



**WANHUA**

# **Vesmody<sup>®</sup> H400 Test Report**

# **C**ONTENT 目录

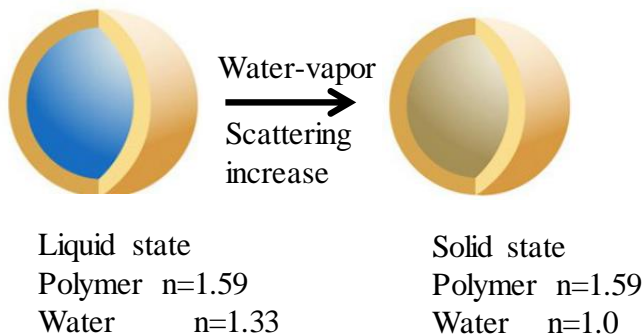
01 | **Vesmody® H400 Property**

02 | **Application of Vesmody® H400 in 8160 interior**

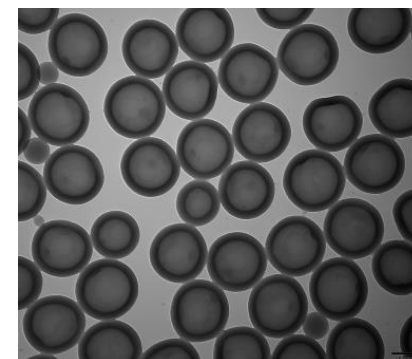
03 | **Application of Vesmody® H400 in 8016 exterior**

- Vesmodity® H400 is an aqueous styrene-acrylic emulsion with a hollow structure, which can reduce the over-accumulation of titanium dioxide in the formulation, and effectively reduce the amount of titanium dioxide added, thereby reducing costs.
- Used for high-grade internal wall latex paint, can improve the stain resistance of the paint film; used for external wall elastic latex paint, can improve the mechanical properties and stain resistance of the paint film.

Property	H400	Competitor E
Appearance	Milky-white	Milky-white
Solid/%	30-32	30
pH	7.0-8.0	8.0-8.7
Diameter/um	0.40-0.45	0.40



Opaque polymer



TEM of Opaque polymer H400

- Vesmody® H400 has similar appearance, solid content, particle size, and neutral pH to the Competitor product E. Compared with the competitive product E, Vesmody® H400 has better freeze-thaw stability and better calcium ion stability.
- Vesmody® H400 has similar mechanical property with Competitor
- Although the VOC of Vesmody® H400 is a little bit higher than Competitor, its odor is lighter than competing products, which is related to the lower content of benzaldehyde in VOC (22ppm vs 56ppm).
- The thermal storage stability of Vesmody® H400 is similar like Competitor

Property	H400	Competitor	Remark
Appearance	Milky-white	Milky-white	
Solid/%	30-32	30	
pH	7.0-8.0	8.0-8.7	
Diameter/um	0.40-0.45	0.40	
Ca <sup>+</sup> Stability/%	1.0	0.5	
Mech. Stability/ppm	110	135	Residue
VOC/ppm	558	436	HS
Freeze thaw stability/%	30.66/30.70	17.89/29.89	Upper/Lower Solid
Thermal storage stability/%	30.55/30.73	30.56/30.60	Upper/Lower Solid

# **C**ONTENT 目录

01 | **Vesmody® H400 Property**

02 | **Application of Vesmody® H400 in 8160 interior**

03 | **Application of Vesmody® H400 in 8016 exterior**

## Formulation

	No.1	No.2	No.3
Slurry			
Water	140	140	140
Propylene Glycol	15	15	15
BD-109	1	1	2
HEC	2	2	2
AMP-95	1	0.5	0.5
CA-2500	14	12	10
Defoamer	2	2	1
TiO2	220	150	200
Calium	60	100	70
Kaolin	50	50	80
Talcum Powder		80	40
Total	505	552.5	560.5
Paint			
8160	350	350	280
Ultra	60	50	60
Film former	12	12	10
Defoamer	2	1	1
AMP-95			0.5
U300	10	8	6
U705	1	0.4	
A401			2.5
LEX	1	1	1
Water	59	25.1	78.5
Total	1000	1000	1000

