

For the attention of:
Mark Wogan, Manager, Energy Safety
Energy Safe New Zealand

WorkSafe NZ
PO Box 165
Wellington

10th December 2019

Dear Mark,

PRODUCT SAFETY AND COMPLIANCE INSPECTION

Serene Industries Ltd / Serene Living branded heaters and heated towel rails.

Pursuant to prior communications please find enclosed our technical inspection and compliance report on Serene Living branded fan heaters and ladder heated towel rails currently manufactured and sold by Serene Industries Ltd in New Zealand and Australia.

1. This report covers the following Serene Living branded products:

- (a) S2078 Fan heater
- (b) S2068 Fan heater
- (c) S2067 Fan heater
- (d) Full range of all metal ladder towel rails (SLTR / LTRS series rails)
- (e) S4022 Bathroom mirror
- (f) S2088 All-metal fan heater

2. This report serves to ratify and illustrate our Director's concerns previously raised with ESNZ:

- (a) That there have been twelve (12) fire incidents in New Zealand caused by Serene fan heaters.
- (b) That the minimum safety requirements required to meet the compliance standard for Class 2 double insulation of an electrical appliance that is simply not met by Serene, despite their publishing AS/NZS Standards certification or an 'S-Doc' self-certification.
- (c) The internal wiring of the S2088 heater.

3. These Serene products are AN ACCIDENT WAITING TO HAPPEN

Someone will be injured or killed through either a fire incident or electrocution with these products. This is a well-trodden path that Serene is already well on their way down based on the incidents and reports referred to us by ESNZ, customers and installers.

- (a) These concerns have been prior discussed direct with the Directors of Serene Industries Ltd since early 2017 with nil resolution.
- (b) We have seen prior narrative that Serene and even Energy Safe New Zealand (ESNZ) are not really concerned. Miles Bonfield of ESNZ most recently responded to us that whilst he confirms ESNZ are investigating twelve (12) fire related incidents in New Zealand, he is satisfied that Serene Industries had provided the certification documents.

Regards our concerns alerted to ESNZ about electrical safety, Miles is satisfied that Serene Industries has published Class 2 certification for double insulation, therefore no earthing is required on these appliances.

Frankly Mark, these ESNZ conclusions leave us aghast.

(a) ESNZ is unconcerned with twelve (12) fire incidents now recorded. Our concerns raised were when we understood there were five (5) fire incidents. In our experience, anywhere else and in any other industry, including our Genco Power Project business, this is just unheard of.

Our Directors are well connected to the safety and quality legacies of heating manufacturers SKOPE / PDL / GOLDAIR. Just a single fire incident in either of these manufacturers entire history was an extreme event that could never be allowed to be repeated (true to their word, it never did in each of their 50/80 year respective history).

By way of example, our Genco Energy Co-founder and Chairman was instrumental in the founding of the competing GOLDAIR heater brand in 1981, still operating today. In 1985 Goldair had a similar problem to Serene and was forced to undertake a national recall of every heater sold. Our Chairman was summonsed to your Wellington office to explain the situation including on the National 6pm news.

This Goldair recall in 1985 was triggered by just 2 fire incidents and resulted in one of the largest manufacturing recalls in New Zealand's history. This investigation would still be in Worksafe archives.

Today, 35 years later ESNZ investigates 12x fire incidents but remains satisfied because of the product certification on paper.

(b) As part of an incident investigation no one except Genco Energy has bothered to check the actual product against its certification on paper.

The simple fact is that none of these Serene products listed actually meet the certification standards that they have been issued – how they even passed certification is another very searching question.

(c) We have taken a zealous attitude with Serene products that we no longer sell in a market and territory that we don't even operate because as the Genco Directors are also registered electricians - we have a duty of care to notify and/or make safe any serious electrical hazard situation clearly known to us, irrespective of whether or not the fault/installation is under our control.

In all our electrical trade training and power project experience we have engrained in us that either leaving exposed live terminals or an absence of adequate earthing on electrical apparatus is an absolute non-negotiable. Neglecting either of these is the fastest way for a tradesmen to face prosecution and lose his electrical registration and practicing licence.

In law it is not an option for us to just ignore these safety issues and say nothing.

Yours Faithfully,
Justin Sollitt, (EWR Reg E11567)
Senior Project and QA Manager
Genco Project Management Ltd

ANNEXED

A. Serene products and CLASS 2 double insulation standards

B. Double insulation inspection of Serene products:

(S2078 / S2068 / S2067 Heaters / All Metal Ladder heated towel rails / S4022 Mirror)

C. Serene S2088 Fan Heater incorrect wiring

A. SERENE PRODUCTS and CLASS 2 DOUBLE INSULATION STANDARDS

Serene Living products don't actually meet the minimum AS/NZS Standards for Class 2 double insulation. This is despite the fact that they have somehow acquired a safety certification confirming that they do.

Specifically the Class 2 double insulation standard by definition requires that:

*A **Class II** or **double insulated** electrical appliance is one which has been designed in such a way that it does not require a safety connection to electrical earth (ground).*

***Double insulation protects the user** of the appliance from an electrical shock by preventing any possibility of the external casing becoming live (the live wire cannot touch the casing even if wires inside become loose), thus eliminating the need for an earth connection.*

***The basic requirement** is that no single failure can result in dangerous voltage becoming exposed so that it might cause an electric shock and that this is achieved without relying on an earthed metal casing. This is usually achieved at least in part by having at least two layers of insulating material between live parts and the user, or by using reinforced insulation.*

The fact is we cannot determine how the Serene heaters meet the spec as they have no earth connection.

At a glance:

Despite the Serene products carrying certification on paper including for Class 2 insulation, the fact is they simply don't meet this specification.

- (i) Serene products have only a single layer of insulation between multiple live terminals and conductors and a metal outer cover. The requirement is for two layers of insulation material, not one.
- (ii) Reinforced insulation is meaningless in these products because it is the terminals and connections that have only a single layer of insulation protection.

B. DOUBLE INSULATION INSPECTION OF SERENE PRODUCTS

1. Serene S2078 "Classic" Fan Heater

(This replaced the S2077 "Chateaux" heater that had the same concerns)

(a) This model is sold under the guise that it meets Class 2 Double insulation standards that includes having AS/NZS safety certification.

(b This product does not meet the Class 2 standard because:

- (i) The heater has a metal cover
- (ii) The heater has live terminals and live components directly under the metal cover.
- (iii) The heater has no earth wire connection and;
- (iv) All electrical terminals and connections under the metal cover have only a single layer of protective insulation - the specification for Class 2 certification requires that there are two.

(c) Serene S2078 Product Certification (class 2) - as published by Serene Industries Ltd

global-mark® **Certificate of Conformity**

Global-Mark Pty. Ltd. certifies the electrical equipment described hereunder complies with standards listed herein and authorises the certificate holder to affix the mentioned mark to products of the same type or the Regulatory Compliance Mark (RCM) provided that the requirements of all relevant parts of AS/NZS 4117 applicable to the article are fulfilled. In placing the authorised mark on the product, the certificate holder makes a declaration of compliance with the certification standard(s) and confirms that the product is identical to the product certified herein.

