WHAT IS CLAIMED IS:

1. A composition for a coating, comprising:

solvent-borne monomers;

a diluent;

a sufficient amount of an adhesion promoter to provide a coating formed from the composition having a substrate adhesion of at least 3 MPa when measured according to ASTM D4541, an overcoat adhesion of at least 3 MPa when measured according to ASTM D4541, or a recoat adhesion window of at least 4 hours when measured according to ASTM D3359;

a sufficient amount of rheology modifier to provide a coating formed from the composition having anti-settling, anti-sagging, or surface-leveling properties; and

a sufficient amount of a ceramic performance additive to provide a coating formed from the composition having a reduced noise radiation of about 2 dB to about 10 dB per about 100μm of coating thickness at frequencies of about 10 Hz to about 10 kHz when measured on a 3mm thickness cold rolled steel metal plate relative to a 3mm thickness cold rolled steel metal plate coated with a coating free of the ceramic performance additive; or a hardness of at least 5H when measured according to ASTM D3363.

2. The composition of claim 1, wherein the solvent-borne monomers comprise:

allyl-functional monomers, amino-functional monomers, maleimide-functional monomers, cyanate ester-functional monomers, epoxy-functional monomers, furan-functional monomers, vinyl ester-functional monomers, or a combination thereof;

solvent-borne pre-polymers, such as allyl-functional pre-polymers, amino-functional pre-polymers, polyester pre-polymers, bis-maleimide pre-polymers, cyanate ester-functional pre-polymers, epoxy-functional pre-polymers, furan-functional pre-polymers, phenolic pre-polymers, polyurea pre-polymers, polyurethane pre-polymers, silicone pre-polymers, or vinyl ester-functional pre-polymers; and/or

epoxy-functional monomers, wherein the epoxy-functional monomers comprise:

bisphenol diglycidyl ethers,

epoxy-functional monomers modified with a cycloaliphatic polyglycidyl ether,

epoxy-functional monomers modified with an aliphatic glycidyl ether,

epoxy-functional epoxide-siloxane monomers,

a reaction product of epichlorohydrin and one or more of hydroxyl-functional aromatics, alcohols, thiols, acids, acid anhydrides, cycloaliphatics and aliphatics, polyfunctional amines, and amine functional aromatics,

a reaction product of the oxidation of unsaturated cycloaliphatics, or

a combination thereof.

3. The composition of claim 2, wherein the epoxy-functional epoxide-siloxane monomers comprise:

an epoxide backbone comprising siloxane or polysiloxane side-chains, wherein optionally at least one of the siloxane or polysiloxane side-chains is a cross-linked silicone resin;

a reaction product of isocyanate and/or polyurethane oligomers, silane oligomers, and epoxy oligomers;

an epoxy-functional epoxide-siloxane pre-polymer;

3-ethylcyclohexylepoxy copolymer modified with dimethylsiloxane side-chains, an epoxy bisphenol A (2,2-Bis(4'-glycidyloxyphenyl)propane) modified with the poly-dimethylsiloxane side-chains, a siloxane modified hybrid epoxy resin, a siliconeepoxide resin, an epoxy-functional epoxide-backbone functionalized with a crosslinked silicone resin comprising terminal alkoxy groups, or a combination thereof; and/or

Silikopon® ED, Silikopon® EF, EPOSIL Resin 5550®, or a combination thereof.

4. The composition of any one of claims 1 to 3, wherein:

the solvent-borne monomers are low-viscosity solvent-borne monomers;

the solvent-borne monomers are low-viscosity solvent-borne monomers comprising epoxy-functional monomers modified with a cycloaliphatic polyglycidyl ether having a viscosity in a range of about 350 to about 550 cps; epoxy-functional monomers modified with a cycloaliphatic polyglycidyl ether having a viscosity in a range of about 400 to about 1000 cps; epoxy-functional monomers modified with an aliphatic glycidyl ether having a viscosity in a range of about 800 to about 1000 cps; or a combination thereof; and/or

the solvent-borne monomers are low-viscosity solvent-borne monomers comprising DLVE®-52 (ultra low viscosity epoxy resin modified with a cycloaliphatic polyglycidyl ether epoxy resin), DLVE®-18 (low viscosity epoxy resin modified with a cycloaliphatic

polyglycidyl ether epoxy resin), D.E.R.® 353 (C12-C14 aliphatic glycidyl ether-modified bisphenol-A/F epoxy-based resin), or a combination thereof.

5. The composition of any one of claims 1 to 4, wherein:

a mixture of the solvent-borne monomers and the diluent have a viscosity in a range of about 200 to about 3500 cps, or about 300 to about 3500 cps;

the solvent-borne monomers are present in a range of about 5 wt% to about 35 wt%, or about 5 wt% to about 30 wt%, or about 10 wt% to about 30 wt%; or about 15 wt% to about 20 wt%, based on Part A wt%; or about 5 wt% to about 25 wt%; or about 5 wt% to about 20 wt%, or about 10 wt% to about 20 wt%, or about 15 wt% to about 20 wt% based on total wt%; and/or

the diluent comprises about 10 wt% volatile organic compounds, or ≤10 wt% volatile organic compounds.

6. The composition of any one of claims 1 to 5, wherein the diluent comprises a reactive diluent that is reactive in a polymerization of solvent-borne monomers, a non-reactive diluent, or a combination thereof.

