

THE BIVALVE

Periostracum (Outer Layer)

A thin, organic, skin-like coat made of a protein called conchiolin. It protects the shell from acidic seawater and boring organisms. It gives some live shells a dark or fuzzy appearance but often wears off over time.

Prismatic Layer (Middle Layer)

The thickest structural component, made of vertically oriented prisms of calcium carbonate (usually in the form of calcite). This vertical placement provides the shell with its rigid structural strength.

Nacreous Layer (Inner Layer)

Also known as mother-of-pearl, this smooth layer is composed of flat, micro-thin tablets of aragonite stacked horizontally like bricks. It prevents friction against the mollusc's soft mantle tissue and reflects light to produce an iridescent gleam.

Mantle

A soft, fleshy layer of living tissue. Because it is a part of the animal's actual body wall (epidermis), it is primarily made of living organic cells, muscle fibers, and specialized proteins.

The Outer Coating

The Wall

The Foundation

The MANTLE

What is it made from?

Marine bivalve shells are made primarily of calcium carbonate combined with an organic protein matrix secreted by the animal's mantle.

Ocean Acidification

Excess carbon dioxide in the ocean creates a chemical imbalance that lowers pH and starves marine organisms of the carbonate ions they need to build and maintain their calcium carbonate shells and skeletons.

