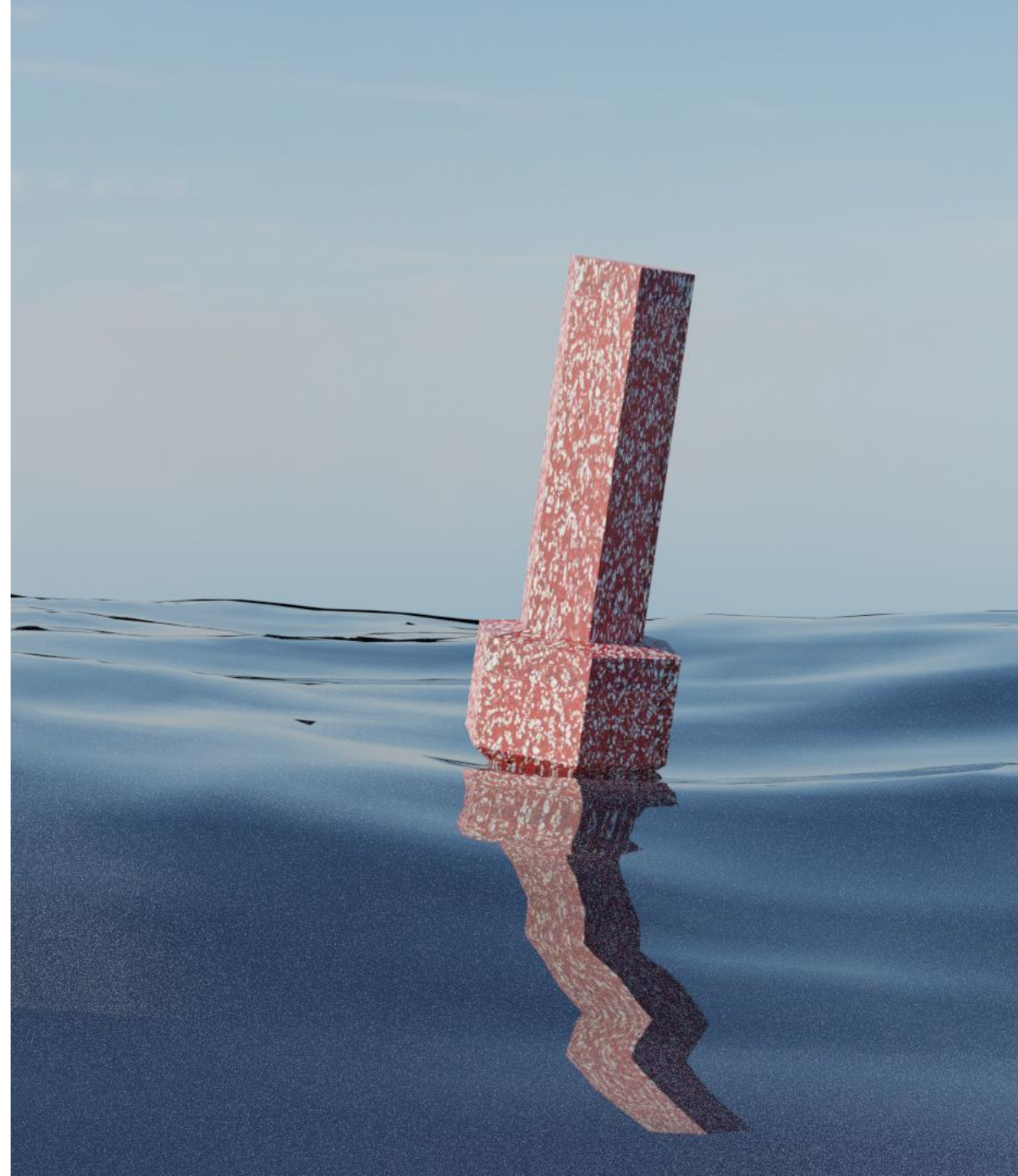
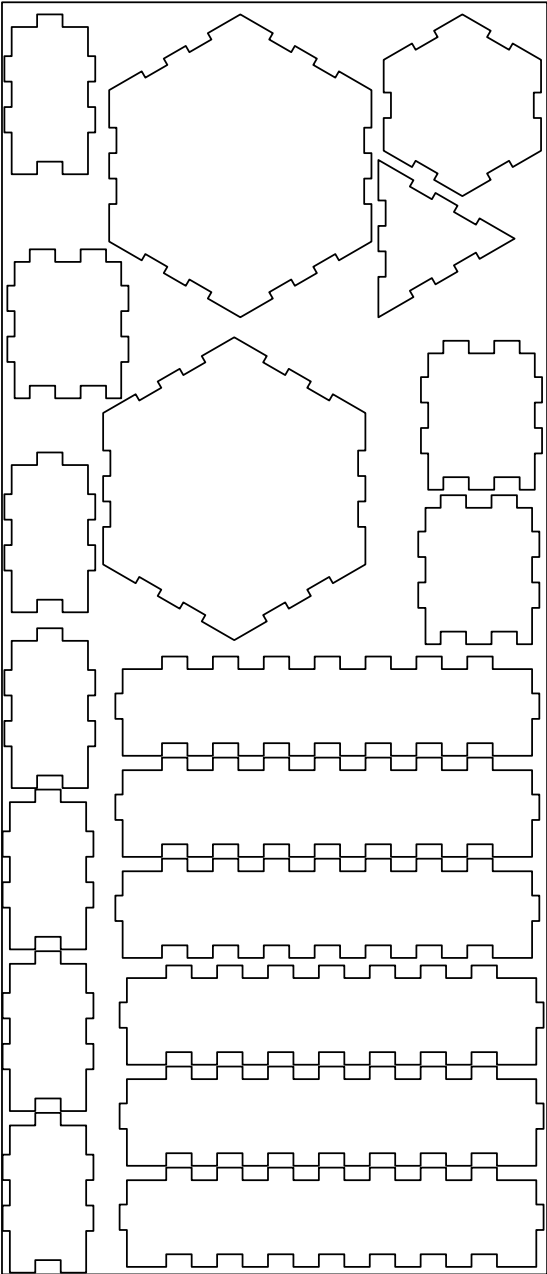


