BIO-ACCEL – tapered

- Fast and easy insertion
- High primary stability
- Accelerated osseointegration

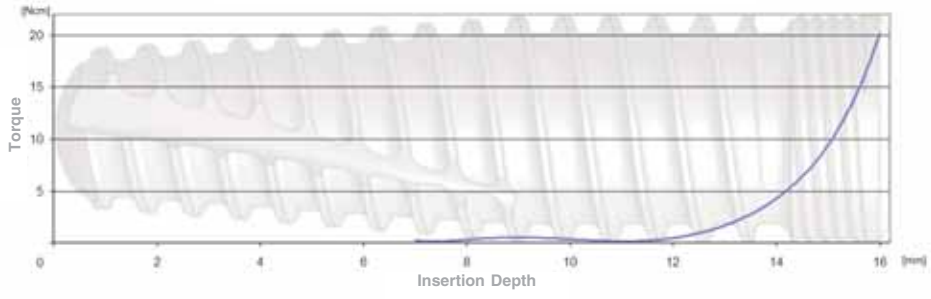
BIO-ACCEL – tapered

Fast and easy insertion, high primary stability

The new BIO-ACCEL – tapered implant is a result of the latest developments in dental implantology and complements the current straight implant series.

The tapered design of the implant enhances primary stability and, compared with the traditional cylindrical shape of implants, reduces by more than half the time needed for insertion. The innovative construction involves a set-off of the distance from the bone level to the implant-abutment connection in both the horizontal and vertical direction, while retaining the mini-thread in the neck-section of the implant. This constructional feature contributes to the stability of the marginal bone as well as the soft tissues in the vicinity of the abutment. The use of a narrower prosthetic component, compared with the implant diameter, enables better maintenance of the soft tissues and higher aesthetics of the restoration.

Implant insertion torque – BIO-ACCEL tapered

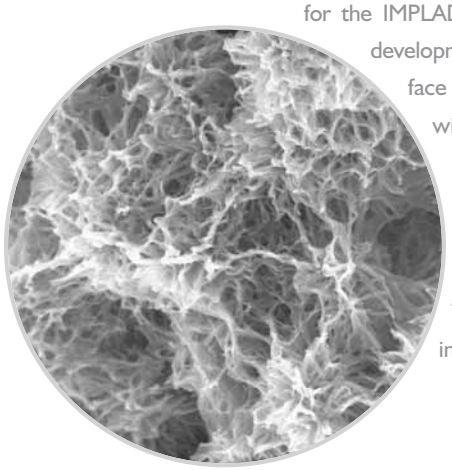


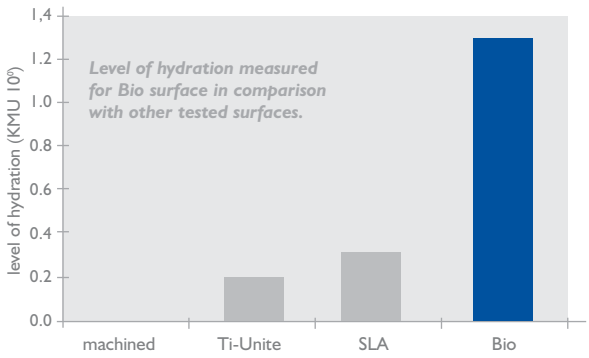
Dependence of insertion torque on insertion depth for BIO-ACCEL-tapered implants D4.4/L16 (model material simulates bone of low density)

BIO-ACCEL – tapered

Accelerated osseointegration thanks to the BIO surface

The implant has been given a scientifically documented bioactive surface (BIO-surface) that combines both mechanical and chemical modifications at the macro-, micro- and nano-scale. The BIO surface was introduced, by LASAK, to the market in 1999, after five years of laboratory, pre-clinical and clinical testing performed by leading scientific and clinical institutions. This innovative feature has provided a leading position for the IMPLADENT system in the development of implant surface modifications worldwide.



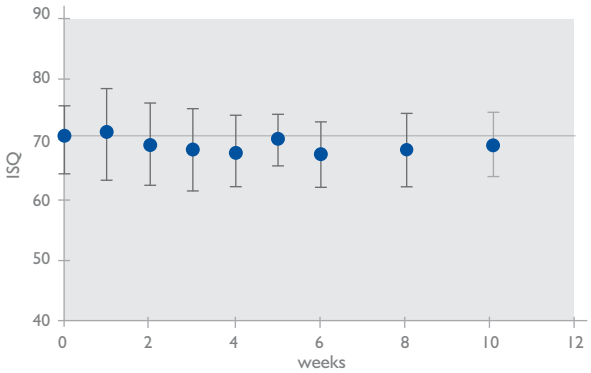


Level of hydration measured for Bio surface in comparison with other tested surfaces.

Enhanced stability throughout the healing period – No more dips!

The unique BIO-surface modification speeds up the formation of a functional implant-bone contact, thus improving the implant's secondary stability in the early healing phase. Because the healing phase is shortened, the early or immediate loading of an implant becomes both possible and safe. Thanks to the BIO surface the stability dip, often observed in non-bioactive implant surfaces, is eliminated.

