

Durcon Chemical Resistant SPC

TECHNICAL DATA SHEET

EN 438 Physical Test Results

Test	Standard	Minimum Requirements	Durcon Chemical Resistant SPC Results
Density:	EN ISO 1183-1	≥ 1,35 g/cm ³	≥ 1,35 g/cm ³
Thickness tolerance:	EN 438-2-5	6 mm +/- 0,40 mm 8-10 mm +/- 0,50 mm 12-16 mm +/- 0,60 mm 18-20 mm +/- 0,70 mm	6 mm +/- 0,40 mm 8-10 mm +/- 0,50 mm 12-16 mm +/- 0,60 mm 18-20 mm +/- 0,70 mm
Length and width tolerance:	EN 438-2-6	-0 / + 10 mm	-0 / + 10 mm
Straightness tolerance:	EN 438-2-7	≤ 1,5 mm/m	≤ 1,5 mm/m
Squareness tolerance:	EN 438-2-8	≤ 1,5 mm/m	≤ 1,5 mm/m
Flatness tolerance:	EN 438-2-9	6-8 mm: ≤ 5 mm 10 mm: ≤ 3 mm	6-8 mm: ≤ 5 mm 10 mm: ≤ 3 mm
Surface defects:	EN 438-2-4	Spots: ≤ 1 mm ² /m ² Linear: ≤ 10 mm/m ²	Spots: ≤ 1 mm ² /m ² Linear: ≤ 10 mm/m ²
Dimensional stability at high temp:	EN 438-2-17	Length: ≤ 0,30 % Traverse: ≤ 0,60 %	Length: ≤ 0,30 % Traverse: ≤ 0,60 %
Modulus of elasticity:	ISO 178	≥ 9000 Mpa	≥ 9000 Mpa
Bending strength:	ISO 178	≥ 80 Mpa	≥ 80 Mpa
Resistance to steam	EN 438-2-14	Rating 4	Rating 5
Dry heat resistance 160 °C:	EN 438-2-16	Rating 4	Rating 5
Resistance to boiling water:	EN 438-2-12	Mass Increase: ≤ 2 % Thickness increase: ≤ 2 % Appearance: Grad 4	Mass Increase: ≤ 2 % Thickness increase: ≤ 2 % Appearance: Rating 4
Resistance to humidity 100 °C:	EN 12721	Rating 4	Rating 5
Impact resistance (large dia. ball):	EN 438-2-21	Drop height: 180 cm Indentation dia. < 10 mm	Indentation dia. < 10 mm
Resistance to cracking:	EN 438-2-24	Face: Rating 4 Edge: Rating 4	Face: Rating 5 Edge: Rating 4
Scratch resistance:	EN 438-2-25	Rating 2 (4N)	Rating 2 (6N)
Colour fastness under artificial light :	EN 438-2-27	Grey scale rating: 4 bis 5	Grey scale rating: 4 bis 5
Stain Resistance (contact time 16 h): Group 1 (acetone, coffee) Group 2 (hydrogen peroxide 3%) Group 3 (sodium hydroxide 25%, hydrogen peroxide 30%)	EN 438-2-26	Rating 5 Rating 5 Rating 4 at 20 min	Rating 5 Rating 5 Rating 4 black / 5 white
Abrasion Resistance:	EN 438-2-10	Initial point 150 rev	Initial point 150 rev
Fire performance:	EN 13501-1	D, s2-d0	D, s2-d0
Fomaldehyde emission:	EN717-2	E1	E1
Volatile Organic Compound emission:	ISO 16000-9	Not listed	Class A / Greenguard Gold

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EN 438 Stain Test Results - Chemical / Stain Resistances

