

BULLET RESEISTANCE HELMET (BALLISTIC) FOR GROUND TROOPS**Ergonomy**

It should be possible to wear, adjust and remove the helmet with ease even with gloved hands. It should be provided with a three point chin strap with comfortable cushioned chin cup made of appropriate non- abrasive, non -allergic material /double strap of reasonable width. The helmet should adequately cover the neck and adequately cover the neck and ears but it should not impair the hearing. Helmet should be compatible with active ear protection.

2. Shape:-

The helmet should adequately cover the head , Neck and ears of the wearer and its design should be on the lines of modular Integrated communications Helmet (MICH/Advanced combat helmet (ACH) The shape of the helmet should facilities the use of handsets within service communication equipment. Helmet should have provision to mount a display system , hands free communication equipment and fix-electro-optical devices and detachable visor as and when required . Vendor should provide a drawing of the helmet along with dimensions and surface area for the entire three size helmet . The dimensions of the attachment /accessories to be mounted on Helmet (including additional attachments) will be defined by the s user separately in the tendering document.

3. Material

Vendor should declare the type of material (Arial Density), construction , dimension and weight of fabricated B R Helmet during tendering process . They should maintain the same in bulk supplies.

4. Surface Finish & Colour:-

The proposed helmet should be of crinkle matt finish and able to be provided in any of the following colours:-

a) Disruptive IA pattern (surface Finish & colour Disruptive IA pattern (without Indian Army Logo .However, during tendering process user organization may suggest to put their logo, if desired)

- b) Khakhi/sand/desert Tan
- c) Olive green
- d) White
- e) Black

1) . Protection

Protection of helmet against 9x19 mm cartridge fired through sub machine gun (such as sten Machine ,MP-5 Carbine any other variant) from a distance of 5 Mtr. to achieve a muzzle velocity $430 \pm 15\text{m/s}$ and weight off the bullet between 7.4 gram to 8.2 gram . The deformation in the helmet should not exceed 13 mm. the material of the helmet should be fire/flare retardant and water resistant.

6. Climate condition :-

The entire helmet must withstand repeated and sustained exposure to climate conditions. The must provide certificate from the accredited laboratory with regard to temperature and humidity as given below: -

(a) Temperature -50 c to + 60 c for six hour

(b) Relative humidity - up to +90%

7. Users of optical instruments:-

The design of the helmet should be such that it should not obstruct the use of monocular/binoculars (day and night), optical sight fitted on the weapons, range finders and Artillery optical instruments as per the requirement of user. The dimension of attachment / Accessories to be mounted on Helmet will be defined by the user separately organization in the tendering documents.

8. Compatibility

The design of the helmet should be compatible to wear along with respirators and chemical hoods. The metal/plastic parts if used must be coated and laminated with grade-I insulation. The firm must provide certificate from the accredited laboratory.

9. Comfort:-

The helmet should not cause any undue discomfort even after prolonged wearing by an individual fro the more than eight hours. The helmet should not hinder aiming during firing and enable unhindered use of is service optical devices and personal spectacles.

WEIGHT

The weight of the helmet less the visor should be as under

- | | |
|------------------------|-------------------------|
| (a) Small size Helmet | - Not more than 1.25 kg |
| (b) Medium size helmet | - Not more than .35 kg |
| (c) Large size helmet | - Not more than 1.45 kg |
| (d) | |

11 Inner lining /harness

The helmet should be provided with a suspension system which should be adjustable to head side. A removable pad system for suspension, comfort and protection from the deformation as mentioned in para -5 above should be provided which should ensure air circulation.

12 Chin strip :

Adjustable chin strip with 3 or 4 points support must be provided. The materials of the chin strip should be suitable to Indian weather conditions and should be rugged enough to stand rough handling in field. The buckle of chin strip should be easy to engage / disengage and its position on the cheek should not hinder aiming during firing. The material of buckle should be harmless and should be skin in all type of climate conditions.

13 Size

The helmet should be provided in three sizes viz a small, medium and large size. The inner circumference of the helmet with suspension pads should be adjustable as under :

- 13.1 head circumference/ maximum – more than 52 up to 57 cms.
- 13.2 sagittal arc (it measures the distance over the top of the head between

The glabella to the nuchale, which is the base of the occiput) – more than 35 up to 39 cms.

14. shelf life :

Shelf life of the helmet indicated is 10 years in the storage conditions. The operation life of seven years is mentioned in field conditions because of different climatic conditions and normal wear and tear. In this regard manufacturer has to submit a certificate along with the supply.

15 provision of visor:

Suitable provisions should exist in the BR helmet for attaching a protective visor. In addition weight of up to 1.5 kgs with click system (tolerance of 10gms permitted) for the visor along with provision for its attachment in the overall weight of the helmet is acceptable. The visor and provision for its attachment in the helmet would be required on selective basis as per user requirement. It should provide protection ballistic fragments and other flying debris. It should have a clear air passage on the top and bottom to prevent fogging of visor. It should conform to ballistic protection as per the user requirement.

16 user evaluation:

16.1 testing of BR helmet for **ballistic Evaluation** will be carried out at CFSL or TBRL, Chandigarh Labourites as per QRs and trial directive.

16.2 testing of BR helmet physical evaluation should confirm the Indian standard : 9562-1980 (reaffirmed -2007) addition 1.5 (2000-12)

17 packing

The helmet should be packed individually in water proof carry bag.

18 literature/document:-

Literature giving details of the equipment , functioning and handling should be provided at time of trials. It must also give out details maintenance equipments.

19 warranty:-

Store supplied against this specification shall be deemed to bear the warranty of the supplier against defective design material, workmanship and performance for period of twelve months from the date of receipt of store at consignee end. And during the specified period, the store supplied is found to be defective, the same shall be replaced immediately with serviceable store by the supplier at free of any changes as may be decided by the purchasing officer, on recommendation of consignee / quality assurance authority.

20. Note:-

- 20.1 The QRs and trial directive are dynamic /live and may be amended only on the approval of competent authority.
- 20.2 the QRs /trial directive has been drawn jointly with the association of CAPFs, DRDO (TBRL, DIPAS), CFSL Chandigarh, AIIMS delhi and DGQA.
- 20.3 The level of protection is limited to the 9mm (level III A) protection.