INSTRUCTIONS FOR USE Cavex Impressional CE **GB**

Indication
Cavex Impressional is a dustfree alginate impressional material with a creamy consistency. It is available in Normal Set and Fast Set and suitable both for general dental practice and for orthodontics. It has exceptional good elastic properties and a high tear-resistance which makes it even more suitable for orthodontics. Thanks to the blue colour the impression is very good readable. The impression surface is very smooth, which gives an excellent gypsum compatibility. The appropriate alginate to combine with Cavex Combiloid (Hydrocolloid).

Storing Cavex Impressional
- Always store Cavex Impressional in a cool, dry place.
- After opening the packaging store Cavex Impressional in a firmly closed storage box. Always close the box immediately after using the material.

Dosing
- Stir the powder to loosen it well.
- Scoop it from the storage box with a light, swift movement and then stroke the powder smooth: do not compress the powder in the scoop.
- Mix water (at room temperature) and powder in the mixing cup.

* for a partial impression	1 scoop	+	1/3 beaker of water
* for a full impression	2 scoops	+	2/3 beaker of water
* for an extra-large impression	3 scoops	+	full beaker of water
* for stiff alginate **(1)**	3 scoops	+	water (high viscosity level)

Ideal mixing ratio: 19,3 g = 3 measuring scoops: 46 ml = 1 full beaker.
You can make the mixture thinner or thicker by adding more or less water respectively.

(1) Cavex stiff alginate technique
The impression technique to make an accurate first (functional) impression for a stable denture. It is the combination of an impression tray with rimlock for edentulous jaws eg Schreinemakers “full denture tray system” and stiff (high viscosity) Cavex alginate. Stiff alginate is the normal amount of powder with 30% less water. The high viscosity alginate pushes the soft tissue aside As a result the anatomical details, even the frenae are clearly visible. The gypsum model can be lined-out accurately and fully, which enables the dental technician to ensure that the individual tray is a perfect fit. The result: a stable denture and satisfied patient.

Mixing
- Mix both components together carefully and thoroughly for 30 seconds until a a smooth and homogeneous mixture is obtained.
- Fill the tray immediatedly and use a wettened finger to stroke it smooth.
- Make sure that the patient has rinsed the mouth with warm water in the mean time.

Taking the impression
- Within 1½ minute (Normal Set) / 1 minute (Fast Set) after mixing, insert the filled impression tray into the patient's mouth applying gentle pressure.
- Allow the impression material to set in the mouth for 1½ minute (Normal Set) / 1 minute (Fast Set).
- Remove the tray from the mouth in a single rapid movement.
- Rinse the tray under cold running water to remove saliva and any residues.
- Remove any excess water, but leave the surface moist. Never blow-dry!

Making the plaster models
- Immediately after rinsing, pour out the plaster impression and make a second plaster model if desired.
- If immediate pouring is impossible: store the impression in a firmly sealed plastic bag to achieve a relative humidity of 100%. This is essential for optimum results at a later pouring.
- Make the plaster model within 48 hours after taking the impression.

For preference, use one of the following plaster products:

Type 3: Moldano® (Heraeus Kulzer)
Type 4: Moldastone® , Moldasynt® (Heraeus Kulzer)

Product specifications
Cavex Impressional (Normal Set / Fast Set) meets the EN 21563 (= ISO 1563) and ADA 18 standards.

	ISO 1563*	**Cavex Impressional**		
		Normal Set	Fast Set	
Powder / water ratio	-	19,3 / 46	19,3 / 46	g / ml
Mixing time	< 60	30	30	sec.
Total working time according to anufacturer's indication		2	1.30	min.
Total setting time according to manufacturer's indication		3.30	2.30	min.
Compression strength	> 0.35	1.00	1.10	MPa
Recovery after distortion	> 95	97.0	96.9	%
Elastic distortion	5-20	15.4	15.8	%
Detail reproduction	50	25	25	µm

* measured with deionised water at 23°C

Mixing scheme Cavex Impressional

	mix	**filling + placing**	**setting in mouth**
Normal Set	30 sec.	1 minute 30 sec.	1 minute 30 sec.
Fast Set	30 sec.	1 minute	1 minute

	total working time
Normal Set	2 minuten
Fast Set	1 minute 30 sec.

	setting time
Normal Set	3 minutes 30 sec.
Fast Set	2 minutes 30 sec.