CERTIFICATE AND CERTIFICATE HOLDER DETAILS

Company Name	Serene Industries Ltd.		
Address	101B, 101C Floor, Block A, Alexander Industrial Bldg., 62 King Lam Street Cheung Sha Wan - Kowloon Hong Kong		
Class ID	103666	Global Mark File Number	102666-004
Certification and Authorised Mark Number	GMS/102708-E-A	Revision Number	00
Certification Standard(s)	AS/NZS 4013:2.36:2015 including A1 Household and similar electrical appliances - Safety - Particular requirements for room heaters		
Type of Certification	Electrical Safety Product - Scheme: Global-Mark Electrical Product Safety Certification Scheme		

CERTIFICATE DATES

Certificate Issue Date	24/01/2018
Certificate Last Update Date	
Certificate Expiry Date	24/01/2023

This certificate remains valid until the above mentioned expiry date, and subject to the registrant's continued compliance with the certificate, standard, and Global Mark's Terms and Conditions. This Certificate of Conformity remains the property of Global Mark Pty Ltd. Company Number: 6426 089 046. The use of the Accreditation Mark indicates accreditation by the Joint Accreditation System of Australia and New Zealand in respect to these activities covered by JAS-ANZ accreditation. Refer to jas-anz.org/registration for verification.

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global-mark® **Certificate of Conformity**

CERTIFIED ELECTRICAL EQUIPMENT

Declared Article	Product Description	Trade Name	Model Number	Rating
Room Heater	Room heater	Serene	S2078	230 - 240V ~ 50Hz 2200 - 2400W Class II

RELEVANT TRADEMARK (S)

COMMENTS OR CONDITIONS ON THE CERTIFICATION

Nil

End of document

This certificate remains valid until the above mentioned expiry date, and subject to the registrant's continued compliance with the certificate, standard, and Global Mark's Terms and Conditions. This Certificate of Conformity remains the property of Global Mark Pty Ltd. Company Number: 6426 089 046. The use of the Accreditation Mark indicates accreditation by the Joint Accreditation System of Australia and New Zealand in respect to these activities covered by JAS-ANZ accreditation. Refer to jas-anz.org/registration for verification.

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CERTIFIED ELECTRICAL EQUIPMENT			
Declared Article	Product Description	Trade Name	Model Number
Room Heater	Room heater	Serene	S2078

RELEVANT TRADEMARK (S)

COMMENTS OR CONDITIONS ON THE CERTIFICATION
Nil

End of document

Certificate of Con

Model Number	Rating
S2078	230 - 240V ~ 50Hz 2200 - 2400W Class II

(d) Disassembly and Inspection

A Serene S2078 heater purchased off the shelf from a NZ electrical wholesaler



Installation manual confirming Wiring: Double insulated, no earth required.

- Isolate the heater from the mains power supply
- Use a damp cloth to clean the exterior of the heater. Do not use any abrasive cleaners
- Use a vacuum cleaner to remove dust and fluff visible on the heater inlet and outlet
- Ensure the heater is dry before turning the mains power supply to the heater back on

Specifications: Serene S2078

Electrical Supply	220-240 volts A.C. 50 Hz
Wattage	2000-2400W, thermostatically reduced to 1000-1200W
Wiring	Permanent connection. Double insulated, no earth required.
Ingress Protection Rating	IP21

Dimensions

Height	220mm
Width	375mm
Depth	140mm (includes mounting base)
Weight	2.35kg

Serene Industries Limited reserves the right to alter specifications without notice.

Outer top metal cover



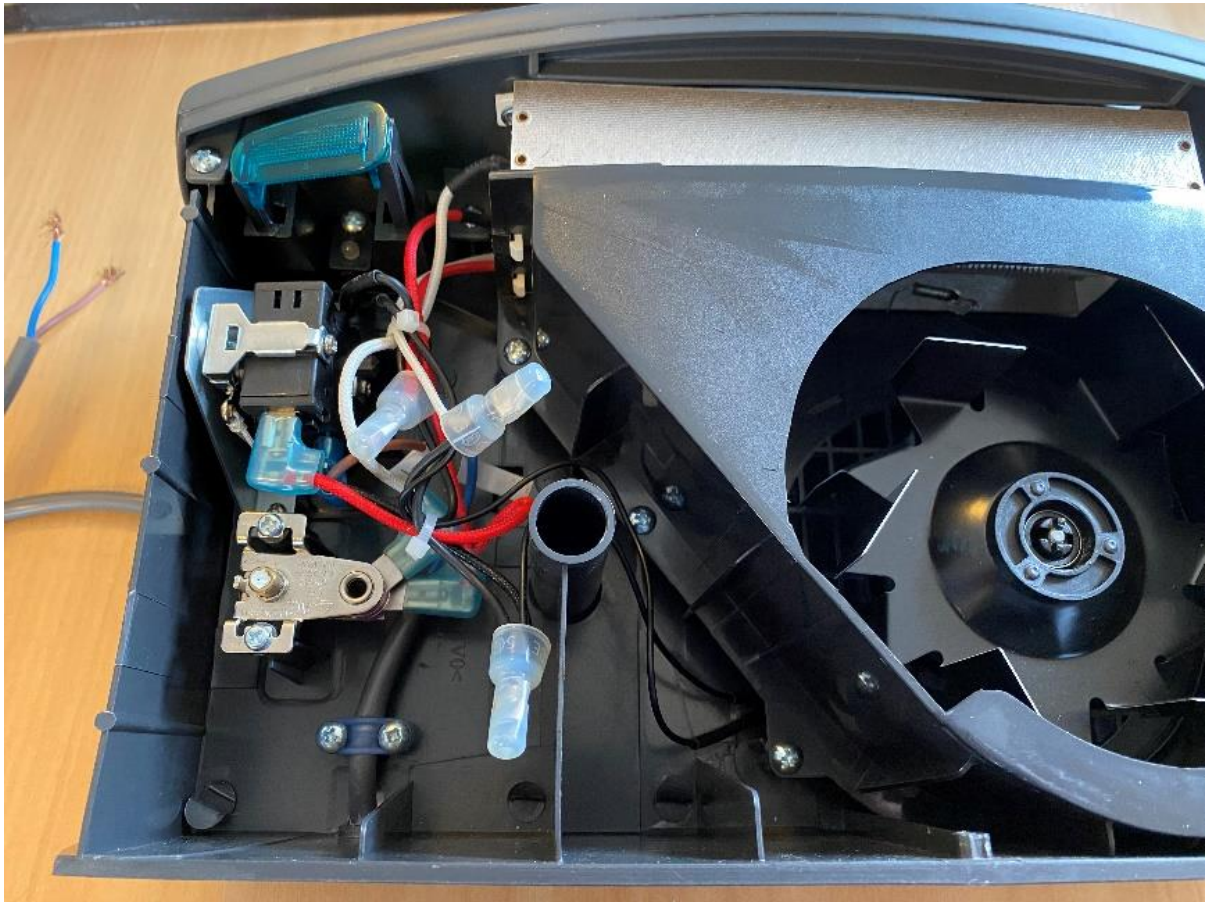
Underside plastic chassis and wall mount.



The metal cover is removed, immediately exposing live components, cables and terminals.

