



Ballistic Evaluation of Portable Bullet Trap

Report No. : DRDO-TBRL-BEHI-EVR-01B-08-2021 dt. 23-08-2021
User : Sunflex Recycling Pvt. Ltd., Ahmedabad

**Ballistic Evaluation and Hypervelocity Impact
Terminal Ballistics Research Laboratory
Sector 30, Chandigarh – 160 030**



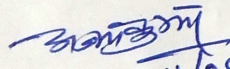
Report No. : DRDO-TBRL-BEHI-EVR-01B-08-2021
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Trial Plan & Date : 1235 dt 23/07/2021
Trial Date : 03-04/08/2021

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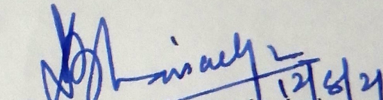
REPORT DOCUMENTATION PAGE

1. Title : Ballistic Evaluation of Portable Bullet Trap
2. Report No. : DRDO-TBRL-BEHI-EVR-01B-08-2021
3. Classification : Restricted
4. Date of issue : 16/08/2021
5. No. of Pages : 09
6. Issuing Group : BEHI
7. Trial Plan No. : 1235
8. Trial date : 03-04/08/2021
9. Distribution : (a) Sunflex Recycling Pvt. Ltd., Plot No.274/4, Shital Estate, B/H Satyamev Complex, S.G. Highway, Sola, Ahmedabad – 380060, Gujarat, India
(b) Director, TBRL
(c) TD, BEHI
10. Abstract : A portable bullet trap system consisting of three rubber blocks was submitted by Sunflex Recycling Pvt. Ltd Ahmedabad. The system was tested against 7.62x39 (MSC), 7.62x51 mm and 5.56x45 mm ammunitions. Movement of trolley after each shot was observed. The bullet trap stopped five shots of each ammunition and no movement was observed.

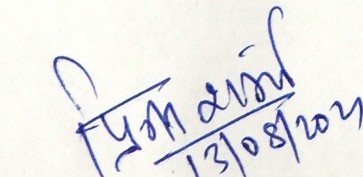
11. Prepared by :


11/08/2021
(Ajay Kumar), TO 'B'
Trial Officer

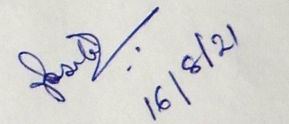
Reviewed by :


12/8/21
(Dr. Debarati Bhattacharjee)
Sc. 'F' : BEHI

Recommended by :


13/08/2021
(Dr. Prince Sharma), Sc. 'F'
JD : BEHI

Approved by :


16/8/21
(Ipsita Biswas), Sc. 'G'
TD : BEHI

Notes :

1. The test articles were brought to TBRL by the Firm's (user) representative as per their own specifications/fabrication process & were not collected from any production lot.
2. TBRL is not responsible, directly/indirectly, for the quality of production lots being manufactured by the firm (user).
3. The report is valid only for the particular panels evaluated against the specified ammunitions & publication of these results in abridged form is not allowed without written approval from Director, TBRL Chandigarh.
4. The "user" must collect back the tested samples within three months of getting the test report. After the stipulated time (03 months), tested samples will be destroyed.



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 Trial Date : 03-04/08/2021

A SAMPLE ID: Sunflex/R-Block-1		B SAMPLE CONDITIONING: NA	
C PHYSICAL VERIFICATION			
Type of Sample	: Rubber Block + 10 mm steel	Thickness (mm)	: 300
Length (mm)	: 500	Material	: -
Width (mm)	: 300	Layers/Plies	: -
Weight (kg)	: 38.25	Construction	: -
Observations	: Weight of rubber block only		
Ref. Letter	: E mail from Sunflex Pvt. Ltd.		
Date Recd.	: 04 May 2021		
D TRIAL SET – UP			
Location	: Ballistic Test Facility	Distances from target (m)	Range Conditions
Ref. document	: Appendix E of email from Sunflex dt 01.06.21	Weapon	: 10.0
Backing material	: NA	Velocity Screens	: 2.5
Witness Plate	: 0.5mm Al. Sheet	Witness Plate	: 0.15
Temperature (° C)	: 22.4		
Relative Humidity (%)	: 57		
E BACKING MATERIAL CONDITIONING			
DROP No.	1	2	3
	4	5	Average
Requirement	NA		
Depth of Indentation (mm)	NA		
F BALLISTIC EVALUATION			
Ammunition		Weapon	
Type	: 7.62x51 mm	Type	: Bolt Action
Lot No/Year	: OFV-90	Regn. No.	: Y-5905
Shot No.	Velocity (m/s)	Impact Angle (°)	Impact Result
			Fair/ Unfair
			Observation
1	839.8	0°	Not Perforated
2	831.8	0°	Not Perforated *
3	828.0	0°	Not Perforated
4	849.8	0°	Not Perforated
5	843.7	0°	Not Perforated
Remarks: * Stopped by Steel			

