



To whom it may concern

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***Technical statement
Installation of DB 80 / 6m N2 W3 without anchoring of terminal elements***

Dear sir or gentleman,

All considerations regarding the Installation of the DELTABLOC safety barrier **DB 80 / 6m N2 W3** without anchoring of terminal elements at the beginning and the end of the barrier chain are based on the following facts:

The nominated safety barrier has been tested for containment level N2 and H1 as follows:

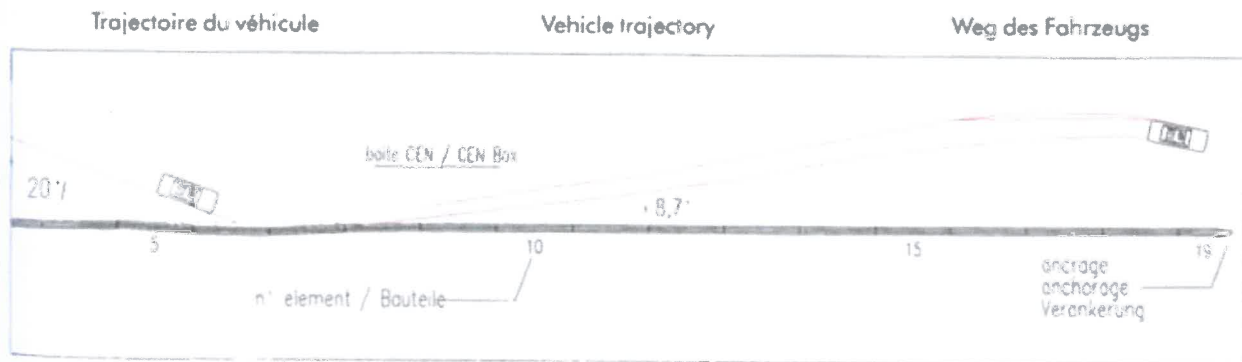
- N2: Tests TB 11 and TB 32, Performance class: N2 W3 ASI B
- H1: Tests TB 11 and TB 42; Performance class: H1 W4 ASI B

Regarding the anchoring of the terminal elements the impact tests with the heavy good vehicles are determining (TB 32 and TB 41). The TB 11 impact test is not relevant due to very little movement of the single elements compared to the impact tests with the heavy good vehicles.

Test TB 32:

1. During the test performance of the TB 32 the installation length was 108 m.
2. The terminal elements have been anchored with 3 pcs. of M24 screws each.
3. The maximum dynamic deflection was 40 cm, the working width 100 cm, corresponding to class W3.
4. At the beginning of the element chain the terminal element (slope element) of 4 m length and three (3) following elements of 6 m length each did not suffer any movement, neither in lateral nor longitudinal direction.

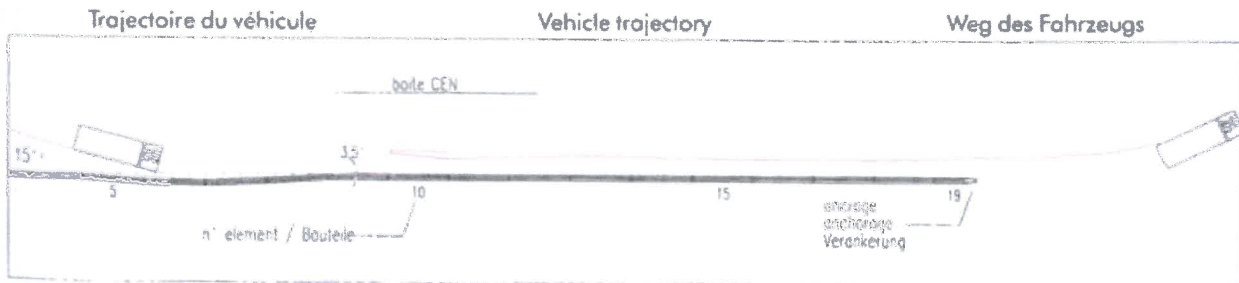
Drawing 1: Extract from test report TB 32: Vehicle trajectory on impact



Test TB 42:

1. During the test performance of the TB 42 test, performed with the same configuration of installation length and anchoring as the TB 32 test. The maximum dynamic deflection was 63 cm, the working with 123 cm, corresponding to class W4.
2. At the beginning of the element chain the terminal element (slope element) of 4 m length and three (3) following elements of 6 m length each did not suffer any lateral movement. A movement in longitudinal direction occurs in the range of some millimeters.

Drawing 2: Extract from test report TB 42: Vehicle trajectory on impact



Conclusion:

Based on the observed movement of the elements following the terminals it can be concluded that the impact test TB 42 leads only to a slight stress of the anchoring with longitudinal forces only. In comparison the TB 32 impact test (81,9 kJ) – having 35% less impact energy then the TB 42 (126,6 kJ) – only low longitudinal forces will be introduced into the anchoring at the beginning of the element chain.

The expected low longitudinal forces at the beginning of the element chain can be absorbed by additional safety barrier elements based on additional weight and friction with the ground of the barrier elements.

Recommendation:

Based on the conclusions above the DELTABLOC safety barrier system DB 80 / 6m N2 W3 can be installed without terminal anchoring under the following circumstances:

1. Minimum installation length must be 108 m.
2. From the end of the area to be protected the installation must be extended by at least 2 (two) standard elements – in each direction.
3. The ground must offer standard friction conditions (for example asphalt layer).

Referring to the standard N2 test the installation of the element barrier chain without terminal anchoring can be treated as equal based on the mentioned conditions for installation.

Annotation:

We need to point out that such an installation without end anchoring does not guarantee adequate protection in case of impact events that are above the norm-impacts for N2 and H1. The working width will be larger than W3, depending on the impact energy.

Kind regards,



Ing. Franz Spitzer

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