Chemical	Rating (immediately after remove) With / Without covering	Rating (24 hours after remove) With / Without covering
Acid		
Acetic acid 99%	5/5	5/5
Formic acid 85%	5/5	5/5
Hydrochloric acid 37%	4/4	5/5
Nitric acid 65%	2/3	2/3
Phosphoric acid 85%	4/4	5/5
Sulfuric acid 96%	5/5	5/5
Alkalis		
Ammonia 28%	5/5	5/5
Sodium hydroxide 10%	5/5	5/5
Caustic soda 20%	5/5	5/5
Caustic soda 40%	5/5	5/5
Potassium hydroxide 25%	4/5	5/5
Salts		
Iron (III) chloride 10%	5/5	5/5
Potassium permanganate 10%	2/2	2/3
Silver nitrate 1%	5/5	5/5
Sodium chloride 10%	5/5	5/5
Sodium hypochlorite 13%	4/4	5/5
Halogens		
Iodine solution (0.1 N) 100%	2/3	3/4
Organic chemicals		
Dimethylformamide > 99%	5/5	5/5
Benzine	5/5	5/5
Hydrogen peroxide 3%	4/5	5/5
Solvent		
Acetone > 99.5%	5/5	5/5
Ethyl alcohol 96%	5/5	5/5
Methyl alcohol min. 99.8%	5/5	5/5
Methyl chloride 99.8% min	5/5	5/5
Tetrahydrofuran ≥ 99%	5/5	5/5
Toluene ≥ 99.5%	5/5	5/5
Ethyl acetate ≥ 99.5%	5/5	5/5

Biological reagents		
Congo red 1%	5/5	5/5
1% malachite green oxalate	5/5	5/5
Methylene blue 1%	4/4	4/4

Independent testing performed by EPH - April 2011

Testing of resistance to staining:

Test standard	EN 438-2
State of test specimens	As delivered
Number of specimens	1 sample for each type of covered medium
Conditioning of specimens	16 hours in test atmosphere (23 °C / 50% RH)
Contact surface	Decorative sheet surface
Contact period	24 hours in each case
Test temperature	23 °C
Test substances	Chemicals listed in table above

The test chemicals (approx.. 1 ml each) were applied to the sample surface with each enclosed in a sealing bead, and let to affect the surfaces. After application, the areas with the test chemicals were covered by a glass plate.

After a time of exposure of about ten hours the test areas were checked visually and new test substances were applied. After 24 hours, the residues of the substances were removed and the panel surfaces were cleaned without scrubbing. Afterwards, the surfaces were assessed according the rating following rating scale:

Rating scale	
Rating 5	No visible change
Rating 4	Slight change of gloss and / or colour, only visible at certain viewing angles
Rating 3	Moderate change of gloss and / or colour
Rating 2	Marked change of gloss and / or colour
Rating 1	Surface distortion and / or blistering

Durcon Chemical Resistant SPC

TECHNICAL DATA SHEET

SEFA Test Results - Chemical / Stain Resistances

2.1 CHEMICAL/STAIN RESISTANCES				
Volatile Chemicals N9600-2M5-White				
Test No.	Chemical	Method	Rating	Comments
1	Acetate, Amyl	A	0	
2	Acetate, Ethyl	A	0	
4	Acetol	A	0	
6	Alcohol, Butyl	A	0	
7	Alcohol, Ehtyl	A	0	
8	Alcohol, Mehtyl	A	0	
10	Benzene	A	0	
11	Carbon Tetrachloride	A	0	
12	Chloroform	A	0	
14	Cresol	A	0	
15	Dichloroacetic Acid	A	1	Gloss change
16	Dimethylformamide	A	0	
17	Dioxane	A	0	
18	Ethyl Ether	A	0	
19	Formaldehyde, 37%	A	0	
21	Furfural	A	1	Gloss change
22	Gasoline	A	0	
27	Methyl Ethyl Ketone	A	0	
28	Methylene Chloride	A	0	
29	Monochlorobenzene	A	0	
30	Naphthalene	A	0	
34	Phenol, 90%	A	0	
46	Toluene	A	0	
47	Trichloroethylene	A	0	
48	Xylene	A	0	

