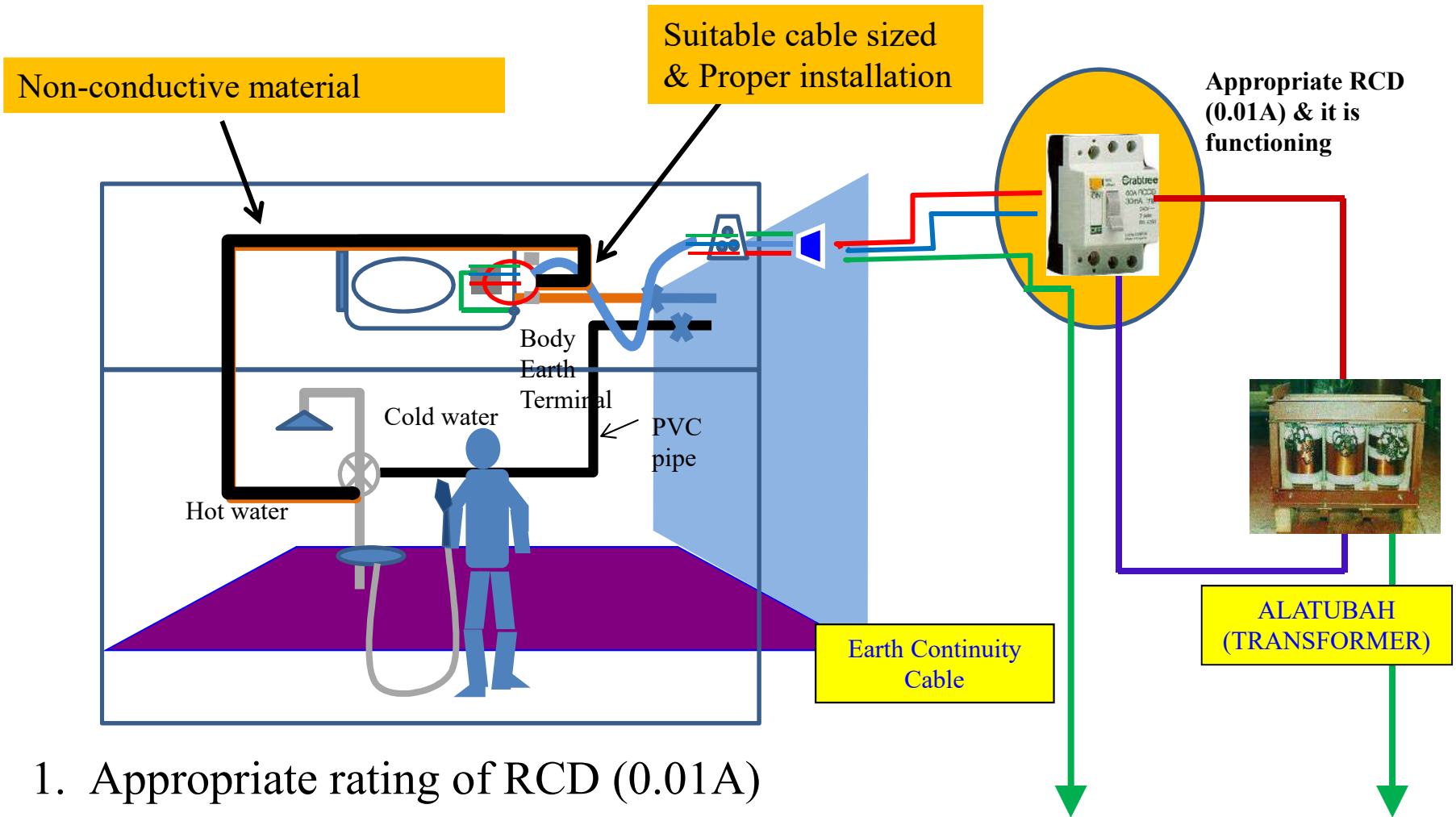


3 c 1.25 mm² flexible cable. Manufacture recommended size is 2.5 mm²

Didapati telah berlaku panas lampau (overheating) di bahagian sambungan bekalan akibat sambungan tidak sempurna dan kabel penyambung bersaiz kecil. Kecacatan –kecacatan ini disyaki menjadi punca kebocoran arus.