Note:
1. The working/setting times increase with a lower (water) temperature. At higher temperatures the times become shorter.
2. The water hardness has the same effect: the harder the water used for mixing, the shorter the working/setting time.

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Product Information On
CAVEX IMPRESSIONAL NORMAL SETTING
CAVEX IMPRESSIONAL FAST SETTING
Dustfree Alginate Impression Materials

Introduction

Cavex Impressional Normal Setting and Cavex Impressional Fast Setting are alginate impression materials for dental use.

Cavex Impressional Normal Setting has a normal setting time for general use, Cavex Impressional Fast Setting is quick setting and therefore particularly suited for orthodontics. Both are presented in the form of a fine grain, homogeneous, blue-coloured powder with a nice spearmint flavour.
A special characteristic of both powders is that they are dustfree: the powder is treated in such a way, that no dust is generated during dosing and mixing. It also facilitates the mixing process through easy absorption of water by the powder, offering both dentist and dental assistant convenient and hygienic handling.

After mixing with water, a smooth paste is formed that is loaded into an impression-tray and placed in the mouth of the patient. After hardening of the paste, due to a chemical reaction, an accurate impression is obtained, that can be taken out of the mouth without any deformation, because of its elastic nature.
By pouring the impression with gypsum, or dental stone, a precise model of the situation in the mouth can be prepared, allowing the dental technician to construct a well-fitting dental prosthesis.

Cavex Impressional Normal Setting and Cavex Impressional Fast Setting are in full compliance with the two most important Specifications for alginate impression material:

- EN 1641 (EN 21563)
- ADA No. 18

Cavex Impressional Normal Setting and Cavex Impressional Fast Setting are developed and manufactured by Cavex Holland B.V. of Haarlem, The Netherlands, a Company that is certified according to the provisions of the
Council Directive 93/42/EEC as amended by Directive 2007/47/EC concerning Medical Devices, against ISO 9001 and ISO13485.

Cavex Impressional Normal Setting and Cavex Impressional Fast Setting bear the CE-marking of conformity.

Composition

The basic composition of both Cavex Impressional Normal Setting and Cavex Impressional Fast Setting is as follows:

alginate	: app. 15% w
calcium sulphate	: app. 10% w
fillers	: app. 69% w
retarder, stabilisers, pigment and flavour	: app. 6% w

The alginate, a soluble salt of alginic acid (extracted from brown seaweed), serves as the thickener for water, giving the paste, upon mixing, the correct consistency. It also reacts chemically with calcium sulphate to make the paste harden into a solid impression.
The fillers give the mixture its mechanical strength and proper handling characteristics.
A retarder, sodium pyrophosphate, is used for achieving the proper hardening-time, the stabilisers will improve the surface-smoothness of the gypsum-cast and the pigment facilitates the "reading" of the impression by the dentist for a good judgement of its quality.

Manufacturing

It is essential that alginate impression material does not come into contact with water during manufacturing and storage. Especially a combination of elevated temperature and moisture has an adverse effect upon the shelf-life of the material. Cavex Impressional Normal Setting and Fast Setting are therefore manufactured and handled in an area with a temperature of app. 20 – 25 °C and a humidity below 70% R.H.

A number of the raw materials has to be pre-treated before use:

- some of them have to be dried in order to decrease their water content below an acceptable level
- some have to be sieved for removing undesired coarse particles

The raw materials are then accurately weighed according to the formulation, and the weight of all the raw materials of every single batch recorded and filed. Then they are fed into the mixer in a special, fixed order and mixed according to a standard program. A sample is taken for In-Process Control, which comprises the following points:

- absorption of water by the powder upon mixing
- consistency of the mixed paste
- smoothness of the paste and absence of coarse particles
- colour and flavour
- general appearance
- setting time

With the exception of the setting time, which is measured, these characteristics are judged through visual inspection by a trained and experienced staff, based on many years of experience.
The setting time is determined according to ADA Spec. No. 18, with a powder/water ratio of 21 g/50 ml.
For all tests, demineralized water is used with a temperature of 23 °C. Tests are carried out in an air-conditioned laboratory (temp. 21 – 23 °C, 40 – 60 % R.H.).

