

## Preferred Code of Practice – Pool Safety

### Pool Features

- Where there is more than one pool and where they are connected by a waterfall, river/stream, slides/slopes, bridge, walkway or other decorative feature safety warning notices must be clearly displayed around the pool advising customers of the danger and/or appropriate behaviour e.g. 'No Sliding', 'No Diving/jumping' etc.
- If the pool(s) have underwater walls, submerged rocks, or hidden ledges below the water surfaces these should be removed. It is not sufficient in these circumstances to simply place warning signs on the poolside.
- Steep slopes from standing depths should be clearly and prominently highlighted with the use of painted and/or buoyed lines across the top of the slope, and further indicated by the use of additional depth marks. Where possible, consideration should be given to removing the slope altogether.
- If the pool surround incorporates raised dive allurements such as decorative rocks, urns, bridges or other raised features, 'No Diving' signs must be displayed on the features themselves. Where possible, consideration should be given to removing the raised feature(s) altogether.

### Diving Boards/Platforms

- Where possible all diving boards and platforms should be removed from the pool(s).
- If a 1m diving board is present the depth of the water below the diving board, should be 3.5 metres or more and this depth must extend forward for 5 metres with a total forward clearance distance of 9 metres.
- A 1m fixed platform requires a minimum of 3.2 metres of water underneath it, extending forward for 4.5 metres with a total forward clearance distance of 8 metres.

### Pool bar

- Ideally the pool bar should be located more than 5 metres away from the pool.

### Depth Markings

- Depth markings must be present around the pool and should be:
  - Clearly visible – not faded and washed out.
  - Accurate – to indicate the exact depth of the water.
  - Adequate in size (10cm<sup>2</sup>) and adequate in frequency (approximately every 3 metres).
  - Indicate every change of 0.3metre depth.

### Pool Depths

- The freeboard distance (the distance from the top of the water surface to the top of the pool surround) should not be more than 30cm. If there are any obvious sudden changes in depth from standing, then notices or preventative measures to reduce the slopes danger should be installed i.e. painted or buoyed lines, and the slope should be further indicated by the use of additional depth markings.
- Where possible, consideration should be given to removing the slope altogether.
- Diving from the poolside should be prohibited where the depth of water is less than 1.5m and the forward clearance less than 7.6m.

### Pool Multi Boards/Signage

- There must be a multi board/safety notices indicating:
  - Pool Opening Hours
  - Children Must be supervised
  - Emergency Action Information.
  - Shower before entering the pool
  - Details of whether there is a life guard on duty or not.
- Prominently displayed pictorial 'No Diving' signs should be clearly featured around the pool where diving is dangerous. Diving from raised features must be prohibited.

## Life Guard & Resuscitation

- If a lifeguard is not provided the pool must have prominent signage to state 'No lifeguard on duty'.
- Resuscitation equipment (or personnel trained in CPR) must be available immediately at the poolside.
- A member of staff must be trained in the use of resuscitation equipment and be available at the poolside when the pool is open.

## Pool Surround

- The pool surround must be non-slip.
- There should not be any cracks or broken tiles around the pool area.

## Pool Maintenance & Records

- The pool water must be clear with the bottom of the pool visible (at its deepest point) at all times.
- The pool(s) must be regularly cleaned (including the grease line).
- Regular visual checks of the pool should be made throughout the day, pre and post opening and whilst the pool is in use.
- There must be a documented chemical disinfectant treatment system in place.
- Pool chemical dosing records should be retained and available for inspection. The records should as a minimum be signed by the pool maintenance person and include date, times, the chemicals used and the dosage. Where more than one pool is a feature of the property, individual pool records must be retained as above and be clearly labelled with the pool name.
- The pool plant room must be securely locked at all times.
- The pool plant room must be kept clean and organised at all times.
- If the pool is closed at night, an adequate method of closure should be implemented i.e. signage, ropes, cover, security patrol etc. to supplement the display of the pool's opening hours.

