



**IS 14698:2009-Carbon And Low Alloy Steel Billets,  
Blooms, Slabs And Bars For Manufacture Of Shell Bodies  
And Proof Shots Used In Defence Services-  
Specification(ISS)**

**Kargil War**, a horrible and unforgettable event in the **history of Indian Armed Forces** where our nation lost many soldiers. But still we **won the war** with the amicable leadership and bravery of our soldiers as well as the **role of armed weapons like Boforce guns** that have played during the war. The **heavy bombarding of shells** with deadly precision destroyed the **enemy locations** with **high accuracy** and made our army march forward every day to **reclaim the enemy captured lands**. Now, what if the shells did not blast properly? What if they blew up in mid air? The result would have been the other way around. But we all know history and let's understand the material which ensured their effective performance.

Indian Standard **14698 : 2009**, specifies requirements for **carbon and low alloy steel bars, billets, blooms and slabs** used for the manufacture of **shell bodies and proof shots used in defence services**. **Carbon and low alloy steels** are the **workhorses** of the mechanical world. No other class of **materials** offers as wide a range of **mechanical properties as economically**. They have **improved heat treat response** too. The standard controls the **grain size** within **Grades- 02 to 04** which ensures **maximum ductility** of the product. Standard specifies **different conditions of supply** of product for various applications like- **as-rolled or normalized, cold drawn, hardened and tempered condition**. Dimensions, **Chemical Composition(29 Chemistries)** and **mechanical properties**, apart from usual some additional special tests have also been specified such as- **Macro-Etch, lead segregation, cleanliness, magnetic particle inspection, sulphur print, heterogeneity, impact strength, etc.**

**These special tests** as specified above, provides the **necessary strength and durability/ductility** to the Shells to endure the thrust as offered by firing guns for carrying the firearms while static as well as during dynamic flight and also explode when landing at the target.

The **Ministry of Steel Quality Control Order** mandates that this product is sold, manufactured, or imported in India comply with **IS 14698** and display the **BIS Standard Mark**, ensuring high-quality and safety for growing Indian households.