S.M.S. TESTING

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BALLISTIC R&D TEST SHEET
V-50

Client: Dayton Armor
Date: 12/7/2020
Project: R&D

PRELIMINARY

PANEL IDENTIFICATION

Manufacturer: Dayton Armor
Size: 9.5 x 12.00 in.
Apex Thk.: .265 in.
Description: Hard armor sample

Sample No: 20201113-303C-AR-212-1
Weight: .97 lbs
Layer count:
Technician: Murray

TEST METHOD

Shot Spacing: PER CUSTOMER
Witness Panel: CLAY
Backing Material: 5.5" CLAY/PLYWOOD
Obliquity 0 DEG
Conditioning: DRY

TEST DISTANCE

Muzzle to Target: 17.0 FT
Target to Witness: NA
VS Screens 5
Midpoint to Target: 8.2
VR Screens

Temp: 70.4° F.
BP: 28.82
RH: 56%

AMMUNITION

1) 5.56 x 45 M193 55gr.
2)
3)

LOT # & MANUFACTURER

1) MIL
2)
3)

POWDER

1) N120
2)
3)

TEST STANDARD OR PROCEDURE

1) 3100+50 fps
2)
3)

Shot No.	Charge Wt.	Time 1	Velocity 1 (ft/s)	Time 2	Velocity 2 (ft/s)	Velocity Average	Results P / C		Shot Location	Deformation (mm)
1	19.9	0.00159	3141	0.001594	3137	3139	P		apex	29.77
2	19.9	0.00161	3111	0.001609	3107	3109	P		right edge	24.26
3	19.9	0.0016	3120	0.001605	3116	3118	P		bottom left	30.21
4		#DIV/0!		#DIV/0!		0				
5		#DIV/0!		#DIV/0!		0				
6		#DIV/0!		#DIV/0!		0				
7		#DIV/0!		#DIV/0!		0				
8		#DIV/0!		#DIV/0!		0				
9		#DIV/0!		#DIV/0!		0				
10		#DIV/0!		#DIV/0!		0				
11		#DIV/0!		#DIV/0!		0				
12		#DIV/0!		#DIV/0!		0				
13		#DIV/0!		#DIV/0!		0				
14		#DIV/0!		#DIV/0!		0				
15		#DIV/0!		#DIV/0!		0				
16		#DIV/0!		#DIV/0!		0				

REMARKS:

Sample tested ICW VS-33A
Soft Armor wt.: 1.0695 lbs

Shot 1: Perforated 26 plies of soft armor

MISC. TEST INFORMATION:

Clay Block ID: 6
Clay Drops: 23.9 mm, 24.1 mm, 24.9 mm
Clay Temp.: 99.8° F.

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PANEL IDENTIFICATION

Manufacturer: Dayton Armor
Size: 9.5 x 12.00 in.
Apex Thk.: .266 in.
Description: Hard armor sample

Sample No: 20201113-303D-AR-212-2
Weight: .97 lbs
Layer count:
Technician: Murray

TEST METHOD

Shot Spacing: PER CUSTOMER
Witness Panel: CLAY
Backing Material: 5.5" CLAY/PLYWOOD
Obliquity 0 DEG
Conditioning: DRY

TEST DISTANCE

Muzzle to Target: 17.0 FT
Target to Witness: NA
VS Screens 5
Midpoint to Target: 8.2
VR Screens

Temp: 70.4° F.
BP: 28.82
RH: 56%

AMMUNITION

1) 5.56 x 45 M193 55gr.
2)
3)

LOT # & MANUFACTURER

1) MIL
2)
3)

POWDER

1) N120
2)
3)

TEST STANDARD OR PROCEDURE

1) 3100+50 fps
2)
3)