The formulation has been chosen such that the setting time is always too short. The laboratory then orders the addition of a certain amount of retarder to be mixed in, and the mixture is checked again. This procedure is repeated another time until the setting time is within the accepted limits and all the above-mentioned points are considered satisfactory.
Only then, the batch is released for packaging and marking with the appropriate batch number and the expiry-date. A large sample is taken to the laboratory for further testing.

End control

Every single batch is tested according to the entire EN 21563 Standard.

In the following Table, all the requirements of the EN 21563 Standard are listed together with the typical values for Cavex Impressional Normal Setting and Cavex Impressional Fast Setting.

Characteristic	**EN 21563**	**Cavex Impressional**		
		Normal Setting	**Fast Setting**	
powder/water ratio	-	21/50	21/50	g/ml
mixing time	max. 60	30	30	sec
total working time	*as stated*	2.00	1.30	min
total setting time	*by the manufacturer*	3.30	2.30	min
setting time in the mouth	-	1.30	1.00	min
compressive strength	min. 0.35	1.0	1.0	MPa
recovery from deformation	min. 95	97	97	%
strain in compression	5 - 20	16	16	%
detail reproduction	50 µm line	complies	complies	
deterioration acc. to ADA No. 18	compressive strength after test: 0.26	0.6	0.6	MPa

Shelf-life test

The test on "deterioration", that is part of the ADA Specification No. 18, is already a good indication for the shelf-life of Cavex Impressional Normal Setting and Cavex Impressional Fast Setting.

The second part of our shelf-life test consists of storing a sample of every single batch in an oven at 50 °C. After 2 weeks, the material is tested for consistency and setting time. Normally, the consistency has become slightly thinner, and the setting time 10 – 40 sec. longer.

A sample of one batch out of the alginate-production of 1 week, is kept in the laboratory and tested for the setting time every 2 months over a period of 5 years. Normally, the setting time has become 40 – 60 sec. longer then.

Finally, every two months an unopened, original package is taken out of the alginate-production. At the end of it's shelf-life the product is tested according to the entire EN 21563 Standard.

Based on all this experience, we are able to guarantee the good quality of Cavex Impressional Normal Setting and of Cavex Impressional Fast Setting for a period of 5 years, provided the bag is unopened and stored in a cool and dry place.

Quality control

A batch of Cavex Impressional Normal Setting or Cavex Impressional Fast Setting, that has passed all the tests, is released for sales.
In case of one or more requirements being not in specification, that batch is withdrawn and not sold.

Statement of non-toxicity

We hereby declare that both Cavex Impressional Normal Setting and Cavex Impressional Fast Setting can be safely used and are non-toxic to the patient as well as to the dental team.
More specifically, it can be stated that Cavex Impressional Normal Setting and Cavex Impressional Fast Setting are free of lead (less than 5 ppm) and cadmium (less than 5 ppm).

Cavex Impressional Normal Setting and Cavex Impressional Fast Setting will also normally not be irritant to oral tissues and do not contain any hazardous ingredients in sufficient concentration to be harmful to human beings when used as directed, or in the event of accidental ingestion of 10 ml.

Haarlem
CAVEX HOLLAND B.V.

0181

The Effect of Mixing Method on the Properties of Alginate

R. WOORTMAN[1], C.J. KLEVERLAAN[2], D. IPPEL[1], A.J. FEILZER[2]

([1]Cavex Holland B.V., Haarlem, NL; [2]ACTA, Department of Dental Materials Science, Amsterdam, NL.)

INTRODUCTION

Alginates are the most widely used impression materials in dentistry. The accuracy of the impression depends primarily on the quality of the alginate, the liquid/powder ratio, and homogeneity of the impression material. Rapid spatulation can give the alginate a “creamy” consistency, which can be achieved by high-speed rotary mechanical mixers.

AIM

The aim of this study was to determine the effect of mixing method, manually versus mechanically, on the tear strength, porosity, compressive strength and E-modulus on Cavex CA37 (batch 060105) at different liquid/powder ratios.