## Pool Outlets

- There should be at least two outlets per suction line.
- Each pool outlet should be separated by at least 2 metres.
- Each pool outlet should be sited at least 3 metres away from poolside walls.
- Each pool outlet should be free from significant suction.
- Each pool outlet should have a net free surface area of 6–10 times that of the suction line.
- Each pool outlet should be free from damage.
- Each pool outlet should be free from entrapment hazards.
- The pool outlets should be located outside the dive trajectory.
- Emergency shut off must be possible and a documented procedure on how to do this must be written and available for use.

## Pool Fixtures & Fittings

- All pool fixtures and fittings i.e. in pool-lights, grills, handrails, steps covers, filters etc must be in place and securely fitted.
- There must be adequate means of access and egress to the pool.
- Pool access steps (not ladders) must have their leading edges highlighted.

### Children's Pools

- If the Children's pool is separate from the main pool, the distance between the children's pool and the main pool must be 3 metres or more.
- The children's pool should be located near the shallowest part of the adult pool.
- If the children's pool is located within three metres of the main pool, there must be an impenetrable and unclimbable barrier separating the children's pool and the main pool. This barrier must extend continuously from the ground to 800mm in height, and extend around the side of the children's pool so that 3m separates the point of egress from the children's pool and the nearest point of the main pool.
- If the children's pool is connected to or is part of the main pool, it should be adjacent to the shallowest part of the main pool. This part of the main pool should be approximately the same depth as the children's pool. The main pool should slope away gently to deeper water. If this is not the case, there must be an impenetrable and unclimbable barrier separating the children's pool and the main pool. This barrier must extend continuously from the pool floor to 800mm above the water line, and extend around the side of the children's pool so that 3m separates the point of egress from the children's pool and the nearest point of the main pool.
- Parents must be able to easily supervise the children's pool area.
- The depth of the children's pool should be clearly indicated.
- The design of the children's pool should be 'Child Friendly' (see below).
- The depth of the pool should be of an acceptable level, which is suitable for children (600 mm or less).
- The gradients within the pool should be of suitable for children (1:15).
- The pool should be free from suction and entrapment possibilities.
- Access and egress must be easy for children (wide but small steps, low freeboard).

### Heated Jacuzzis

- Heated jacuzzis must have warning notices clearly displayed in close proximity to advise customers of the following:
  - The temperature of the water
  - The minimum ages for use
  - The emergency action information
  - Advice against use by those with high blood pressure, heart conditions and pregnancy etc.

### Flumes & Slides

- Flumes and waterslides that are over 2 meters in height must be supervised when the pool is open.
- Flumes and waterslides must have pictorial information signs clearly displayed at the slide access or top to advise customers of the following:
  - Minimum ages restrictions or minimum height restrictions (must be displayed at the access)
  - The correct riding position
  - The water depth of the landing area
  - Advice to customers to move out of the landing area immediately upon splashdown.
- There must be a clear method of keeping riders apart i.e. advising not to ride until the current rider has cleared the landing area. This could be actioned by the use of a traffic light system.
- There must be a segregated or separate landing/splash down area provided for each slide or flume.

## Additional Information – Pool Safety

### Depth Markings

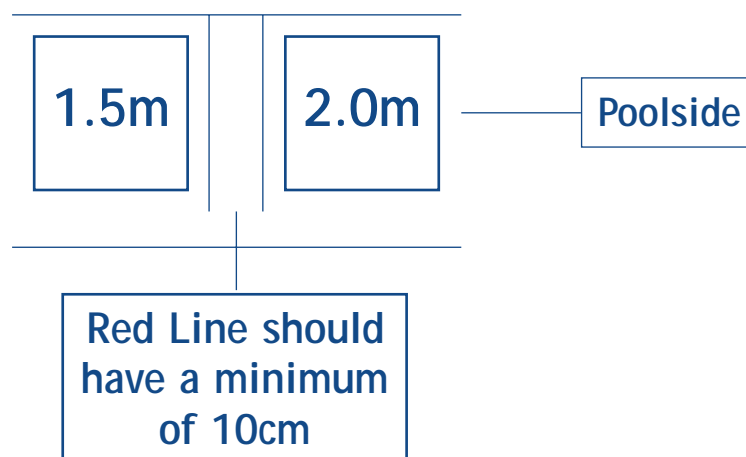
Depth markings to be located on the paving/area immediately next to the water (horizontal plane). Markings should be in metres and/or feet and be a minimum of 10cm square without the M sign, i.e. depth of 1.5M should be:



These markings should be in red or alternatively a colour which contrasts sharply with the paving/surround. Depth markings should be placed at regular intervals. Minimum 2m apart on small pools, 3m apart on large pools. (Small pools = less than 6m square and Large pools = more than 6m square). Depth markings that are painted should not be allowed to fade. It is recommended that they are repainted/retouched every month.

