



Blue Angel Eco-label DE-UZ 221

for

“Underwater coatings and other antifouling systems”



The Blue Angel is the German federal government’s eco-label, which sets strict standards for environmentally friendly products and services. Since 2022, it has also been possible to apply for Blue Angel certification for underwater coatings and other antifouling systems. This poster outlines the types of products for which the label can be applied for and the evidence of environmental compatibility and effectiveness that must be provided.

Environmental criteria:

• Restriction of hazardous substances:

- The coating formulation must not contain active biocidal substances or specific harmful additives such as persistent, bioaccumulative, and toxic (PBT) or very persistent and very bioaccumulative (vPvB) substances.

• Control of intentional release:

- The coating must not be self-polishing or release microplastics. It must not use exuding silicone oils, except those that are demonstrably harmless to health and the aquatic environment. It must only employ unmodified natural substances.

• Ecotoxicity testing:

- Laboratory testing must demonstrate that any leachates show no acute or chronic toxicity to standard test organisms

• Proof of efficacy:

- The coating must show adequate antifouling effectiveness and/or abrasion resistance under standardised field or laboratory conditions.

Fouling assessment:

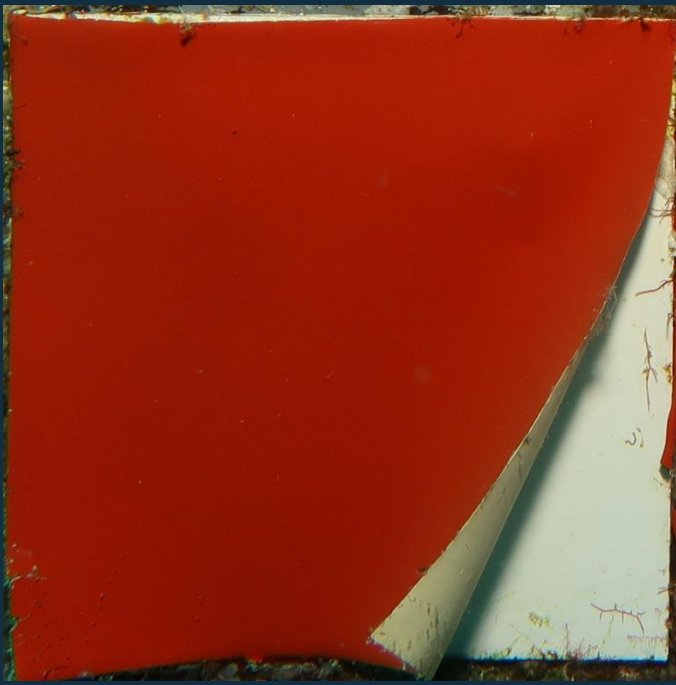
- **ASTM 6990-20** ,Standard Practice for Evaluating Biofouling Resistance and Physical Performance of Marine Coating Systems’
- **CEPE 2011** – ‘Efficacy evaluation of antifouling products – Conduct and reporting of antifouling efficacy evaluation trials’

Which types of products are eligible for the Blue Angel label?

Foul-Release Coating



Adhesive foils



Cleanable hard coatings



Mobile ship cleaning devices



Stationary ship cleaning systems



Boat lifting systems



What requirements must the test system meet to be awarded the Blue Angel label?

Simulated static or dynamic field tests, 3 Replicates

- Negative control: either PVC/PE or metal panel with Primer coating
- Min. **6 months Exposure:**

Simulated static



Simulated dynamic



Real-world conditions



- Exposure during the main fouling season in both the northern and southern hemispheres, during the summer months in each case
 - In tropical regions – testing possible all year round

Saltwater



- Sea- & brackish water – min. **18 %**
- Occurrence of **at least one** barnacle and mussel specie
- Negative control –min. **75%** macrofouling
- Test product – **≤25%** fouled
- Cleaning interval: min. interval of **2 weeks**



Freshwater



- Occurrence of Zebra- or Quagga mussel
- Negative control – min. **10%** macrofouling
- Test product – **≤5%** fouled
- Cleaning interval: min. interval of **2 months**



How do you obtain the Blue Angel eco-label?

Award criteria:

Blue Angel/ RAL gGmbH



Selected testing facilities:

Efficacy testing:

Dr. Brill + Partner GmbH



Ecotoxicology & biodegradability:

Hydrotex GmbH



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