

Beschussamt Mellrichstadt

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Swebor Stål AB
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Test Report

Testing of the ballistic resistance of armouring material.

Report No. : 13M368B01#, order No.: 7363
Date of delivery : 11.12.2013
Tester : Selzam, Edelmann
Sample : steel plate (2,0mm x 400mm x 400mm)
Designation : SWEBOR XXXX (ID-No. SW1350-083)
Applicant : Swebor Stål AB
Manufacturer : Swebor Stål AB
Requirement : 9mm Luger FMJ/RN/SC




Böttsch

Mellrichstadt, 12.12.2013

The test results are only valid for the samples described in this report.
The applicability of this test report is restricted to ten years from the date of testing. It will expire prematurely, if any alteration or modification to the manufacturing process, materials and/or quality management system could impact the product conformity.
This report is only valid with the official seal and correspondence of the report numbers on all pages.
Duplication in extracts of this report is only allowed with written approval of the Beschussamt Mellrichstadt.

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Report-No.: 13M368B01#
Report part-No.:
Test date: 11.12.2013

Description of the specimen in shooting direction (specification of the manufacturer):

steel plate, nominal thickness 2,0mm

Size of the sample (mm): 400 x 400, thickness (mm): 2,0
Total weight determined by the Beschussamt (g) : 2581
mass per unit area determined by the Beschussamt (kg/m²) : ----
mass per unit area determined by the manufacturer (kg/m²) : ----

Test conditions and results:

Calibre : 9mm Luger (9 x 19)
Bullet type : FMJ/RN/SC (DM41SR, RUAG, CN316)
Bullet mass : 8,00g
bullet velocity : 415m/s ± 10m/s
Weapon : test barrel No. 08/01
Barrel length : 260mm
Twist length : 250mm
Shooting distance : 5,00m
Room temperature : 21°C
Humidity : 27%
penetration witness : 0.5mm Al-sheet (AlCuMg1 440N/mm²)
Sample fixation : acc.to PM 2007
hit pattern (preset) : Multihit
sample preparation : tested as delivered

| No | veloc. v(2,50) [m/s] | energy E(2,50) [J] | pene- trat. J/N | angle [deg.] 1.) | remarks |
|----|----------------------------|--------------------------|-----------------------|------------------------|----------------------|
| 1 | 413 | 682 | N | 90,0 | bulge without cracks |
| 2 | 412 | 679 | N | 90,0 | bulge without cracks |
| 3 | 417 | 696 | N | 90,0 | bulge without cracks |

1.) 90 degree = 0 degree NATO

The evaluation of penetration or no penetration was performed according to VPAM APR-2006

The test was carried out according to special requirements of the applicant. A final classification is not applicable.

This report consists of 2 pages and 1 appendix

Abkürzungen / abbreviations

Geschossarten / bullet types:

| | | |
|------|-----------------------------|---------------------------|
| L | Blei | Lead |
| FMs | Vollmessing | Full Brass |
| CB | Kegelstumpfgeschoss | Coned Bullet |
| FMJ | Vollmantel | Full Metal Jacket |
| RN | Rundkopf | Round Nose |
| SC | Weichkern | Soft Core |
| HC | Hartkern | Hard Core |
| WC | Wolframcarbidkern | Tungsten Core |
| PB | Spitzkopfgeschoss | Pointed Bullet |
| FN | Flachkopf | Flat Nose |
| FeC | Weicheisenkern | Fe-Core |
| SCP | Weichkern mit Penetrator | Soft Core Penetrator |
| TPSC | Zwei Stahlkerne | Two-piece Steel Core |
| I | Brandsatz | Incendiary |
| JSP | Teilmantelgeschoss | Jacketed Soft Point |
| JHP | Teilmantelhohlspitzgeschoss | Jacketed Hollow Point |
| SJSP | Teilmantelgeschoss | Semi Jacketed Soft Point |
| SJHP | Teilmantelhohlspitzgeschoss | Semi Jacketed Hollow Pont |
| SWC | Scharfrandgeschoss | Semiwadcutter |

Bemerkungen / comments:

| | | |
|-------|--|---|
| oM | ohne Merkmal | without marks |
| l | leicht (z.B. leichte Beule ...) | slight (e.g. slight bulge ...) |
| s | stark (z.B. starker Splitterabgang) | serious (e.g. serious fragmentation) |
| BoR | Beule ohne Riss | bulge without cracks |
| BmR | Beule mit Riss | bulge with cracks |
| BmRoL | Beule mit Riss ohne Lichtdurchlass | bulge with cracks without light |
| BmRmL | Beule mit Riss mit Lichtdurchlass | bulge with cracks with light |
| SA | Splitterabgang | fragmentation |
| SF | splitterfrei | no fragmentaion |
| glD | glatter Durchschuss | complete penetration |
| SpD | Spitzendurchbruch | partial penetration |
| S | Splitterbildung nach DIN EN ² | fragmentation described by DIN EN ² |
| NS | Splitterfrei nach DIN EN ² | no fragmentation described by DIN EN ² |

²DIN EN 1063, DIN EN 1522/1523

Sonstige / miscellaneous:

| | | |
|----|----------------------|-----------------------------|
| J | Ja | yes |
| N | Nein | no |
| SI | Splitterindikator | fragmentation witness plate |
| DI | Durchschussindikator | penetration witness plate |
| TA | Trefferabstand | hit distance |
| FG | Flächengewicht | mass per unit area |