

CERTIFICATE

Certified that the specification No. OFPM /R&D/SP/COMPOSITE ARMOUR/07 Dated 02.03.2019 (Acceptance test procedure (ATP)/ Composite Armour for MPV (Army Version) hereby stands amended on 02nd day of March 2019. This is the Fourth amendment issued to this specification, contain 02 pages and they have been serially numbered from serial No. 01 to 02.



(A.K. RAI)

JT.GENERAL MANAGER
VEHICLE FACTORY JABALPUR

RESTRICTED

तकनीकी सेवा अनुभाग
 TECHNICAL SERVICE SECTION
 वाहन निर्माण जबलपुर
 VEHICLE FACTORY JABALPUR
 इ.स.जी.ई.एस. तकनीकी पुनरीक्षित
 IS TECHNICALY VETTED
 दिनांक, DATE... 2-5-11-2020.
 विभागीय अधिकारी
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 JWM / TSS

**ACCEPTANCE TEST PROCEDURE (ATP)
COMPOSITE ARMOUR FOR MPV (ARMY VERSION)**

No: OFPM/R&D/SP/COMPOSITE – ARMOUR/07, DT.16.03.2007
Amendment No.:04 Dt.02.03.2019

1. Technical Specification: -

- i. Material:- Composite armour material (Ultra High Molecular Weight Polyethylene)-
DYNEEMA-UD HB 25/26
- ii. Thickness :- 23±1 mm
- iii. Aerial density:- 21.00 -1/+2 Kg/m²
- iv. The material should be able to retain its original physical properties (ii & iii), when used in temperature conditions of - 40°C to +55°C

2. Protection Level:-

The material should offer protection against 7.62 SLR (Self Loading Rifle) from a distance of 10 mts.

3. Test Condition:-

- i. The firm is to give material certificate for all the components manufactured.
- ii. The firm is to give a certificate that all the components against each set manufactured should be from the same lot of material and whenever there is a change in the material lot size, separate sample should be provided.
- iii. The firm is to provide a certificate along with the samples, that they are the true representative of the bulk of 60 sets manufactured.
- iv. However, for each 60 sets of material at least one set of sample as per the Drawing no.645-15-1-1 to 15/B, will be tested by VFJ to prove the above protection level and also practical trials on vehicle application. One set of test samples will be selected randomly from the components already manufactured. The firm should make good of this deficiency before dispatch to consignee. (In case of foreign vendor the firm should give a certificate as per (iii) and dispatch the sample to VFJ for trials)
- v. From the above one set of test sample components two numbers of components will be selected and subjected for check at - 40 degree first in cold chamber for two hours and subsequently at + 55 degree in an oven for two hours to check the physical parameters of the samples for size and weight at both stages of cold chamber test and heat oven test. The samples should retain its physical properties compared to the results obtained at ambient temperature conditions. The same samples will be subjected to 24 hours conditioning at 24-28 degree C before the ballistic test is conducted.
- vi. Based on the satisfactory ballistic test results at (4) below, either RH or LH panels as per OFMK's drawing no: 645-15-1-1 to 15/B, will be subjected for practical trials for vehicle application.

The test results will be communicated to the firm within one month's time for bulk dispatch clearance of 60 sets. Quantity consumed in test / practical trials will have to be made good by the firm at their own cost.

- vii. The firm should offer the items in sets only and a minimum of 60 sets should be offered in each consignment.
- viii. Based on the test result, bulk dispatch clearance will be accorded for each 60 sets, confirming to the approved samples.
- ix. The firm is to give RAW MATERIAL ASSURANCE CERTIFICATE (RMAC) from OEM.

4. Ballistic Test Procedure: -

- i. Samples are hung on a heavy and rigid support in vertical condition.
- ii. Shooting distance 10m.
- iii. Angle of incidence: 0° (approx)
- iv. No. of shots on each sample must be 06 from 7.62 SLR with 51mm NATO Ball ammunition M80.
- v. Distance between two shots and also from edges must be 50 mm (minimum)
- vi. Muzzle velocity to be recorded. (810+/- 10 Mts/Sec)

5. Traceability: -

Every component in each set should have the manufacturers initials with year of manufacture for identification of the product.

6. Acceptance Criteria: -

Samples and subsequently whole batch consisting of 60 sets are accepted,

- i. When there is no penetration/perforation either by the bullet or its fragment.
- ii. When passes successfully, in the practical trials for vehicle application carried out on the RH/LH panels.

Otherwise, the whole batch stands rejected.


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