7. The composition of claim 6, wherein:

the reactive diluent comprises poly[(phenyl glycidyl ether)-co-formaldehyde], alkyl (C12-C14) glycidyl ether, phenyl glycidyl ether, alkenyl-substituted phenyl glycidyl ether, butyl glycidyl ether, 2-ethylhexyl glycidyl ether, o-cresol glycidyl ether, cycloaliphatic glycidyl ether, 1,2-epoxy-3-phenoxypropane; epoxy-functional polydimethylsiloxane, silicone-amine; or a combination thereof;

the non-reactive diluent comprises xylene, cyclohexane, toluene, methyl acetate, methyl ethyl ketone, tert-butyl acetate, nonyl phenol, cyclohexanedimethanol, n-butyl alcohol, benzyl alcohol, isopropyl alcohol, polyethylene glycol, propylene glycol, phenol, methylstyrenated phenol, styrenated phenol , C12-C37 ether, low-viscosity hydrocarbon resin, aryl polyoxyethylene ether, or a combination thereof; and/or

the non-reactive diluent comprises benzyl alcohol, xylene, methyl acetate, ethers, aromatic solvents, or a combination thereof;

wherein optionally,

the reactive diluent is present in a range of about 1 wt% to about 15 wt%, or about 1 wt% to about 10 wt%, or about 1 wt% to about 5 wt%, based on Part A wt% or total wt%; the non-reactive diluent is present in a range of about 1 wt% to about 20 wt%, or about 1 wt% to about 10 wt%, or about 5 wt% to about 20 wt%, based on Part A wt%; or about 5 wt% to about 25 wt%, or about 5 wt% to about 20 wt%, or about 10 wt% to about 20 wt%, based on total wt%.

8. The composition of any one of claims 1 to 7, wherein the adhesion promoter comprises:

an silane promoter, the silane being optionally reactive in a polymerization of solvent-borne monomers; a dry adhesion promoter being optionally reactive in a polymerization of solvent-borne monomers, reactive with a substrate, and/or reactive with metal oxides; a wet adhesion promoter being optionally reactive in a polymerization of solvent-borne monomers, reactive with a substrate, and/or reactive with metal oxides; a dry/wet adhesion promoter being optionally reactive being optionally reactive in a polymerization of solvent-borne monomers, reactive with a substrate, and/or reactive with metal oxides; or a combination thereof;

an alkoxylated silane, such as an epoxy-functional alkoxylated silane, an amino-functional alkoxylated silane, or a combination thereof; a modified polyester, such as a modified polyester having a hydroxyl value enough about 30 mg to about 100 mg KOH/g, a polyacrylic, a modified polyester oligomer, a polyacrylate, a metal-doped phosphosilicate, a benzotriazole, a mercaptane-comprising polymer or pre-polymer, or a combination thereof; and/or

3-(2,3-Epoxypropoxy)propyltrimethoxysilane; glycidoxypropyltrimethoxysilane; aminopropyltriethoxysilane; 3- aminopropyltriethoxysilane; an secondary amino bis-silane; a modified polyester, such as Tego Addbond LTW-B®, Tego Addbond 2220 ND®; a strontium phosphosilicate, such as HALOX® SW-111; a zinc calcium strontium aluminum orthophosphate silicate hydrate, such as HEUCOPHOS® ZCP-Plus; a zinc phosphosilicate, such as InvoCor CI-3315 (Invotec); an alkyl-substituted, hydroxylamine-substituted benzotriazole, such as CCI-01 Copper Adhesion Promoter; a mercaptane-comprising polymer or pre-polymer, such as CAPCURE® 3-800, CAPCURE® 40 SEC HV; or a combination thereof;

wherein optionally,

the adhesion promoter is present in a range about 1 wt% to about 10 wt%, or about 2 wt% to about 10 wt%, or about 2 wt% to about 8 wt%, based on Part A wt% ; or of about 0.1 wt% to about 5 wt%, or about 0.1 wt% to about 1 wt%, or about 1 wt% to about 5 wt%, based on total wt%.

9. The composition of any one of claims 1 to 8, wherein a sufficient amount of the adhesion promoter provides a coating formed from the composition having a substrate adhesion of about 3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa when measured according to ASTM D4541, an overcoat adhesion of about 3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa when measured according to ASTM D4541, or a recoat adhesion window between about 4 hours to about 72 hours when measured according to ASTM D3359; or a combination thereof.

10. The composition of any one of claims 1 to 9, wherein the ceramic performance additive comprises hollow ceramics and non-hollow ceramics.

11. The composition of claim 10, wherein the hollow ceramics comprise:

hollow ceramic spheres having a particle size of about 10 µm to about 40 µm; about 20 µm to about 40 µm, or about 25 µm to about 35 µm; or about 10 µm to about 15 µm, or about 12 µm;

hollow ceramic spheres having a particle size of about 20 µm to about 40 µm, or about 25 µm to about 35 µm, present in a range of about 30 wt% to about 70 wt%, or about 35 wt% to about 65 wt%, or about 30 wt% to about 50 wt%, based on Part A wt%; or in a range of about 15 wt% to about 50 wt%, or about 20 wt% to about 50 wt%, or about 20 wt% to about 45 wt% about 15 wt% to about 40 wt%, based on Part A wt% or total wt%;

hollow ceramic spheres having a particle size of about 10 µm to about 15 µm, or about 12 µm, present in a range of about 5 wt% to about 70 wt%, about 15 wt% to about 70 wt%, about 25 wt% to about 70 wt%, about 35wt% to about 70 wt%, about 40 wt% to about 70 wt%, or about 5 wt% to about 20 wt%, or about 10 wt% to about 20 wt%, or about 10 wt% to about 18 wt%, or about 10 wt% to about 15 wt%, based on Part A; or in a range

of about 20 wt% to about 50 wt%, or about 20 wt% to about 45 wt%, or about 15 wt% to about 40 wt%, based on total wt%; and/or

hollow ceramic spheres comprising Zeeospheres® G 600 hollow ceramic spheres, W410® hollow ceramic spheres, W610® hollow ceramic spheres, Zeeospheres® N-200PC hollow ceramic spheres, W210® hollow ceramic spheres, W410® hollow ceramic spheres, W610® hollow ceramic spheres, or a combination thereof.

12. The composition of claim 10 or 11, wherein the non-hollow ceramics comprise:

non-hollow ceramic particles having a particle size of about 0.1 µm to about 5 µm; about 0.5 µm to about 5 µm, or about 1 µm to about 5 µm; or about 2 µm to about 5 µm;

non-hollow ceramic particles present in a range of about 10 wt% to about 50 wt%, or about 10 wt% to about 45 wt%; or about 15 wt% to about 40 wt%, based on Part A wt%; or in a range of about 5 wt% to about 40 wt%, or about 10 wt% to about 35 wt%, or about 20 wt% to about 35 wt%, or about 10 wt% to about 20 wt%, based on total wt%; and/or

non-hollow ceramic particles comprising titanium oxide, brown aluminium (III) oxide, fused aluminium (III) oxide, titanium alloys, or a combination thereof.

