



INSTITUTE OF FORENSIC SCIENCE
GUJARAT FORENSIC SCIENCES UNIVERSITY

SECTOR 18/A, NEAR POLICE BHAVAN, GANDHINAGAR, GUJARAT - 382 007

IFS/13/ BPJ&BPH /12/603/2013

BALLISTICS EVALUATION REPORT

IFS File No.	IFS/13/BPJ&BPH/12
Date of Report	27/12/2013
User request Letter No.	Your email dated: 18/12/2013
Acceptance of tender No./ Tender Enquiry No.	Not Applicable
Dates of Trials	26/12/2013
Armour Type	Bullet Proof Jackets
Manufacture / Supplier	Ballistic Safety Systems Technology India Pvt. Ltd.
User	Not Applicable

(Dr. M.S. Dahiya)
Director

Note

1. The test results of ballistics evaluation of Four HAP + SAP and one SAP submitted by Ballistic Safety Systems Technology India Pvt. Ltd. are as per the sheet attached here with.
2. The test articles were brought to IFS, Gandhinagar by the user's representative as per their own specifications / fabrication process.
3. IFS, Gandhinagar is not responsible, directly / indirectly, for the quality of production lots being manufactured by the firm.
4. The report is valid only for the particular Four HAP + SAP and one SAP evaluated against the specified ammunition & publication of these results in any abridges form is not allowed without written approval from Director, IFS, Gandhinagar.
5. The tested samples are returned back to the user's representative along with the test report after ballistics evaluation.
6. The test procedure is followed as per the NIJ standards.
7. Mr. V. V. Sharma was also present at the time of test firing.


DIMENSIONS

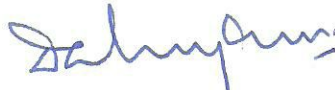
Sr. No.	Identification No.	Length (cm)	Breadth (cm)	Thickness (cm)	Weight (Dry) (kg)	Weight (Wet) (kg)
1	IFS-13-BPJ-12-BSST-01 (HAP + SAP)	30.3	25.5	1.43	2.116	-
2	IFS-13-BPJ-12-BSST-02 (HAP + SAP)	29.8	25.5	1.6	1.7	-
3	IFS-13-BPJ-12-BSST-03 (HAP + SAP)	30.5	25.2	1.8	1.266	1.27
4	IFS-13-BPJ-12-BSST-04 (HAP + SAP)	30.5	25.2	1.8	1.206	1.266
5	IFS-13-BPJ-12-BSST-05 (SAP)	40.0	40.0	0.52	0.712	--

Trial Officers, IFS, Gandhinagar


(S.G. Khandelwal)
Dy. Director


(H.P. Sanghvi)
Assistant Director


(H. J. Trivedi)
Scientific Officer


(Dr. M.S. Dahiya)
Director
IFS, GFSU,
Gandhinagar

Manufacturer's Representative(s) witnessed the trials

Mr. V. V. Sharma
Ballistic Safety Systems Technology India Pvt. Ltd.
Rangareddy

COMPLIANCE TEST -05

A) BASIC DETAILS

IFS Test Sample ID:	IFS-13-BPJ-12-BSST-05	Trial Date:	26/12/2013
Armour Type:	SAP	Manufacture Ref. ID:	--
Type of Firearm:	9 MM Carbine No. 18264935	Type of Ammunition:	9 × 19 mm Make: KF
BFS Acceptance Criteria:	BFS ≤ 44 mm	HAP ID:	--
Type of Test:	Dry	Time In: --	Time Out: --
Reference Velocity:	415 ±15m/s	Distance:	5 m
Room Temperature:	22.6°C	Humidity:	58%

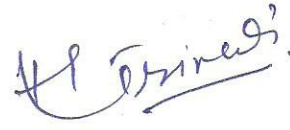
B) BALLISTICS EVALUATION DATA

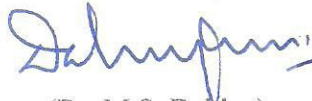
Shot No	Time	Fair/ Unfair	Angle of Firing	Velocity (m/sec)	Perforated/ Not Perforated	BFS (mm)	Remarks
1	17:17	Fair	90°	401.671	Not perforated	24.83	Passed
2	17:18	Fair	90°	402.755	Not perforated	25.98	Passed
3	17:20	Unfair	90°	386.145	Not perforated	22.34	-----
4	17:22	Fair	90°	415.818	Not perforated	15.48	Passed
5	17:25	Fair	90°	399.728	Not perforated	26.83	Passed
6	17:27	Fair	90°	403.861	Not perforated	24.93	Passed

