Class 1

Raymor Avon Mixer, Spout, Handshower and Shower Rose

Product Disclosure Information Self-Assessment
Version: V1

Product Name	Raymor Avon Mixer, Spout, Handshower and Shower Rose
Product Line	RAYMOR AVON TAPWARE
Product Identifier	(7)644893, (7)644894, (7)644901, (7)647387, (7)647388, (7)644900, (7)644898, (7)644897, (7)644896, (7)649420, (7)649418, (7)647386, (7)644899, (7)644895

Product description

Avon single lever basin mixers and sink mixers, bath spout, shower mixers, single and multispray handshowers with slide rails and fixed shower roses, also in single and multispray. Suitable for both mains and low pressure installations except the multispray handshowers which are suitable for mains pressure only.

Relevant Building Code Clauses

B2 DURABILITY B2.3.1 (i) and (ii)
E3 INTERNAL MOISTURE E3.3.5
G12 WATER SUPPLIES G12.3.2, G12.3.5, G12.3.7
G4 VENTILATION G4.3.3 (Referenced in maintenance requirements)
H1 ENERGY EFFICIENCY H1.2

Contributions to Compliance

B2.3.1 Durability: Made from brass and with solid metal handles, the Avon mixers come with a 5 year warranty. The European cartridge has a 20 year warranty. The finish is achieved with chromium electroplating, which wears well over many years with simple maintenance. Handshowers and Shower Roses have a 2 year warranty.**

Only high quality German flow regulators from Neoperl are used in the Avon Sink and Basin Mixers, the Single and Multispray Handshowers and the Single and Multispray Roses. These regulators reliably limit flow to achieve the relevant water efficiency star rating under WELS for mains pressure situations. (The star ratings for each product are listed on the next page under H1 Energy Efficiency.)

The Sink Mixer has 500mm long flexible tails to minimise kinking and for easier installation. The Sink and Basin Mixers have a wider hot flexible tail for increased flow on low pressure.

Every single shower, basin or sink mixer is individually pressure tested in New Zealand prior to its dispatch for quality assurance. The cartridge in all the mixers is high quality European-made technology.

E3 Internal Moisture: E3.3.5 The smooth surfaces of the chrome plated Avon tapware are easy to wipe clean thereby reducing mould growth or surface contamination.

G12 Water Supplies G12.3.2 In the unlikely event that the spray head on a Sink Mixer with Pullout Spray is inadvertently dropped into a vessel with contaminated water, a double flow regulator housing attached to the Mixer is fitted with two non-return valves which prevent back-flow of contaminated water through the line and into the main water supply. In the event that a handshower head from the shower could potentially reach the toilet bowl or basin, similar backflow prevention devices can be purchased to install in the head of the handshower for the same purpose.

G12.3.5 These fixtures are intended to supply hot and cold water as required for utensil and personal washing, showering or bathing.

G12.3.7 Each tap delivers sufficient flow for correct functioning under normal conditions. (See Conditions of Use below for pressure minimums.) Each individual mixer is pressure tested in New Zealand prior to dispatch to reduce the likelihood of leakage. The backflow prevention devices installed at the hose-to-head connection of the Sink Mixer with Pullout Spray are easily accessible for maintenance.

For unequal pressure environments, the mixers are set up so that high cold water pressure is less likely to backflow through the cartridge and into the hot water line, and back into the hot water cylinder, and even out onto the roof, thereby wasting water and energy. (See Conditions of Use for the details of what is supplied to achieve this.)

H1 Energy Efficiency: H1.2 All the mixers and handshowers which are covered by WELS, (the Water Efficiency Labelling Scheme), are supplied with high quality German Neoperl regulators to reliably limit flow to achieve their mains pressure star ratings. For low pressure (also known as unequal pressure) the flow regulators for WELS are not used. The WELS ratings are:

Avon Basin Mixer	4* Mains (7.5 l/min), 3* Low (9 l/min)
Avon Swivel Basin Mixer	4* Mains (7.5 l/min), 3* Low (9 l/min)
Avon Sink Mixer	3* Mains and Low Pressures (9 l/min)
Avon Sink Mixer with Pullout Spray	3* Mains (9 l/min), 5* Low (6 l/min)
Avon Single Spray Handshower	3* Mains and Low Pressures (9 l/min)
Avon Multispray Handshower	3* Mains Pressure (9 l/min)
Avon Single Spray Shower Rose	3* Mains and Low Pressures (9 l/min)
Avon Multispray Shower Rose	3* Mains Pressure (9 l/min)

In addition, the European Kerox cartridge includes a clever yet simple anti-scald device which can be set if desired. This is both a safety feature and an energy saving device. It's a simple matter of removing the grey plastic ring on the top of the cartridge and repositioning it so that the cartridge is prevented from travelling all the way to full hot, stopping instead at whatever point in its travel is chosen as the maximum hot temperature.

