Biocide antifouling coatings usually create a surface which continually releases biocide at the substrate water interface. Recently non-biocidal coatings have been developed. These coatings are known as fouling release or minimally adhesive coatings. They present surface characteristics which reduce the strength of adhesion of attaching organisms.

- In biocide antifouling coatings, the number of “acceptable” antifouling agents is now a rather short list.
- To be effective, the biocide agent must be continuously released at a rate necessary to generate a toxic concentration for the organisms causing the fouling, within the surface boundary layer.
- Biocide release rates decrease exponentially with time and effective life is again limited to periods rarely exceeding 18 months.
ANTIFOULING STANDARDS AND SPECIFICATIONS

Field Tests

**ASTM D3623 · Standard Test Method for Testing Antifouling Panels in Shallow Submergence**

Procedure for testing **antifouling compositions in shallow marine environments**. It involves a standard antifouling panel of **known performance to serve as a control in antifouling studies**.

The method is designed as a screening test in evaluating antifouling coating systems

**ASTM D6990 · Standard Practice for Evaluating Biofouling Resistance and Physical Performance of Marine Coating Systems**

Coating systems are evaluated in terms of **fouling rating**, describing the **percent coverage** of the coating system by fouling organisms, and **physical deterioration rating**, describing the percentage area of the coating system affected by physical coating damage/failure.

Laboratory Tests

**JIS Z 2801/ISO 22196**

Measurement of antibacterial activity on plastics and other non-porous surfaces

Antifouling activity of polymers and surfaces under both laboratory and field environment conditions often behave differently in static controlled environment as compared to the dynamic conditions of the natural marine environment.

The assumption that direct correlation exists between laboratory and field tests is a misnomer. Each one of these types of test serves for different purposes in understanding antifouling behavior.