Notes :

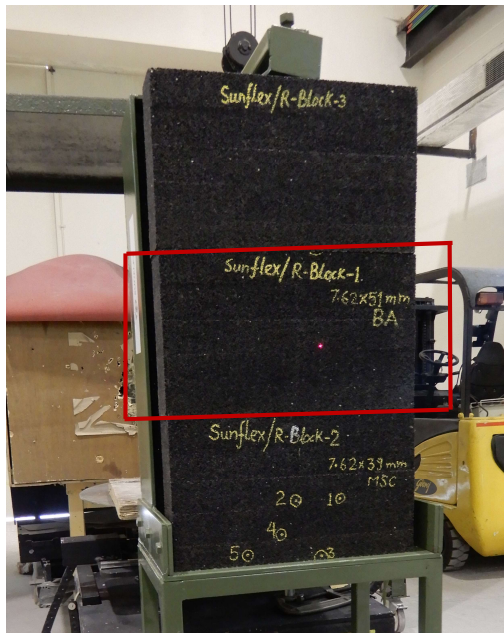
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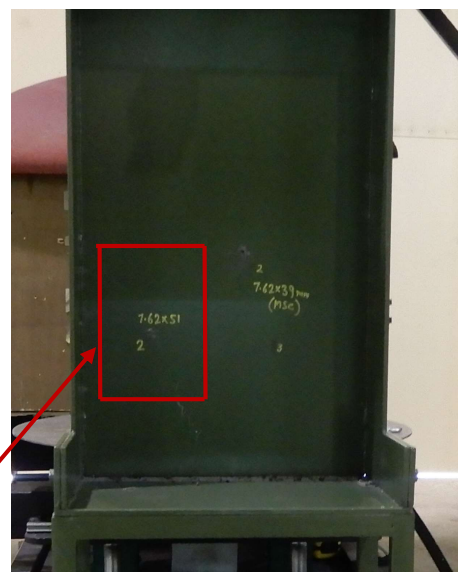
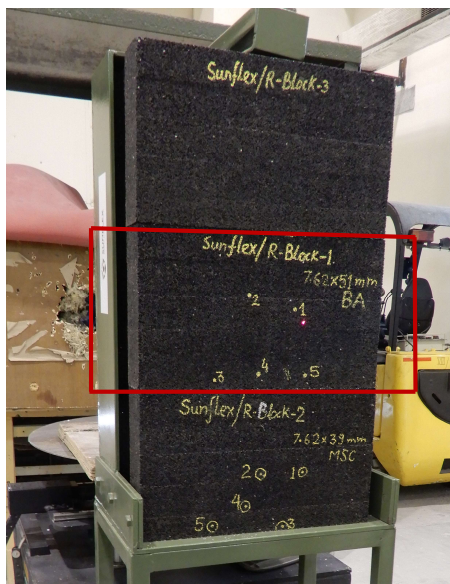
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 Trial Plan & Date : 1235 dt 23/07/2021
 Trial Date : 03-04/08/2021

G SAMPLE ID: SAMPLE ID: Sunflex/R-Block-1

PHOTOGRAPHS (BEFORE TRIAL)



PHOTOGRAPHS (AFTER TRIAL)