13. The composition of any one of claims 1 to 12, wherein the sufficient amount of the ceramic performance additive provides a coating formed from the composition having reduced noise radiation of about 3 dB to about 9 dB, or about 5 dB to about 7 dB per about 100µm of coating thickness, or a hardness of about 6H to about 8H, or about 8H.

14. The composition of any one of claims 1 to 13, wherein the rheology modifier comprises an anti-settling rheology modifier, an anti-sagging rheology modifier, or a combination thereof.

15. The composition of claim 14, wherein:

the rheology modifier comprises aluminum phyllosilicate clay; organo-modified derivative of aluminium phyllosilicate clay; organo-modified bentonite clay; organo-modified montmorillonite clay, such as Claytone-HY® or Claytone-APA®; organo-modified castor oil derivative wax, such as Thixatrol ST®; micronized organo-modified polyamide wax derivative, such as Crayvallac Super®; fumed silica, fumed silica surface modified with

silane, fumed silica surface modified with dimethyldichlorosilane, such as Cab-O-Sil TS-610®; micronized barium sulphate, such as VB Techno®; microcrystalline magnesium silicate, such as Talc SIlverline 202® or Mistron 002®; polyether siloxane copolymer, such as TEGO® Glide 410® (Evonik); or a combination thereof;

the anti-settling rheology modifier comprises fumed silica, fumed silica surface modified with silane, fumed silica surface modified with dimethyldichlorosilane; aluminum phyllosilicate clay; organo-modified derivative of aluminium phyllosilicate clay; organo-modified bentonite clay; organo-modified montmorillonite clay; or a combination thereof; and/or

the anti-sagging rheology modifier comprises micronized organo-modified polyamide wax derivative, organo-modified castor oil derivative wax, or a combination thereof;

wherein optionally

the rheology modifier is present; or in a range of about 1 wt% to about 5 wt%, or about 1 wt% to about 3 wt%, or about 1 w% to about 1.5 wt%, based on Part A wt%; or in a range of about 0.3 wt% to about 5 wt%, or about 0.3 wt% to about 3 wt%, or about 0.3 w% to about 1.5 wt%, based on total wt%;

the anti-sagging rheology modifier or anti-settling rheology modifier is present in a range of about 0.1 wt% to about 5 wt%, or about 0.3 wt% to about 3 wt%, or about 0.3 w% to about 1.5 wt%, based on total wt%.

16. The composition of any one of claims 1 to 15, further comprising a dispersant.

17. The composition of claim 16, wherein the dispersant comprises:

a polymeric dispersant, such as a polymeric non-ionic dispersant, polymeric ionic dispersant, a polymeric pigment dispersant, or a combination thereof; and/or

ADDITOL VXW 6208® (polymeric non-ionic dispersant), K-SPERSE A504 (polymeric non-ionic dispersant), Disperbyk 140® (polymeric ionic dispersant, alkyl ammonium salt of an acidic polymer), MULTIWET EF-LQ-AP® (polymeric non-ionic dispersant), HPERMER KD6-LQ-MV® (polymeric non-ionic dispersant blend), ECO NatraSense 125 MBAL-LQ-AP® (non-ionic alcohol ethoxylate dispersant), BRIJ-03-LQ-AP® (nonionic alkyl polyglycol ethers dispersant), SP BRIJ 02 MBAL LQ-AP® (nonionic

alkyl polyglycol ethers dispersant), ANTI-TERRA-204® (polymeric ionic dispersant, polycarboxylic acid salt of polyamine amides), TEGO Dispers 670® (polymeric non-ionic dispersant), TEGO Disperse 1010® (polymeric non-ionic dispersant), TEGO® Glide 410® (polyether siloxane copolymer); or a combination thereof;

wherein optionally,

the dispersant is present in a range of about 0.1 wt% to about 2 wt%, or about 0.1 wt% to about 1.5 wt%, or about 0.1 wt% to about 1 wt%, based on Part A wt%; or in a range of about 0.1 wt% to about 5 wt%, or about 0.1 wt% to about 4 wt%, or about 0.1 wt% to about 3 wt%; or about 0.1 wt% to about 2 wt%, or about 0.1 wt% to about 1 wt%, based on total wt%.

18. The composition of any one of claims 1 to 17, further comprising:

a wear inhibitor; and/or

a wear inhibitor comprisinggraphite oxide, multilayered graphene flakes, titanium dioxide, microcrystalline magnesium silicate**,** fumed silica, micronized barium sulphate, or a combination thereof;

wherein optionally

the wear inhibitor is present in a range of about 0.01 wt% to about 5 wt%, 0.05 wt% to about 5 wt%, 0.5 wt% to about 5 wt%, or about 0.5 wt% to about 2 wt%, based on Part A wt% or total wt%.

19. The composition of any one of claims 1 to 18, further comprising a hydrophobicity-modifying additive, the hydrophobicity-modifying additive comprising an epoxy-functional silane, an epoxy-functional polydialkylsiloxane, or a combination thereof.

20. The composition of claim 19, wherein the hydrophobicity-modifying additive comprises epoxy-functional polydimethylsiloxane; and/or glycidoxypropyltrimethoxysilane .

21. The composition of any one of claims 1 to 20, further comprising a defoamer.

22. The composition of claim 21, wherein the defoamer comprises:

a polymeric defoamer;

a silicone-based oligomeric defoamer, wherein optionally the silicone-based oligomeric defoamer is a polysiloxane oligomer; and/or

BYK-066 N, BYK-1790, ADDITOL VXW 6210 N, TEGO Airex 900, or a combination thereof, optionally present in a range of about 1 wt% to about 5 wt%, or about 1 wt% to about 3 wt%, or about 1 wt% to about 1.5 wt%, based on Part A wt%.; or in a range of about 0.1 wt% to about 5 wt%, or about 0.1 wt% to about 1 wt%, or about 1 wt% to about 5 wt%, based on total wt%.

