CONTENT

1 INTRODUCTION

A comparative study was commissioned by the Federation of Finishing Businesses paint cleaners, in particular those which do not need to be washed after. The assignment is provided by returning the signed quotation with reference JJK / MH LB00-OFF of November 23, 2000.

2. GENERAL

Samples:

Producers	Concentration	Supplier	Washing after according to supplier
St. Marc	50 gr / l	Benckiser	yes
Ammonia	5%	Merck	---
Universol	1: 100	Chemtec	no
Miltex	1: 4	Servant	yes
Rigorex SC	100%	Prochemko	yes
Viamond	1:10	Micone BV	yes
Andy	100%	Lever Faberge	yes

3. PROCEDURE

The spruce wood samples, dimensions 300 x 100 x 20 mm, are as follows treated:

- Apply 2x primer Sikkens Onol HS (COT KO 06.01) with air spray (2 x 40 m dry) on sanded spruce panels
- Apply 1 x 40 m dry coat of SigmaS2U Satin (COT KO 07-00) with air spray (1 x 40 m)
- 14 days of drying at 23 oC and 50% relative humidity (RH)
- 24 hours of drying at 40 oC
- 100 hours of aging in QUV Accelerated Weathering Tester with QUV type 340 lamps. One cycle consists of 4 hours of light at 60 oC and 4 hours of condensation at 50 oC
- half of the panels are sanded per unit with sandpaper 220 and half of the panels is not sanded
- all panels have been cleaned with detergent, after which half of each panel has been rinsed with tap water
- in one series is an alkyd resin coating Sigma 52U Satin (COT KO07-00) with air spray applied (40 m dry)
- in one series, a water-based surface coating is Sigma Torno Semi Gloss (COT KO 07-05) with air sprayer applied (40 m dry)

After 10 days of drying at 23 oC and 50% RH the test pieces were exposed to the condensation test according to DIN 50.017. One test cycle consisting of 24 hours of condensation at 40 o C and 24 hours of drying at 23 o C and 50% RH.
After 1, 2 and 5 cycles, the panels were visually assessed for defects. Furthermore, after 5 cycles the adhesion determined in accordance with NEN-EN-ISO 2409

4. RESULTS

4.1 Composition of various cleaning agents (information packaging)

product Composition (undiluted)
blank tap water
Andy non-ionic surfactant <5%, soap <5%, preservative
Miltex anionic surfactant 5-10%, non-ionic surface active detergent 1-5%, NaOH <5%
Viamond nonionic and anionic surfactants, sulfonates with short chain, complex phosphates and silicates, NaOH
Rigorex SC Synthetic cleaner, phosphate, nonionic surfactant <5%, anionic surfactant <5%
Universol Amphotheric surfactants
St. Marc non-ionic surfactant <5%, soap
Ammonia NH4OH (5%)

4.2 Appearance after cleaning (visual)

product	**sanding**		**no sanding**	
	cleaning	**cleaning and washing after**	**cleaning**	**cleaning and washing after**
blanco	clean	clean	clean	clean
Andy	low spot formation	clean	low spot formation	clean
Miltex	strong spot formation	clean	strong spot formation	clean
Viamond	low spot formation	clean	low spot formation	clean
Rigorex SC	low spot formation	low spot formation	low spot formation	low spot formation
Universol	very low spot formation	clean	very low spot formation	clean
St. Marc	very low spot formation	clean	clean	clean
Ammonia	low spot formation	clean	low spot formation	clean

4.3 Defects on alkyd resin paint after 1 cycle of condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	no defect	no defect	no defect	no defect
Andy	no defect	no defect	no defect	no defect
Miltex	blisters/scorch Ø 5 mm	no defect	blisters/scorch Ø 5 mm	no defect
Viamond	blisters/points Ø 1 mm	no defect	blisters/points Ø 1 mm	no defect
Rigorex SC	blisters Ø 10 mm	no defect	blisters Ø 10 mm	no defect
Universol	no defect	no defect	no defect	no defect
St. Marc	blisters Ø 1 mm	no defect	blisters Ø 1 mm	no defect
Ammonia	no defect	no defect	no defect	no defect

4.4 Defects on water-based cover paint after 1 cycle of condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	no defect	no defect	no defect	no defect
Andy	no defect	no defect	no defect	no defect
Miltex	blisters Ø 10 mm	no defect	blisters Ø 10 mm	no defect
Viamond	no defect	no defect	no defects	no defect
Rigorex SC	spots	no defect	spots	no defect
Universol	no defect	no defect	no defect	no defect
St. Marc	no defects	no defect	no defects	no defect
Ammonia	no defect	no defect	no defect	no defect