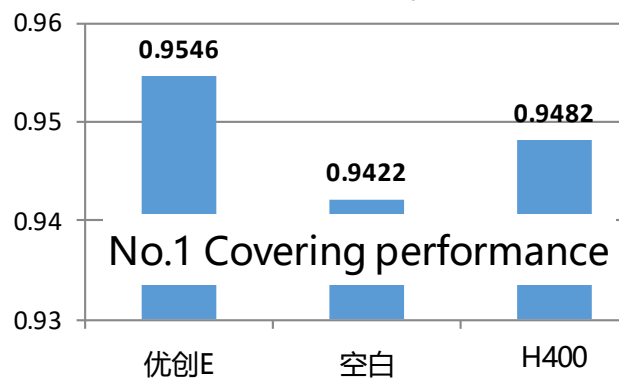
## Property of different formulation

Item	NO.1	NO.2	NO.3
PVC/%	43.0	51.0	55.0
Vol. Solid/%	40.0	41.0	39.0
KU	108	103	95
State in container	No lumps, uniform after mixing	No lumps, uniform after mixing	No lumps, uniform after mixing
Appearance	Normal	Normal	Normal
Expected contrast ratio/%	95	92	93

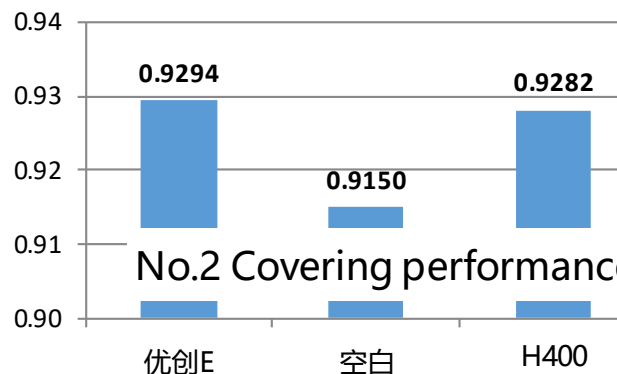
# Covering performance of H400 in 8160



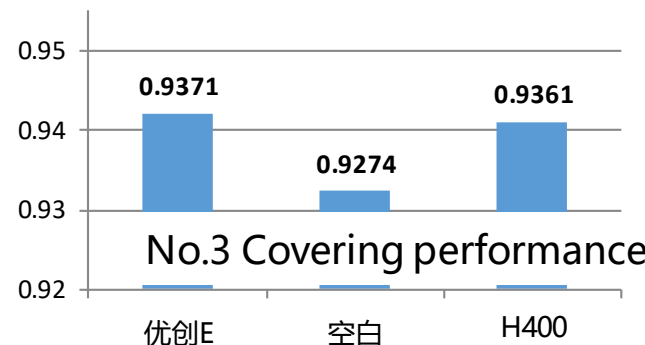
Left: Competitor E



Middle: Control Group



Right: H400



	No.1			No.2			No.3		
	E	Control	H400	E	Control	H400	E	Control	H400
Gloss 60	8.3	8.0	8.2	4.7	4.2	4.5	3.7	3.4	3.0
Gloss 85	21.1	16.2	21.0	4.1	2.9	3.8	6.8	4.9	5.6
Whiteness	92.4	91.7	92.4	90.9	90.6	90.9	91.4	90.7	90.9

- In the high-quality interior wall formulation (No. 1), the covering performance of Vesmodity® H400 is lower than that of the competitor E; while in the mid-range to mid-to-high-quality interior wall formulation (No. 2/3), the covering performance of Vesmodity® H400 is similar to that of the competing product.
- The latex paint film added with Vesmodity® H400 shows whiteness similar to that of competing products, but it can effectively reduce gloss (60 degrees and 85 degrees).