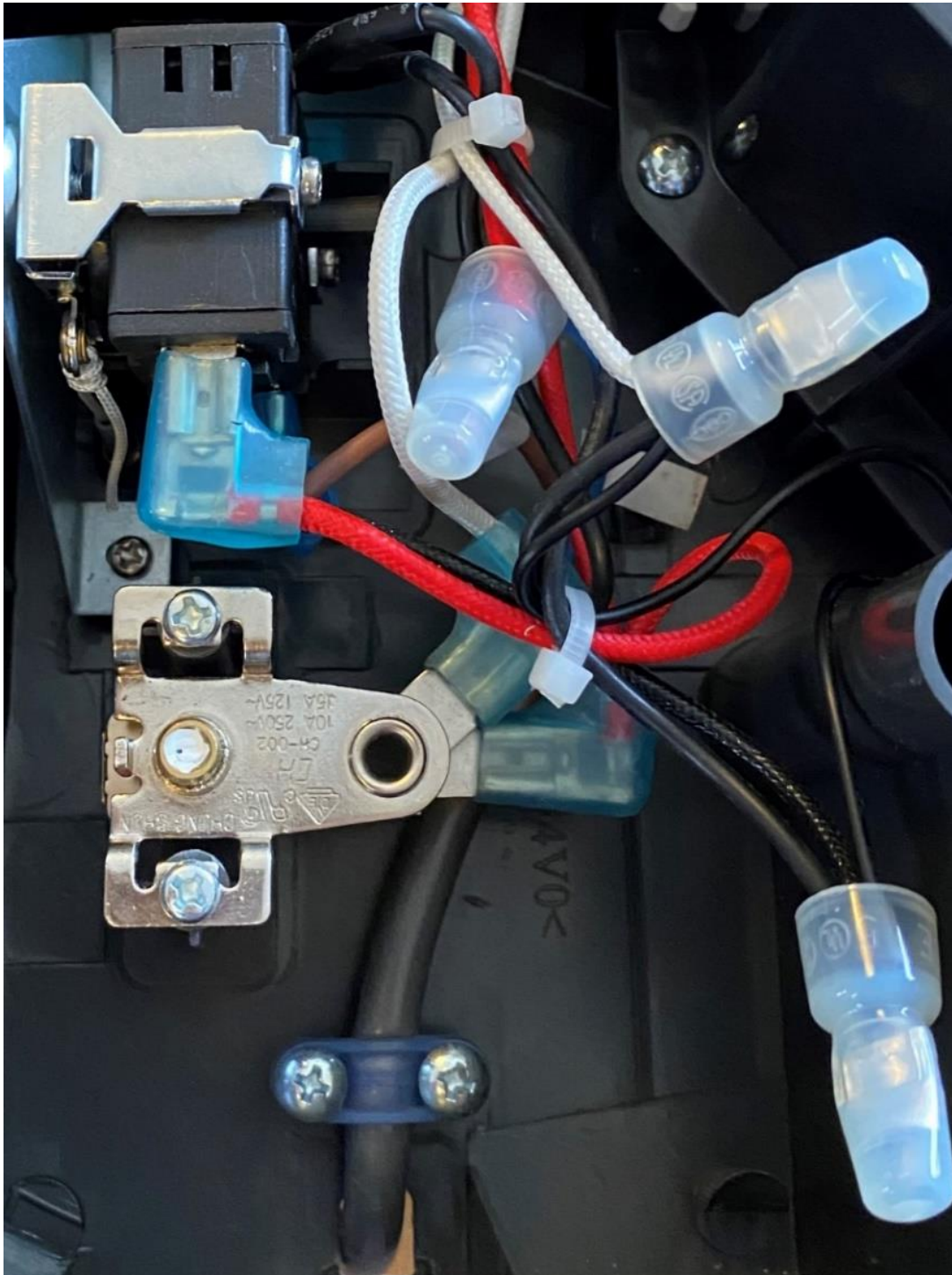


The main power cord is depicted, with phase (brown) and neutral (blue) wires.
There is no earth.



Without exception, all electrical components, cables, terminals and connections directly under the metal cover, all have only a single layer of protective insulation, the requirement is for two.





(e) Conclusion:

Nothing depicted in these images meets the standard for Class 2 double insulation. All live components and terminals have only a single layer insulation.

The only way to achieve either the Class 2, or any safety standard is by either:

- (i) Make the entire outer cover from plastic, the same as the chassis underneath.
- (ii) Include an earth wire that connects the metal cover to earth.

2. SERENE S2068 "Classic" FAN HEATER

(This replaced the S2066 heater that had the same concerns)

(a) This model is also sold under the guise that it meets Class 2 double insulation standards that includes having AS/NZS safety certification.

(b) We cannot see how the product meets the Class 2 standard because:

- (i) The heater has a metal cover
- (ii) The heater has live terminals and live components directly under the metal cover
- (iii) The heater has no earth wire connection and;
- (iv) All electrical terminals and connections under the metal cover as depicted here, have only a single layer of protective insulation.

(c) Serene S2068 Product certification as published by Serene Industries Ltd

SUPPLIER DECLARATION OF CONFORMITY (SDoC)
In accordance with ISO/IEC 17050-1:2004

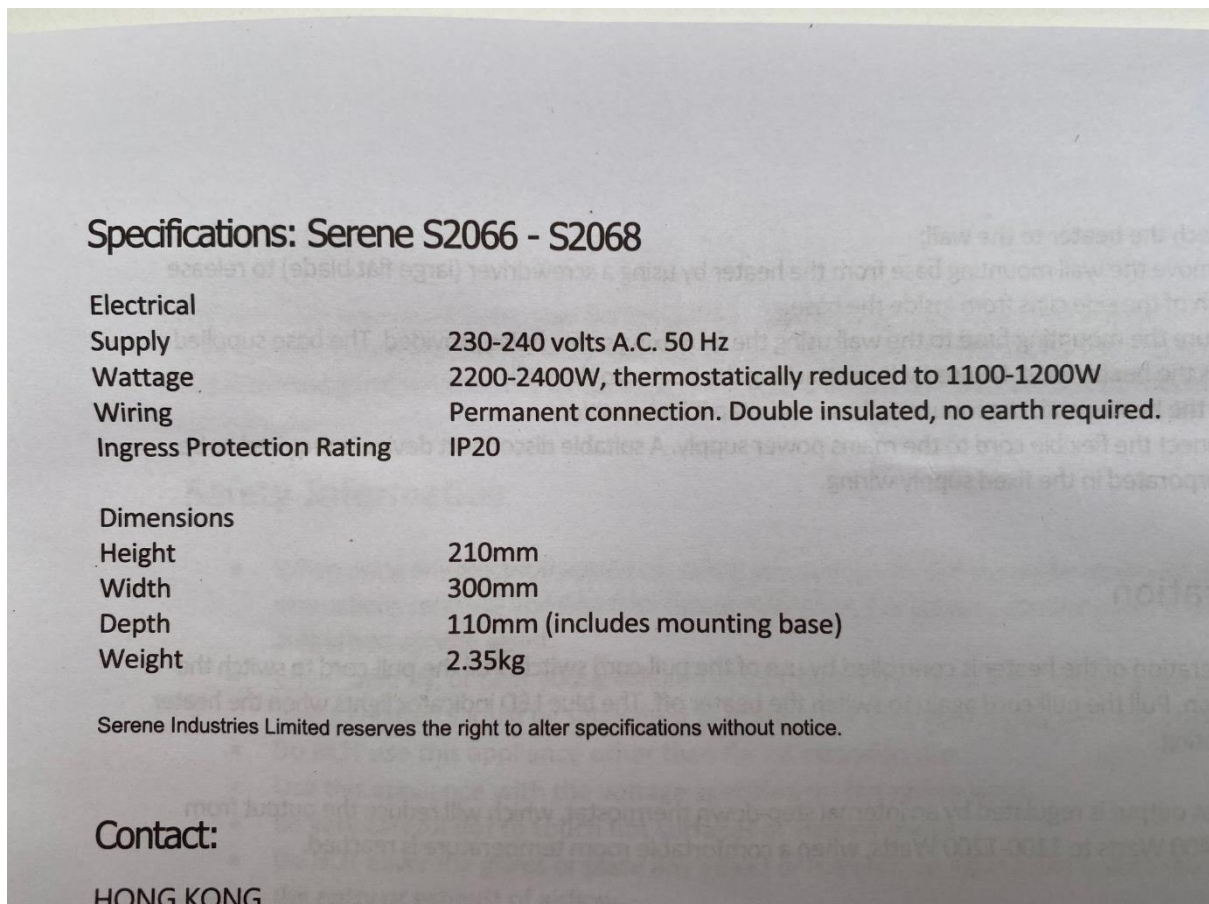
SDoC Identification Number¹: SDoC Serene Industries Limited S2066/S2068	
Issuer details	
Name ² (of New Zealand manufacturer or importer): Contact Address: Serene Industries Limited	
Telephone: 03 344 5550	PO Box 33501 Barrington , Christchurch 164 Waterloo Road, Sockburn, Christchurch
New Zealand Company No. (if applicable): 109774162	
Email Address: alexW@serene-ind.com	
Medium Risk Article – Details³ (Product name, type, rating, brand, model, batch numbers, and serial numbers, as applicable):	
Serene Wall Mounted Fan Heater S2066 & S2068	
The Medium Risk Article listed above, fully complies:	
With cited standard(s), as listed:	
Standard number and issue year: IEC 60335-2-30:2009	Standard number and issue year: <input type="text"/>
Edition / Amendment status: Amendment 1 2016	Edition / Amendment status: <input type="text"/>
Standard title: AS/NZS 60335.2.30:2015	<input type="text"/>
AS/NZS ZZ modified Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	AS/NZS ZZ modified Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
OR Complies with the Conformity Cooperation Agreement ⁴ Yes <input type="checkbox"/> No <input type="checkbox"/>	