Scope of Use

The Raymor Avon Tapware is intended for accommodation and residential use. It is suitable for both hot and cold water use, and with mains or low pressure systems with pressures greater than 35kPa. (Exceptions are the multispray handshower and multispray rose. Both are suitable for mains pressure only.)

Conditions of Use

The Raymor Avon tapware should be installed by a registered plumber following best practice.

All the mixers in the range are supplied ready for low pressure situations and are suitable for all pressures above 35kPa except the **Sink Mixer with Pullout Spray** which requires a minimum operating pressure of 50kPa. The **Single Spray Handshower** is also suitable for all pressures above 35kPa. However, the **Multispray Handshower** and **Multispray Shower Rose** are suitable for mains pressure only, in order for the alternative spray options to operate properly. (150kPa)

They are designed to operate under pressures up to a maximum of 1000kPa. However, there are 2 things to consider. Firstly, consider that the pressure overnight increases while taps are not being used and can easily spike to well beyond 1000kPa without a pressure limiting device installed. And secondly, consider what the Building Code now requires, shown below.

Building Code Requirement - Pressure
It is now a requirement in the NZ Building Code that the minimum working pressure at any fixture is 30kPa and the maximum static pressure shall be no more than 500kPa.

Building Code Requirement - Temperature
Another Building Code requirement is that the temperature of water at personal hygiene fixtures in a home should not exceed 50°C. 45°C is the maximum in early childhood education and care centres, schools, old people's homes, institutions for people with psychiatric or physical disabilities and hospitals. (For licensing purposes for early childhood education and care centres, the Ministry of Education requires that the temperature of water delivered from taps that are accessible to children should not exceed 40°C.)

The Handshowers are supplied with a German Pressure Compensating Washer (PCW) which is only required to be fitted in mains pressure situations. This is typically in the wall elbow end of the wide bore shower hose. It should be fitted so that the water direction is towards the little black oring on the PCW.

There are two reasons for installing the PCW into the wall elbow end of the shower hose. Firstly because the hose is then more flexible during operation and secondly because it prevents the shower hose taking the brunt of any build-up of pressure that might occur behind the PCW.

The Sink Mixer and Basin Mixers are supplied ready for low pressure situations with a German Neoperl grey flow guide installed. A separate pressure compensating aerator (PCA) is supplied in an envelope for installation into the aerator for mains pressure situations. This is required to achieve the WELS water efficiency rating but is not used for low pressure installations. After installation, the mixer tails should not be kinked or unduly twisted.

Bath Spouts and **Shower Mixers** are exempted under the WELS scheme and are therefore not rated.

The Sink Mixer with Pullout Spray achieves its WELS rating for mains pressure, from the pressure compensating washer (PCW) installed in the connection between the tap body and the hose. This PCW should be removed for low pressure installations. Be aware the Mixer requires a minimum of 65kPa to function properly. This mixer is also fitted with two non-return valves, one on either side of the connection between the hose and the spray head. These are a safety measure in the unlikely event that the spray head is dropped into a vessel of contaminated water. These valves provide back-flow prevention to ensure that the contaminated water cannot backflow through the line to contaminate the water supply.

Low pressure environments typically mean low pressure hot water and high pressure cold water. The higher pressure of the cold water can force cold water back through the cartridge, into the hot line, back into the hot water cylinder, and even out onto the roof, (thereby wasting both water and energy) unless there is a mechanism within the mixer to reduce the risk of this occuring. The **Sink and Basin Mixers** in this range have a high quality, German Neoperl Pressure Compensating Washer (PCW) in the cold flexible tail which is designed to limit the flow on cold water to more closely match the hot. This reduces the risk of a backflow issue and also makes it easier to achieve a warm mix during operation. It's important that the PCW is installed so that the direction of the water is towards the side of the washer with the little black oring.

Sometimes in the shower, in unequal pressure situations, in your search to find "warm" you might tap the handle slightly and you get cold, tap it the other way and you get hot. "Warm" seems to be in a very small spot. The European cartridge in the **Avon Shower Mixer** has a ceramic disc which provides a wider mixing action, which means there's a larger "warm" zone. And here's a simple tip on how to set the mixer up for unequal pressure: with the faceplate off, set the handle to 6 o'clock. Turn both isolators off. Turn the hot isolator on full, then gradually open up the cold isolator until the water runs at your desired temperature. Now it's set. The same cartridge also includes an anti-scald device, described in more detail under H1 ENERGY EFFICIENCY.

