

Zircon Missile

September 15, 2025 • vajiramandravi.com



Zircon Missile Latest News

Russia recently said that it had fired a Zircon (Tsirkon) hypersonic cruise missile at a target in the Barents Sea.

About Zircon Missile

- The 3M22 Zircon (Tsirkon), **NATO code-named SS-N-33**, is a **scramjet-powered hypersonic cruise missile developed by Russia**.
- **Initially designed to target naval assets**, the missile has **evolved to include land-attack capabilities**, making it an important tool for precision strike missions.
- It entered service in 2022, with initial deployments on Project 22350 Admiral Gorshkov-class frigates.

Zircon Missile Features

- It has an estimated length of 9 meters (30 feet) and a diameter of 60 cm (24 inches), with an estimated weight of between 3,000 and 4,000 kg (3–4 tons).
- The missile is powered by a **two-stage propulsion system**.

- The **first stage** consists of a **booster engine powered by solid fuel**, which accelerates the missile to supersonic speeds.
- **After reaching a certain speed**, the **scramjet engine in the second stage** ignites, **utilizing liquid fuel to accelerate the missile to hypersonic speeds.**
- Its **speed—reaching up to Mach 9**—makes it extremely difficult to intercept.
- The **operational range** of the Zircon is reported to be around **400-450 km (250-280 miles) at low altitudes**, while it can extend up to **1,000 km (620 miles) in a semi-ballistic trajectory.**
- It is **capable of carrying both conventional and nuclear warheads**, providing it with a versatile role in modern warfare.
- The missile uses a **combination of inertial navigation, radar homing, and plasma stealth** to navigate towards its target.
- One of the key features of the Zircon is its **ability to generate a plasma cloud during hypersonic flight**, which **absorbs radio waves** and makes the missile more **difficult to detect by radar**. This phenomenon is known as **plasma stealth.**

Source: TH

Source: <https://vajiramandravi.com/current-affairs/zircon-missile-upsc/>

© Vajiram & Ravi. For personal use only.