The story behind IPS POWER

By Alham Farah, Syria

IPS e.max® Ceram. The versatile layering ceramic is optimally coordinated with the materials of the IPS e.max System. Matching the shade when using different framework materials is clearly facilitated by the universal layering diagram and the precise shade coordination. After all, the veneering ceramic is the key to highly esthetic results within the IPS e.max system – both on lithium disilicate (LS2) and zirconium oxide (ZrO2), particularly for the adaptation to the natural model. The unique combination of translucency, brightness, and opalescence leads to natural light scattering and a balanced relationship between brightness and chroma (Fig. 2).

At the beginning of the all-ceramic era, both lithium disilicate and zirconium oxide were only available with medium or high opacity. These opaque framework structures reflect a lot of light, which increases the brightness of the fabricated restoration. The conventional IPS e.max Ceram Dentin and Incisal (Fig. 3) materials are exactly adapted to this effect and are thus optimally suitable for use on opaque substructures. The balanced relation between brightness and chroma results in the exact match with the respective shade guide (Fig. 2).

Frequently Asked Questions

Why POWER dentin & Incisal initially developed?

Mainly because of two factors that raised over the past few years: (Fig. 4)

1. The continuous development of more translucent all-ceramic framework materials.
2. The general trend of patients’ desire for brighter restorations in the overall.

Figure 1

Figure 3

Figure 6 & 7: A comparison between the e.max ceram & e.max ceram POWER after 1st and 2nd firing

Figure 8

Figure 9

A shade comparison between IPS the e.max ceram Incisal (I) & IPS e.max ceram POWER Incisal (PI)
How does it affect restorations?
With the modern translucent substructures less light would reflect, what reduces the brightness of the fabricated restoration. To counteract this effect, IPS e.max Ceram “Power Dentin” and “Power Incisal” materials were developed (Fig. 5).

Where is IPS Power Dentin from Deep Dentin?
Deep Dentin is basically developed to enhance the Chroma dimension of a shade, and subsequently increases opacity and value of the ceramic restoration, whereas Power Dentin is developed to enhance the Value dimension of a shade in the first place, and indirectly and slightly increase the chroma of a ceramic restoration.

What is the change needed on the layering diagram after POWER?
No change is required on the familiar layering diagram. Power dentin is additional optional layer, just like Deep dentin, but deep dentin enhance the chroma, while Power dentin enhance the value, so it can be:
1. either placed buccally as an intermediate layer between the frame and the Dentin layer, and especially in the cervical third where build up ceramic at its maximum thickness.
2. or used instead of Dentin, for complete body build up.

In what case scenarios IPS POWER is recommended? (Fig. 6,7)
1. patient cases when translucent frameworks are used, like ZenoStar (T or MT) zirconium oxide (ZrO2), or lithium disilicate (LS2) IPS e.max (LT or HT)
2. patient cases when natural teeth clearly exhibit greater brightness.
3. patient cases when we have a thick space buccally, or extremely thin space buccally, to layer on with IPS e.max Ceram.
4. patient cases when natural teeth which need to be shade-matched exhibit high fluorescence, what’s visually interpreted as higher value effect.
5. patient cases when Bleach colors of final restoration is required, Power bleach dentin & Incisal range exhibit higher value and subsequently higher bleach color stability.
6. patient cases when more light-from the inside out- required for the restorations, knowing that intracoronal is a dark cavity, and slightly brighter restorations are always recommended to compensate the lack of light inside the mouth where restorations will end up after cementation. Fig 9.
7. patient cases when stumps (prepared tooth) are not vital and exhibit discoloration

What are the delivery forms of IPS Power?
IPS e.max Ceram Power Dentin (PD) materials are available in all A – D shades and 4 Bleach BL shades. The IPS e.max Ceram Power Incisal materials are available in 4 shades. Note in (Fig. 8,9) a comparison in few shades and incisals between before/after IPS Power.

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DAC UNIVERSAL: 10 Years of Maximum Hygienic Safety

For 10 years, Dentsply Sirona Instruments has satisfied the most stringent hygiene requirements imposed on dental practices with the DAC UNIVERSAL combination autoclave. Now, the addition of the new FLEX lid extends the requirements profile for the device and closes the hygiene gap in mechanical reprocessing.

By DentsplySirona

BENSHEIM/SALZBURG: After acquiring the hygiene division of Danish company Nitram 10 years ago, Dentsply Sirona continued developing the DAC UNIVERSAL combination autoclave to create a reprocessing device with validation processes for handpieces in dentistry. By 2006, the Robert Koch Institute (RKI) recommended that medical devices be reprocessed only with suitable, validated procedures to prevent infection. This prompted Dentsply Sirona Instruments to document the autoclave’s reprocessing procedures so that the technical and hygienic operation of the device, as well as its processes, can be tested and validated. As a result, dentists and their teams can practice safe dentistry.

“The technology of our DAC UNIVERSAL complies with the most stringent requirements, so we can offer dentists greater legal certainty,” says Eric Berndt, hygiene product manager at Dentsply Sirona Instruments, referring to the tougher demands for compliance with hygiene guidelines imposed by the health authorities. Simultaneously, the capacities of practice teams and the space they have in many reprocessing rooms are limited; therefore, the equipment required for mechanical reprocessing should be simple, effective, safe and usable with verifiable results for many different instruments.

Unsurpassed hygienic safety with the DAC UNIVERSAL

Compared with other reprocessing methods, the DAC UNIVERSAL offers not only process safety but significant time advantages as well, because it is the only device on the market that can clean, lubricate and sterilize up to six turbines, and straight and contra-angle handpieces in 16 minutes. Using this device, instruments are quickly ready for use again, which lowers the dentist’s investment cost in handpieces. Additionally, no chemical additives are used during the cleaning process, which is beneficial for the working life of the instruments.

For IDS 2015, Dentsply Sirona Instruments expanded the reprocessing capabilities of the combination autoclave to include more instruments. With the new FLEX lid on the DAC UNIVERSAL, the device can now be used for internal and external cleaning, thermal disinfection of ultrasonic tips and handpieces as well as the nozzles of multifunctional syringes. The STANDARD lid can be used for cleaning, maintaining and sterilizing up to six wrapped handpieces, or a wire basket makes it possible to reprocess solid instruments such as probes, mirrors or curettes. The ultrasonic tips are reprocessed together with their associated torque wrenches and undergo a closed, fully automated hygiene cycle so that sources of error are excluded. Various adapters also make it possible to reprocess instruments from other manufacturers in the DAC UNIVERSAL. Yet another advantage is the graphical user interface that enables simple, intuitive operation. The current status is shown in the LCD display throughout the hygiene cycle. All-important reprocessing parameters and confirmation of successful completion of the program can be documented after the cycle ends.

DAC UNIVERSAL FLEX lid

DAC UNIVERSAL can be used for reprocessing many different instruments simply by replacing the Standard lid with the FLEX lid.

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