CLAIMS

1. A cured fouling release coat comprising a polysiloxane-based binder matrix from a polysiloxane based binder which is a functional organopolysiloxane with terminal and/or pendant functionality, said polysiloxane-based binder matrix constituting 50-90 ~~at least 40~~ % by dry weight of the coat, ~~and~~ one or more enzymes and one or more hydrophilic-modified polysiloxane oils in an amount of 0.05-10 % by dry weight of the coat.

2. The fouling release coat according to ~~any one of the preceding~~ claims 1, wherein the one or more enzymes include hydrolytic enzymes, e.g. those selected from EC classes: EC 3.1, EC 3.2, EC 3.4, and EC 4.2.

3. The fouling release coat according to any one of the preceding claims, wherein the one or more enzymes are selected from serine proteases, cysteine proteases, metalloproteinase, cellulase, hemicellulase, pectinase, and glycosidases.

4. The fouling release coat according to any one of the preceding claims, wherein the one or more enzymes include an enzyme which is capable of degrading the exopolymeric substances of marine-based bio-fouling organisms as determined in the Barnacle settlement test described herein.

5. The fouling release coat according to any one of the preceding claims, wherein the one or more enzymes include an enzyme which is capable of degrading the exopolymeric substances of marine-based bio-fouling organisms as determined in the Algae settlement test described herein.

6. The fouling release coat according to any one of the preceding claims, wherein the one or more enzymes are formulated by surface treatment or by immobilisation.

7. The fouling release coat according to any one of the preceding claims, wherein

~~a. the coat further comprises one or more hydrophilic-modified polysiloxane oils; and/or~~

the binder matrix has included as a part thereof hydrophilic oligomer/polymer moieties wherein more than 50 % by weight of the binder matrix is represented by polysiloxane parts.

8. The fouling release coat according to any one of the preceding claims ~~6~~, wherein the one or more hydrophilic-modified polysiloxane oils constitute 0.05-7~~10~~ % by dry weight of the coat~~coating composition~~.

9. The fouling release coat according to any one of the preceding claims, which further comprises one or more thickeners and/or anti-settling agents (e.g. thixotropic agents).

10. The fouling release coat according to any one of the preceding claims, which further comprises one or more solvents selected from aliphatic, cycloaliphatic and aromatic hydrocarbons such as white spirit, cyclohexane, toluene, xylene and naphtha solvent, esters such as methoxypropyl acetate, n-butyl acetate and 2-ethoxyethyl acetate; octamethyltrisiloxane, and mixtures thereof, preferably those solvents having a boiling point of 110 °C or more.

11. The fouling release coat according to any one of the preceding claims, wherein the coat further comprises one or more fluorinated oils.

12. The fouling release coat according to any one of the preceding claims, which is prepared from a coating composition having a viscosity in the range of 200-4,000 mPa·s measured at 25 °C in accordance with ISO 2555:1989.

13. The fouling release coat according to any one of the preceding claims, which is prepared from a coating composition that it exhibits sag resistance for a wet film thickness up to at least 300 µm as determined in accordance with ASTM D 4400-99.

14. The fouling release coat according to any one of the preceding claims, which further comprises one or more biocides.

15. A kit for preparing thea fouling release coat comprising one or more enzymes and one or more hydrophilic-modified polysiloxane oils according to any one of the claims 1-1413, said kit comprising a first container holding a polysiloxane binder base, and a second container holding a siloxane curing agent and optionally a catalyst, wherein polysiloxane binder base of the first container is curable in the presence of the content of the second container, the kit further comprises one or more enzyme either as a constituent of the first container or a constituent of the second container, or alternatively in a third container.

16. A method of coating a surface of a substrate, comprising the sequential steps of

    a. applying one or more layers of a primer composition and/or applying one or more layers of a tie-coat composition onto the surface of said substrate, and

b. applying one or more layers of a coating composition so as to obtain a fouling release coat comprising one or more enzymes as defined in any one of the claims 1-14~~13~~ on the coated surface of said substrate.

17. A marine structure comprising on at least a part of the outer surface thereof an outermost fouling release coat as defined in any one of the claims 1-14.

18. The structure according to claim 17, wherein at least a~~s~~ part of the outer surface carrying the outermost coating is a submerged part of said structure.

19. A fouling release coating composition comprising a polysiloxane-based binder system including a polysiloxane-based binder which is a functional organopolysiloxane with terminal and/or pendant functionality, said polysiloxane-based binder system constituting 50-90 % by dry weight of the coating composition, said binder system comprising one or more polysiloxane components modified with hydrophilic oligomer/polymer moieties, and one or more enzymes and one or more hydrophilic-modified polysiloxane oils in an amount of 0.05-10 % by dry weight of the coating composition.

20. A fouling release coating composition comprising a polysiloxane-based binder system including a polysiloxane-based binder which is a functional organopolysiloxane with terminal and/or pendant functionality, said polysiloxane-based binder system constituting 50-90 % by dry weight of the coating composition, 0.01-20 % by dry weight of one or more hydrophilic-modified polysiloxane oils, and one or more enzymes.

~~21. A fouling release coating composition comprising a polypolysiloxane-based binder system constituting at least 40 % by dry weight of the coating composition and one or more enzymes.~~

~~22. A fouling release coating composition comprising a polysiloxane-based binder system constituting at least 40 % by dry weight of the coating composition, and one or more fluorinated oils.~~