# Application of H400 in 8160 interior



Recommend Formula		
Number	Material	Mass/g
1	Water	140
2	250HBR	3
3	AMP-95	1
4	BD-109	2
5	731A	10
6	NXZ	1.5
7	R996	200
8	DB-80	50
9	CC-1250	60
10	Celite	20
11	Opaque Polymer	50
12	LXE	1
13	Water	70
14	NXZ	1.5
15	8160	300
16	Coasol	12
17	Propylene Glycol	8
18	DF-19	2
19	U300	5
20	U604	3
21	Water	60
Total		1000

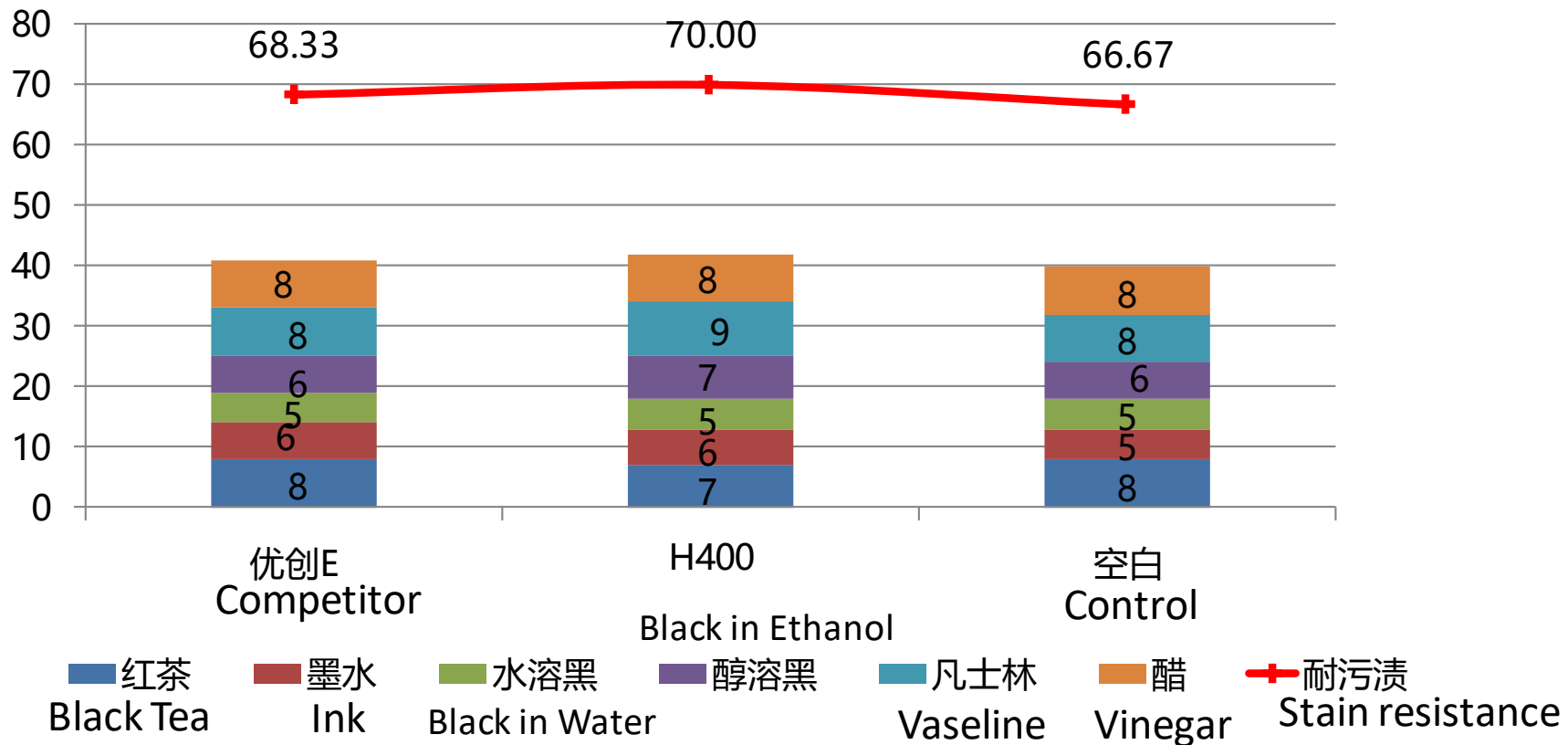
## Property:

Item	Competitor	Control	H400
PVC/%	46.0	46.0	46.0
KU	117	113	118
State in container	No lumps, uniform after mixing	No lumps, uniform after mixing	No lumps, uniform after mixing
Appearance	Normal	Normal	Normal
Contract/%	94.64	92.92	94.12
Gloss (60/85)	3.6/5.4	3.6/4.0	3.6/5.5
Whiteness	91.7	91.7	91.8
Free-thaw ability	No deterioration, viscosity increases	No deterioration, viscosity increases	No deterioration, viscosity increases
Contract after Free-thaw /%	96.96	96.10	96.32
Thermal storage	Little stratification	Little stratification	Little stratification