Impact on Steel

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A SAMPLE ID: Sunflex/R-Block-2		B SAMPLE CONDITIONING: NA			
C PHYSICAL VERIFICATION					
Type of Sample	: Rubber Block+ 10 mm Steel	Thickness (mm)	: 300		
Length (mm)	: 500	Material	: -		
Width (mm)	: 300	Layers/Plies	: -		
Weight (kg)	: 38.25	Construction	: -		
Observations	: Weight of rubber block only				
Ref. Letter	: E mail from Sunflex Pvt. Ltd.				
Date Recd.	: 04 May 2021				
D TRIAL SET – UP					
Location	: Ballistic Test Facility	Distances from target (m)	Range Conditions		
Ref. document	: Appendix E of email from Sunflex dt 01.06.21	Weapon	: 10.0		
Backing material	: NA	Velocity Screens	: 2.5		
Witness Plate	: 0.5mm Al. Sheet	Witness Plate	: 0.15		
Temperature (° C)	: 22.4				
Relative Humidity (%)	: 57				
E BACKING MATERIAL CONDITIONING					
DROP No.	1	2	3		
	4	5	Average		
Depth of Indentation (mm)	NA				
Requirement					
F BALLISTIC EVALUATION					
Ammunition		Weapon			
Type	: 7.62x39 mm (MSC)	Type	: AK-47		
Lot No/Year	: 21/06	Regn. No.	: TN 1659		
Shot No.	Velocity (m/s)	Impact Angle (°)	Impact Result	Fair/ Unfair	Observation
1	704.9	0°	Not Perforated	Fair	No movement of trolley
2	709.5	0°	Not Perforated *	Fair	No movement of trolley
3	703.1	0°	Not Perforated *	Fair	No movement of trolley
4	700.1	0°	Not Perforated	Fair	No movement of trolley
5	703.5	0°	Not Perforated	Fair	No movement of trolley
Remarks: * Stopped by Steel					

Notes :

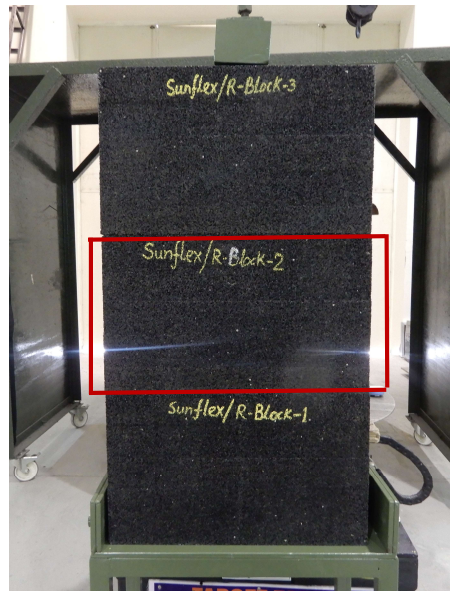
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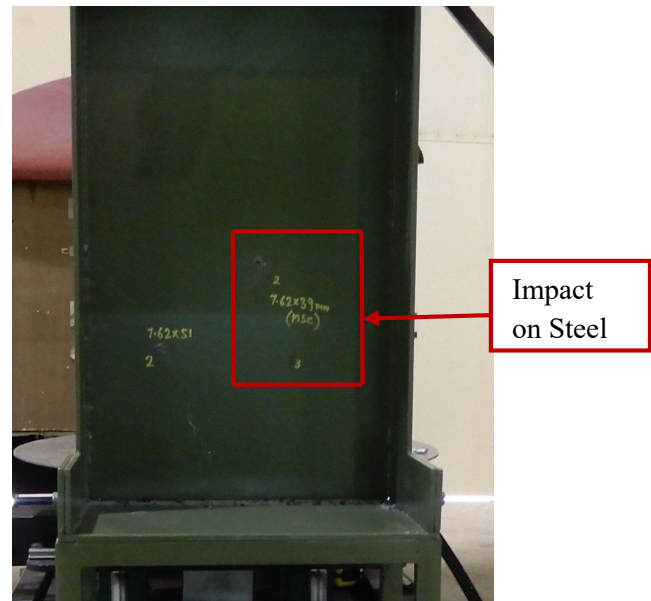
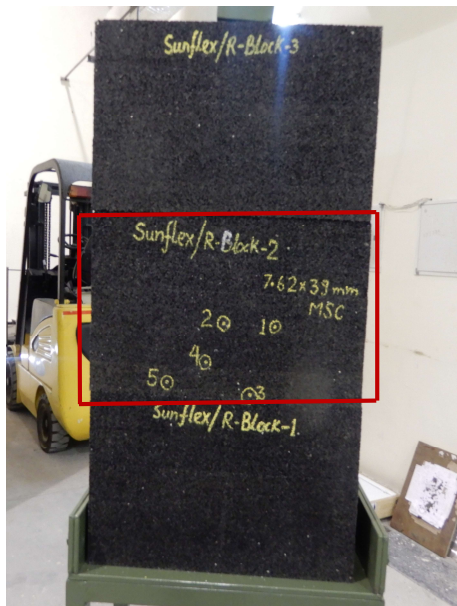
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G SAMPLE ID: SAMPLE ID: Sunflex/R-Block-2

