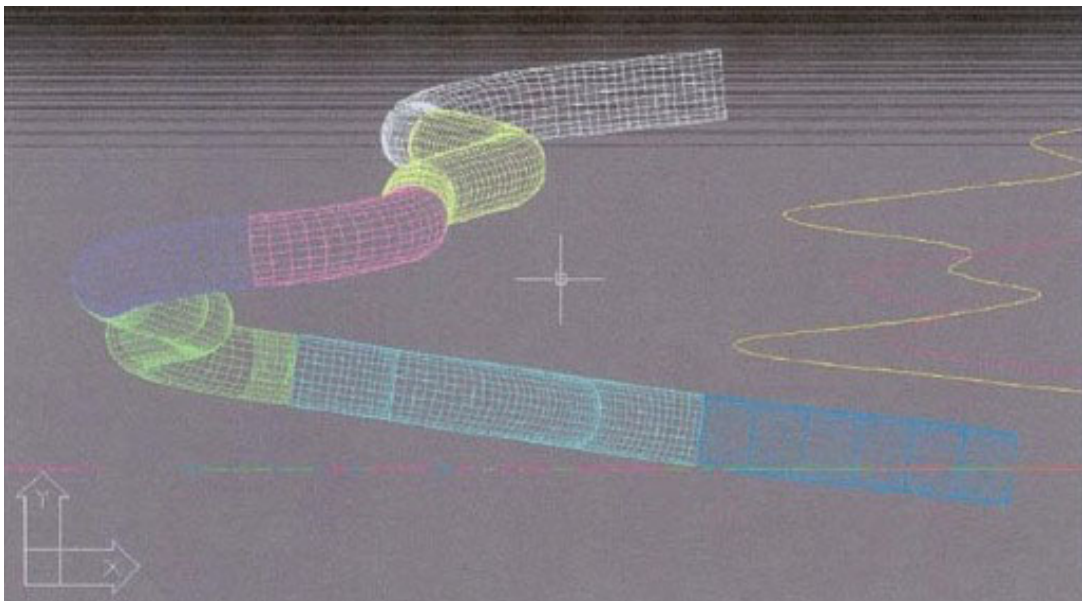


# The AEROMACH™ Seamless Hydroslide



*Proudly manufactured by:  
Aeromarine Industries Ltd  
PO Box 2097  
Washdyke  
TIMARU  
[aeromarine@paradise.net.nz](mailto:aeromarine@paradise.net.nz)*

## Contents

1. Introduction.....	3
2. AEROMACH™ Seamless Hydroslide data .....	4
3. Discussion - AEROMACH™ Seamless Hydroslide vs Flanged Pipe style slides.....	5
3.1. Introduction .....	5
3.2. Flanged.....	5
3.3. Seamless.....	6
3.4. Discussion on flanged tubes.....	7
3.5. Summary.....	8
3.6. Discussion on tube size.....	8
3.7. Design flexibility and ride excitement.....	8
3.8. AEROMACH Seamless Hydroslide – Simply Superior ....	9



## 1. Introduction

Aeromarine Industries Ltd is the sole New Zealand manufacturer of the AEROMACH™ Seamless Hydroslide, a significantly superior and safer Hydroslide.

The AEROMACH™ Seamless Hydroslide is, as the name suggests, completely seamless.

In addition to the monocoque seamless construction the AEROMACH™ Seamless Hydroslide offers many advances over alternative out dated slides such as:

- Much larger internal diameter giving over 25% more internal slide area. This colossal increase in area provides improved head space for add-on features such as riding novelties, and maintains the vital separation between the rider's body and the slide walls
- Complete elimination of leak paths, unsightly joints and joint maintenance
- No possibility of intentional sabotage of the slide by the placing of sharps into the joints, as there are **no** joints
- No dangerous jarring bumps at joints, again because there are **no** joints!
- Can be constructed to any practical length or desired grade
- Is completely flexible in spatial layout in both direction and variations of grade even within the same slide.
- Rapid on-site assemble. Typically taking around one week on-site to erect a single slide
- Professional computer aided design and engineering analysis



## 2. AEROMACH™ Seamless Hydroslide data

The following general information typically applies to AEROMACH™ Seamless Hydroslides.

- Diameter: 1350mm
- Joint method: Completely seamless
- Flow rate: 85-100lps typical
- Water source: Pool water circulation system
- Water recovery: Direct drain from base of landing chutes to pool balance system
- Power requirements: 18-20kW typical for a 7m lift
- Grade: Infinitely variable
- Available angular deflection: Infinitely variable
- External Colour selection: Standard base colours recommended, but can be matched to any colour
- Internal colour selection: Selected range of chlorine resistant swimming pool colours
- Standard entry: Hole in the wall style
- Standard exit: 4.2m landing chute.  
Landing pools are available but may require additional operational supervision



### **3. Discussion - AEROMACH™ Seamless Hydroslide vs Flanged Pipe style slides**

#### ***3.1. Introduction***

We at Aeromarine firmly believe that the seamless hydroslide tube is significantly superior to the alternative flanged arrangement. As background to this it is perhaps prudent to provide some detail on the fabrication method of the two processes.

