TESTING
RvA L 275

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Test report

19REP0185

Experiment according to **EN 1522/1523**
Class **FB7 NS**

Assignor	Arcelor Mittal 56 rue Clemenceau BP19 71201 Le Creusot France
Contact	Mr. Francois Verget
Sample references	104932 T03

TNO project no
060.37883/01.17.01
Date
19-04-2019
Reference
19OD122
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Summary

The sample was tested with three shots (120mm triangle) of the threat specified in the ballistic requirements of 'EN 1522/1523' level 'FB7 NS'.

All impacts partial penetrated the sample and no splinters were detected on the rear side (NS).

The tested material was not a complete construction. Normally the tests in areas 2 and 3 (see description of test method) also have to be performed to complete the requirements.

J.P.F. Broos
Project leader

Test report number 19REP0185
Assignor Arcelor Mittal

Description test method

Establishing the ballistic protection of windows, doors, shutters and blinds according to the requirements specified in the NEN-EN 1522/1523 "Windows, doors, shutters and blinds - Bullet resistance - Requirements and classification"/"Test method". The ballistic impact experiments are performed with a bullet for the desired protection level as described in the standard. Three areas should be tested; 1. Armored and re-enforced areas, 2. Transition / connection between frame and solid or moving sub-frame, 3. Parts like handle's, lock's, and their connection, weld's, etc. The mutual distance between the consecutive points of impact is 120 mm. If no complete penetrations occur but splinters are released at the rear face of the test panel, this is marked as S (Splinters) behind the protection level in the test results. If not, this is marked as NS (No Splinters).

Experiment specifications

Experiment No. : 19MB01421
Experiment date : 17-04-2019
Witness system : Aluminium foil 0.02mm

Conditioning of sample materials

Conditioning temperature : 18 °C ± 5 °C

Minimum conditioning time : 24 hrs.

Results

19SC01384 **EN 1522/1523 - FB7 - 7.62x51 mm AP (P80/1)**

Shot	Valid	Impact velocity[m/s]	Splinters	Result PP/CP *)
KKW1 19SN02251	**Yes**	828	NS	PP
KKW1 19SN02252	**Yes**	823	NS	PP
KKW1 19SN02253	**Yes**	827	NS	PP

*) PP: Partial Penetration CP: Complete Penetration

Sample composition specifications

TNO Sample composition No. : 19SC01384

Layer	TNO Sample No.	Customer Sample reference
1	19SA01743	104932 T03

Sample specifications

TNO Sample No.	Customer reference	Arrival	Size	Avg. thick.	Weight	Areal density
19SA01743	104932 T03	16-04-2019	915 x 305 mm	15.2 mm	32820 g	117.6kg/m2

*All specification of the materials are provided by the assignor

Test report number 19REP0185
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Test specifications

Experimental facility	: TNO, LBR, Small Calibre Firing Range KKW 1
- Ambient temperature	: 19 °C
- Ambient Relative Humidity	: 48 %Rh

Ballistic specifications

Weapon	: SVB-4 (KKW 1)
- Barrel length	: 660 mm
- Rifling twist	: 1 : 254 mm
Projectile	: 7.62x51 mm AP (P80/1)
- Weight	: 9.75 g
- Calibre	: 7.62 mm
- Manufacturer	: FN Herstal SA
Shooting distance	: 10 m

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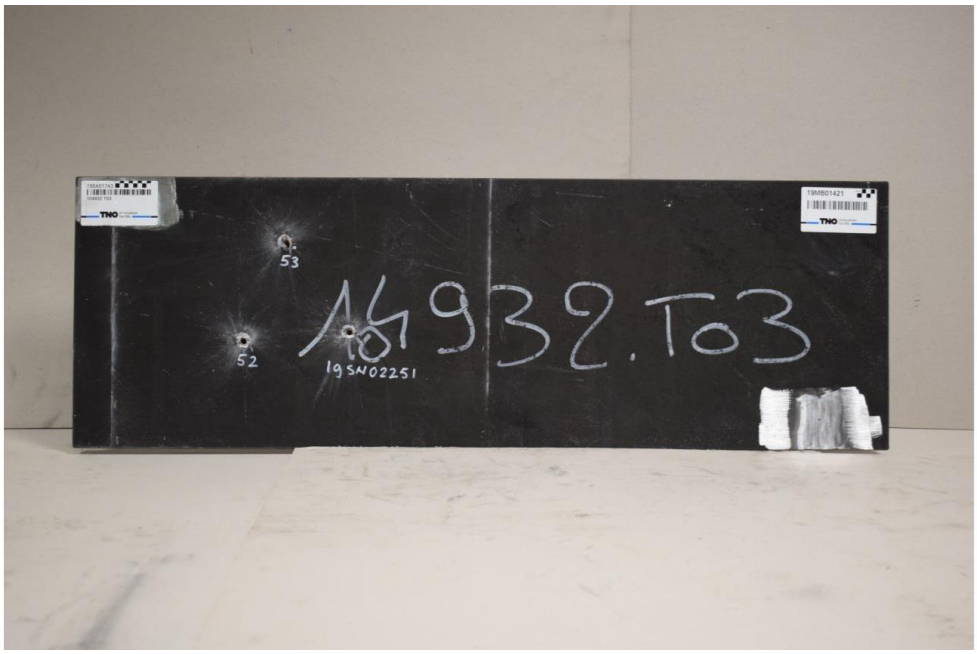
Pictures



Strike Face sample 19SA01743 after test 19MB01421

Back Face sample 19SA01743 after test 19MB01421