(d) Disassembly and inspection

Serene S2068 heater purchased from a NZ electrical wholesaler



Installation manual confirming Double insulated, no earth required.



Outer top metal cover

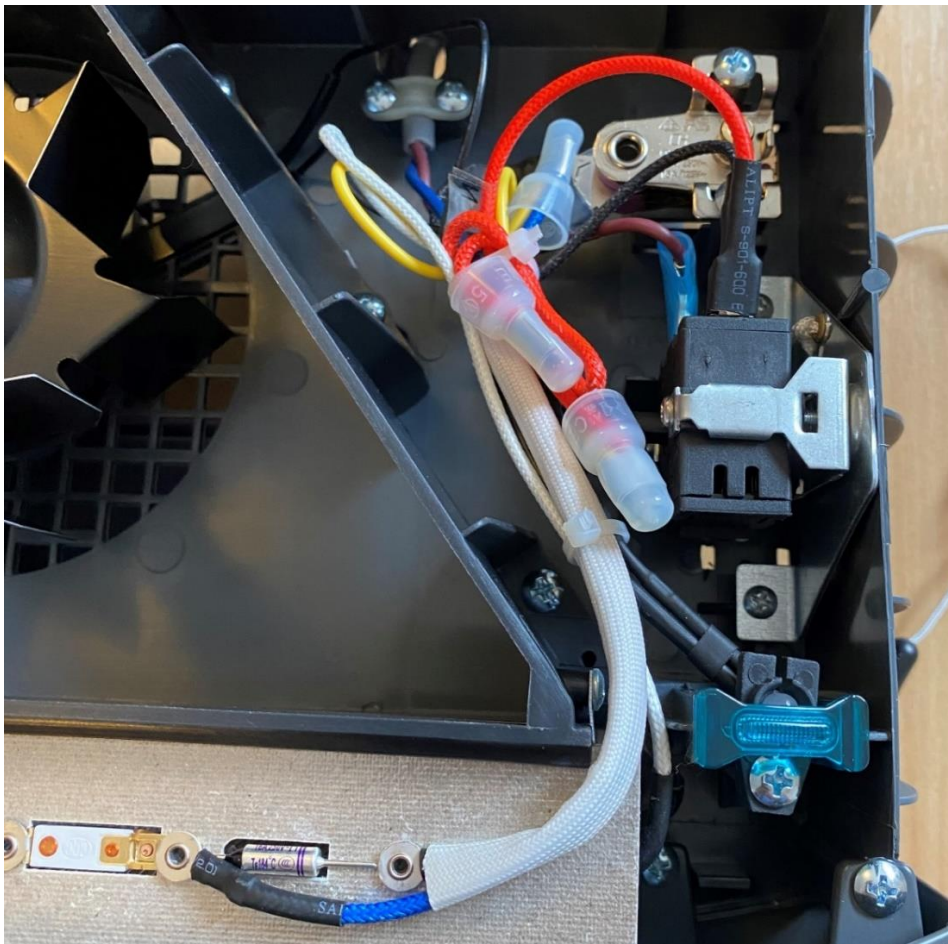
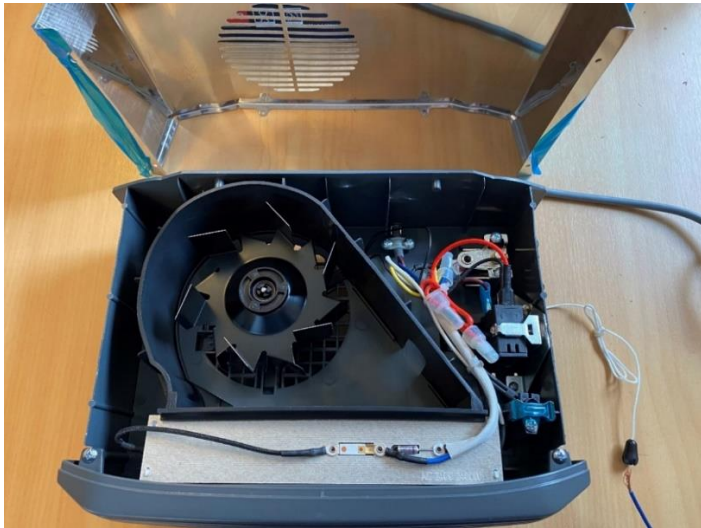
The power cord is depicted, with phase (brown) and neutral (blue) wires.
There is no earth wire.



The metal cover is removed and it immediately exposes live components, cables and terminals directly under the metal cover.

Without exception, all electrical components, cables, terminals and connections all have only a single layer of protective insulation.





(e) Conclusion

Nothing depicted in these images meets the standard for Class 2 double insulation. All components have only a single layer insulation, two is required.

The only way to achieve either the Class 2, or any safety standard is by either:

- (i) Make the entire outer cover from plastic, the same as the chassis underneath.
- (ii) Include an earth wire that connects the metal cover to earth.