The use of Bio-surface implants has been documented even in the most demanding indications (see listed literature).



Stability time dependence of immediately loaded implants with the BIO surface – No significant stability change throughout the follow-up period ($P > 0.05$).

BIO-ACCEL – tapered

Indications and insertion procedure of BIO-ACCEL – tapered implants

This implant is mainly designed to be used in bones of lower densities, after tooth extraction, and whenever enhanced primary stability is required. The single threadformer, which is designed for all implant lengths, can be used for bone bed preparation to the full length of the implant in bone of higher densities (D1-D2). The implant has a pronounced conical shape and a macrothread of specific design allowing lower insertion torque throughout the course of implant insertion, increasing torque towards the end of insertion and perfect implant stability after insertion.

Implants		L10	L12	L14	L16
D4.4 BIO-ACCEL - tapered	●	0221:3	0321:3	0421:3	0521:3
D5.6 BIO-ACCEL - tapered	●	211:3	311:3	411:3	511:3
Final drill		**L10**	**L12**	**L14**	**L16**
Final drill d4.4 for implants D4.4	●	13414.3	23414.3	33414.3	43414.3
Final drill d5.6 for implants D5.6	●	16414.3	26414.3	36414.3	46414.3
Threadformer					
Threadformer D4.4	●				053414.3
Threadformer D5.6	●				56414.3
Depth gauge					
Depth gauge d3.7 for implants D4.4	●				63414.3
Depth gauge d4.9 for implants D5.6	●				66414.3

The BIO-ACCEL D4.4 implant bone bed needs to be prepared using standard d2.0mm, d2.5mm and d3.0mm drills to the full length of the implant, followed by the final tapered drill d4.4. For BIO-ACCEL D5.6 implants the bone bed preparation continues with the use of d4.3 drill and the final tapered drill d5.6. Both final tapered drills d4.4 and d5.6 are available in four lengths, corresponding to the implant lengths L10, L12, L14, L16. The final drill functions also as a counter bore; thus the use of a counter bore is not required. The implants described above are fully compatible with all the prosthetic and laboratory components used with implants of the D3.7 series (green prosthetic platform).

Literature:

1. Strnad J., Urban K., Povysil C., Strnad Z.: **Secondary Stability Assessment of Titanium Implants with an Alkali-Etched Surface: A Resonance Frequency Analysis Study in Beagle Dogs**, Int J Oral Maxillofac Implants 2008;23:502–512 • **2.** Strnad Z, Strnad J, Povýšil C, Urban K.: **Effect of Plasma Sprayed Hydroxyapatite Coating on Osteoconductivity of cp Titanium Implants**, International Journal of Oral and Maxillofacial Implants, 2000, 15, 483-490 • **3.** Suketa et.al.: **Photocatalytic reaction on Tiunite surfaces**, Clin. Oral. Impl. Res. 15, 4, 2004 • **4.** Šimůnek A., Kopecká D., Strnad J.: **Alkali treatment - new concept of titanium implant surface modification**, Clin. Oral. Impl. Res., Vol. 15, No. 4, 2004 • **5.** Strnad J., Urban K., Strnad Z.: **The effect of bioactive surface on implant stability during healing**, Clin. Oral. Impl. Res, Vol.16, 4, 2005 • **6.** Strnad J., Protivínský J., Strnad J., Veselý P.: **Chemically treated titanium: early surface activity detected in vitro**, Clin. Oral impl. Res., Vol.13, 4, 2002 • **7.** Elingsen J.E.: **On the properties of surface-modified titanium**. In: Davies JE. Bone engineering. Toronto: Em squared Inc, 2000, 183-189 • **8.** Protivinsky J., Appleford M., Strnad J., Helebrant A., Ong J.L.: **Effect of chemically modified titanium surfaces on protein adsorption and osteobalst precursor cell behavior**, International Journal of Oral and Maxillofacial Implants, Vol. 22, No. 4, 2007 • **9.** Šimůnek A., Vosáhlo T., Kopecká D., brázda T., Sobotka M., Dufková D.: **Teeth in 6 hours**, Implantologie Journal 8/2006 • **10.** Štěpánek A., Strnad J., Strnad Z.: **Early loading (4 weeks) of dental implants Impladent in maxilla and mandible-monitoring of the healing process using resonance frequency analysis**, Quintessenz, Vol. 14, 4, 2005 • **11.** Šimůnek A., Kopecká D., Strnad J.: **Reduced healing time of Impladent implants with bioactive surface**, Quintessenz, Vol. 13, 6, 2004 • **12.** Nathanský Z., Strnad J., Strnad Z.: **Stability assessment of immediately loaded alkali-etched implants**, Clin. Oral. Impl. Res., Vol. 15, No. 4, 2004 • **13.** A.Šimůnek, J.Strnad, J.Novák,Z.Strnad, D. Kopecká, R.Mounajjed, **STI-Bio titanium implants with bioactive surface design**, Clin. Oral. Impl. Res. 12, 2001

LASAK Ltd. • Papírenská 25 • Prague 6, 160 00 • Czech Republic • web: www.lasak.cz
e-mail: lasak@lasak.cz • tel.: +420 224 315 663 • fax: +420 224 319 716