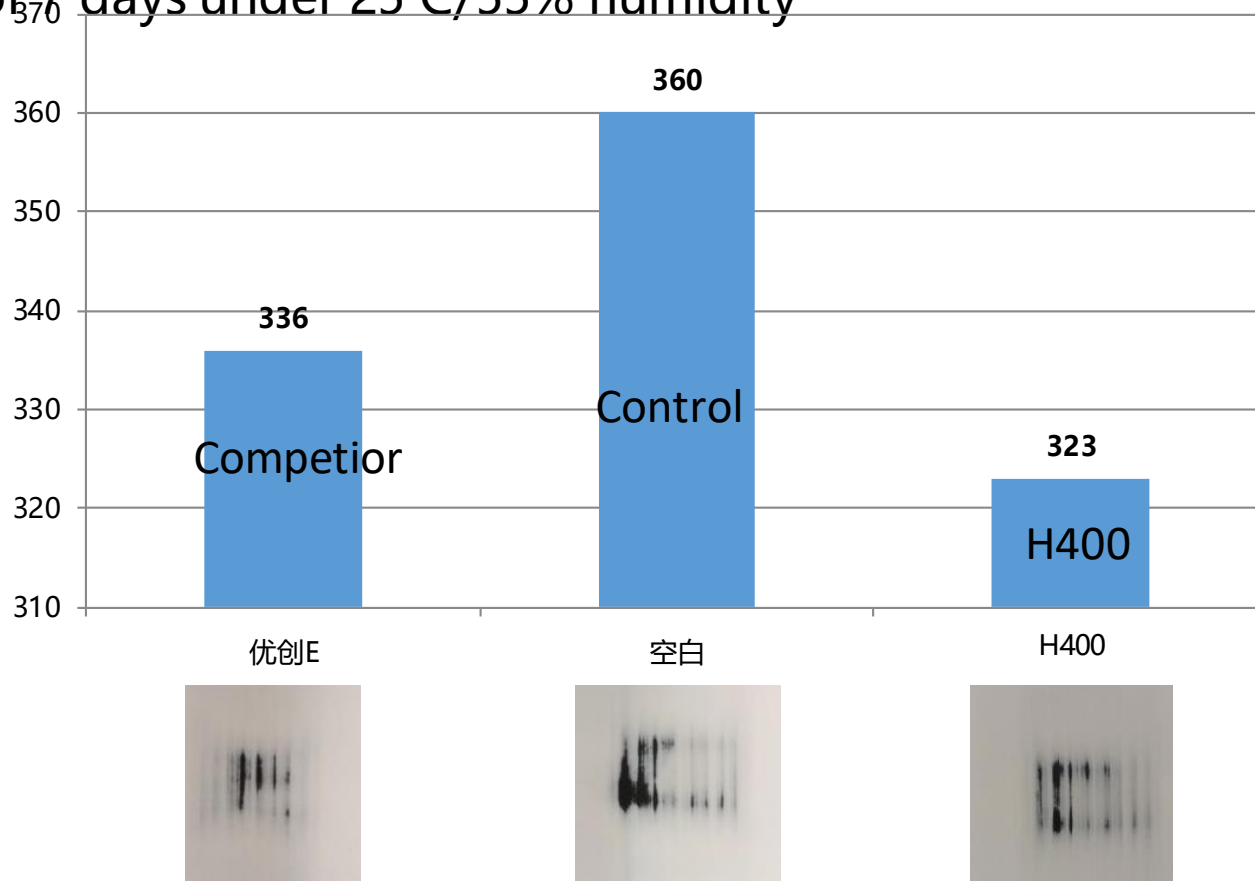
## Stain resistance: Better than Competitor

- Test method: 150μm wet film preparer, paint film on PVC board, curing for 7d under 25oC/55% humidity



## Scrub resistance: Little bit worse than Competitor

- Test method: 180 $\mu$ m wet film preparation machine, paint film on PVC board, curing for 7 days under 25 $^{\circ}$ C/55% humidity