Rating scale	
Rating 0	No effect
Rating 1	Excellent
Rating 2	Good
Rating 3	Fair

2.1 CHEMICAL/STAIN RESISTANCES

Non-volatile Chemicals
N9600-2M5-White

Test No.	Chemical	Method	Rating	Comments
3	Acetic Acid, 98%	B	0	
5	Acid Dichromate, 5%	B	1	Gloss Change
9	Ammonium Hydroxide, 28%	B	0	
13	Chromic Acid, 60%	B	1	Gloss Change
20	Formic Acid, 90%	B	0	
23	Hydrochloric Acid, 37%	B	0	
24	Hydrofluoric Acid, 48%	B	1	Color Change
25	Hydrogen Peroxide, 30%	B	0	
26	Iodine, Tincture of	B	2	Color Change
31	Nitric Acid, 20%	B	1	Color Change
32	Nitric Acid, 30%	B	1	Color Change
33	Nitric Acid, 70%	B	1	Color Change
35	Phosphoric Acid, 85%	B	0	
36	Silver Nitrate, Saturated	B	1	Gloss Change
37	Sodium Hydroxide, 10%	B	0	
38	Sodium Hydroxide, 20%	B	0	
39	Sodium Hydroxide, 40%	B	0	
40	Sodium Hydroxide, Flake	B	0	
41	Sodium Sulfide, Saturated	B	0	
42	Sulfuric Acid, 33%	B	0	
43	Sulfuric Acid, 77%	B	0	
44	Sulfuric Acid, 96%	B	0	
45	Sulfuric Acid, (77%) and Nitric Acid (70%), equal parts	B	1	Color Change
49	Zinc Chloride, Saturated	B	0	

Rating scale	
Rating 0	No effect
Rating 1	Excellent
Rating 2	Good
Rating 3	Fair

2.1 CHEMICAL/STAIN RESISTANCES

Summen
N9600-2M5-White

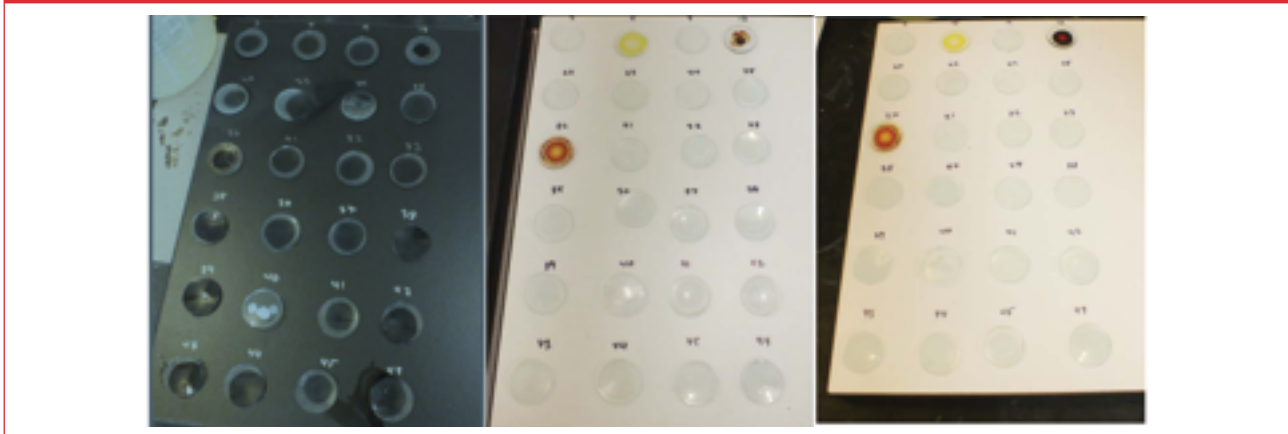
Items	Requirement	No. Reagent with 3 Ratings	Disposition
Volatile Subtotal:	-	0	
Non-Volatile Subtotal:	-	0	
Grant Totals:	No More than Four Level 3 Conditions	0	Confirming*

* Suitability for a given application is dependent upon the chemicals used in a given laboratory.

Rating scale	
Rating 0	No effect
Rating 1	Excellent
Rating 2	Good
Rating 3	Fair

2.1 CHEMICAL/STAIN RESISTANCES

Photos
N9600-2M5 Black, Grey und White



Setup non-volatile chemicals