



Contact angle measurements



The contact angle measurement is a direct measure of liquids behavior on the materials surface. Indeed, when the surface is liquid-repellent, drops assume a spherical shape (and high values of contact angle) to minimize the contact with the surface. We have performed contact angle measurements on samples of different types of DryFlex® polyurethane provided by Pelma, before and after aging in an oven at 125 ° C. The time 0 (t = 0) refers to not heated samples, and then the contact angles were remeasured after 3 and 6 days of heat treatment.

The instrument used was the Kruss G10 Contact Angle Drop Shape Analysis System. It operated at a temperature of 20 ° C with a relative humidity of 55%. The measurements were performed according to the UNI EN 15802: 2004. The drops (approx. 0.05 ml of hexadecane) were deposited with the aid of a graduated pipette. The obtained results are the following:

Sample	Contact angle at t=0 with oil	Contact angle at t=3 days with oil	Contact angle at t=6 days with oil
Conv. Pol. 1	40	37	32
DryFlex® 1	115	113	110
Conv. Pol.. 2	5	5	5
DryFlex® 2	105	105	105

From the reported measurements we can conclude that the samples of DryFlex® Polyurethane possess a considerably higher oil repellency when compared to the Conventional Polyurethane Foam and this property remains almost unchanged even after accelerated aging.

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