EVALUATIONS OF BLOCKING PADS FOR EDGING MACHINES AND LENSES WITH SUPERHYDROPHOBIC TREATMENTS

Evaluation of a new blocking pads formula for optical laboratory edgers. Specifically, the request provides for an assessment of adhesiveness on different types of optical surfaces treated and the related considerations for use in laboratory practice.

The evaluation was carried out both by single setting and by comparison on pairs of lenses with similar characteristics of curve, thickness and treatment.

The edgers used are of different types: industrial and conventional, in order to reproduce the broadest needs of use.

Used edgers

| | 8 | |
|--------------------|-------|----------------|
| Conventional edger | Nidek | ME1000+/ME1200 |
| Industrial edger | Nidek | SE 9090 Supra |

The tests were performed using lenses treated with hardening treatment, basic multi-layer AR and treatments belonging to the type (satin coat), belonging to the main companies in the sector. In order to test the blocking pads, mainly on critical products, we concentrated the tests on Zeiss lenses of variable index on which a Platinum AR / super hydro-oleo-phobic treatment was coated. Great attention was paid to the Trivex 1.53 Platinum treated product by Zeiss and Long Life by Hoya and the 1.6 UVTEC product by Dagas.

The index taken into consideration were from 1.5 to 1.74 including 1.53 and 1.6 uvtec. Both Positive and Negative lens types were considered.

Categories of coating

| Hard Coated |
|---|
| Hard Multi Coated |
| Hard Multi Coated Super hydro-oleo-phobic |

THE METHOD ADOPTED

Processing in the edger of a pair of lenses with the tested blocking pads to verify both the performance of the adhesive and the objective quality.

Operating conditions:

- Cooling water use temperature: between 18 and 22 degrees
- Average working temperature for dry milling: 24 degrees.

THE TESTS

They have been set up to be able to check the tightness in traction and in rotation, in order to evaluate the result of the assembly in the operating environment. In particular, an attempt was made to evaluate the main critical issues usually highlighted in laboratories: the rotation of the lens axis resulting from sliding due to traction.

Check of the presence of axis rotation of the lens Check the adhesiveness on the lens

RESULTS

Below is the summary table.

The data obtained are the synthesis of over 240 edging tests carried out with the standard of an operating laboratory; the type of treatments is equally distributed in the tests and this applies also to the brands of the treatments subject to the test.

Vtec super hydro (Dagas) has also been included in the treatment panel as it is generally difficult to bond with automatic or semi-automatic systems (Briot, Nidek class 900 - 1200 etc.)

| Blocking pad type | Ref. | Coating | Rotation | Adherence | Note |
|-------------------|-------|---------------------|----------|-----------|-------------------|
| | | No coating | 0° | Excellent | Leave tampo marks |
| | | Hard coating | 0° | Excellent | Leave tampo marks |
| | 07295 | | | | |
| | | UV Tech Super hydro | 0° - 1° | Very good | Leave tampo marks |
| | | Mr7/Mr8 | | | |
| | | Hard Multi Coated | 0° | Excellent | Leave tampo marks |
| | | Super hydro-Oleo | | | |

CONCLUSIONS

The ref. 07295 new version confirmed the good performances of the tests also showing a good response to difficult bonding (UVtec) and an improved stability in super hydro-oil treatments with excellent adhesion to the lens, avoiding rotation during the edging phase.

The use of the ref. 07295 guarantees the maintenance of the pad printing of progressive lenses. They are double-sided adhesives suitable for industrial use or in any case for highly automated laboratories equipped with fast peripherals, whose operating qualities (cutting speed and pressure variations on the spindle) can also cause problems of slight rotation or slippage with particular treatments of latest generation.