



An improved high performance mouthguard design

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Building on its world-leading custom laminated mouthguard designs, for 2005 Erkodent GmbH has released the latest addition to this range; the Light-pro.

The new mouthguard was originally conceived in Europe to meet the requests from professional athletes for a high performance mouthguard without the bulk and intrusiveness often associated with these levels of protection.

Erkodent's response, the Light-pro, has over the past year been enthusiastically and successfully received in these elite circles. It is now available as an alternative for wider use.

Based on the proven and tested triple laminated Heavy-pro mouthguard technology, the Light-pro has, after supervised testing at the University of Tübingen (Germany), been proven to have more than 84% of the power (impact) distribution of the original Heavy-pro design yet reduces the overall bulk required by over 31%. For athletes, this translates to an extremely protective mouthguard but one that is at the same time light and unobtrusive to wear.

Materials

The principal construction materials used are Erkoflex 82 at 2mm thickness for the external layers of the mouthguard and Erkodur-S for the hard internal reinforcement. Erkoflex 82 material is an EVA (ethyl-vinyl-acetate) optimised for use in mouthguard construction, with a consistent Shore-A hardness of 82 across the entire range of colours. (For mouthguards a Shore-A hardness of 82 is generally recognised as the best compromise between power distribution and wearer comfort). To facilitate the construction of the new mouthguard, Erkodent now offers all solid colours and freestyle combinations in the 2.0mm thickness.

Erkodur-S is related to the well known Erkodur brand (copolyester) material however it has the properties required to form a bond, with the application of heat and pressure, to the Erkoflex 82 material. As with the Heavy-pro design, 0.8mm thickness material is used for the internal bonded hard layer of the Light-pro.

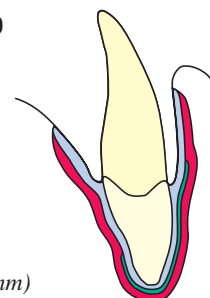


ERKODENT Light-pro features 3 layers:

Top layer: coloured or transparent and flexible (2 mm)

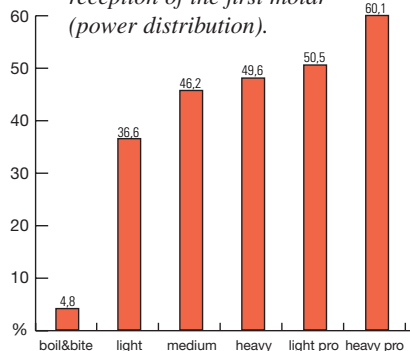
Reinforcement: hard (0.8 mm) light pro and heavy pro

Base: transparent and flexible (2 mm)



Light-pro (cross section)

Impact pendulum test, University Tübingen: Percentage of the power reception of the first molar (power distribution).



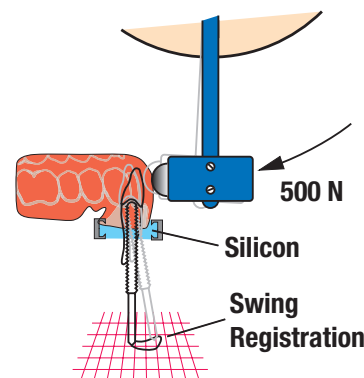
Method of construction

Basic method of construction is as follows:

1. Form first layer of 2mm Erkoflex 82 (clear material) and trim to required extensions.
2. Degrease and form Erkodur-S 0.8mm layer.
3. Trim Erkodur-S layer to specifications, degrease, and insert identification and branding.
4. Laminate with final 2.0mm Erkodur 82 layer in the desired colour (or colour combination).
5. Articulate and imprint lower occlusion.
6. Trim and smooth peripheries and polish with Lisko-S discs and hot air.

The new mouthguard design can be produced on either pressure forming machines or rapid vacuum units such as the Erkoform RVE. Both methods give equal levels

Pendulum Test



of material bonding strengths. The Erkoform RVE unit, however, has a substantial production time advantage, particularly when used in conjunction with an Occlusoform attachment which allows the occlusal imprint to be incorporated at the same time as the final layer is thermoformed.

Conclusion

Current mouthguard designs and materials provide the athlete with exceptional levels of protection, however many users wish for less intrusive protective devices. The new Erkodent Light-pro design is a positive step in this direction.

For more info, contact Erkodent Australia on info@erkodent.com.au or call 1800-242-634.