CLAIMS

1. A coating dispersion, the coating dispersion comprising:

water;

titanium dioxide;

calcium carbonate;

calcined aluminum silicate;

acrylic polymers present at an amount not greater than 20 wt% of the coating;

a dihydrazide; and

a fluoroalkyl polymer present at an amount of 0.1 wt% to 5 wt% of the coating.

2. The coating dispersion according to claim 1, wherein the amount of titanium dioxide is at least 5 wt% and not greater than 15 wt% of the coating.

3. The coating dispersion according to claim 1, wherein the amount of calcium carbonate is at least 18 wt% and not greater than 35 wt% of the coating.

4. The coating dispersion according to claim 1, wherein the amount of calcined aluminum silicate is at least 5wt% and not greater than 12 wt% of the coating.

5. The coating dispersion according to claim 1, wherein the amount of acrylic polymers is at least 7 wt% and not greater than 17 wt% of the coating.

6. The coating dispersion according to claim 1, wherein the amount of the dihydrazide is at least 0.1 wt% and not greater than 0.5 wt% of the coating.

7. The coating dispersion according to claim 1, wherein the amount of the a fluoroalkyl polymer is at least 0.2 wt% and not greater than 0.9 wt% of the coating.

8. The coating dispersion according to any of the foregoing claims, further comprising at least one ingredient selected from the group of Magnesium silicate, anhydrous aluminum silicate, or a mixture thereof.

9. The coating dispersion according to claim 8, wherein the at least one ingredient is present in an amount of at least 2 wt% and not greater than 12 wt% of the coating.

10. The coating dispersion according to any of the foregoing claims, further comprising zinc oxide.

11. The coating dispersion according to claim 10, wherein the zinc oxide is present in an amount of at least 0.2 wt% and not greater than 1.2 wt% of the coating.

12. A building article comprising a coating, wherein the coating includes:

titanium dioxide, calcium carbonate, calcined aluminum silicate, acrylic polymers present at an amount not greater than 25 wt% of the coating on the building article, a dihydrazide, and a

fluoroalkyl polymer present at an amount of not greater than 1 wt% of the coating on the building article.

13. The building article according to claim 12, wherein the amount of calcium carbonate is at least 25 wt% and not greater than 55 wt% of the coating on the building article.

14. The building article according to claim 12, wherein the amount of titanium dioxide is at least 6 wt% and not greater than 16 wt% of the coating on the building article.

15. The building article according to claim 12, wherein the amount of calcined aluminum silicate is at least 6 wt% and not greater than 16 wt% of the coating on the building article.

16. The building article according to claim 12, the amount of acrylic polymers is at least 10 wt% and not greater than 22 wt% of the coating on the building article.

17. The building article according to claim 12, wherein the amount of the dihydrazide is at least 0.15 wt% and not greater than 0.6 wt% of the coating on the building article.

18. The building article according to claim 12, the amount of the a fluoroalkyl polymer is at least 0.2 wt% and not greater than 0.8 wt% of the coating on the building article.

19. The building article according to claim 12 further comprising at least one ingredient selected from the group of Magnesium silicate, anhydrous aluminum silicate, or a mixture thereof.

20. The building article according to claim 19, wherein the at least one ingredient is present in an amount of at least 2 wt% and not greater than 20 wt% of the coating on the building article.

21. The building article according to claim 12, further comprising zinc oxide.

22. The building article according to claim 21, wherein the zinc oxide is present in an amount of at least 0.5 wt% and not greater than 2 wt% of the coating on the building article.

23. The coating dispersion or building article according to any one of the preceding claims, wherein the dihydrazide is selected from isophthalic dihydrazide, sebacic dihydrazide, adipic dihydrazide, or any combination thereof.

24. The building article according to any one of claims 12-23, wherein the building article includes a tile, a mineral board, a gypsum board, fiberglass, or any combination thereof.

25. The building article according to any one of claims 12-24, wherein coating has a thickness of at least 1 mil and not more than 6 mils.