23. The composition of any one of claims 1 to 22, further comprising a weather-resistance additive.

24. The composition of claim 23, wherein:

the weather-resistance additive is a a wet/dry adhesion promotor; and/or

the weather-resistance additive comprises 95% Benzenepropanoic acid, 3-(2H-benzotriazol-2-yl)-5-(1, 1-dimethylethyl)- 4-hydroxy-, C7-9-branched and linear alkyl esters, 5% 1-methoxy-2-propyl acetate (Tinuvin 99-2®), 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol (Tinuvin 900®), 2-[4-[2-Hydroxy-3-tridecyloxypropyl]oxy]-2-hydroxyphenyl]-4,6-bis(2,4-dimethylphenyl)-1,3,5-triazine and 2-[4-[2-hydroxy- 3-didecyloxypropyl]oxy]-2-hydroxyphenyl]-4,6–bis(2,4- dimethylphenyl)-1,3,5-triazine (Tinuvin 400®), or a combination thereof; optionally present in a range of about 0.5 wt% to about 5 wt%, or about 1 wt% to about 5 wt%.

25. The composition of any one of claims 1 to 24, further comprising a curing catalyst, wherein optionally the curing catalyst comprises 2,4,6-tris[(dimethylamino)methyl]phenol.

26. The composition of any one of claims 1 to 25, wherein the composition comprises about 80 wt% to about 90 wt% solids.

27. The composition of any one of claims 1 to 26, further comprising a hardener composition, the hardener composition comprising a hardener and optionally a diluent, the hardener being reactive in curing the composition to form a coating having a resistance to

abrasive treatment with organic solvents of at least 50 passes, or between 50 and 80 passes when measured according to ASTM D1640.

28. The composition of claim 27, wherein:

the hardener comprises an amine hardener, amide hardener, or a combination thereof, such as phenalkamine, amine-modified phenalkamine, phenalkamides, amine-modified phenalkamides, polyamidoamine, organo-modified polyamidoamine, or a combination thereof; or a silamine hardener, such as aminopropyltriethoxysilane, triamino-functional propyltrimethoxysilane; or a combination thereof; optionally present in a range of about 40 wt% to about 100 wt%, or 40 wt% to about 90 wt%, or about 70 wt% to about 100 wt%, or about 70 wt% to about 90 wt% of the hardener composition; and/or

the diluent comprises a non-reactive diluent, such as xylene, benzyl alcohol, methyl ethyl ketone, methyl acetate, ethers, aromatic solvents, or a combination thereof; optionally present in a range of about 1 to 30% wt% of the hardener composition; optionally, wherein the xylene is present in a range of about 1 wt% to about 5 wt%, and methyl acetate is present in a range of about 10 wt% to about 25 wt%.

29. A coating comprising a reaction product of:

a composition for a coating of any one of claims 1 to 26 and a hardener; or

a composition for a coating of any one of claims 1 to 26 and the hardener composition according to claim 27 or 28.

30. The coating of claim 29, having:

a bending strength of at least 10 mm when measured by a cylindrical bend test;

a bending strength of at least 8 mm, or at least 6mm when measured by a cylindrical bend test;

a substrate adhesion of at least 3 MPa when measured according to ASTM D4541, an overcoat adhesion of at least 3 MPa when measured according to ASTM D4541, or a recoat adhesion window of at least 4 hours when measured according to ASTM D3359, or a combination thereof;

having a substrate adhesion of about 3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa when measured according to ASTM D4541, an overcoat adhesion of about

3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa when measured according to ASTM D4541, or a recoat adhesion window between about 4 hours to about 72 hours when measured according to ASTM D3359; or a combination thereof;

having a reduced noise radiation of about 2 dB to about 10 dB per about 100µm of coating thickness at frequencies of about 10 Hz to about 10 kHz when measured on a 3mm thickness cold rolled steel metal plate relative to a 3mm thickness cold rolled steel metal plate coated with a coating free of the ceramic performance additive, or a hardness of at least 5H when measured according to ASTM D3363; and/or

having reduced noise radiation of about 3 dB to about 9 dB, or about 5 dB to about 7 dB per about 100µm of coating thickness, or a hardness of about 6H to about 8H, or about 8H.

31. A composition for a coating, comprising:

a solvent-borne epoxy resin;

a diluent;

an adhesion promoter;

an anti-settling rheology modifier;

an anti-sagging rheology modifier; and

a ceramic performance additive comprising hollow ceramic spheres.

32. The composition of claim 31, wherein the epoxy resin comprises a bisphenol A epoxy resin, a bisphenol F epoxy resin, a bisphenol S epoxy resin, a cycloaliphatic polyglycidyl ether-modified epoxy resin, a cycloaliphatic polyglycidyl ether resin having a viscosity in a range of about 350 to about 550 cps, a cycloaliphatic polyglycidyl ether-modified resin having a viscosity in a range of about 400 to about 1000 cps, an aliphatic glycidyl ether-modified epoxy resin having a viscosity in a range of about 800 to about 1000 cps, or a combination thereof;

wherein optionally,

the epoxy resin is present at an amount between about 5 to about 30 wt%, or between about 5 to about 20 wt%, or between about 15 to about 20 wt%, or between about 10 wt% to about 20 wt%, based on Part A wt%.

33. The composition of claim 31 or 32, wherein the diluent comprises a reactive diluent that is reactive in a epoxy polymerization, a non-reactive diluent, or a combination thereof;

wherein optionally

the reactive diluent comprises butyl glycidyl ether, C12-14 aliphatic glycidyl ether, phenyl glycidyl ether, alkenyl-substituted phenyl glycidyl ether, 2-ethylhexyl glycidyl ether, o-cresol glycidyl ether, cycloaliphatic glycidyl ether, 1,2-epoxy-3-phenoxypropane; epoxy-functional polydimethylsiloxane, or a combination thereof;

the non-reactive diluent comprises xylene, cyclohexane, toluene, methyl acetate, methyl ethyl ketone, tert-butyl acetate, nonyl phenol, cyclohexanedimethanol, n-butyl alcohol, benzyl alcohol, isopropyl alcohol, polyethylene glycol, propylene glycol, phenol, or a combination thereof; and/or

the non-reactive diluent comprises benzyl alcohol, xylene, methyl ethyl ketone, methyl acetate, ethers, aromatic solvents, or a combination thereof.

