



Electrical Geyser Cylinder Failure Guideline

The Institute of Plumbing South Africa (IOPSA) has facilitated with industry-leaders and geyser manufacturers, the development of a guideline to alleviate confusion in the industry relating to fixed electrical water heating (geyser) cylinder failures. The confusion and frustration have arisen due to a very high percentage of non-compliant installations versus actual product failures, and whether poor installation has resulted in the product failure.

To avoid such confusion, industry has collaboratively created a guideline that aims to support plumbing installers and manufacturers, clarifying critical areas that determine where incorrect installation can be used as a technical reason to void a warranty claim.

It is important to note that geyser manufacturers are within their rights to void a warranty claim based on an installation not been compliant, however also have the responsibility to support their product in the industry, if failure is determined to be a manufacturing fault. This guideline will provide critical standards that, if followed correctly by the plumber, will help to prevent product failure from happening. On the other hand this the document will provide information that supports technical reasons as to why a manufacturer may void a warranty due to non-compliant installation.

It is important to note that this guideline is an ongoing document, and will be updated as necessary as and when IOPSA and industry reconvene.

It must be noted that compliance to all regulations & standards applicable to a fixed electrical water heating system are to be adhered to.

The following table advises those areas that are critical to the fixed electrical water heating (geyser) cylinder failure All points of reference are to be verified with the relevant manufacturer in terms of warranty conditions to alleviate confusion/ liability or uncertainty.

Installation items that may lead to failure of water heating cylinder in an electrical geyser. (15 items extracted from SANS 10252 & 10254 Standards discussed as points relating to water heater cylinder failure)

No.	Description of fault cause	Cylinder failure	Critical safety
1	Temperature Pressure Valve (TP valve) rating is higher than water heating cylinder installed	Yes	Yes
3	Installation of reconditioned valves.	No, if compliant	Yes

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	<i>NOTE: Some manufacturers do not allow for the installation of a reconditioned valve onto the cylinders so warranty will be void. Confirm with the Relevant manufacturer if this point is applicable to the Manufacturer.</i>		
4	Un-balanced pressure of water system	No, may lead to failure of PCV expansion valve	Yes
5	Safety valve is restricted (blocked or damaged)	Yes	Yes
6	T&P overflow piping is incorrect size or smaller than the minimum requirement of 22mm	No	Yes
7	Isolating or non-return valve is installed between hot water cylinder and the pressure control valve (PCV), expansion relief (ERV) valve or vacuum breaker.	Yes	Yes
8	Where no T&P valve is installed	Yes	Yes
9	Where no pressure control valve is installed	Yes	Yes
11	Back-siphonage of hot water into the cold-water supply - tank warranty intact – element void Note: This may however effect copper tanks and tanks that have a PEX lining.	No, may lead to failure of element	Yes
12	Vacuum breakers are installed incorrectly or not above the top of the water heater (the anti-siphon loop) tank warranty intact – element void Vacuum breaker should be installed 300mm above the cylinder, if it is not possible it can be installed within 700mm of hot water supply directly on the line.	No, may lead to failure of element	Yes
13	Discharge pipes that are obstructed and not open to the atmosphere	Yes	Yes
15	Limited or no access to hot water heating system installation	No	Yes

Guideline to manufacturers items that may lead to product warranty void by manufacturers.

1. Indoor hot water cylinder installed outside (must be identified on the cylinder)
2. Electrical element burnt in air – element warranty only

3. Limited or no access to hot water cylinder installation (maintenance and replacement purposes) – replacement product provided but installation labour for customers account. Manufacturer will only provide the cylinder.
4. Required isolating valves not installed – Cylinder will be provided and customer must install the cylinder using his own plumbing contractor.
5. Water heater cylinder has been tampered with
6. Water heater cylinder serial plate has been tampered with or missing
7. Water heater cylinder has been removed from installation
8. All components installed in conjunction with the hot water cylinder must be approved components as per manufacturer specifications, if grey product components are used; the warranty will be void.
9. If the incorrect support structure is in place, the manufacturer will only provide a cylinder replacement. The installation cost will be for the consumers own account using his own plumbing contractor. The same goes for cylinders mounted on incorrect wall support.

NOTE:

1. This is a guideline to industry and users must always refer to current regulations and standards.
2. This guideline does not exclude the supply chain from liability of compliance in any manner. Installers must issue Notice of Non-compliance to property owners as required by regulation.
3. Solar geyser and heat pump installations have been excluded from this guideline at this point.
4. This guideline is subject to the manufacturers (water heater cylinder and valves) installation instructions.

Recommendations

1. Compliance of an electrical water heater system installation should be included in manufacturer warranty conditions going forward. Change behaviour of entire supply chain to ensure requirements of regulation are met, therefore ensuring the protection of the public and the environment.
2. Clear guideline to industry of how to bring an existing electrical water heater system installation to be compliant.
3. Understanding installations where specific conditions may affect voiding a warranty claim:
 - a. Amendments of regulation / standards related to installation date.
 - b. Water heater cylinder not been SANS 151 accredited (SABS approved) at time of installation.
 - c. Solar Water heater system not being SANS 1307 accredited (SABS approved) at time of installation.

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- d. Requirements of all solar system panel and cylinder configurations being SANS accredited (SABS approved).

For more information, please visit the IOPSA website at www.iopsa.org. Or contact 08610 PLUMBER

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