Maintenance Requirements

Chromium electroplated tapware is amongst the hardiest of fixture coatings. However, to keep tapware looking good for longer, avoid using spray cleaners which over time can attack the chrome finish. Instead, wipe regularly using a mild detergent and a soft damp cloth. Then wipe dry with a clean cloth.

To prevent mould growth in the bathroom, and to increase the life of all the fixtures, install a fan which draws out moisture from the room. To ensure regular use of the fan, you could ask your electrician to link the light switch to the fan. *(This would fulfill obligations under the building code clause **G4.3.3** to remove moisture and pathogens in the air from bathing or showering.)*

Sometimes debris in the water line can make its way into the aerator at the end of the spout of the sink or basin mixer. You might notice the flow pattern become irregular. Simply unscrew the aerator ring, rinse out and reinstall. There are flats on the aerator ring for grip. Most often this can be unscrewed by hand, just with a piece of rubber. If a wrench is needed, still use the rubber to prevent metal-on-metal damage to the aerator ring.

Debris in a water line can also damage the smooth ceramic surfaces in a mixer cartridge. This is the most likely reason for a good cartridge to fail. In that event, replacing a cartridge is not an overly technical activity and can typically be carried out by a home handyman. For sink and basin mixers Aquatica Isolator Filter Stops can be installed in the cupboard below the mixer, at the flexible tail connection point, to help protect the cartridge from debris in the line. They can also be used to balance the flow and it can be a convenient shut-off point for the water, if ever that's required.

The flexible tails on the Basin and Sink Mixers are made with a waterproof lining to prevent leaking, then covered with stainless steel braiding for protection and strength. Although stainless steel stains less than steel, it is not stain-proof. It is more resistant to corrosion than ordinary carbon or alloy steels but in some circumstances it can corrode. Chemicals ending in "ine" such as chlorine, iodine and bromine will attack stainless steel. This can even happen if you store chemicals under the sink or basin. Even if the container has a lid on, it may not be perfectly sealed and can give off vapour which, when combined with any dampness in the air will corrode stainless steel. So you should check your flexible tails about every 6 months for signs of corrosion, especially if the room is damp and not well ventilated.

Warnings and Bans

This product line is not subject to any warning or ban under section 26 of the Building Act 2004.

Contact details

Manufacture locations	New Zealand, China, Italy, Germany
Legal and trading name of manufacturer and importer	AQUATICA NZ LIMITED
Manufacturer/Importer Address for Service	9 Saunders Place, Avondale Auckland 1026
Manufacturer/Importer Website	www.aquatica.co.nz
Manufacturer/Importer NZBN	9429000023962
Manufacturer/Importer Email	info@aquatica.co.nz
Manufacturer/Importer Phone Number	09.828.2068

Building code performance clauses

All relevant building code performance clauses listed in this document:

B2 DURABILITY

B2.3.1 *Building elements* must, with only normal maintenance, continue to satisfy the performance requirements of this code for 5 years if **(i)** The *building elements* (including services, linings, renewable protective coatings, and *fixtures*) are easy to access and replace, and **(ii)** Failure of those building elements to comply with the building code would be easily detected during normal use of the building.

E3 INTERNAL MOISTURE

E3.3.5 Surfaces of *building elements* likely to be splashed or become contaminated in the course of the *intended use* of the *building* must be *impervious* and easily cleaned.

G12 WATER SUPPLIES

G12.3.2 A potable water supply system must be a) protected from contamination; and b) installed in a manner that avoids the likelihood of contamination within the system and the water main; and c) installed using components that will not contaminate the water.

G12.3.5 Sanitary fixtures and sanitary appliances must be provided with hot water when intended to be used for a) utensil washing; and b) personal washing, showering or bathing.

G12.3.7 *Water supply systems* must be installed in a manner that a) pipes water to *sanitary fixtures* and *sanitary appliances* at flow rates that are adequate for the correct functioning of those *fixtures* and *appliances* under normal conditions: and b) avoids the likelihood of leakage; and c) allows reasonable access to components likely to need maintenance; and d) allows the system and any backflow prevention devices to be isolated for testing and maintenance.

H1 ENERGY EFFICIENCY

H1.2 *Buildings* must be *constructed* to achieve an adequate degree of energy efficiency when that energy is used for a) modifying temperature, modifying humidity, providing ventilation, or doing all or any of those things; or b) providing hot water to and from sanitary fixtures or sanitary appliances, or both.

G4 VENTILATION *(only with reference to Maintenance Requirements)*

G4.3.3 Buildings shall have a means of collecting or otherwise removing the following products from the spaces in which they are generated: **b)** [Moisture] from laundering, utensil washing, bathing and showering and **h)** bacteria viruses or other pathogens.

*** The warranties referred to in this document are residential warranties. Commercial warranties can be found as part of Aquatica's full warranty document available at www.aquatica.co.nz.*