### Pool depths

Gradual changes in depths should be indicated at regular intervals (as indicated). Sudden changes in depths should be clearly marked and some warning such as buoys across the pool or red lines painted by the side should ensure this is highlighted.



Pools should have adequate cleaning and maintenance programs, which should be adjusted if necessary when there is heavy use of the pool in high season and full records of cleaning and chlorine/pH testing should be held by the property.

### Pool Water Clarity

If the pool bottom can not be seen, a swimmer beneath the surface who gets into difficulty may not be noticed and may drown. Regular visual checks should be made throughout the day in order to continually assess the clarity of the water.

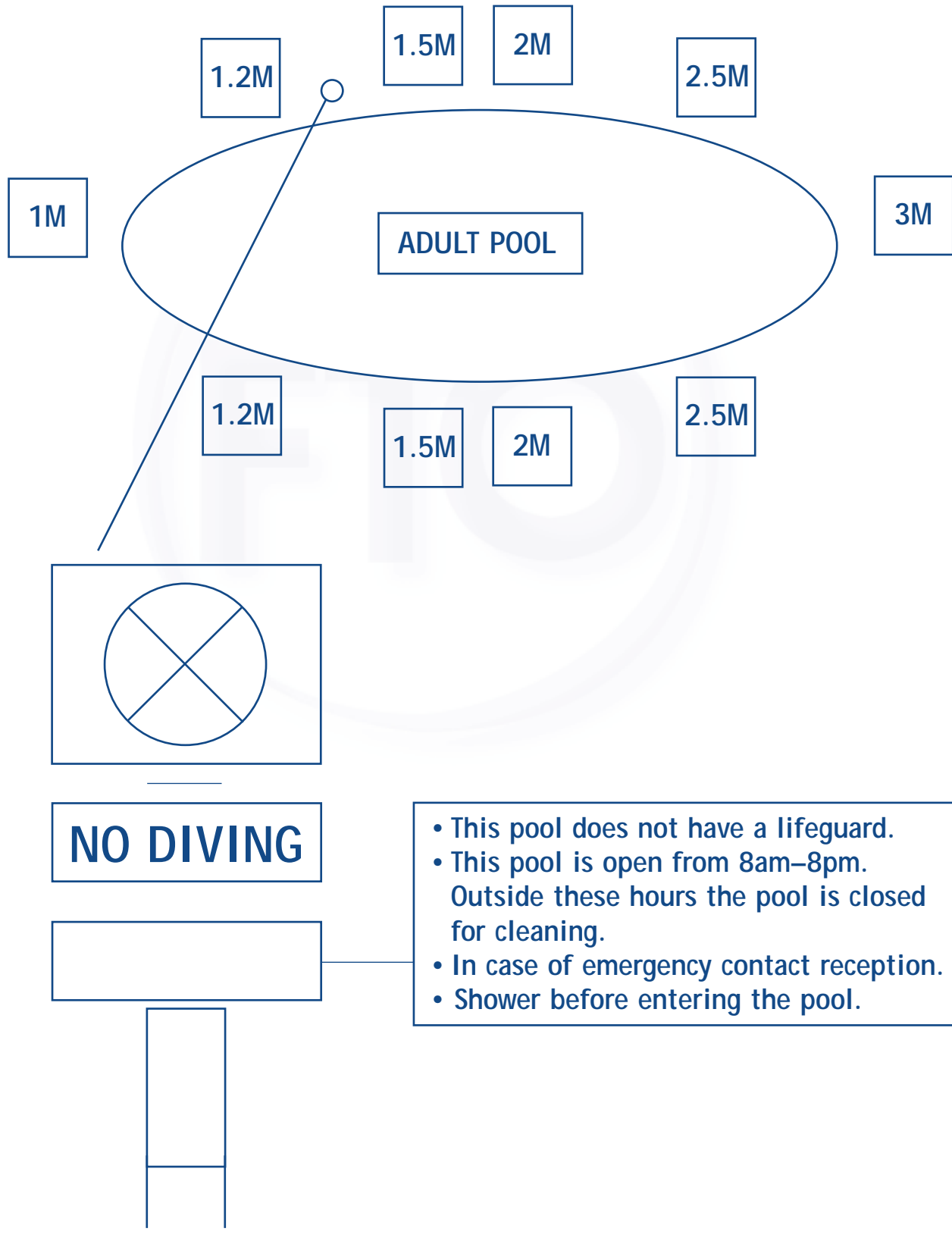
In order to assist, listed below are a number of possible causes why the clarity of the pool water is poor and the possible solutions to the problems:

- Poor water quality, often due to heavy use and inadequate treatment making the pool cloudy
  - Pool operators should ensure that the water has been properly treated and prepared for the expected number of users.
- Wind ripple, especially on unprotected open-air pools
  - Wind ripple can be reduced as much as possible by planting or solid screening.
- Too many swimmers in the water
  - Maximum user numbers should be established.
- The effect of coloured tiles, which can darken the bottom of the pool or would make a body less obvious
  - Ideally the tiles should be replaced otherwise supervision should be encouraged.

### Pool water quality

This is different from pool water clarity, however poor water quality can lead to poor water clarity. It is imperative that it is chemically maintained and that the water is tested on a regular basis. All pools should have a logbook stating the result of all chemical disinfectant treatment and tests.

Illustrated example of a pool



## Swimming Pool Hygiene – Cryptosporidium

### Introduction

Water recreational activities and swimming pools are one of the most popular features of any holiday hotel. However a large outbreak of waterborne infection in a Majorcan hotel during the summer of 2000 has highlighted potential risks to all swimming pool operators. A large number of people were affected by an illness known as Cryptosporidium (linked to faecal contamination of pool water) and associated costs of related claims has been estimated at over £1 million pounds (UK Sterling).

### What are the risks?

Swimming and similar water recreational activities which principally involve communal use of the pool, pose a risk of the contamination of water by germs from the swimmers and bathers themselves. Without control this could cause a variety of illnesses such as diarrhoea, skin, or ear infections.

Most pool operators know that adequate chlorination of pools will kill many germs however, there are a number of organisms, for example Giardia and Cryptosporidium, which are chlorine resistant. These organisms commonly cause infection following faecal accidents in the pool. There is therefore an increased risk of such incidents from toddlers who wear nappies or who are just learning to be toilet trained and from persons who have experienced a recent bout of diarrhoea. When faecal accidents occur in the pool germs, which contaminate the pool, can be swallowed by other swimmers causing diarrhoeal illness.

### Cryptosporidium

Cryptosporidium (sometimes referred to Cryptosporidiosis) is a parasitic infection whose symptoms generally include stomach cramps, abdominal pain, diarrhoea and loss of appetite. As with many diarrhoeal infections this can quickly lead to dehydration in many patients.

Should a bather swallow water contaminated with Cryptosporidium, infection may not occur immediately since the incubation period can last up to an average of 7 days before symptoms commence. In holiday makers this may mean that some would not fall ill until after their return home.

The infection poses a specific risk as the organism can have a very low infectious dose rate. It is highly chlorine resistant and therefore relies upon effective filtration to remove the infectious organisms (known as oocysts). This can sometimes be difficult to achieve due to the very small size of the oocysts.

The illness can be passed on indirectly person to person as well as through the ingestion of contaminated water. This may arise through poor personal hygiene after visiting the toilet or after changing children's nappies or hand to mouth contact from contaminated surfaces.

Testing of water samples for the presence/absence of Cryptosporidium is difficult. Large volumes of water must be filtered and examined and there are very few reputable and accredited laboratories that can reliably and routinely carry out the tests.