The incident of electric shock could be avoided if;



1. Appropriate rating of RCD (0.01A)
2. No metal pipe from storage tank to mixer-tap/shower
3. Suitable cable size from storage tank terminal to power socket outlet
4. Proper earthing system in place.



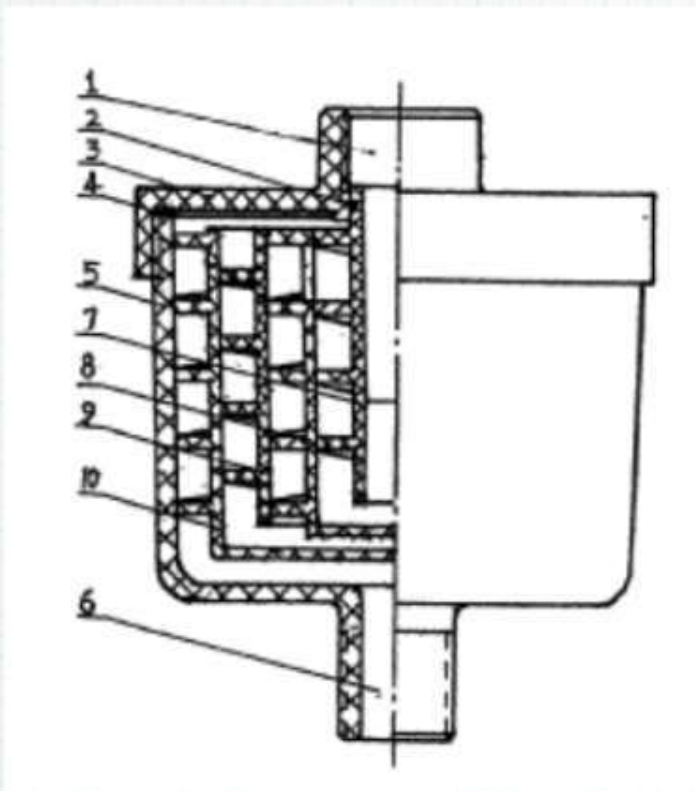




**ARAHAN ST No. 3/2016 :
MEMANDATORIKAN
STANDARD MS1597-2-21:2015 MENGGANTIKAN
STANDARD MS1597-2-21:2011 SEDIA ADA**



Isolation Barrier



Isolation Barrier



AVOID ELECTRICAL HAZARDS

Tekan butang 'T' suis pemutus litar automatik di rumah anda sekali sebulan untuk pastikan ia berfungsi dengan baik.



ELAK DARIPADA
MEMBELI DAN
MENGUNAKAN

**BANTAL
PEMANAS
ELEKTRIK**

YANG TIDAK
DILULUSKAN

Bantal pemanas elektrik dipasarkan sebagai pemanas bagi tujuan bertungku. Dipromosikan sebagai produk kesihatan, ia dijual secara meluas di pasaran dan melalui internet.



'ALAT PENJIMATAN TENAGA'

Didapati Tidak Berkesan Untuk Menjimatkan Tenaga Elektrik Seperti Diiklankan



Adakah alat ini benar-benar boleh menjimatkan penggunaan tenaga elektrik tanpa pengguna perlu mengubah cara penggunaan tenaga elektrik?



Penggunaan ESD tidak membantu menjimatkan kos elektrik pengguna. Tambahan pula pengguna domestik tidak dikenakan apa-apa surcaj faktor kuasa rendah.

What will happened if the electrical equipment do not meet minimum requirement?

Can cause fire, electric shock, explosion, radiation and others risk that cause injured/death to human and or damage to property.





Penalty

Regulation 122, Electricity Regulations 1994

“Unless otherwise made an offence under the Act, the person who contravenes or fails to comply with any of the provisions of this Regulations shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding **RM5000** or to imprisonment for a term not exceeding **1 year** or BOTH”



Penalty



Sec. 37(1), Electricity Supply Act 1990

“Any person who tempers with or adjusts any installation or part thereof or manufactures or importers or sells any equipment so as to cause or to be likely to cause danger to human life or limb or injury to any equipment or other property shall be guilty of an offence and for each such offence shall, on conviction, be liable to a fine not exceeding **RM1,000,000** or to imprisonment for a term not exceeding **10 years** or to both. ”



Safety begin from us.