# **C**ONTENT 目录

01 | **Vesmody® H400 Property**

02 | **Application of Vesmody® H400 in 8160 interior**

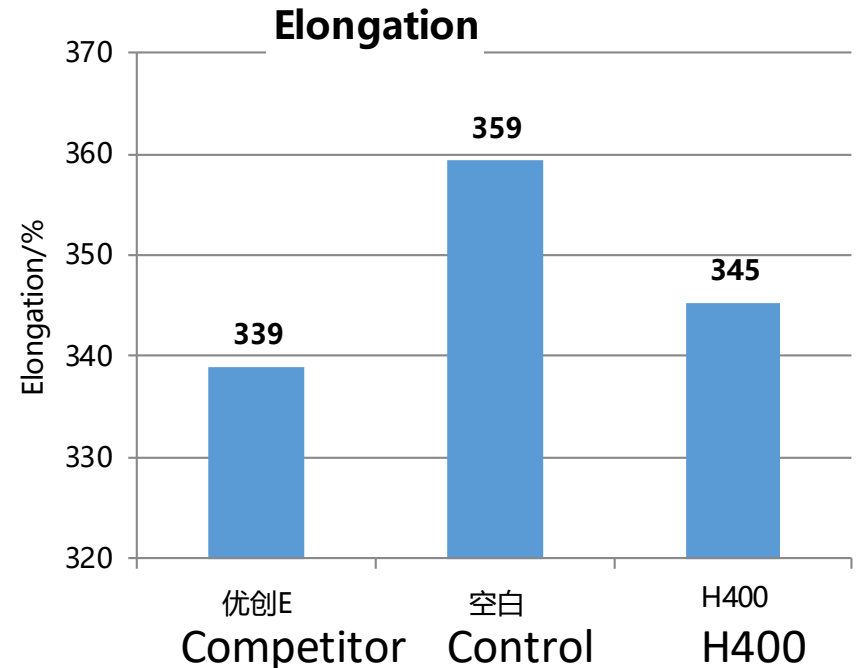
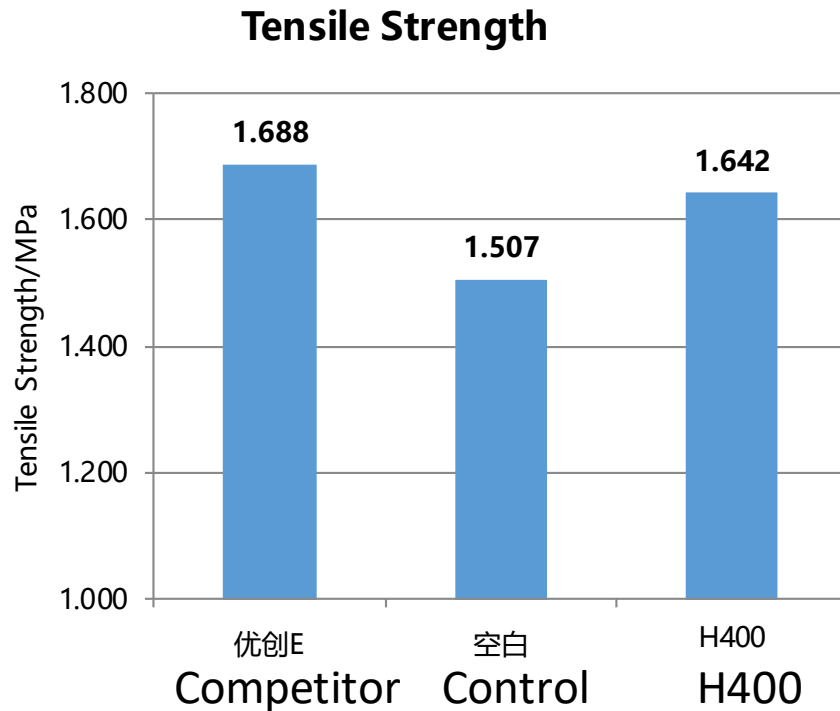
03 | **Application of Vesmody® H400 in 8016 exterior**

Elastic coating	
Material	Mass/g
Water	170
250HBR	4
AMP-95	1
SN154	1.5
BD-109	2
GA40	9
R-996	200
CC-800	170
8016	350
Propylene Glycol	15
Opaque Polymer	30
LXE	2
DF19	2
NXZ	3.5
U505	1.5
Water	38.5
Total	1000