PHOTOGRAPHS (BEFORE TRIAL)



PHOTOGRAPHS (AFTER TRIAL)



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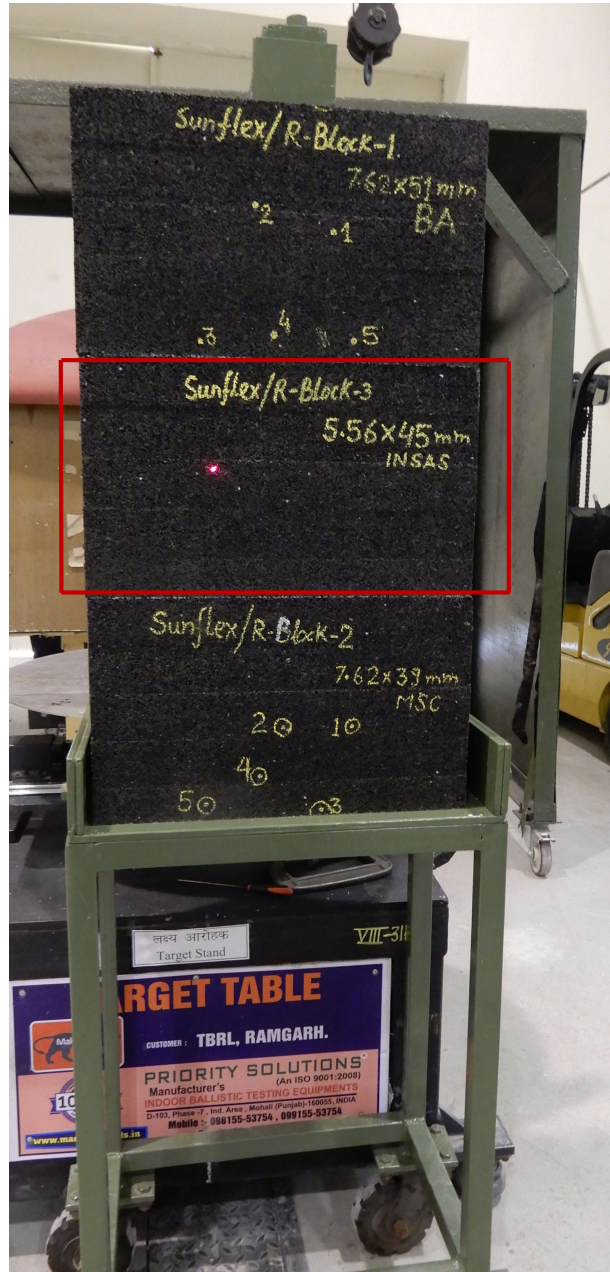
A SAMPLE ID: Sunflex/R-Block-3		B SAMPLE CONDITIONING: NA	
C PHYSICAL VERIFICATION			
Type of Sample	: Rubber Block + 10 mm Steel	Thickness (mm)	: 300
Length (mm)	: 500	Material	: -
Width (mm)	: 300	Layers/Plies	: -
Weight (kg)	: 38.15	Construction	: -
Observations	: Weight of rubber block only		
Ref. Letter	: E mail from Sunflex Pvt. Ltd.		
Date Recd.	: 04 May 2021		
D TRIAL SET – UP			
Location	: Ballistic Test Facility	Distances from target (m)	Range Conditions
Ref. document	: Appendix E of email from Sunflex dt 01.06.21	Weapon	: 10.0
Backing material	: NA	Velocity Screens	: 2.5
Witness Plate	: 0.5mm Al. Sheet	Witness Plate	: 0.15
Temperature (° C)	: 22.4		
Relative Humidity (%)	: 57		
E BACKING MATERIAL CONDITIONING			
DROP No.	1	2	3
	4	5	Average
Depth of Indentation (mm)	NA		
Requirement			
F BALLISTIC EVALUATION			
Ammunition		Weapon	
Type	: 5.56x45 mm	Type	: INSAS
Lot No/Year	: OFV-04	Regn. No.	: 681724DT2
Shot No.	Velocity (m/s)	Impact Angle (°)	Impact Result
1	903.8	0°	Not Perforated
2	909.8	0°	Not Perforated
3	918.5	0°	Not Perforated
4	909.2	0°	Not Perforated
5	902.9	0°	Not Perforated
			Fair/ Unfair
			Fair
			Fair
			Fair
			Fair
			Fair
			Observation
			No movement of trolley
			No movement of trolley
			No movement of trolley
			No movement of trolley
			No movement of trolley
Remarks:			