3. SERENE S2067 “Elite” PORTABLE FAN HEATER

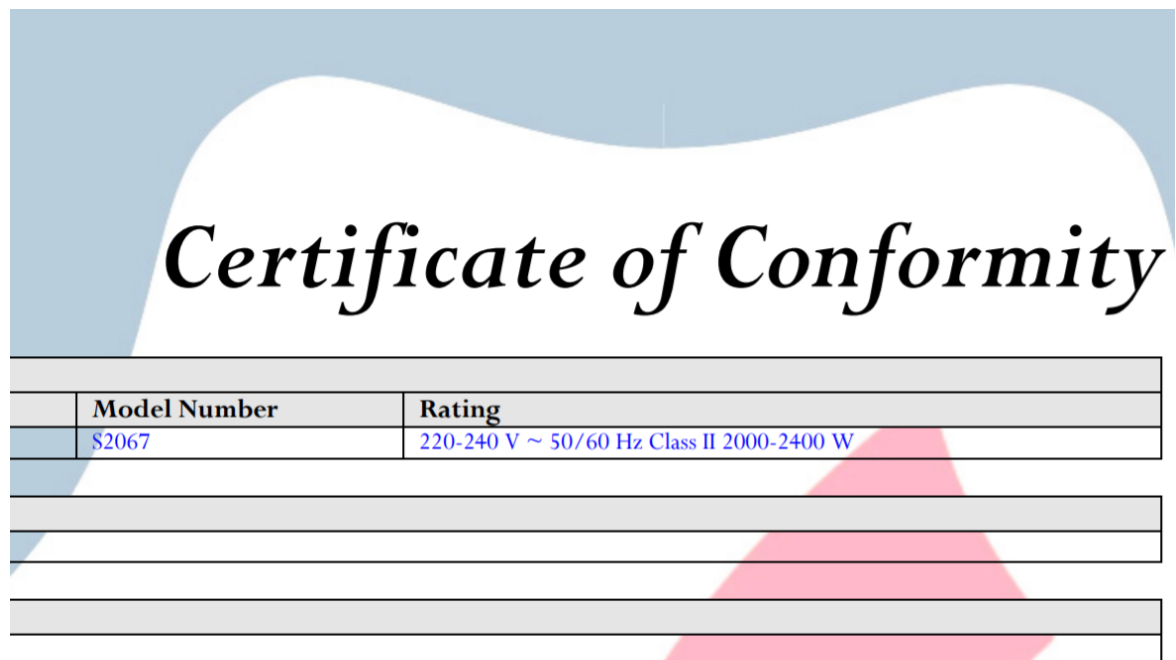
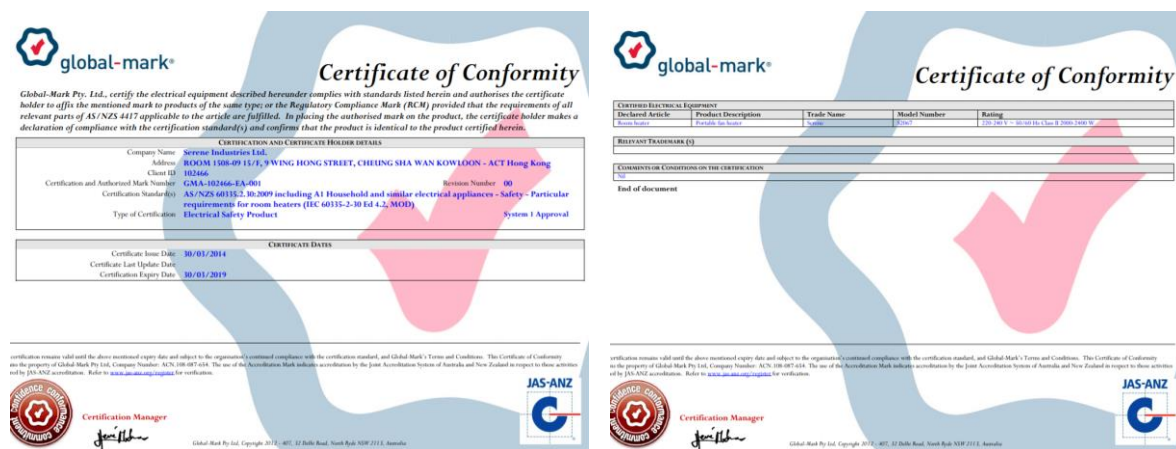
(a) This model is also sold under the guise that it meets Class 2 double insulation standards that includes having AS/NZS safety certification.

(b) We cannot see how the product meets the Class 2 standard because:

- (i) The heater has a metal cover
- (ii) The heater has live terminals and live components directly under the metal cover
- (iii) The heater has no earth wire connection and;
- (iv) All electrical terminals and connections under the metal cover as depicted here, have only a single layer of protective insulation.

(c) Serene S2067 Product certification as published by Serene Industries Ltd

(note the published certification is dated March 2019, (it has expired), yet Serene advertises that the product is still part of their product range)

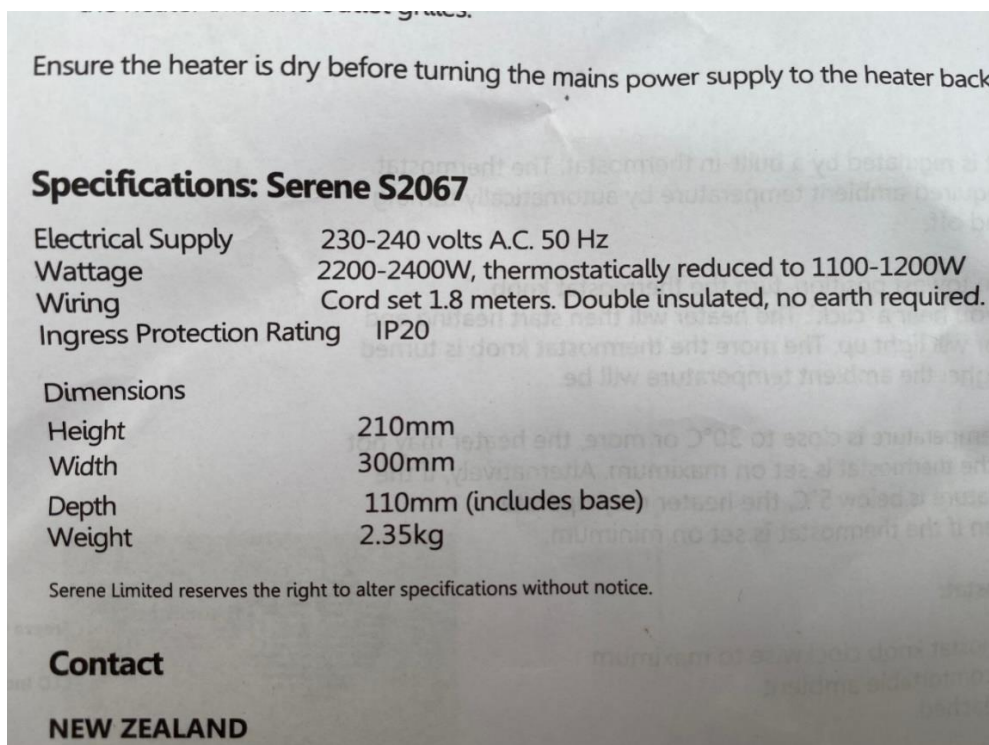


(d) Disassembly and inspection

A Serene S2067 heater purchased from Serene Industries Ltd in 2016



Installation manual confirming Double insulated. No earth required.



Outer top metal cover
The power cord is depicted, there is no earth pin/wire.