34. The composition of claim 33, wherein:

the reactive diluent is present in a range of about 1 wt% to about 15 wt%, or about 1 wt% to about 10 wt%, or about 5 wt% to about 10 wt%, or about 1 wt% to about 5 wt%, based on Part A wt%; or in a range of about 1 wt% to about 10 wt%, or about 2 wt% to about 8 wt%, based on total wt%; and/or

the non-reactive diluent is present in a range of about 1 wt% to about 20 wt%, or about 1 wt% to about 10 wt%, or about 5 wt% to about 20 wt%, based on Part wt% or total wt%.

35. The composition of any one of claims 31 to 34, wherein the adhesion promoter comprises:

an alkoxylated silane, the silane being optionally reactive in a epoxy polymerization; a hydroxyphenyl-benzotriazole, a hydroxyphenyl-triazine, or a combination thereof;

epoxy-functional alkoxylated silane, an amino-functional alkoxylated silane, a hydroxyphenyl-benzotriazole, a hydroxyphenyl-triazine, or a combination thereof; and/or

3-(2,3-epoxypropoxy)propyl-trimethoxysilane; glycidoxypropyl-trimethoxysilane; aminopropyl- triethoxysilane; 3-aminopropyl- triethoxysilane; an secondary amino bis-silane; 95% Benzenepropanoic acid, 3-(2H-benzotriazol-2-yl)-5-(1, 1-dimethylethyl)- 4-

hydroxy-, C7-9-branched and linear alkyl esters, 5% 1-methoxy-2-propyl acetate (Tinuvin 99-2®), 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol (Tinuvin 900®), 2-[4-[2-Hydroxy-3-tridecyloxypropyl]oxy]-2-hydroxyphenyl]-4,6-bis(2,4-dimethylphenyl) -1,3,5-triazine and 2-[4-[2-hydroxy- 3- didecyloxypropyl]oxy]-2-hydroxyphenyl]-4,6–bis(2,4-dimethylphenyl)-1,3,5-triazine (Tinuvin 400®); or a combination thereof;

wherein optionally,

the adhesion promoter is present in a range of about 0.1 wt% to about 5 wt%, or about 0.1 wt% to about 1 wt%, or about 1 wt% to about 5 wt% based on Part A wt% or total wt%..

36. The composition of any one of claims 31 to 35, wherein the anti-settling rheology modifier comprises:

a silica, a clay, or a combination thereof; and/or

fumed silica, fumed silica surface modified with silane, fumed silica surface modified with dimethyldichlorosilane; aluminum phyllosilicate clay; organo-modified derivative of aluminium phyllosilicate clay; organo-modified bentonite clay; organo-modified montmorillonite clay; or a combination thereof;

wherein optionally,

the anti-settling rheology modifier is present in a range of about 0.1 wt% to about 5 wt%, or about 0.3 wt% to about 3 wt%, or about 0.3 w% to about 2 wt%, based on Part A wt%; or about in a range of about 0.1 wt% to about 2 wt%, or about 0.2 wt% to about 1.5 wt%, or about 0.3 wt% to about 1.3 wt%, based on total wt%.

37. The composition of any one of claims 31 to 36, wherein the anti-sagging rheology modifier comprises:

a wax, a micronized wax, or a combination thereof;

a polyamide wax, a micronized polyamide wax, a micronized organo-modified polyamide wax, a micronized organo-modified polyamide wax derivative, a castor oil wax, an organically-modified castor oil-derivative wax, or a combination thereof; and/or

a polyamide wax, a micronized polyamide wax, a micronized organo-modified polyamide wax, a micronized organo-modified polyamide wax derivative, or a combination thereof;

wherein optionally,

the anti-sagging rheology modifier is present in a range of about 0.1 wt% to about 1.5 wt%, or about 0.1 wt% to about 1 wt%, or about 0.1 w% to about 0.5 wt%; based on Part A wt% or total wt%.

38. The composition of any one of claims 31 to 37, wherein the ceramic performance additive comprises hollow ceramic spheres, wherein the hollow ceramic spheres:

have a particle size of about 20 µm to about 40 µm, or about 25 µm to about 35 µm;

are present in a range of about 20 wt% to about 40 wt%, or about 25 wt% to about 35 wt%; based on Part A wt% or total wt%; and/or

comprise Zeeospheres® G 600 hollow ceramic spheres, W410® hollow ceramic spheres, W610® hollow ceramic spheres, or a combination thereof.

39. The composition of any one of claims 31 to 38, further comprising a dispersant,

wherein optionally

the dispersant comprises a polymeric dispersant;

the dispersant comprises a polymeric non-ionic dispersant, polymeric ionic dispersant, a polymeric pigment dispersant, or a combination thereof;

the dispersant comprises ADDITOL VXW 6208® (polymeric non-ionic dispersant), K-SPERSE A504 (polymeric non-ionic graphene dispersant), MULTIWET EF-LQ-AP® (polymeric non-ionic dispersant), HPERMER KD6-LQ-MV® (polymeric non-ionic dispersant blend), BRIJ-03-LQ-AP® (nonionic alkyl polyglycol ethers dispersant), SP BRIJ 02 MBAL LQ-AP® (nonionic alkyl polyglycol ethers dispersant), ANTI-TERRA-204® (polymeric ionic dispersant, polycarboxylic acid salt of polyamine amides), TEGO Dispers 670® (polymeric non-ionic dispersant), TEGO Dispers 1010® (polymeric non-ionic dispersant), TEGO® Glide 410® (polyether siloxane copolymer); or a combination thereof; and/or

the dispersant is present in a range of about 0.1 wt% to about 1.5 wt%, or about 0.1 wt% to about 1 wt%, or about 0.1 wt% to about 0.5 wt%, based on Part A wt% or total wt%.

40. The composition of any one of claims 31 to 39, further comprising a wear inhibitor, wherein optionally

the wear inhibitor comprises graphite oxide, graphene, multilayered graphene flakes, titanium dioxide, microcrystalline magnesium silicate**,** fumed silica, micronized barium sulphate, or a combination thereof; and/or

the wear inhibitor is present in a range of about 0.01 wt% to about 1 wt%, or about 0.05 wt% to about 0.5 wt% or about 0.05 wt% to about 0.8 wt%, based on Part A wt% or total wt%.

