QUALITATIVE REQUIREMENT (QRs) & TRIAL DIRECTIVES (TDs) FOR BALLISTIC BRIEFCASE (Handheld)

1. Scope

1.1 These are generic performance requirements of **Handheld Foldable Ballistic Briefcase** to enable first line protection to the bearer against bullets fired from small arms ammunition (BIS level-I). The usages are limited to security forces as a personal protective gear during various types of threat perceptions envisaged by them during operational commitments.

1.2 The scope of these QRs are limited to physical and ballistic requirements of Ballistic Briefcase and its evaluation against in service small arms amn to be used by Centre Armed Police Forces (CAPFs) and other Law Enforcement Agencies. These specifications prescribe the minimum performance requirements.

1.3 These specifications cover only the basic design of ballistic briefcase and guidelines for its evaluation.

2. Terminology

2.1 All the terminologies and acronyms used herein shall be read in accordance to BIS standards of BR Jackets (BIS-17051:2018) and BR Shield (BIS-17435:2020) and its subsequent amendments issued by BIS.

3. General

3.1 The user by its un-deployed appearance wish to harness the non-threatening appearance to the general public which is ideal for protection of VIPs by the user.

3.2 It needs to be disguised, lightweight and compact making it easy to be stowed in vehicles and carried anywhere during escort duties.

3.3 The simplistic design of the briefcase shall allow its single handed and rapid deployment in emergent situations to provide a sizeable first line of effective ballistic protection to human being.

<table>
<tr><td colspan="4">4. <u>Physical Requirements</u></td></tr>
<tr><td>S No</td><td>Parameters</td><td>Requirements</td><td>Trial Directives</td></tr>
<tr><td>4.1</td><td>Appearance</td><td>The Executive styled Briefcase instantly converts from a lightweight, discreet briefcase to a fold-out ballistic panel for protection against bullets for determined threat level.</td><td>To be assessed by BOO by user through visual testing / inspection.</td></tr>
<tr><td>4.2</td><td>Design</td><td>Design and layout of the Ballistic Briefcase shall be such as to resemble a single panel when folded and 03 panels when deployed/opened. All three panels of a single ballistic briefcase should be from same protection level. Overlapping in design is permitted subject to user’s requirement.</td><td>To be assessed by BOO by user through visual testing / inspection.</td></tr>
<tr><td>4.3</td><td>Size</td><td>The Ballistic Briefcase should be of two sizes:-
a) Normal
b) Large
To be define/ be revealed in TE by the user organizations.</td><td>To be assessed by BOO by user through visual inspection.</td></tr>
<tr><td>4.4</td><td>Dimensions of finished Panels</td><td>a) Normal Size:-
<table>
<tr><td>Particulars</td><td>Folded form</td><td>Extended form</td></tr>
<tr><td>Length</td><td>35 Cms (Min)</td><td>105 Cms (Min)</td></tr>
<tr><td>Width</td><td>54 Cms(Min)</td><td>54 Cms(Min)</td></tr>
<tr><td>Thickness</td><td>05 Cms (Max)</td><td>1.6 Cms (Max)</td></tr>
<tr><td colspan="3">b) Large Size:-</td></tr>
<tr><td>Particulars</td><td>Folded form</td><td>Extended form</td></tr>
<tr><td>Length</td><td>39 Cms (Min)</td><td>117 Cms (Min)</td></tr>
<tr><td>Width</td><td>54 Cms(Min)</td><td>54 Cms(Min)</td></tr>
<tr><td>Thickness</td><td>05 Cms (Max)</td><td>1.6 Cms (Max)</td></tr>
</table>
i) <u>Customized shape & size</u>- User may opt for their own customized size at the time of tender subject to proportional change in weight.</td><td>To be physically checked by BOO.</td></tr>
</table>

S No	Parameters	Requirements	Trial Directives
4.5	**Weight (All 03 folds)**	**Normal Size = Maximum 3.8 Kgs** **Large Size = Maximum 4.1 Kgs** **[Inclusive of all the attachments and outer cover]** **Note:-** User may define their own weight as per their customized size at the time of tender.	To be physically checked by BOO.
4.6	**Colour of cover**	As defined by the user organizations to be revealed in TE.	To be physically checked by BOO.
4.7	**Outer Finish**	ABS (Acrylonitrile- Butadiene-Styrene) material or genuine leather as per user's choice to be revealed at the stage of TE.	Firm to submit certificate from any NABL accredited lab.
4.8	**Pocket for Document**	The last, inner fold of the ballistic briefcase shall contain a zip pocket for quick placement of A5 size documents as per user requirements.	To be physically checked by BOO.
4.9	**Labeling on the product**	- Nomenclature of the product. - Model number & Type - Serial number - Size - Level of protection (Threat) - Date of manufacture (MM/YYYY) - Marking should be at the rear face in indelible ink.	To be physically checked by BOO.