MATERIALS AND METHODS

Cavex CA37 was mixed mechanically (10s, Cavex Alginate Mixer) or manually 30s. Different liquid/powder ratios were evaluated; 25.0/14.0, 30.0/14.0 (= manufacturer’s recommendation), 35.0/14.0, and 40.0/14.0.

The porosity was evaluated by determining the density, calculated from the weight and volume of 16 cylinders (h=10 mm, ø12,5mm) directly after setting.

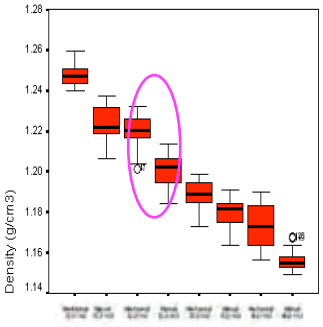
To overcome influences from setting behavior on the strength the specimens were air-dried for two weeks at room temperature and 1 day at 55°C. The compressive strength was measured in a tensilometer (1.0mm/min)

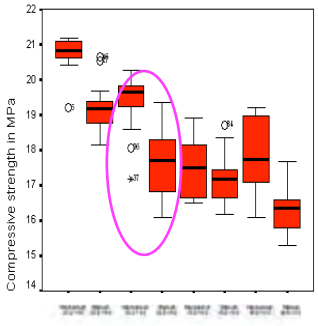
The tear strength was measured in accordance with ASTMD624, 5 minutes after the start of mixing with a cross-head speed of 500mm/min.

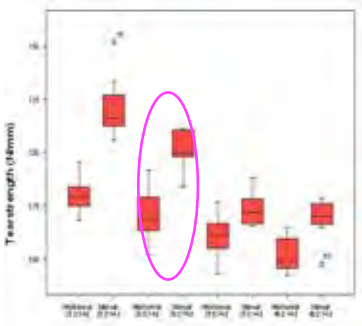
The setting time and E-modulus were evaluated in a tensilometer. During setting the cross-head moved up and down creating sinusoid stress-strain cycles (displacement =20µm, freq.=0.4Hz). From the curves obtained, the point of inflection in stress was used to determine the setting time, while the E-modulus was calculated (t =470s) from the stress-strain cycles.

RESULTS

Significant differences ($p<0.05$, ANOVA) were found between mechanically mixed and manually mixed specimens for the density, compressive strength and tear strength.

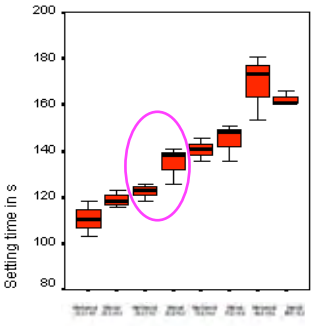


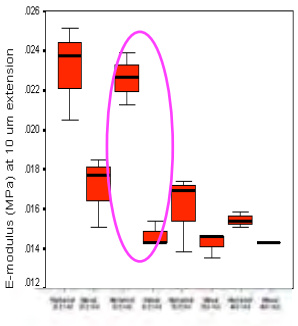




A lineair relationship was found between the liquid/ powder ratio and the setting time in both mixing methods.
No significant difference in setting time was found between mechanically and manually mixing.

In contrast, at liquid/powder ratio 25.0/14.0 and 30.0/14.0 (= recommended mixing ratio, indicated with circle) significant difference was found in E-modulus between mechanically mixed and manually mixed.





CONCLUSION

Mechanically mixed specimens are denser, stronger, and have a higher E-modulus compared to the manually mixed specimens. Clinically mechanically mixed samples will have higher strength and lower chance to deform.

R.Woortman@cavex.nl

Effects of Alginate Adhesives on the Bond Strength of Alginate Impression Material to Stainless Steel

R. WOORTMAN, Cavex Holland BV, Haarlem, Netherlands, J. HERMANS, Cavex Holland BV, Haarlem, Netherlands, and A.J. FEILZER, ACTA, Amsterdam, Netherlands

For an accurate impression of the dental arch without any distortion, one has to be convinced of a good adherence of the impression material and the impression tray.
As alginate based impression materials does not show good or reliable bond to all types of tray materials, it is advised to use perforated or rim lock trays. Also the use of adhesives is propagated.
Unfortunately, little knowledge is available on the efficacy of the Alginate Adhesive on the Alginate bond to impression tray materials.