4.5 Defects on alkyd resin paint after 2 cycle condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	no defect	no defect	no defect	no defect
Andy	no defect	no defect	no defect	no defect
Miltex	blisters Ø 5 mm	no defect	blisters Ø 5 mm	no defect
Viamond	blisters/points Ø 1 mm	no defect	blisters/points Ø 1 mm	no defect
Rigorex SC	blisters Ø 10 mm	no defect	blisters Ø 10 mm	no defect
Universol	no defect	no defect	no defect	no defect
St. Marc	blisters Ø 1 mm	no defect	blisters Ø 1 mm	no defect
Ammonia	no defect	no defect	no defect	no defect

4.6 Defects on water-based cover paint after 2 cycle of condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	no defect	no defect	no defect	no defect
Andy	no defect	no defect	no defect	no defect
Miltex	blisters Ø 10 mm	no defect	blisters Ø 10 mm	no defect
Viamond	no defect	no defect	no defect	no defect
Rigorex SC	spots	no defect	spots	no defect
Universol	no defect	no defect	no defect	no defect
St. Marc	no defect	no defect	no defect	no defect
Ammonia	no defect	no defect	no defect	no defect

4.7 Defects on alkyd resin paint after 5 cycle condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	no defect	no defect	no defect	no defect
Andy	no defect	no defect	no defect	no defect
Miltex	blisters Ø 5 mm scorching	no defect	blisters Ø 5 mm scorching	no defect
Viamond	blisters Ø 1 mm points	no defect	blisters Ø 1 mm points	no defect
Rigorex SC	blisters Ø 10 mm	no defect	blisters Ø 10 mm	no defect
Universol	no defect	no defect	no defect	no defect
St. Marc	blisters Ø 1 mm	no defect	blisters Ø 1 mm	no defect
Ammonia	no defect	no defect	no defect	no defect

4.8 Defects on water-based cover paint after 2 cycle of condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	no defect	no defect	no defect	no defect
Andy	no defect	no defect	no defect	no defect
Miltex	big blisters Ø 10 mm	no defect	big blisters Ø 10 mm	no defect
Viamond	no defect	no defect	no defect	no defect
Rigorex SC	spots	no defect	spots	no defect
Universol	no defect	no defect	no defect	no defect
St. Marc	no defect	no defect	no defect	no defect
Ammonia	no defect	no defect	no defect	no defect

4.9 Adhesion of NEN-EN-ISO 2409 alkyd resin paint after 5 cycle condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	0	0	0	0
Andy	0	0	0	0
Miltex	5	0	5	0
Viamond	0	0	3	0
Rigorex SC	3	0	3	0
Universol	0	0	0	0
St. Marc	2	0	4	0
Ammonia	0	0	1	0

4.9 Adhesion of NEN-EN-ISO 2409 water-based cover paint after 5 cycle condensation test

product	sanding		no sanding	
	cleaning	cleaning and washing after	cleaning	cleaning and washing after
blanco	0	0	0	0
Andy	0	0	0	0
Miltex	0	0	2	0
Viamond	0	0	1	0
Rigorex SC	0	0	0	0
Universol	0	0	0	0
St. Marc	0	0	0	4
Ammonia	0	0	0	0

0 = no flaking 5 = total flaking

5. DISCUSSION OF THE RESULTS

Dewashing with water from paint surfaces which have been cleaned before with paint cleaning agents is necessary for the following products:

-Miltex
-Viamond 7040 KL
-Rigorex SC
-St. Marc

Not dewashing with: tap water, ammonia, Andy and Universol does not give any deffects to the paint surface.
For painting with alkyd resin paint, washing with water after use of cleaning agents is strongly recommended.

With water-based products, the effects of washing or not being laundered are less strong than with the alkyd resin paint, but here again the results after dewashing are better.

The test pieces which have been sanded before the use of cleaning agents also show after determination of adhesion better results than the test pieces that have not been sanded.

Given the many types (changing compositions) of water-based paint, it is not in advance to predict whether a paint is to be applied directly or after application on an not dewashed cleaned paint surface will show defects over time. It is also unforeseeable whether a manufacturer of paint cleaners the composition of a product can change causing the sensitivity to defects to an paint system is adversely affected.

6. CONCLUSION

Native washing is necessary for different detergents. To solve problems to prevent residual detergent is recommended after washing after cleaning, or by trial and error to establish whether or not washing is necessary.

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