Notes :

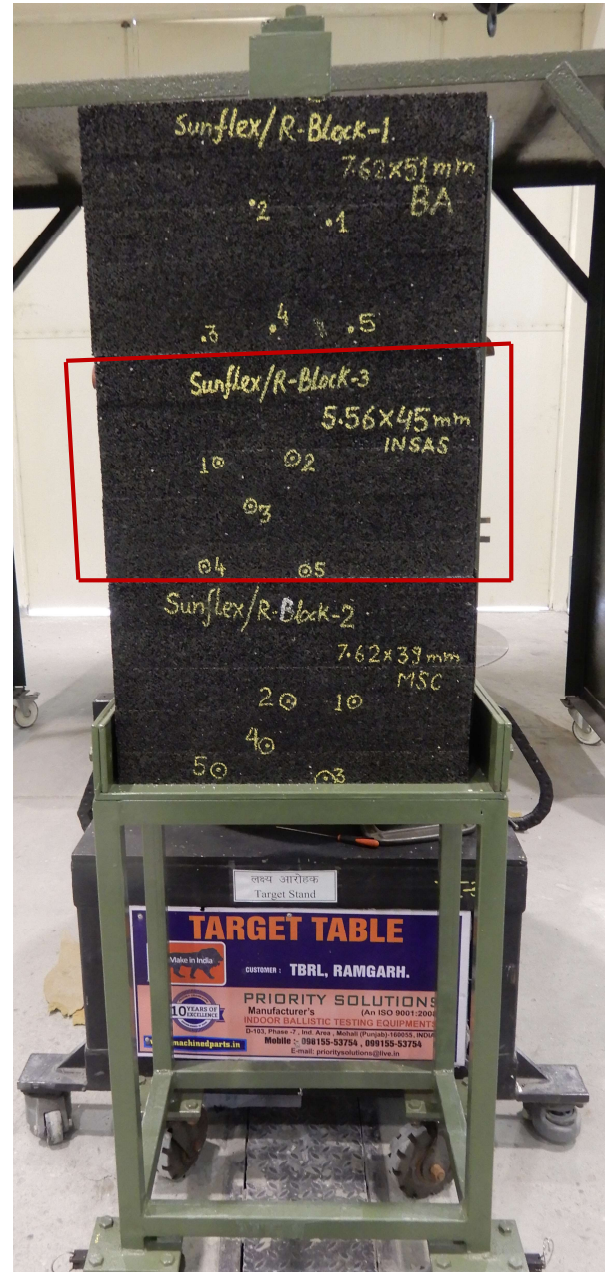
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PHOTOGRAPHS (BEFORE TRIAL)



PHOTOGRAPHS (AFTER TRIAL)



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