## What precautions will reduce the risk of infection?

### Education of bathers and swimmers

- a) People should be encouraged to shower prior to using the pool to assist in the removal of germs and chemicals (sun lotions, perfumes and cosmetics) from their skin. Suitable and sufficient shower facilities should therefore be provided by the poolside and appropriate signage will help to encourage their use.
- b) Parents should be discouraged from allowing children wearing nappies into the pool. Special swimming pants may be used.
- c) Both adults and children who are suffering from, or have recently experienced an incident of diarrhoea should be discouraged from using the pool. Again, signage will assist in the education of guests.
- d) Provision of adequate toilet and nappy changing facilities will encourage use and will help to promote good personal hygiene. All facilities should be well maintained and kept clean at all times. Parents should be discouraged from changing nappies at the poolside.

### Pool Design and Maintenance

Along with the structural safety of the pool it is essential that the pool filtration system and water treatment plant is adequate for its purpose and the capacity of the pool. All filtration systems will require regular maintenance programmes.

Pool designs vary and it is therefore beyond the scope of this information to provide detailed advice regarding this issue. Expert advice should be sought during the installation or refurbishment of the pool from the pool manufacturer.

Designated staff should be trained in the correct use and maintenance of the pool systems and a nominated person allocated responsibility for implementing the guidance contained in this section.

All procedures should be documented with log books of regular treatments and actions maintained. All records should be routinely checked and inspected by a member of the hotel management. We would emphasise the need to maintain written records of your actions and daily treatments/checks, as there are an increasing number of legal actions following cases of *Cryptosporidium* associated with hotels. It is very difficult to make a defence argument if the hotelier does not have written records of an active control plan.

### Faecal and/or vomit accidents

An action plan to deal with faecal accidents in the pool should be prepared in writing. This should also include procedures for investigating suspected outbreaks of illness with up to date local health authority contacts and telephone numbers.

Staff should be familiar with this policy and should have access to a copy in the event of an incident. One person should be allocated the responsibility of ensuring that this protocol is followed.



## Recommended procedures

It is important to ensure that any such accident is identified and action taken quickly to prevent spread of infection. Faecal accidents and vomit can spread the infection. The first precaution is to ensure that any accident is quickly identified and the pool cleared immediately. Below are the housekeeping practices that need to be in place to minimise the risk of infection being spread as a result of faecal/vomit accidents in the pool.

The accommodation management should appoint a person to take responsibility for implementing the procedures shown below, specifically to encourage all staff to maintain vigilance of the pool while in use.

In the event of a release of a solid stool, the following action must be taken:

- It must be retrieved quickly and discarded in a hygienic manner, ie. flush down toilet.
- Ensure the scoop used is disinfected.
- Ensure that the pool is operating correctly in other respects (pH, chlorine levels) and if these are acceptable, no further action is necessary.

In the event of a release of vomit or diarrhoea the following actions are to be taken:

- Clear pool of bathers immediately.
- Ensure disinfectant levels are maintained at the top of the recommended ranges.
- Ensure the pool is vacuumed and swept to remove any contamination as soon as possible (vacuum to a safe disposal point – not to a recirculation point of the pool). Disinfect vacuum after use.
- Using a coagulant, the water is to be filtered for six turnover cycles.
- The filter is to be backwashed throughout the operation.
- Subject to clarity of pool and water samples taken indicating satisfactory chlorine and pH levels, the pool can then be reopened.
- Records must be maintained of any such incidents and subsequent action taken.

## Further Information and Technical Guidance

U.K. Pool Water Treatment Advisory Group Publications

- Swimming Pool Water – Treatment and Quality Standards Published 2000. ISBN 0-951-7007-6-6 ProMinent Fluid Controls (UK) Ltd, Resolution Rd, Ashby-de-la-Zouch, LE65 1DW Tel: +44 1530 560555 Fax: +44 1530 560777 £35
- Technical Guidance Note February 2001 Advice on Cryptosporidium updated.
- Institute of Sport & Recreation Management Information Update on Cryptosporidium (216: 02/01)  
see [www.isrm.co.uk/info-index.htm](http://www.isrm.co.uk/info-index.htm)

