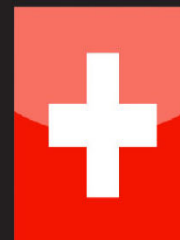


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Ceracoat Surface Mechanics

Re: Protective Coatings for Absorbent &
Non Absorbent Surfaces

Wetting

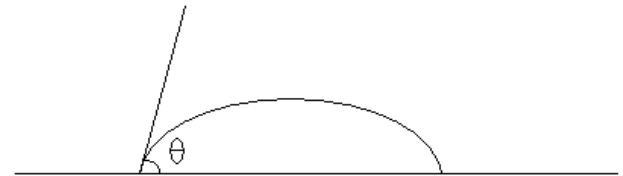
The degree to which a liquid spreads on a solid when it comes into contact with it.

One measure of wetting is the [contact angle](#).

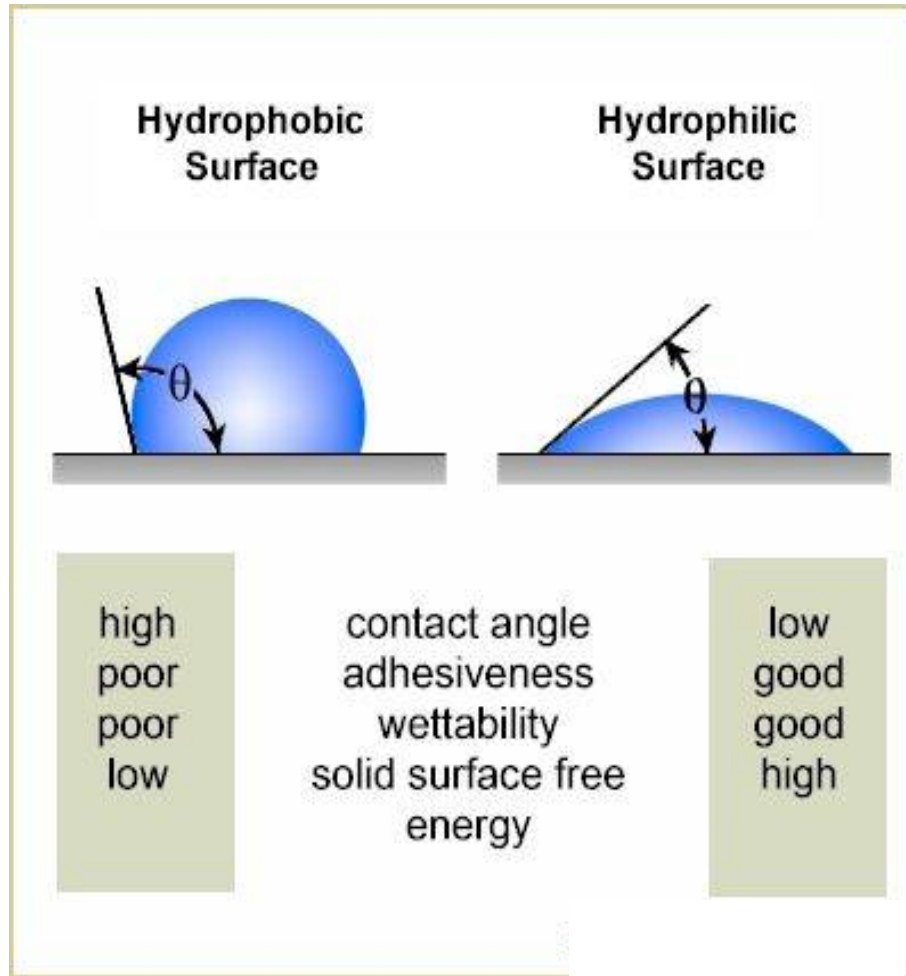
Complete wetting is referred to as [spreading](#).

CERACOAT INHIBITS SURFACE WETTING.

- Wetting is the penetration of a surface by a liquid or gas.
- The amount of wetting is quantified through measurement of the contact angle of the liquid or gas through the liquid, where a liquid/vapor interface
- meets a solid surface.



Ceracoat Surface Physics



Contact Angle

"The contact angle is conventionally measured through the liquid, where a liquid/vapor interface meets a solid surface. It quantifies the absorption capacity of a solid surface by a liquid via the Young equation."

If the contact angle is low, the liquid lies "flat" on a surface and adheres on it or penetrates it. If the contact angle is high, the liquid forms a droplet or ball and the contact with the surface is small, so that liquid won't adhere to, or penetrate, the surface, due to lack of spreading.

Cearacoat Testing Protocol

Accelerated Weathering - ASTM G154

- Accelerated weathering simulates damaging effects of long term outdoor exposure of materials and coatings.
- **Scope:**
- Standards include: ASTM G154, ASTM D4329, ASTM D4587, ISO 4892
- The effect is being measured by exposing test samples to varying conditions of the most aggressive components of weathering - ultraviolet radiation, moisture and heat.
- The test chamber uses fluorescent lamps to provide a radiation spectrum centered in the ultraviolet wavelengths. Moisture is provided by forced condensation, and temperature is controlled by heaters.
- **Source:** [American Society for Testing and Materials \(ASTM\),](#)

Ceracoat Testing Protocol Results

Please find below UV and abrasion tests results of Ceracoat™ against competitive technologies. (coatings for mineral surfaces)

The test was executed according the ASTM G154 standard. Samples 1 to 7 are fluoropolymers, sample 9 is a silane/siloxane (Belzona). 8 is Ceracoat™

sample	Contact angles before UV [°]		Contact angles after 250 hours of UV [°]		Contact angles after 500 hours of UV [°]	
	water	hexadecane	water	hexadecane	water	hexadecane
1	135,9	98,8	104,3	88,9	79,6	60,9
2	133,3	96,7	82,8	77,4	44	34,6
3	134,7	97,7	118,2	75,8	80,2	63,6
4	127,3	69	124,6	69,1	125	61,2
5	132,4	90,7	62,6	65,6	41,1	57,6
6	131,9	113,3	98,8	99,3	91,4	77,3
7	135,5	91,8	50,4	36,7	36,8	32,4
8: CC	141,2	121,9	140,1	111,2	139,8	108,7
9	118,2	38,2	109,5	39	99,4	33,7

You see that after 500 Hours of UV-test, Ceracoat™ was outperforming the competitive products.

Abrasion/washability resistance was performed according to EN ISO 11998 standard.

Higher contact angle equals greater UV protection!

Ceracoat delivers the protection you need!

Sample	Contact angles before abrasion (°)		Contact angles after abrasion (°)	
	Water	Hexadecane	Water	Hexadecane
1	124,7	94	109,1	68,4
2	133,7	100,6	52,3	73,9
3	135,3	96	74,3	70,5
4	121,3	65,5	81,2	45,7
5	135,3	90,4	117,8	74,1
6	133,8	116,6	97,7	73,9
7	135,5	91,7	112,4	74,7
8: Ceracoat™	141,2	121,9	136,8	102,8
9	117,9	31,3	71,9	24,7

Also in term of abrasion we are on the top, so that Ceracoat™ was by far the best product in this extensive tests



Seen by the
Chamber of Industry and Commerce
of Thurgovia 2014 -09- 24 003047
8570 Wädenswil (Switzerland),

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