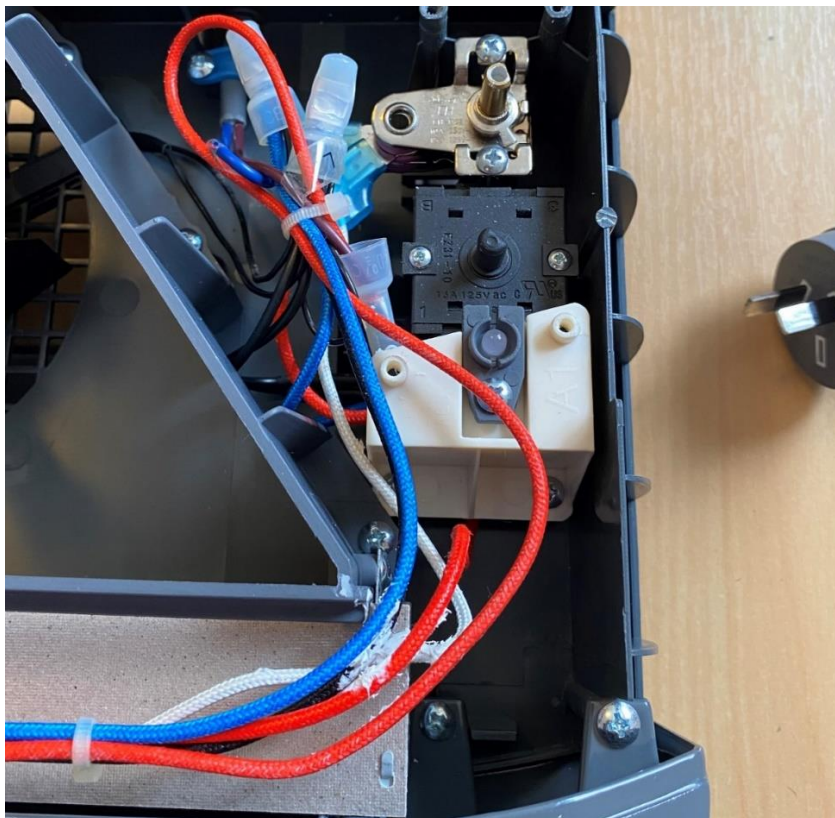
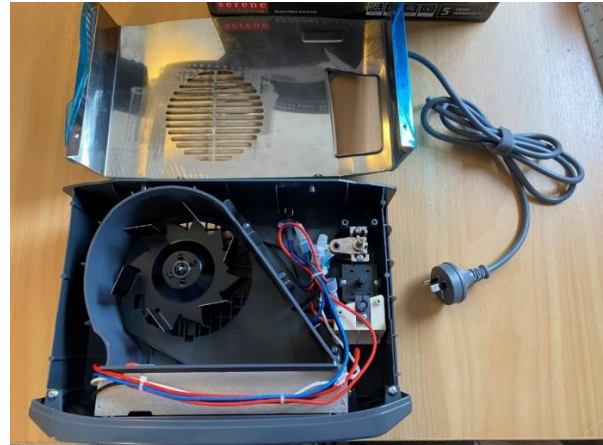


The underside and plastic chassis with floor mount.



The metal cover is removed and it immediately exposes live components, cables and terminals directly under the metal cover.

Without exception, all electrical components, cables, terminals and connections under the metal cover as depicted here, all have only a single layer of protective insulation. There is nothing here that meets the Class 2 double insulation standard.



(e) Conclusion

Nothing depicted in these images meets the standard for Class 2 double insulation. It is all single layer insulation.

The only way to achieve Class 2 or any safety standard is by either:

- (i) Make the entire outer cover from plastic, the same as the chassis underneath.
- (ii) Include an earth wire that connects the metal cover to earth.

4. Serene All Metal Ladder series Heated Towel Rails (HTR)

(a) This series of HTR is also sold under the guise that it meets Class 2 double insulation standards that includes having AS/NZS safety certification.

(b) We cannot see how the product meets the Class 2 standard because:

- (i) The HTR are all metal construction
- (ii) The HTR has no earth connection, and:
- (iii) All electrical terminals and connections running through the metal chassis as depicted, have only a single layer of protective insulation.

(c) Serene HTR Product certification as published by Serene Industries Ltd

SUPPLIER DECLARATION OF CONFORMITY (SDoC)
In accordance with ISO/IEC 17050-1:2004

SDoC Identification Number¹:

Issuer details

<p>Name² (of New Zealand manufacturer or importer): <input type="text" value="Serene Industries Limited"/></p> <p>Telephone: <input type="text" value="03 344 5550"/></p> <p>New Zealand Company No. (if applicable): <input type="text" value="109774162"/></p> <p>Email Address: <input type="text" value="Murray.reid@serene-ind.com"/></p>	<p>Contact Address: <input type="text" value="PO Box 33501 Barrington , Christchurch"/> <input type="text" value="164 Waterloo Road, Sockburn, Christchurch"/></p>
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Medium Risk Article – Details³ (Product name, type, rating, brand, model, batch numbers, and serial numbers, as applicable):

The Medium Risk Article listed above, fully complies:

With cited standard(s), as listed⁴:	
Standard number and issue year: <input type="text"/>	Standard number and issue year: <input type="text"/>
Edition / Amendment status: <input type="text"/>	Edition / Amendment status: <input type="text"/>
Standard title: <input type="text" value="EN60335-2.43:2005+A1-A2:2008"/> <input type="text" value="AS/NZS 60335.1:2002+A1-A3"/>	Standard title: <input type="text"/>
AS/NZS ZZ modified Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	AS/NZS ZZ modified Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
OR Complies with the Conformity Cooperation Agreement⁵ Yes <input type="checkbox"/> No <input type="checkbox"/>	

(d) Disassembly and inspection

Serene LTRS purchased from Serene Industries in early 2016.





SLTR & LTRS Multi Connect Series

Curved and Square Profile
SERENE Heated Ladder Towel Rails



Confirming Class 2 Double insulation, no earth required.

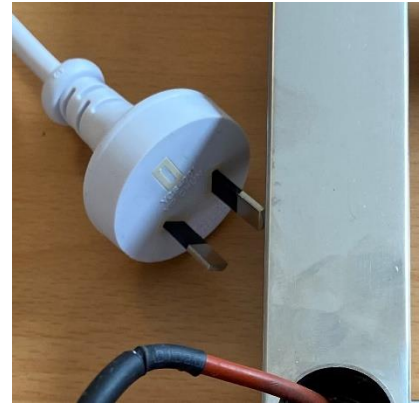
Regulations

This appliance must be installed in accordance with the relevant wiring rules and regulations which cover installation of appliances and accessories in damp situations such as bathrooms, showers, laundries and other areas with fixed water containers (in Australia and New Zealand - AS/NZS 3000:2007 Wiring Rules).

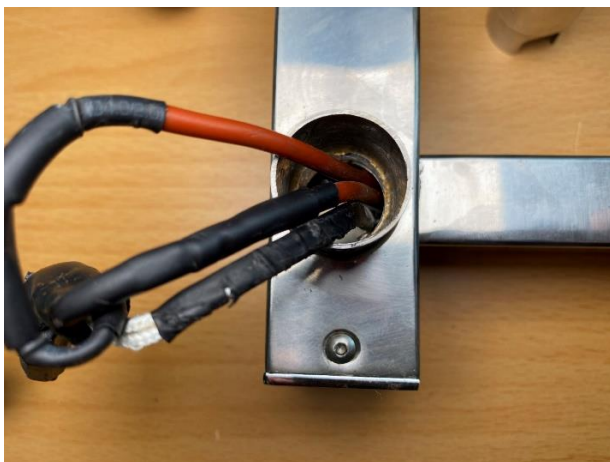
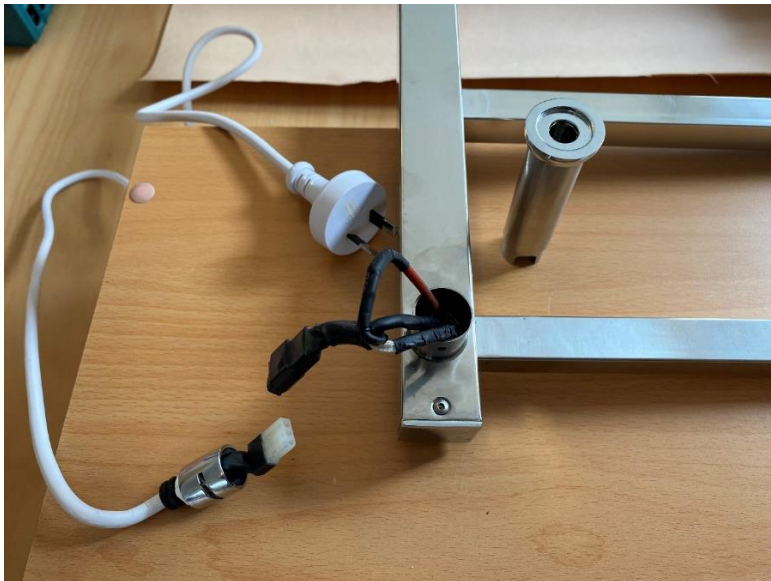
Wiring

The Heated Ladder Towel Rail is supplied with a 900mm supply cord and plug. This Class II appliance does not require Earthing.