Trial Officers, IFS, Gandhinagar


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(Dr. M.S. Dahiya)
Director
IFS, GFSU,
Gandhinagar

Manufacturer's Representative(s) witnessed the trials

Mr. V. V. Sharma
Ballistic Safety Systems Technology India Pvt. Ltd.
Rangareddy

COMPLIANCE TEST -03


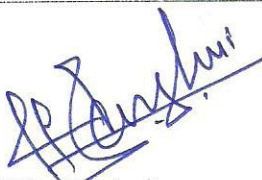
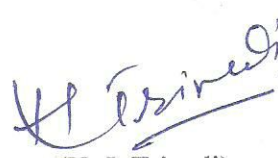

A) BASIC DETAILS

IFS Test Sample ID:	IFS-13-BPJ-12-BSST-03	Trial Date:	26/12/2013
Armour Type:	HAP + SAP	Manufacture Ref. ID:	--
Type of Firearm:	7.62 SLR No. 18056757	Type of Ammunition:	7.62 × 51 mm Make: KF
BFS Acceptance Criteria:	BFS ≤ 44 mm	HAP ID:	--
Type of Test:	Wet	Time In: 13.20	Time Out: 13.50
Reference Velocity:	838 ± 15m/s	Distance:	10 m
Room Temperature:	22.6°C	Humidity:	58.5%

B) BALLISTICS EVALUATION DATA

Shot No	Time	Fair/Unfair	Angle of Firing	Velocity (m/sec)	Perforated/Not Perforated	BFS (mm)	Remarks
1	14:00	Fair	90°	828.569	Not perforated	40.05	Passed
2	14:03	Fair	90°	850.557	Not perforated	32.64	Passed
3	14:06	Fair	90°	828.063	Not perforated	28.57	Passed
4	14:11	Fair	90°	833.611	Not perforated	29.78	Passed
5	14:15	Fair	90°	829.669	Not perforated	25.23	Passed
6	14:22	Fair	90°	826.726	Not perforated	38.25	Passed

Note: - Shot no. '1' is on edge.

Trial Officers, IFS, Gandhinagar		
 (S.G. Khandelwal) Dy. Director	 (H.P. Sanghvi) Assistant Director	 (H. J. Trivedi) Scientific Officer
 (Dr. M.S. Dahiya) Director IFS, GFSU, Gandhinagar		
Manufacturer's Representative(s) witnessed the trials		
Mr. V. V. Sharma Ballistic Safety Systems Technology India Pvt. Ltd. Rangareddy		

COMPLIANCE TEST -04

A) BASIC DETAILS

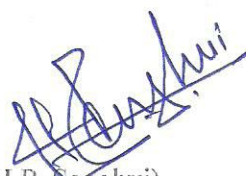
IFS Test Sample ID:	IFS-13-BPJ-12-BSST-04	Trial Date:	26/12/2013
Armour Type:	HAP + SAP	Manufacture Ref. ID:	--
Type of Firearm:	AK 47 OL - 1763	Type of Ammunition:	7.62 × 39 mm Make: MS(Imported)
BFS Acceptance Criteria:	BFS ≤ 44 mm	HAP ID:	--
Type of Test:	Wet	Time In: 15.30	Time Out: 16.00
Reference Velocity:	715 ±15m/s	Distance:	10 m
Room Temperature:	26.4°C	Humidity:	72%

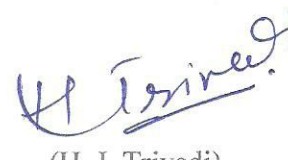
B) BALLISTICS EVALUATION DATA


Shot No	Time	Fair/ Unfair	Angle of Firing	Velocity (m/sec)	Perforated/ Not Perforated	BFS (mm)	Remarks
1	16:04	Fair	90°	713.623	Not perforated	18.11	Passed
2	16:10	Fair	90°	708.767	Not perforated	23.16	Passed
3	16:12	Fair	90°	713.419	Not perforated	22.05	Passed
4	16:15	Fair	90°	714.643	Not perforated	23.67	Passed
5	16:16	Fair	90°	707.464	Not perforated	25.06	Passed
6	16:28	Fair	90°	712.454	Not perforated	26.78	Passed
7	16:25	Fair	90°	716.794	Not perforated	35.67	Passed

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Mr. V. V. Sharma
Ballistic Safety Systems Technology India Pvt. Ltd.
Rangareddy