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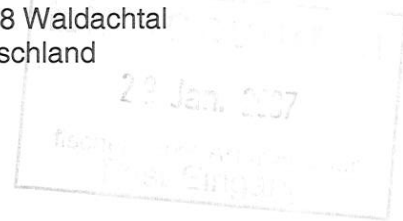
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Our Reference

Sachbearbeitung T. Friedrich
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Date

fischerwerke Artur Fischer GmbH & Co.
Herrn W. Hengesbach
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Influence of the Coating of Metal Anchors on the Shock Load Transfer

Dear Mr Hengesbach,

SPIEZ LABORATORY has been performing shock tests on metal anchors for more than twenty years. Up to now, more than 30 types of anchors have been subjected to experimental shock tests. With such tests, SPIEZ LABORATORY determines whether or not an anchor system is suitable for the use in shelters. Various galvanised steel, hot-dip galvanised steel and stainless steel anchors have been tested. Generally, no significant influences of the anchor coating could be observed in these tests.

The undercut anchor fischer FZA was shock tested at SPIEZ LABORATORY in 2006. In all these tests galvanised steel anchors were used. All anchors performed well and fulfilled the shock test criteria. Subsequently, approval from the Swiss Federal Office for Civil Protection FOCP has been issued for these anchors.

Fischer also produces the FZA anchor in hot-dip galvanised steel. Based on our experience, it can be expected that the load transfer under shock conditions is not significantly affected by varying the type of coating. In the case of the undercut anchor fischer FZA, the main load transfer mechanism is mechanical interlock.

For this reason it can be concluded that, as far as the transfer of shock loads is concerned, the geometry of the mentioned anchor is much more important than the coating.

Yours sincerely,

LABOR SPIEZ
NBC Protection Technology
Mechanical Effects

T. Friedrich

z.K.: FTO, Ltg. → Reg.