The power cord is depicted here, there is no earth pin.



The power connection is removed exposing the internal wiring.



The power cord connector to the towel rail wiring does meet Class 2 double insulation standards, just.

However all electrical cables running through the metal chassis, especially around sharp corners as depicted here, have only a single layer of protective insulation.

Nothing depicted in these images meets the safety standard for Class 2 double insulation.

All cables and terminals have only a single layer of insulation, between live cables and terminals and the metal chassis/covers. The minimum requirement is for two layers.



(e) Conclusion

The only way to achieve the Class 2 Double insulation standard, is by including an earth wire that connects the metal chassis to earth.

Serene is the only brand in the world that we have found that omits the earth wire from an all metal appliance – and one that is designed for use in wet area.

5. SERENE S4022 BATHROOM MIRROR

(a) This product is also sold under the guise that it meets Class 2 double insulation standards that includes having AS/NZS safety certification.

(b) We cannot see how the product meets the Class 2 standard because:

- (i) The mirror is all metal construction
- (ii) The mirror has no earth connection, and:
- (iii) All electrical cables, terminals and connections running through the metal chassis as depicted, have only a single layer of protective insulation. The requirement is for two.

(c) Serene product certification as published by Serene Industries Ltd

Serene has never published any certification for this product.

(d) Disassembly and inspection

Installation manual confirming the wiring: Double insulated, no earth required.

Specifications:

Electrical

Supply 230-240 volts A.C. 50 Hz

Wattage 5-6

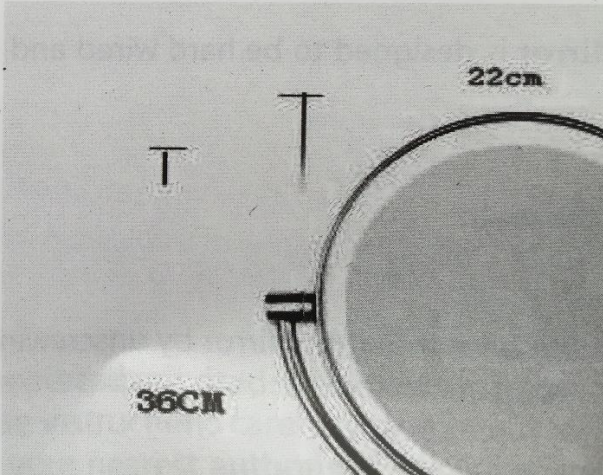
Wiring Permanent connection. Double insulated, no earth required.

Ingress Protection Rating **IPX20**

Dimensions

Mirror face 220 mm Diameter

Total height 360 mm



serene
LIVING

PARISIAN

Lighted & Adjustable bathroom mirror. The new 'MUST-HAVE' addition to any luxury bathroom.

VERY PRACTICAL AND HIGHLY FASHIONABLE



STYLISH AND VERSATILE

'Parisian' is fully adjustable vertically and horizontally and finished in high quality Chrome that will never rust and last a lifetime.



CONTEMPORARY AND ELEGANT

'Lumière' du jour (the lighting colour) best approximates daylight and is the most suitable colour for applying make-up.

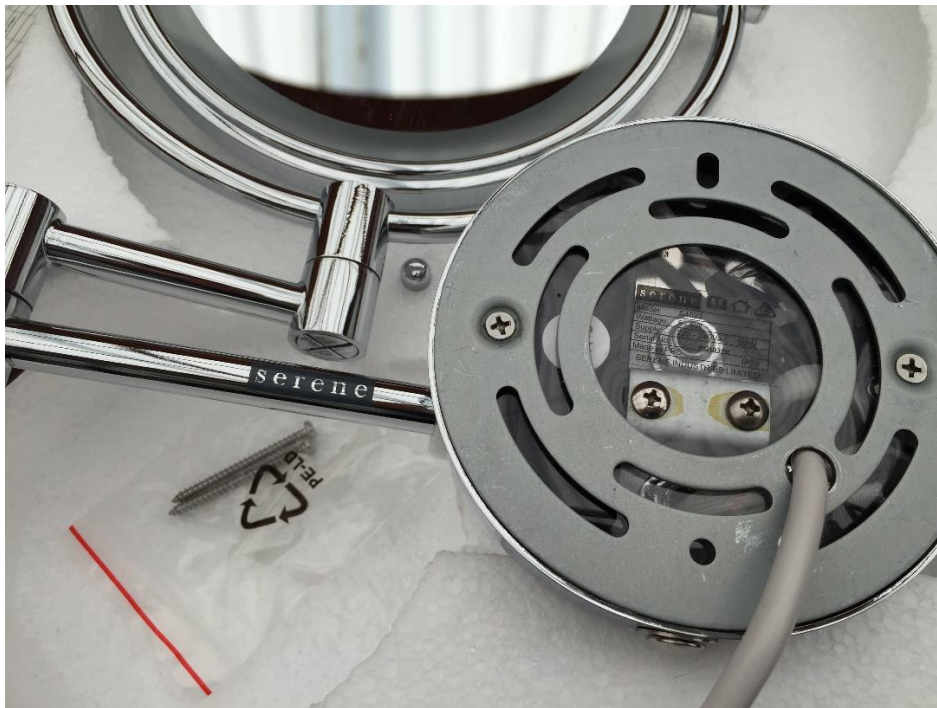


Model: SP022

Product straight out of the carton, power cable is depicted at the top (blue/brown).
There is no earth wire



This image depicts a thin layer of plastic cellophane underneath the metal wall mount plate, as well as bits of heat shrink over the connections - clearly in an attempt at double insulation. In electrical terms this is woefully inadequate.



(e) Conclusion

Nothing depicted in these images meets the safety standard for Class 2 double insulation. All cables and terminals have only a single layer of insulation, between live cables and terminals and the metal chassis/covers. The minimum requirement is for two layers.

The only way to achieve Class 2 or any standard of safety is by either:

- (i) Make the entire product from plastic.
- (ii) Include an earth wire that connects the metal chassis to earth.

