

Aeration tube makes swimming safer

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Accidents with pool grilles result in fatalities every year. Pool owners and builders are hardly aware of the risks of suction entrapment. UT student Joost Avezaat studied the technical safety of water circulation systems in European pools together with the [Blue Cap Foundation](#). This resulted in workable solutions.

Pools with a water circulation system in which water is drawn through grilles are a major risk. Swimmers can get sucked onto a grille if they block it. In the worst case, the swimmer will not be able to free himself

from the grille. This is known as suction entrapment, a problem that has not been widely publicized and that is little understood due to lack of serious research. Those involved in swimming pool design and construction simply do not possess the relevant expertise and equipment.

Aeration tube

In his final project for his Master's degree in Industrial Design and Engineering, Joost Avezaat describes the optimal application of current safety systems in combination with aeration tubes. Currently available measures in the area of sensors and grille techniques are often not sufficient for addressing the problem of suction entrapment.

Aeration tubes are an effective and cheap solution. Drawing on the results of this study, the technique has already been applied in several [swimming pools](#) in the Netherlands. Aeration tubes eliminate the localized underpressure in the pumping system by introducing air into the water. Experiments show that aeration tubes reduce the risk of suction entrapment, and, when used together with other [safety measures](#), can eliminate the risk altogether. Additional design requirements for aeration tubes, drain grilles and [water circulation](#) systems can eliminate suction entrapment risk from all swimming pools, both new and existing.

On Thursday, March 28 at 14:00 Joost Avezaat will give a presentation entitled "[Risk Analysis](#) of [Swimming Pool Water](#) Circulation Systems – Developing safety measures and design requirements to exclude entrapment risk." Location: De Spiegel building (room 3), on the UT campus.

Provided by University of Twente

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