

SPECIFICATION FOR ITEM NO.1

Item Code : 2111657086

CERAMIC PLATES USED IN MANUFACTURE OF FRONT/BACK HARD  
ARMOUR PANELS (HAP) OF BODY ARMOURS ~~FOR~~ SIZE STANDARD

(K) OCF AVADI SPECIFICAITON No.: 1201909/003 (enclred)

VETTED FOR  
TECHNICAL PARTICULARS ONLY

Dt: 22/2/19

1/9/19  
Hos/ODC

**Specification No.: 1201909/003****DATE: 12.09.2019**

**Nomenclature :** Ceramic Plates used in manufacture of Hard Armour Panels (HAP)  
of Body Armours

**Specification:****a) Chemical**

- (i) Material: Silicon Carbide (SiC)
- (ii) Composition: Bonded Silicon Carbide (SiC)

**b) Physical**

- (i) Construction: Monolithic
- (ii) Density: Max 2.8 to 3.2 g/cc
- (iii) Thickness: 7.5 mm (Tolerance + 0 mm – 0.25 mm)
- (iv) Dimensions: As per Drawing enclosed
- (v) Plate shall be free from cracks, voids, or any other surface defects when subjected to Radiographic/X-rays screening as per ASTM standards.

**c) Mechanical**

- (i) Modulus of Rupture: at RT 150-180 MPa,  
at 1400°C 170- 200 MPa
- (ii) Fracture Toughness: 2.8 to 4.3 MPa/m<sup>2</sup>
- (iii) Modulus of Elasticity: 200 to 300 GPa

**d) Ballistic**

- (i) Monolithic Silicon Carbide Ceramic Plate of thickness 7.5 mm with Multiple layers of UHMWPE fabric with areal density of 4.90 Kg/m<sup>2</sup>, when subjected to ballistic testing for threat level III+ as a composite shall be able to stop bullets fired from the following ammunitions a distance of 10 metre.

Table-A

Test Bullet	Bullet Weight (g)	Reference Velocity (m/s)
7.62 X 39mm (Hard steel core)	7.45 to 8.05	700 ± 15
7.62 mm NATO FMJ	9.4 to 9.6	838 ± 15

- (ii) Plates supplied shall be of Vintage not before 2019.

**Note:** OCF Avadi reserves the right to perform 100% radiography/X-ray screening of all the plates and ballistic evaluation of item supplied.

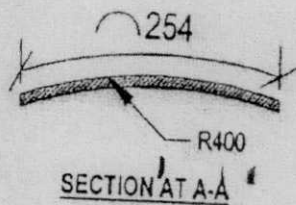
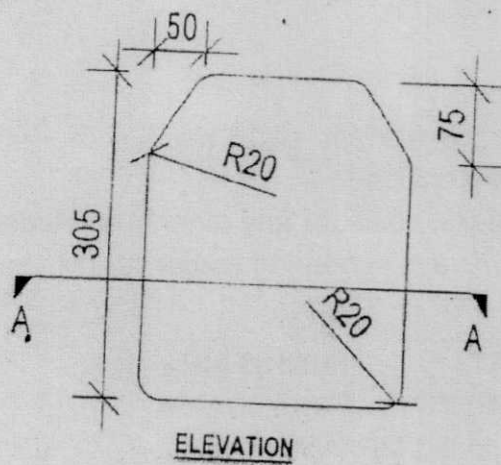
AGM/ODC

AWM/ODC

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Drawing for Ceramic Armour Plate Front/Back Standard:

Drawing No: OCFV/Ceramic/F/S001



Note:

Area : 0.0735 M<sup>2</sup>

All Dimensions are in mm.



10/9/19  
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