C. SERENE S2088 FAN HEATER INCORRECT WIRING

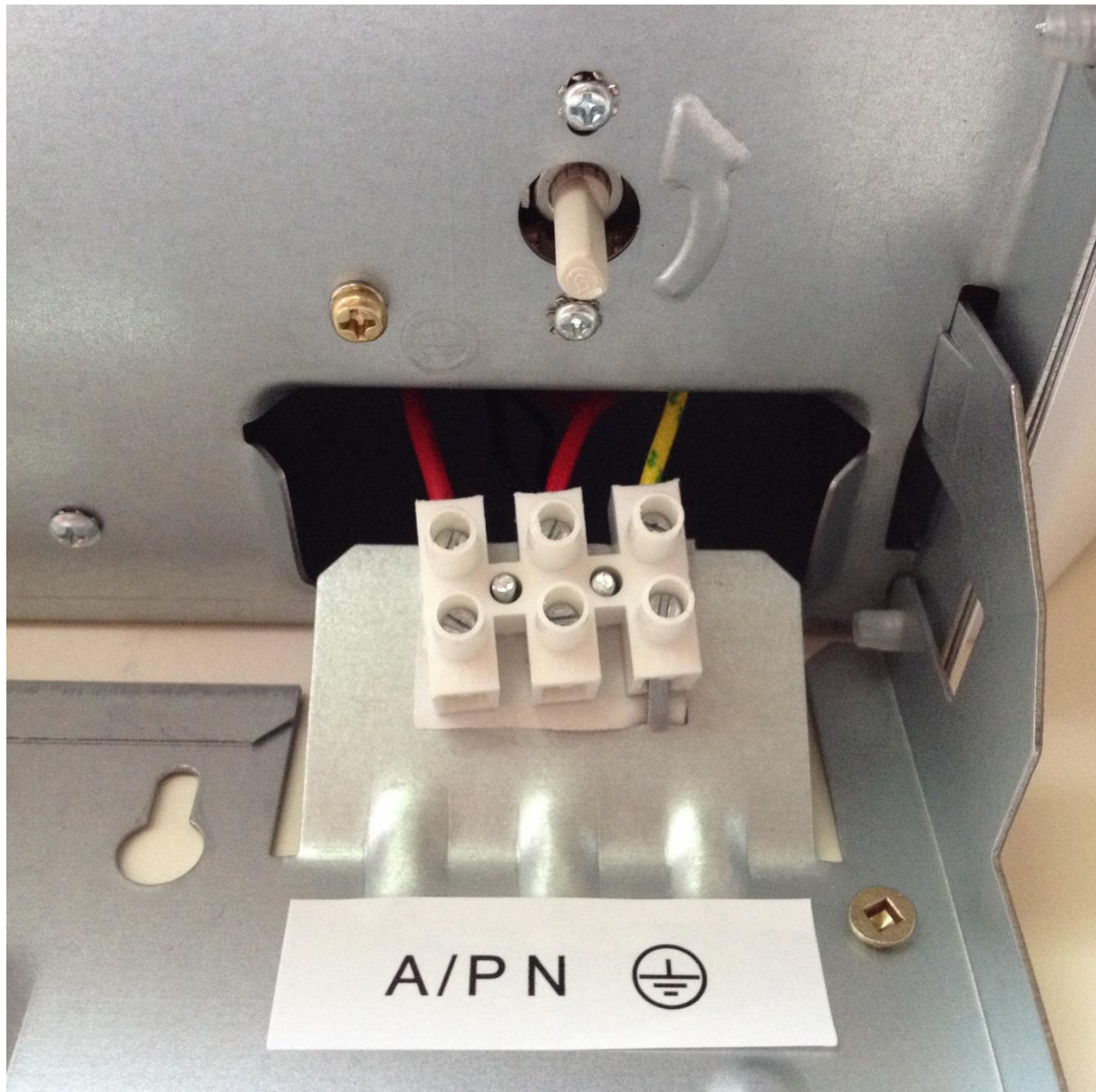
There are no concerns with earthing on this model, the heater has an all-metal outer case and there is a robust earth connection. Fundamentally the S2088 is a very good product.



This depicts a red/phase "live" colour coded cable installed in the neutral N terminal.

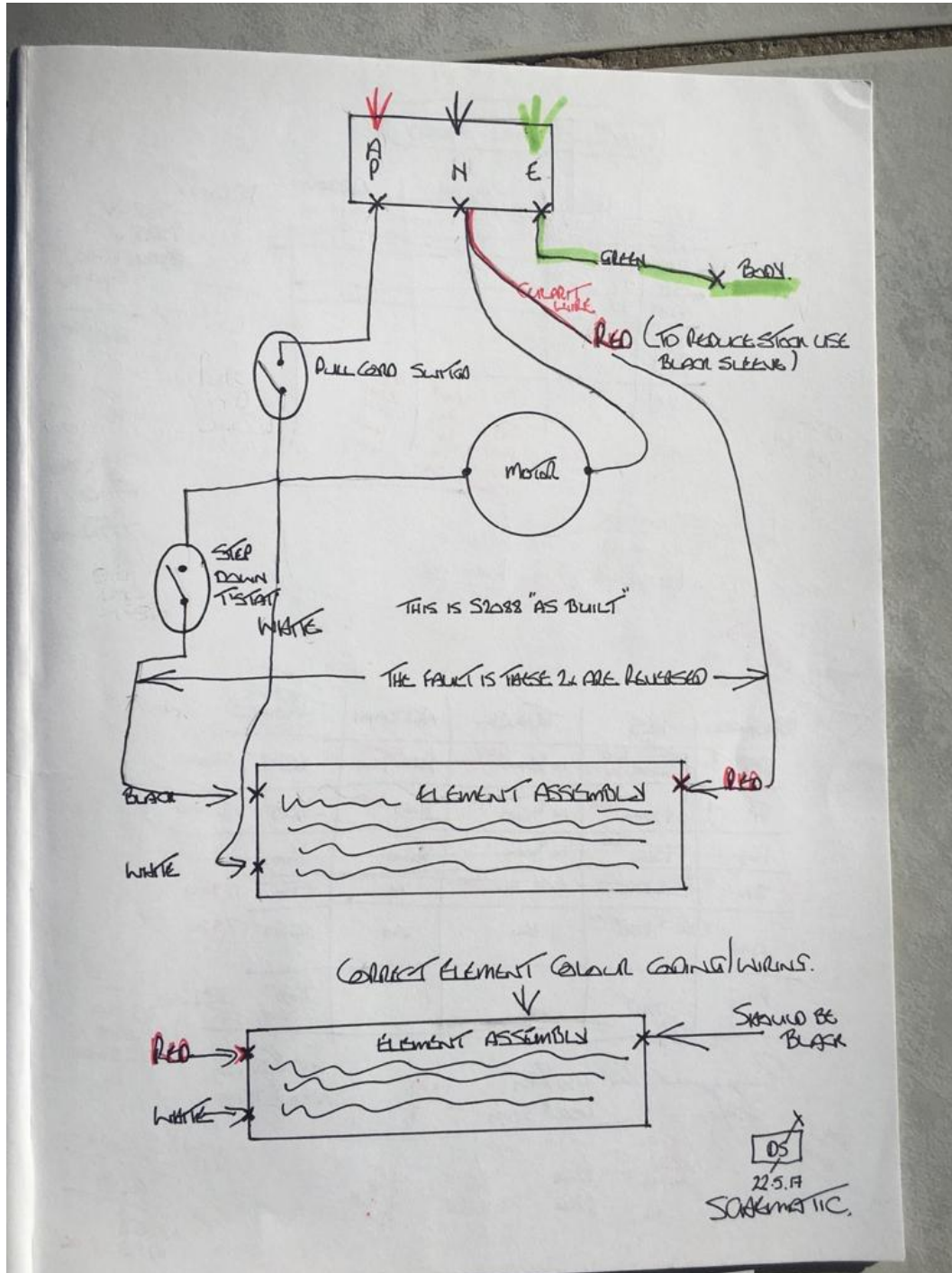
Whilst this is not an acute safety hazard, it is far from industry/trade best practice because it leaves the installer making the final connections confused that the N / neutral terminal can receive a live phase wire.

This in turn causes the heater to be switched on and off via the neutral not the phase connection, that leaves the heater alive when the user thinks they have switched it off.



To remedy this is very easy at the factory and only requires black cable to be used instead of red, there is no cost involved.

The Serene factory manager agreed to these recommended changes in mid-2017. But they were never implemented.



ENDS

Completed by:
Justin Sollitt, (EWR Reg E11567)
Senior Project and QA Manager
Genco Project Management Ltd