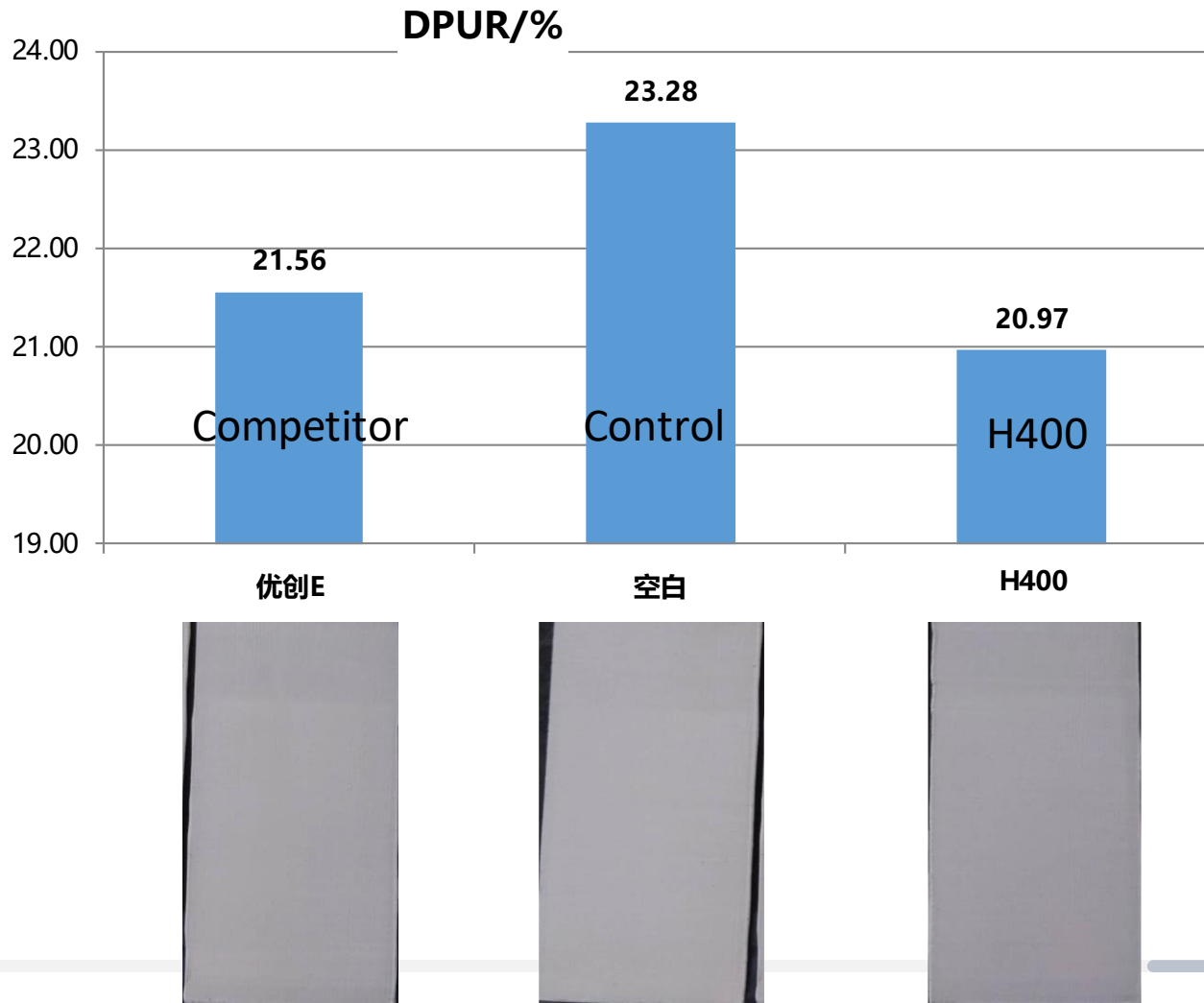
## Property

Item	Competitor	Control	H400
KU	117	116	117
State	No lumps, uniform after mixing	No lumps, uniform after mixing	No lumps, uniform after mixing
Appearance	Normal	Normal	Normal
<b>Contract/%</b>	<b>94.86</b>	<b>93.81</b>	<b>94.38</b>
Gloss (60/85)	6.3/6.0	6.0/4.9	6.0/5.5
Whiteness	90.4	90.2	90.2

