



Bhabha Kavach

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India's **lightest** and **cheapest bullet proof jacket** 'Bhabha Kavach' was displayed at the **International Police Expo 2019** held at Pragati Maidan **in New Delhi**.

- The expo was organised by **Nexgen Exhibitions** (Asia's leading and established trade fair, exhibition and conference organizer).
- The bullet proof jacket weighs just **6.6 kg** (in comparison to traditional jackets which weigh around 17-kg).

Production and Development

Bhabha Kavach was **developed indigenously** by Defence organizations like **Ordnance Factory Board** and **Mishra Dhatu Nigam Limited (MIDHANI)** with transfer of carbon-nanomaterial technology from **Bhabha Atomic Research Centre (BARC)**.

- **MIDHANI**, is a (public sector undertaking) specialized metals and metal alloys manufacturing facility in India, located in **Hyderabad, Telangana**.
- **Ordnance Factory Board** is an industrial organisation, functioning under the Department of Defence Production , Ministry of Defence (headquartered in Kolkata).

Manufacturing

- Bhabha Kavach is built from layers of **high-density, high-tenacity polyethylene**, which are fused together at **high temperatures** to form a thick, hard armour plate, which is then sprayed with BARC's **carbon nanomaterial**.
- The material used in the jacket are **hard boron carbide ceramics, carbon nano-tubes** and **composite polymer** (polymer made up of two or other types of polymer).

Bhabha Atomic Research Centre

- BARC is India's premier **nuclear research** facility based in Mumbai, Maharashtra.

- It is a multi-disciplinary research center with extensive infrastructure for advanced research and development.
- Its core mandate is to sustain peaceful applications of nuclear energy, primarily for power generation.

Need

- In the backdrop of several terrorist attacks (like Uri , Pulwama), Indian security forces are in the dire need to develop an advanced, efficient and cost-effective security system which can potentially deal with the fast changing threats of the 21st century.
- Central Armed Police Forces like Central Reserve Police Force, **Border Security Force**, Indo-Tibet Border Police, and Sashastra Seema Bal, which secure our border areas are more exposed to security threats and hence, Bhabha Kavach has been designed to protect Indian defence forces against:
 - **AK-47 rifle:** 7.62mm hard steel core or bullets fired from an AK-47 rifle.
 - **INSAS bullet:** 5.56mm Indian Small Arms System (INSAS) bullet.
 - **SLR:** 7.65mm bullet of self-loading rifle (SLR).

Source: Business Standard