The navigation buoy I've designed transforms marine plastic waste into maritime marking equipment. This choice is deliberate: plastic that once polluted the ocean now becomes an essential tool for navigation and maritime safety.

Designed for optimal cutting from a recycled plastic sheet, this buoy assembles easily through an intelligent interlocking system. This approach directly addresses Precious Plastic's mission by maximizing the use of recycled material while creating a functional and durable object.

The design takes into account technical manufacturing and usage constraints: water stability, optimal visibility, and resistance to marine conditions. It's a concrete example of how circular economy can work in the maritime field - waste becomes resource, creating useful objects that return to their original environment with a positive function.





Several technical challenges need to be addressed for this recycled plastic navigation buoy design. The primary concern is the watertightness of the assembled joints. While the interlocking system provides structural integrity, adding a marine-grade sealant would be necessary to ensure proper watertight seals at all connection points. Additionally, metal reinforcement rings could be incorporated to maintain compression on the joints and prevent separation under stress.

The buoyancy of the design remains uncertain without knowing the specific density of the recycled plastic sheets. Without proper testing, there's a risk that the buoy may not provide sufficient flotation. The material's density would need to be tested and potentially compensated for through adding internal air chambers or foam core inserts.

The most significant concern is the durability of the buoy in marine conditions. If the plastic degrades or the joints fail, the device could disintegrate, effectively returning plastic waste to the ocean - defeating the purpose of the recycling effort. This paradox highlights the need for extensive material testing and potentially incorporating UV stabilizers and structural reinforcements to extend the operational lifespan of the buoy.