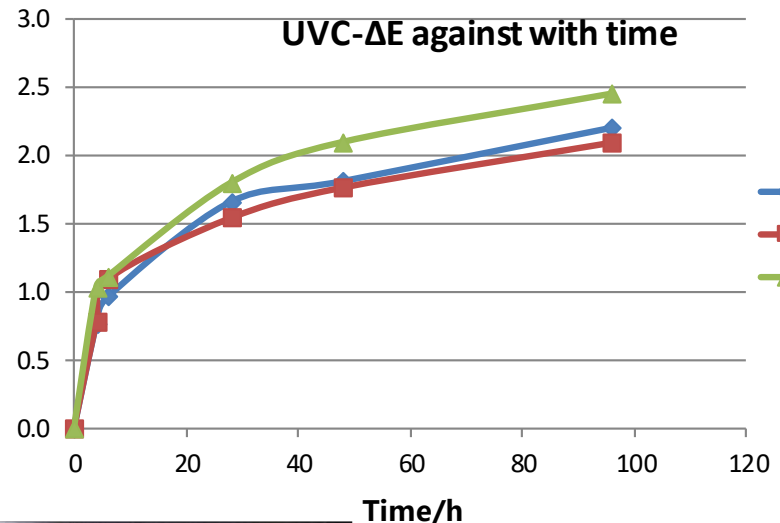
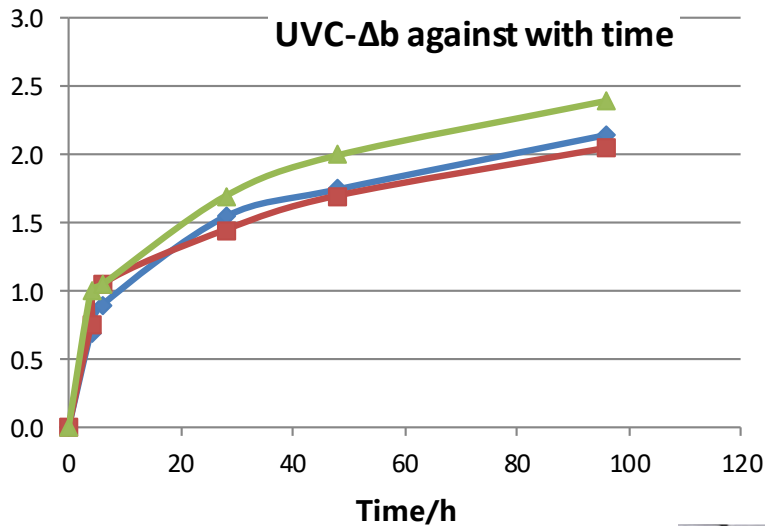
Mechanical properties: Tensile Strength is similar with Competitor



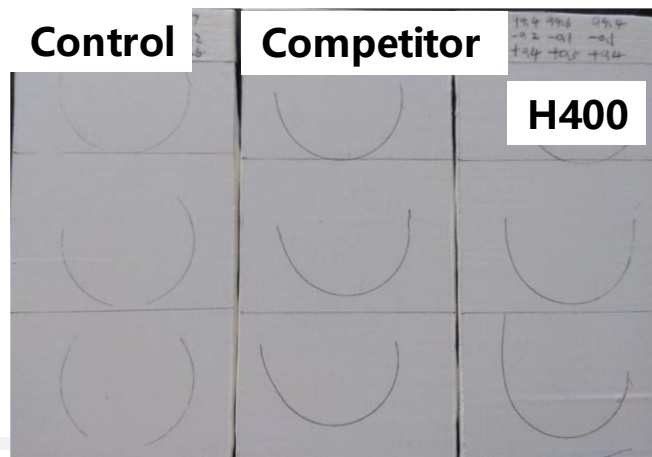
Stain resistance: DPUR of H400 is better than competitor



UVC resistance: UVC yellowing resistance and color aberration is little bit worse than competitor.



优创E Competitor  
空白 Control  
No3 H400





创新成就卓越 INNOVATION CREATES EXCELLENCE

