



Gate Safety by Design

Three hinges Q&As

Q: Why the sudden focus on three hinges for swing gates?

A: From a Gate Safe perspective, this is not a 'sudden focus'. We've always referenced the need for an inherently safe design for a gate and have regularly documented the growing number of falling gate incidents.

Q: In a recent article Gate Safe said that the British Standard BS EN 12604 clearly states that all swing gates should be fitted with three hinges. Is this true?

A: The standard says it should not be capable of falling through single point failure, one hinge breaking would be a single point failure that causes a catastrophic failure of the gate to use the technical term taken from the standard. So, Gate Safe recommend a third hinge although a tether could be used to prevent a gate from falling.

Q: Is there an actual legal requirement for three hinges on a gate?

A: Court cases relating to gate accidents take in consideration previous accidents and there is already a clear precedence for injuries / fatalities caused by a falling gate. Gates must be made safe and the absence of a third hinge or alternative measure such as a tether, represents a failure to mitigate the risk of the gate falling.

Q: If there is no legal requirement as such, what legal framework can be used to support the need to adopt this as best practice?

A: Under the Supply of Machinery (Safety) Regulations 2008 there is a requirement as part of 'ensuring that the essential health and safety requirements (EHSRs) are satisfied' for the gate to be safe.

Q: If a hinge cannot be fitted, what other measures can be adopted to mitigate the risk of the gate falling?

A: A tether or alternative fall arrest mechanism. Although care needs to be taken to select a tether capable of resisting the dynamic force of a gate falling.

Q: Inverting hinges is also an issue, why?

A: An inverted hinge is no longer a load bearing hinge at this point, the pin should face up so that the eye of gate is leaning on the hinge pin. Placing weight on one section of the gate rather than two or three mounting points represents a clear compromise on the safety of the installation. If the hinge has been inverted to prevent the gate being lifted off the post, other options can be pursued that will achieve this desired outcome. This includes welding a nut to the hinge pin, putting a bolt through the hinge pin, a gate tether, or an anti-lift device.