S No	Parameters	Requirements	Trial Directives
4.10	**Ergonomics and aesthetics**	i) Weight distribution of the shield must not negatively impact the user's ability to perform tactical maneuvers. ii) Handle/Grips shall enable the user to comfortably hold and position the unfolded ballistic briefcase. iii) Unfolding mechanism of ballistic briefcase shall allow an ambidextrous design to unfold it within 2 sec and refold and lock it within 5 Sec (Max) by a trained user. iv) Ballistic briefcase finish shall be free from wrinkles, blisters, cracks or fabric tears, crazing, chipping or sharp corners or other evidence of inferior workmanship.	To be physically checked by BOO.
5. <u>Material Requirement</u>:-The Ballistic Briefcase shall be made up of high Quality Polyethylene fibers/Aramid Ultra High Strength fibers/High Strength organic Fibers/ Kevelar / Dyneema or any other material with equivalent or better ballistic resistance / proof capabilities or in combination to the above to arrive at the protection level and other defined requirements by the user.			Firm to submit OEM certificate in this regard.
6. <u>Ballistic Requirements</u>:-The major attributes of ballistic components are dimensions, weight/areal density, number of layers, strike/protection area, surface area, labeling, etc. The components may comprise of multiple layers of different materials. However, each layer shall be of same material and of equal shape and size to maintain uniform thickness all over area up to edge of the plates.			Firm to submit OEM certificate in this regard.

<table>
<tr><th>S No</th><th>Parameters</th><th colspan="6">Requirements</th><th>Trial Directives</th></tr>
<tr><td rowspan="3">6.1</td><td rowspan="3">Level of protection</td><td>Srl</td><td>Ammn.</td><td>Bullet</td><td>Impact Velo (m/s)</td><td>Dist of impact (m)</td><td rowspan="3">Ballistic testing to be done at any Govt. lab preferably at TBRL/NFSU/CFSL. Head stamp and other relevant ammunition details to be mentioned in the ballistic report by the testing agency. Ammunition should be as per BIS 17051:2018.</td></tr>
<tr><td colspan="5">BIS Threat Level-1 (SAP)</td></tr>
<tr><td>01</td><td>9 X19 mm</td><td>FMJ/Pb</td><td>430±15</td><td>5±0.5</td></tr>
<tr><td>6.2</td><td>Perforation/ Non perforation test</td><td colspan="6">No perforation is allowed in Ballistic Testing. Perforation testing will be conducted as per BIS 17435:2020.</td><td>Ballistic testing to be done at any Govt. lab preferably at TBRL/NFSU/CFSL.</td></tr>
<tr><td>6.3</td><td>No of shots and fair hit criteria</td><td colspan="2">13 (Max)</td><td colspan="3">03 shots at each panel and 02 shots at each fold (if applicable as per design).

Shot should be taken as per following details:-
i) Shot to edge – 51mm (Min) distance
ii) Shot to shot – 51mm (Min) distance

In case of unfair shot, only one additional shot is allowed in each panel and each fold.

Firing at fold (if applicable as per design) will be in the range of ± 5mm from the fold. All shots to be fired at 0° (Zero degree).

Fair hit criteria as per clause 7.3 BIS 17435:2020

Acceptance criteria as per clause 7.4 BIS 17435:2020

No shots at overlapping area.</td><td>To be ensured by BOO at the time of ballistic testing. Any perforation will be considered as critical defect and the sample/ Lot shall be rejected.</td></tr>
</table>

S No	Parameters	Requirements	Trial Directives
6.4	**Bullet resistant Material**	As per para-5 above. The supplier shall declare the type of materials used. Number of layers and their Areal density in technical bid of tender and shall have to maintain the same in bulk supply.	Firm to submit OEM certificate in this regard.
6.5	**Wet Test**	As per the test protocol of clause 9.1 and 9.2 of BIS 17435:2020 and amendment therein.	To be done at any Govt. approved ballistic testing lab viz- NFSU/TBRL/CFSL etc. BOO to ensure the testing as per the protocol.
6.6	**Extreme temp. test (Optional test)**	Low temp. test:- sample to be kept at -20°C ±3°C for two hour ± 5 min Ballistic test to be done, first shot with in 15 min and testing to be completed in one hour High temp. test:- sample to be kept at 55°C ±3°C for two hour ± 5 min Ballistic test to be done, first shot with in 15 min and testing to be completed in one hour	
6.7	**Service life assessment**	Thermo mechanical conditioning test as per BIS 17051:2018 clause No. 8.4	
6.8	**Sealing fabric of panels**	Ballistic panels shall be encased in a water proof & heat sealable fabric	Firm to submit OEM certificate in this regard.
6.9	**Threads for fabric**	Threads used for stitching should have weight per linear meter equivalent to TKT 40. **Note**- In accordance to ISO-2060.	To be assessed by designated Govt approved NABL accredited lab.

S No	Parameters	Requirements	Trial Directives
6.10	**Handle/ Grip**	The handles are reinforced to comfortably withstand the drop energy caused by the deployment of the additional protective panels for 10000 cycles.	To be assessed by designated Govt approved NABL accredited lab.
6.11	**Outer Casing of Ballistic Briefcase**	One hard case and one soft carrying case to be provided by the firm. Hard case will be checked by dropping it from 2 meter height and no breakage is allowed after drop test. Soft case should be water resistance features and of good quality.	To be physically checked by BOO.
7. Samples: - 01 for wet & 01 for thermo mechanical testing and 01 as reserve for each size. (if extreme temp. testing is opted then 02 more samples will be required).			
8. Warranty & Shelf life			
8.1	Warranty	Minimum 2 years warranty to be extended by the vendor/supplier.	
8.2	Shelf life	Minimum 05 years	
9. <u>Packing</u>: - A baggage for storage and transportation of the said Ballistic briefcase to ensure safety from prolonged unnecessary exposure and damage.			