TO THE CLIMBING COMMUNITY

Climbing is a growing activity around the world, and more and more new routes are being established. Bolts can be a big cost for many bolters, and the lifetime of bolts are not always the main focus when new routes are being established.

The UIAA safety commission has worked to improve the safety for climbers for many decades and continues to do so. During the last few years, a lot of work and money have been put in to research regarding corrosion of rock anchors (bolts, hangers and anchor stations).

This has been needed since the recent discovery of stress corrosion cracking at ambient temperatures and the understanding that the type of material used in a rock anchor is not the only aspect when it comes to corrosion resistance.

How to choose a good quality anchor

The UIAA recommends that an anchor should be installed with the ambition that the anchor should have a lifetime of at least 50 years (regarding corrosion). If this should be possible the product must be of good quality and chosen correctly for the environment it is installed in.

To be sure that an anchor is of a high quality, the manufacturer must control all parts of manufacturing. Aspects such as material sourcing, machining, welding etc. can easily be missed, even though the anchor looks fine when purchased.

If a UIAA safety label is marked on a rock anchor it shows that it have been certified to the UIAA safety standard 123 and to EN 959, by an independent test laboratory. A rock anchor with an UIAA safety label will also have a marking showing what corrosion class it has passed.

To be sure that a rock anchor is of high quality, safe and corrosion resistant (if used in a suitable location) you shall chose a product that have the UIAA safety label, and with a suitable corrosion class (or higher).

Marking on rock anchors

The material that a rock anchor is made of is not the only aspect that influences the corrosion resistance. Therefore, UIAA does not recommend that anyone choose products solely on the material it is made of. The corrosion resistance test for a UIAA 123 certified product is tested on the full rock anchor as it is installed (including installation stress). It is also a known problem that raw material that is purchased by the manufacturer could be out of specification, and thereby having less resistance to corrosion.

UIAA 123 corrosion classes

SCC: High SCC and general corrosion resistance
High resistance against SCC
High resistance against general corrosion

GC: General corrosion resistance
No resistance against SCC
High resistance against general corrosion

LC: Low corrosion resistance
No resistance against SCC
Medium resistance against general corrosion

Even if rock anchors have markings identifying the alloy type (e.g. "304" "316L"), they still need to have the UIAA corrosion class marking.

Best regards

The UIAA Safety commission

SAFE BOLTS THAT LAST A CENTURY!

Bolters and bolting organisations have the responsibility to choose rock anchors (bolts) that are of high quality, correct type for the rock type and with an expected lifespan of 50 years or more, regarding corrosion. Wear will still be a factor, but wear is normally easier to monitor that corrosion.

An anchor or an anchor-system should be readily assessable and modifiable if replacement or repair is needed.

Choose a rock anchor with the UIAA safety label to be sure that the rock anchors have been manufactured to the highest safety standard, and that they are tested for a corrosion class! To just state what material an anchor is made of is not sufficient!

Material is not a suitable way to define corrosion resistance. Therefore, the UIAA has developed a corrosion test in three levels that is mandatory for all UIAA-certified rock anchors (bolts). The UIAA safety label on rock anchors guaranty high quality products with a tested corrosion resistance!

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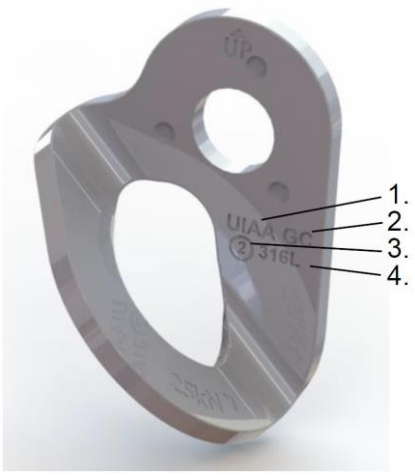

1. UIAA shows that the product is certified to the UIAA safety standard.
2. GC = General corrosion (the corrosion class for the product).
3. The material class acc. to the EN 959:2019 (1, 2 or 3).
4. The material that the component is manufactured from.