41. The composition of any one of claims 31 to 40, further comprising a defoamer, wherein optionally

the defoamer comprises a polymeric defoamer;

the defoamer comprises a silicone-based oligomeric defoamer;

the defoamer comprises BYK-066 N, BYK-1790, ADDITOL VXW 6210 N, TEGO Airex 900, or a combination thereof; and/ot

the defoamer is optionally in a range of about 0.1 wt% to about 5 wt%, or about 0.1 wt% to about 1.5 wt%, or about 0.3 wt% to about 1.2 wt%, or about 1 wt% to about 5 wt%, based on Part A wt% or total wt%.

42. The composition of any one of claims 31 to 41, further comprising a curing catalyst, wherein optionally the curing catalyst comprises 2,4,6-tris[(dimethylamino)methyl]phenol.

43. The composition of any one of claims 31 to 42, further comprising a hardener composition, the hardener composition comprising a hardener and optionally a diluent, the hardener being reactive in curing the composition to form a coating having a resistance to abrasive treatment with organic solvents of at least 50 passes, or between 50 and 80 passes when measured according to ASTM D1640;

wherein optionally,

the hardener comprises an amine hardener, amide hardener, or a combination thereof;

the hardener comprises phenalkamine, amine-modified phenalkamine, phenalkamides, amine-modified phenalkamides, polyamidoamine, organo-modified polyamidoamine, or a combination thereof;

the hardener is present at an amount to provide an epoxy group/NH ratio of about 1.2 to about 1.4;

the hardener is present in a range of about 70 wt% to about 100 wt%, or about 70 wt% to about 90 wt% of the hardener composition;

the diluent comprises xylene, benzyl alcohol, methyl ethyl ketone, methyl acetate, ethers, aromatic solvents, or a combination thereof; and/or

the diluent is present in a range of about 1 to 30 wt%, or about 5 to 25 wt%, about 10 to 25 wt%; or about 1 to 5 wt% of the hardener composition.

44. A coating comprising a reaction product of:

a composition for a coating of any one of claims 31 to 44 and a hardener; and/or

a composition for a coating of any one of claims 31 to 42 and the hardener composition according to claim 43;

wherein optionally,

the coating further comprises a primer coating; and/or a topcoat coating.

45. The coating of claim 44, having:

a bending strength of at least 10 mm when measured by a cylindrical bend test;

having a bending strength of at least 8 mm, or at least 6mm when measured by a cylindrical bend test;

having a substrate adhesion of at least 3 MPa when measured according to ASTM D4541, an overcoat adhesion of at least 3 MPa when measured according to ASTM D4541, or a recoat adhesion window of at least 4 hours when measured according to ASTM D3359, or a combination thereof;

having a substrate adhesion of about 3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa when measured according to ASTM D4541, an overcoat adhesion of about 3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa when measured according to ASTM D4541, or a recoat adhesion window between about 4 hours to about 72 hours when measured according to ASTM D3359; or a combination thereof;

having a reduced noise radiation of about 2 dB to about 10 dB per about 100µm of coating thickness at frequencies of about 10 Hz to about 10 kHz when measured on a 3mm thickness cold rolled steel metal plate relative to a 3mm thickness cold rolled steel metal plate coated with a coating free of the ceramic performance additive; and/or

having reduced noise radiation of about 3 dB to about 9 dB, about 5 dB to about 9 dB, or about 5 dB to about 7 dB per about 100µm of coating thickness.

46. Use of a composition for a coating of claim 44 or 45 for forming a coating on a substrate,

wherein optionally,

the substrate is a surface of a marine vessel, such as a boat or ship; or marine equipment, such as a sensor or propeller; and/or

the substrate is a surface of a marine vessel hull.

47. Use of a coating comprising a reaction product of:

a composition for a coating of any one of claims 31 to 42 and a hardener for reducing underwater radiated noise; or

a composition for a coating of any one of claims 31 to 42 and the hardener composition according to claim 43 for reducing underwater radiated noise.

48. A composition for a coating, comprising:

a solvent-borne epoxy resin;

a diluent;

an adhesion promoter comprising a dry adhesion promoter, a wet adhesion promoter, a dry/wet adhesion promoter, or a combination thereof;

a rheology modifier comprising an anti-settling rheology modifier; an anti-sagging rheology modifier; surface-leveling rheology modifier, or a combination thereof; and

a ceramic performance additive comprising hollow ceramic spheres, non-hollow ceramic particles, or a combination thereof.

49. The composition of claim 48, wherein the epoxy resin comprises a hybrid epoxy-siloxane resin, wherein optionally the epoxy resin is present at an amount between about 30 to about 55 wt%, or between about 40 to about 50 wt%, based on Part A.

50. The composition of claim 48 or 49, further comprising a hydrophobicity-modifying additive, the hydrophobicity-modifying additive comprising an epoxy-functional silane, an epoxy-functional polydialkylsiloxane, or a combination thereof,

wherein optionally,

the hydrophobicity-modifying additive comprises an epoxy-functional polydialkylsiloxane;

the hydrophobicity-modifying additive comprises an epoxy-functional polydimethylsiloxane;

the epoxy-functional silane comprises glycidoxypropyltrimethoxysilane.

51. The composition of any one of claims 48 to 50, wherein the diluent comprises a non-reactive diluent,

wherein optionally

the non-reactive diluent comprises xylene, cyclohexane, toluene, methyl acetate, methyl ethyl ketone, tert-butyl acetate, nonyl phenol, cyclohexanedimethanol, n-butyl alcohol, benzyl alcohol, isopropyl alcohol, polyethylene glycol, propylene glycol, phenol, or a combination thereof;

the non-reactive diluent comprises benzyl alcohol, xylene, methyl ethyl ketone, methyl acetate, ethers, or aromatic solvents, or a combination thereof; and/or

the non-reactive diluent is present in a range of about 1 wt% to about 20 wt%, or about 1 wt% to about 10 wt%, or about 5 wt% to about 20 wt%; or about 5 wt% to about 15 wt%, based on Part A wt%; or in a range of about 1 wt% to about 25 wt%, or about 5 wt% to about 20 wt%, or about 5 wt% to about 15 wt, based on total wt%.