Shot No.	Charge Wt.	Time 1	Velocity 1 (ft/s)	Time 2	Velocity 2 (ft/s)	Velocity Average	Results P / C		Shot Location	Deformation (mm)
1	19.9	0.00161	3111	0.001608	3109	3110	P		apex	28.54
2	19.9	0.0016	3119	0.001604	3117	3118	P		left edge	24.87
3	19.9	0.0016	3121	0.001604	3117	3119	P		bot. right	26.31
4		#DIV/0!		#DIV/0!		0				
5		#DIV/0!		#DIV/0!		0				
6		#DIV/0!		#DIV/0!		0				
7		#DIV/0!		#DIV/0!		0				
8		#DIV/0!		#DIV/0!		0				
9		#DIV/0!		#DIV/0!		0				
10		#DIV/0!		#DIV/0!		0				
11		#DIV/0!		#DIV/0!		0				
12		#DIV/0!		#DIV/0!		0				
13		#DIV/0!		#DIV/0!		0				
14		#DIV/0!		#DIV/0!		0				
15		#DIV/0!		#DIV/0!		0				
16		#DIV/0!		#DIV/0!		0				

REMARKS:

Sample tested ICW VS-33A
Soft Armor wt.: 1.0890 lbs

MISC. TEST INFORMATION:

Clay Block ID: 6
Clay Drops: 23.9 mm, 24.1 mm, 24.9 mm
Clay Temp.: 99.8° F.

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PRELIMINARY

PANEL IDENTIFICATION

Manufacturer: Dayton Armor
Size: 9.5 x 12.00 in.
Apex Thk.: .265 in.
Description: Hard armor sample

Sample No: 20201113-303A-AR-212-3
Weight: .98 lbs
Layer count:
Technician: Murray

TEST METHOD

Shot Spacing: PER CUSTOMER
Witness Panel: CLAY
Backing Material: 5.5" CLAY/PLYWOOD
Obliquity 0 DEG
Conditioning: DRY

TEST DISTANCE

Muzzle to Target: 17.0 FT
Target to Witness: NA
VS Screens 5
Midpoint to Target: 8.2
VR Screens

Temp: 70.4° F.
BP: 28.82
RH: 56%

AMMUNITION

1) 5.56 x 45 M193 55gr.
2)
3)

LOT # & MANUFACTURER

1) MIL
2)
3)

POWDER

1) N120
2)
3)

TEST STANDARD OR PROCEDURE

1) 3100+50 fps
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3)

Shot No.	Charge Wt.	Time 1	Velocity 1 (ft/s)	Time 2	Velocity 2 (ft/s)	Velocity Average	Results P / C		Shot Location	Deformation (mm)
1	19.9	0.00159	3143	0.001593	3139	3141	P		apex	23.49
2	19.9	0.00158	3159	0.001584	3157	3158	P		right edge	26.64
3	19.9	0.00159	3135	0.001596	3133	3134	P		bot. left	29.84
4		#DIV/0!		#DIV/0!		0				
5		#DIV/0!		#DIV/0!		0				
6		#DIV/0!		#DIV/0!		0				
7		#DIV/0!		#DIV/0!		0				
8		#DIV/0!		#DIV/0!		0				
9		#DIV/0!		#DIV/0!		0				
10		#DIV/0!		#DIV/0!		0				
11		#DIV/0!		#DIV/0!		0				
12		#DIV/0!		#DIV/0!		0				
13		#DIV/0!		#DIV/0!		0				
14		#DIV/0!		#DIV/0!		0				
15		#DIV/0!		#DIV/0!		0				
16		#DIV/0!		#DIV/0!		0				

REMARKS:

Sample tested ICW VS-33A
Soft Armor wt.: 1.0885 lbs

Shot 1 perforated 20 plies of soft armor.
Shot 2 perforated 16 plies of soft armor.
Shot 3 perforated 11 plies of soft armor.

MISC. TEST INFORMATION:

Clay Block ID: 6
Clay Drops: 23.9 mm, 24.1 mm, 24.9 mm
Clay Temp.: 99.8° F.