Beschussamt Mellrichstadt

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Swebor Stål AB
Föreningsgatan 9

S-97436 Luleå

Test Report

Testing of the ballistic resistance of armouring material.

Report No.	:	13M354A01#, order No.: 7363
Date of delivery	:	29.11.2013
Tester	:	Selzam, Edelmann
Sample	:	steel plate (4,2mm x 400mm x 400mm)
Designation	:	SWEBOR XXXX (ID-No. SW1300-077)
Applicant	:	Swebor Stål AB
Manufacturer	:	Swebor Stål AB
Requirement	:	7,62 x 39 mild steel core

BESCHUSSAMT MELLRICHSTADT BAYERN

Bötsch

Mellrichstadt, 03.12.2013

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.: 13M354A01#
Report part-No.:
Test date: 02.12.2013

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

steel plate, nominal thickness 4,0mm

Size of the sample (mm): 400 x 400, thickness (mm): 4,2
Total weight determined by the Beschussamt (g) : 5172
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	: 7,62 x 39
Bullet type	: FMJ/PB/FeC (mild steel core, DDR, CN109)
Bullet mass	: 7,90g
bullet velocity	: 720m/s ± 10m/s
Weapon	: test barrel No. 04/02
Barrel length	: 700mm
Twist length	: 240mm
Shooting distance	: 10,00m
Room temperature	: 21°C
Humidity	: 39%
penetration witness	: 0.5mm Al-sheet (AlCuMg1 440N/mm²)
Sample fixation	: acc.to PM 2007
hit pattern (preset)	: acc.to PM 2007 triangle 120mm ± 10mm
sample preparation	: 24h bei 2°C ± 2°C

No	veloc. v(7,50) [m/s]	energy E(7,50) [J]	pene-trat. J/N	angle [deg.] 1.)	remarks
1	725	2076	N	90,0	bulge without cracks
2	718	2036	N	90,0	bulge without cracks
3	724	2070	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

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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]

[2]DIN 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

Revision, 01.12.2010