52. The composition of any one of claims 48 to 51, wherein the dry adhesion promoter, the dry/wet adhesion promoter, and/or the wet adhesion promoter are:

non-reactive, reactive in a epoxy resin polymerization, reactive with a substrate, and/or reactive with metal oxides; or a combination thereof;

metal adhesion promoters; and/or

copper or aluminum adhesion promoters;

wherein optionally,

the adhesion promoter is present in a range of about 0.1 wt% to about 10 wt%, about 0.1 wt% to about 8 wt%, about 0.1 wt% to about 5 wt%, or about 0.1 wt% to about 1 wt%, or about 1 wt% to about 5 wt%, or about 1 wt% to about 8 wt%; based on Part A wt% or total wt%.

53. The composition of claim 52, wherein:

the dry adhesion promoter

is non-reactive, reactive in a epoxy resin polymerization, reactive with a substrate, and/or reactive with metal oxides;

comprises an alkoxylated silane; and/or

comprises an epoxy-functional alkoxylated silane, an amino-functional alkoxylated silane, or a combination thereof;

the wet adhesion promoter

is reactive with a substrate;

comprises a metal-doped phosphosilicate; and/or

comprises a strontium phosphosilicate; a zinc phosphosilicate, a zinc calcium strontium aluminum orthophosphate silicate hydrate; or a combination thereof;

and/or

the dry/wet adhesion promoter

is non-reactive, reactive with a substrate, and/or reactive with metal oxides; and/or

comprises a modified polyester, a modified polyester oligomer, a polyacrylic, a polyacrylate, a benzotriazole, a mercaptane-comprising polymer or pre-polymer, or a combination thereof, wherein optionally

the modified polyester comprises a modified polyester having a hydroxyl value enough about 30 mg to about 100 mg KOH/g; and/or

the benzotriazole comprises an alkyl-substituted, hydroxylamine-substituted benzotriazole; a hydroxyphenyl-benzotriazole; or a combination thereof.

54. The composition of any one of claims 48 to 53, wherein:

the anti-settling rheology modifier

comprises a silica, a clay, or a combination thereof;

comprises fumed silica, fumed silica surface modified with silane, fumed silica surface modified with dimethyldichlorosilane; or a combination thereof; and/or

is present in a range of about 0.1 wt% to about 5 wt%, or about 0.3 wt% to about 3 wt%, or about 0.3 w% to about 2 wt%; based on Part A wt% or total wt%;

the anti-sagging rheology modifier

comprises a wax, a derivatized wax, or a combination thereof;

comprises a castor oil wax, an organically-modified castor oil-derivative wax, a polyamide wax, a micronized polyamide wax, a micronized organo-modified polyamide wax, a micronized organo-modified polyamide wax derivative, or a combination thereof; and/or

is present in a range of about 0.1 wt% to about 1.5 wt%, or about 0.1 wt% to about 1 wt%, or about 0.1 w% to about 0.5 wt%, based on Part A wt% or total wt%;

and/or

the surface-leveling rheology modifier

comprises a polyether siloxane copolymer; and/or

is present in a range of about 0.1 wt% to about 1.5 wt%, or about 0.1 wt% to about 1 wt%, or about 0.1 w% to about 0.5 wt%; based on Part A wt% or total wt%.

55. The composition of any one of claims 48 to 54, wherein:

the hollow ceramics comprises

hollow ceramic spheres having a particle size of about 10 µm to about 40 µm; about 20 µm to about 40 µm, or about 25 µm to about 35 µm; or about 10 µm to about 15 µm, or about 12 µm; and/or

hollow ceramic spheres present in a range of about 5 wt% to about 15 wt;

and/or

the non-hollow ceramics particles

have a particle size of about 0.1 µm to about 5 µm; about 0.5 µm to about 5 µm, or about 1 µm to about 5 µm; or about 2 µm to about 5 µm;

are present in a range of about 5 wt% to about 40 wt%, or about 10 wt% to about 35 wt%, or about 20 wt% to about 35 wt%, or about 10 wt% to about 20 wt%; based on Part A wt% or total wt%;

comprise titanium oxide, fumed silica, brown aluminium (III) oxide, fused aluminium (III) oxide, titanium alloys, or a combination thereof; and/or

comprise titanium alloys titanium carbonitride, titanium carbide, or a combination thereof.

56. The composition of any one of claims 48 to 55, further comprising:

a dispersant,

wherein optionally

the dispersant comprises a polymeric dispersant;

the dispersant comprises a polymeric non-ionic dispersant, polymeric ionic dispersant, a polymeric pigment dispersant, or a combination thereof;

the dispersant comprises ADDITOL VXW 6208® (polymeric non-ionic dispersant), K-SPERSE A504 (polymeric non-ionic graphene dispersant), MULTIWET EF-LQ-AP® (polymeric non-ionic dispersant), HYPERMER KD6-LQ-MV® (polymeric non-ionic dispersant blend), BRIJ-03-Lam Q-AP® (nonionic alkyl polyglycol ethers dispersant), SP BRIJ 02 MBAL LQ-AP® (nonionic alkyl polyglycol ethers dispersant), ANTI-TERRA-204® (polymeric ionic dispersant, polycarboxylic acid salt of polyamine amides), TEGO Dispers 670® (polymeric non-ionic dispersant), TEGO Disperse 1010® (polymeric non-ionic dispersant), TEGO® Glide 410® (polyether siloxane copolymer); or a combination thereof; and/or

the dispersant is present in a range of about 0.1 wt% to about 1.5 wt%, or about 0.1 wt% to about 1 wt%, or about 0.1 wt% to about 0.5 wt%; based on Part A wt% or total wt%;

a wear inhibitor,

wherein optionally,

the wear inhibitor comprises graphite oxide, graphene, multilayered graphene flakes, titanium dioxide, microcrystalline magnesium silicate**,** fumed silica, micronized barium sulphate, or a combination thereof; and/or

