



Gate Safety by Design – Mind the Gap(s)

While we have previously looked in detail at the role that finger trap guards can play in mitigating the risk of injury due to the gap between the post and the hang stile of a swing gate, in this issue we take a look at the potential dangers associated with gaps in general.

When looking at installing a gate, or reviewing an existing installation as part of a regular maintenance visit, it is important to bear in mind the significance of any gaps created within and around the gate in relation to the hazards these represent.

Such gaps can represent a serious dragging, shearing or drawing in risk and as such, in relation to a new installation - must be designed out – and when considering an existing gate, steps must be taken to mitigate the risk of injury or worse.

Gap watch

Gaps over 100mm should be eliminated from the gate design as follows:

- On a swing gate, any reducing gap between the gate and the gate post – as per earlier column
- On a sliding gate between the sliding gate and its support posts to mitigate the drawing in risk
- Under the gate - gaps under the gate should be less than 100mm, to prevent a crushing risk when the gate is in operation. Be also aware that if the gap is too large it provides an opportunity for people to crawl under the gate to gain entry to the site. This makes a mockery of the investment made in a new security gate!
- Between the pales of the gate – gaps should be 100mm or less to ensure there is no entrapment risk

In addition, if the gate is in a setting where there could be a risk of entrapment / crushing or shearing above the gate, such as within an underground car park with a distinct ceiling, installers need to protect against the potential scenario where someone attempting to climb over the security gate, could find themselves squeezed into a very tight space if the 'machine' begins to move.

Reducing gaps

On a swing or bi-folding installation, reducing gaps between the gate hang stile and the hang post are a dangerous crushing risk if the gap reduces when the gate is in operation. Gaps cannot reduce by more than 20% of the original opening to a minimum of 25mm for example an 80mm gap between the post and gate should only reduce by 16mm (20% of 80mm).

When considering safety on the cycle of a gate operation, with sliding gates the focus tends to be fixated on the opening end rather than what is happening at the rear end.

Persons sited near the rear of the gate can feasibly be hit or drawn into the gate, so measures must be taken to prevent anyone from coming into contact with the gate by fencing off the entire run back when it is in the open phase. This also represents a cost-effective solution.

Tapering gaps

Wire mesh is frequently employed to effectively 'fence off' high risk areas, such as the run back on a sliding gate. Be aware that some mesh featuring for example a diamond pattern where the gap tapers at the top and bottom, can create a shearing / cutting / entrapment risk if someone tries to scale it. The mesh effectively remains 'static' while the gate is moving offering no 'give' and therefore posing an additional safety hazard. Tapering gaps are often created through the design of the gate, pretty shapes or wording within the design can all create additional risks which will require protective measures if they are not removed in the design stage.

For more information please visit the Gate Safe website www.gate-safe.org to book an online training course.