

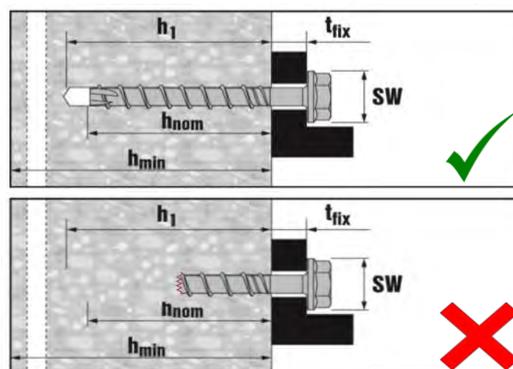
## Unauthorised Alterations/Modifications to Fixings – HILTI HUS3

It has been discovered at Tottenham Court Road (TCR) that HILTI HUS3 Concrete Screw Anchors supporting ductwork, including “Flameshield” fire life safety ductwork (stair pressurization and air release systems) have been sawn down in size and used by a sub-contractor.

Tampering with, modifying and altering fixings is an extremely serious issue which jeopardises the structural integrity of an entire system that is being installed. Failure of fixings could result in the collapse of installations resulting in catastrophic circumstances.

This practice is expressly forbidden. At no time should any fixings being used to support plant or equipment be altered or modified to aid the ease of installation. Not only does it increase the risk of failure but it also invalidates any warranties and the design life of the fixings.

In this case at present, the decision has been made to undertake removal and replacement of all HUS3 fixings that have been installed in two sections of ductwork in the Western Ticket Hall.



HILTI have issued the following statement regarding altering their fixings;

*"Any alterations to the HUS3 anchor including the HUS-HF fixings will invalidate the ETA approval along with its 50 year design life. Along with this, all technical data regarding the performance of the anchor is lost. Hilti will take no liability for any anchors that have been altered or tampered with in any instances as this falls outside of the test data contained within the ETA."*

*In addition, any alterations to the anchor means the anchor will not perform as inspected. The HUS3 screw anchor works on the principle of keying & friction with the end of the anchor formed to cut the concrete in a specific way and ensure a distributed load introduction by friction and keying.*

*Finally, without removing the anchor itself, there is no way of knowing if the anchor has been altered. Carrying out pull out tests within this situation will also not guarantee the fixing."*

This action of modifying fixings constitutes a serious breach of the Projects quality assurance requirements and of the contractor's ductwork supplier's accreditation to install fire life safety ductwork systems.

### ACTION TO BE TAKEN

- Conduct on-site briefings on the risks and consequences of modifying fixings.
- Ensure a robust system is in place for monitoring and documenting the installation of fixings and ensuring assurance of the end product.
- Carry out surveillance exercises on installation of fixings.