#### ***3.2. Flanged.***

This is the traditional method of constructing a hydroslide tube. It ordinarily consists of half pipe sections of tube that are jointed by bolt and flange along a longitudinal join to form sections. Each section is then jointed, again by bolt and flange, to the mating sections.

The main advantages of this system are the ability to fabricate the half pipe section off-site as they nest easily for transport. The sealing surface of the joints is made watertight by the insertion of a sealer that is compressed between the mating flanges.

The resultant hydroslide inevitably has a quite noticeable surface feature or “bump” at each section join due to the difficulty of achieving perfectly grade aligned tube inverts. Indeed, it is quite common for flanged sections to miss align by a considerable amount with a consequential very jarring effect on participants. This “bump” is exacerbated by the unavoidable tendency of fibreglass to “pull” from the mould during the manufacturing process of a 90 degree flange, giving a more raised “bump” than would normally be expected. The jarring effect from this “bump” is compounded further still by the tendency for hydroslide rides to become increasingly faster.

It is important to understand that the hydroslices of as little as ten years ago were built to gradients of around one in thirteen. Today’s hydroslices are being installed at grades ranging from one in ten to one in eight with resultant speed increases.

Visually the flanged hydroslide will be dominated by the proliferation of longitudinal and sectional mating flanges and bolts, giving what may best be described as an “industrial” look to the hydroslide.

The lifecycle of the mating joint sealer is also an issue to be considered. Inevitably, some movement will occur through normal use of the hydroslide with this movement being easily accommodated by the flexible nature of the hydroslide itself. However, this movement will have a more deleterious effect on the mating joint sealer.

Unfortunately in today's world it is not possible to ignore the potential for deliberate and malicious attack on patrons by the insertion of sharps or other cutting objects into the gaps at the flanges, something impossible to do with an AEROMACH™ Seamless tube.

While some may scoff at this issue as being alarmist we can confirm that we have been approached to supply AEROMACH™ Seamless slides into Australia with our increased safety and size being cited as the main reasons.

### **3.3. *Seamless.***

This is the modern approach to hydroslide construction, and only Aeromarine Industries Ltd proudly offers truly seamless hydroslices.

Our process for manufacturing the advanced AEROMACH™ Seamless hydroslide is still somewhat confidential and subject to a degree of commercial confidentiality.

However, we can advise that our process completely eliminates both the longitudinal and sectional joints.

It is optically difficult to perceive the joints between the sections as these are finished to a standard that matches the surrounding tube, with the only visible indication being a very minor increase in outside diameter.

With the elimination of all flange joints we are able to produce a homogenous tube with continuous strength and watertightness.



### ***3.4. Discussion on flanged tubes.***

We take this opportunity to provide the following commentary on some issues regarding the use of flanged hydroslides.

We have, during discussions with the operators of the old flanged hydroslides, become aware of incidents that they experienced involving abrasions, lip lacerations and the like, generally attributed to the rough ride offered by the flanged joints.

During the last quarter of 2000, we were involved in the refurbishment of an open water slide at the Timaru District Council's Maori Park pool. The refurbishment was initiated by an understanding of how good and safe a hydroslide can truly be if constructed in a seamless manner (the Timaru D C has an AEROMACH™ Seamless hydroslide at its Century indoor pool). The works involved the replacement of the existing flanged joints with a seamless joints and cost in the order of 25% of the slides new cost.

We are confident that the conversion to seamless has resulted in a significant improvement in the quality and safety of ride.

### **3.5. Summary.**

We must strongly recommend the construction of the AEROMACH™ Seamless hydroslide regardless of selected diameter.

Further, we are strongly of the opinion that it is only a matter of time until flanged hydroslide tubes become obsolete due to Health and Safety considerations.

### **3.6. Discussion on tube size.**

We fully understand the financial constraints that are likely placed on a development of this type and appreciate that it may not be possible to fund the additional cost of the recommended 1350mm diameter tube.

However, we consider we would be remiss if we were to not bring the significant benefits of the increased diameter to your attention.

The greater diameter provides both a safer and more flexible product because:

- The increased chord distance at the riding position will reduce the likelihood of riders abrading on the tube walls.
- Superior future proofing and revenue generating ability by being able to accommodate novelty-riding devices.
- A much less claustrophobic tube environment owing to the 27% increase in tube cross-sectional area.

### **3.7. Design flexibility and ride excitement**

AEROMACH™ Seamless Hydroslides offer extremely flexible design options including variations in grade, sudden acceleration options, and a higher measure of angular deflection per meter of slide run.

These all combine to provide a superior ride encouraging repeat custom, stronger revenue streams and very happy patrons.

### **3.8. AEROMACH Seamless Hydroslide – Simply Superior**

We are supremely confident that our AEROMACH™ Seamless Hydroslide is light years ahead of the outdated, smaller flanged slides that we encourage all potential purchasers to experience the ride for themselves.

AEROMACH™ Seamless Hydroslides are currently operated in the following centres:

- Timaru – Century Pool – 1 slide
- Napier – Onekawa Domain – 2 slides
- Whakatane – Whakatane Aquatic Centre – 1 slide
- Taupo – AC Baths – 2 slides
- Palmerston North – LIDO Aquatic Centre – 2 slides
- Soon to be installed – Queenstown Aquatic Centre -- 2 slides
- Soon to be installed – Jelly Park Aquatic Centre -- 1 slide