the wear inhibitor is present in a range of about 0.01 wt% to about 1 wt%, or about 0.05 wt% to about 0.5 wt%; or about 0.05 wt% to about 0.8 wt%, based on total wt%;

a defoamer,

wherein optionally,

the defoamer comprises a polymeric defoamer;

the defoamer comprises a silicone-based oligomeric defoamer;

the defoamer comprises BYK-066 N, BYK-1790, ADDITOL VXW 6210 N, TEGO Airex 900, or a combination thereof;

the defoamer is in a range of about 0.1 wt% to about 5 wt%, or about 0.1 wt% to about 1 wt%, or about 1 wt% to about 5 wt%, based on Part A wt% or total wt%;

a weather-resistance additive,

wherein optionally,

the weather-resistance additive comprises a hydroxyphenyl-benzotriazole, a hydroxyphenyl-triazine, or a combination thereof;

the weather-resistance additive comprises 95% Benzenepropanoic acid, 3-(2H-benzotriazol-2-yl)-5-(1, 1-dimethylethyl)- 4-hydroxy-, C7-9-branched and linear alkyl esters, 5% 1-methoxy-2-propyl acetate (Tinuvin 99-2®); 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol (Tinuvin 900®); 2-[4-[2-Hydroxy-3-tridecyloxypropyl]oxy]-2-hydroxyphenyl]-4,6-bis(2,4-dimethylphenyl)-1,3,5-triazine and 2-[4-[2-hydroxy- 3- didecyloxypropyl]oxy]-2-hydroxyphenyl]-4,6–bis(2,4-dimethylphenyl)-1,3,5-triazine (Tinuvin 400®); or a combination thereof;

the weather-resistance additive is a wet/dry adhesion promotor; and/or

the weather-resistance additive is present in a range of about 0.5 wt% to about 5 wt%, or about 1 wt% to about 5 wt%;

and/or

a curing catalyst,

wherein optionally,

the curing catalyst comprises 2,4,6-tris[(dimethylamino)methyl]phenol.

57. The composition of any one of claims 48 to 56, further comprising a hardener composition, the hardener composition comprising a hardener and optionally a diluent, the hardener being reactive in curing the composition to form a coating having a resistance to abrasive treatment with organic solvents of at least 50 passes, or between 50 to 80 passes when measured according to ASTM D1640;

wherein optionally,

the hardener comprises an silamine hardener, amine hardener, amide hardener, or a combination thereof;

the hardener comprises an silamine hardener, the silamine hardener comprising aminopropyltriethoxysilane, triamino-functional propyltrimethoxysilane; or a combination thereof;

the hardener is present at an amount to provide an epoxy group/NH ratio of about 0.9 to about 1.1, or about 1;

the hardener is present in a range of about 70 wt% to about 100 wt%, or about 70 wt% to about 90 wt% of the hardener composition;

the diluent comprises a non-reactive diluent;

the diluent comprises xylene, benzyl alcohol, methyl ethyl ketone, methyl acetate, ethers, aromatic solvents, or a combination thereof; and/or

the diluent is present in a range of about 1 to about 20 wt%, or about 1 to about 30 wt% of the hardener composition.

58. The composition of any one of claims 48 to 57, wherein the hardener composition further comprises a curing catalyst, wherein optionally the curing catalyst comprises 2,4,6-tris[(dimethylamino)methyl]phenol.

59. A coating comprising a reaction product of:

a composition for a coating of any one of claims 48 to 56 and a hardener; and/or

a composition for a coating of any one of claims 48 to 56 and the hardener composition according to claim 57 or 58.

60. The coating of claim 59, further comprising a primer coating, the primer coating comprising a reaction product of a composition for a primer coating and a hardener.

61. The coating of claim 59 or 60, wherein the composition for a primer coating comprises:

an epoxy resin or a urethane resin;

at least 10 wt% epoxy resin;

an adhesion promoter comprising a dry adhesion promoter, a wet adhesion promoter, a dry/wet adhesion promoter, or a combination thereof; and/or

fillers for producing micro-roughness and inducing the gas-liquid barrier properties in the dried primer, wherein optionally

the fillers comprise magnesium silicate (talc), wollastonite, barium sulfate, fumed silica, or a combination thereof, in amount not less than 30%wt based on total formula weight.

62. The coating of any one of claims 59 to 61, having:

a bending strength of at least 10 mm when measured by a cylindrical bend test;

a bending strength of at least 8 mm, or at least 6mm when measured by a cylindrical bend test;

a substrate adhesion of at least 3 MPa when measured according to ASTM D4541, an overcoat adhesion of at least 3 MPa when measured according to ASTM D4541, or a combination thereof;

a substrate adhesion of about 3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa, or about 3 MPa to about 7 MPa, or about 5 MPa to about 7 MPa when measured according to ASTM D4541, an overcoat adhesion of about 3 MPa to about 15 MPa, or about 3 MPa to about 10 MPa, or about 3 MPa to about 7 MPa, or about 5 MPa to about 7 MPa when measured according to ASTM D4541; or a combination thereof;

a dry adhesion to metal substrate of at least 3 MPa, wet adhesion to metal substrate of at least 4 MPa, or a combination thereof;

a dry adhesion of about 3 to about 15 MPa, or about 3 to about 10 MPa, ot about 3 to about 5 MPa, a wet adhesion of about 4 to about 15 MPa, or about 4 to about 10 MPa, or about 5 to about 7 MPa, or a combination thereof;

a hardness of at least 5H when measured according to ASTM D3363; and/or

a hardness of about 6H to about 8H, or about 8H.

63. Use of a composition for a coating of any one of claims 59 to 61 for forming a coating on a substrate,

wherein optionally,

the substrate is a surface of a marine vessel, such as a boat or ship; or marine equipment, such as a sensor or propeller;and/or

the substrate is a surface of a propeller.

64. Use of a coating comprising a reaction product of:

a composition for a coating of any one of items 48 to 56 and a hardener for reducing cavitation; or

a composition for a coating of any one of items 48 to 56 and the hardener composition according to claims 57 or 58 for reducing cavitation.