Objectives:

Therefore the aim of this study was to evaluate the effect of Alginate adhesives on the bond strength of alginate to impression tray material. In this study three different Alginate Impression Materials (Cavex CA37, Cavex Impressional and GC Aroma Fine) were combined with 8 different Alginate Adhesives.

Methods:

A new bond strength test was developed in which the Alginate Adhesive was applied thinly on a stainless steel testing plate or a Plexiglass testing plate (50x70mm).
The Alginate Adhesive was allowed to dry for 10 minutes before applying the Alginate Impression Material on the plate by using a perforated brass ring mould as tray (25mm diameter, 20 mm height).

3 and 6 minutes after setting, the tensile force at failure was measured in a tensilometer (Zwick) at a crosshead speed of 500 mm/min. A non-adhesive group was used as control.

Results:

The bond strength increased with prolonged waiting times after setting of the Alginate Impression Material. All tested Alginate Adhesives showed significantly higher bond strength when compared with specimens in the non-adhesive group.

Conclusion:

Alginate adhesives are effective in improving the bond strength of Alginate Impression Materials to stainless steel.
The bond strength increased with prolonged waiting time after setting.
A proper combination of Alginate impression material and alginate Adhesive is of importance

12th March 2012 | Zahnmedizin kompakt (Condensed Dentistry)

Classic vs. digital impressions – Many roads lead to Rome, but not all of them are recommendable

"Obviously digital impressions are an interesting topic, but the classic impression method is not likely to become obsolete for many years. At the moment, many people are acting as if digital impressions have just been invented. This isn't the case, as Cerec has been in existence for 25 years, and the international sales figures are not as high as one might think. Digital impressions also only cater for some indications. The difficulty with all these systems is that it is only possible to see optically what we too can see. And because we can see it, we can also easily make a conventional impression of it. And the whole thing becomes really problematic if the preparation margin can't be viewed. Here all digital systems experience difficulties".

This statement, made by Prof. Dr. Bernd Wöstmann [1] marks the current situation in a both complex and problematic area of reconstructive dentistry, as the quality of the impression results plays a major role in the success or failure of a treatment [Rehmann et al. 2]. They may only be one link in the chain of different clinical and dental working steps, but they are a high-priority link, as any errors made at this stage can generally not be corrected, or can only be corrected by repeating the entire process again [1].

Crown and bridge prosthetics:
Aims and requirements
For the production of correctly-fitting crowns, dimensionally-accurate models of the abutment teeth and the neighbouring teeth as well as a model of the opposing jaw in the correct maxillomandibular relationship is required. This is only possible with a precision impression including a detailed negative display of the clinical situation. Depending on the particular case, ready-made or individually-manufactured impression trays can be used. The optimum layer thickness of the elastomeric impression material lies between two and four millimetres [Rammelsberg et al. 3]

"Perfect in a damp environment"
In contrast to the problems which arise when making impressions with hydrophobic materials (for example addition-curing silicones), polyether elastomers are hydrophilic and therefore less prone to faults. They have been optimised through the development of hybrid polyethersiloxanes (for example EXA'lence Medium Body and Heavy/Light/GC), with which the preparation margin can also be reproduced in a damp environment. In general, automatic mixing is most certainly better than the classic hand-mixing method [1, Wöstmann et al. 4].

Full prosthetics: Functional impressions only using individual trays
Because the functional impressions have to comprise not only of the jaw and mucosa, but also of the cheek, lip and tongue musculature, individual impression trays are required which - depending on the anatomical situation - are produced on a model. Sturdy materials are required for muscular impressions of the functional ridge, which however must be sufficiently deformable to allow impressions to be made through pressure from the cheek, lip and tongue musculature. Even if plastic materials and sturdy silicones are offered by the dental industry for functional ridge work, thermoplastic materials are in fact more suitable for creating an optimum functional ridge to the prosthetics [Setz et al. 5].

Impression accuracy depending on the impression material and technique.
In the Abform-Leitfaden (Impression Manual) by the Poliklinik für Zahnärztliche Prothetik des ZMK-Zentrums der Universität Köln [7] (Polyclinic for Dental Prosthetics at the ZMK Centre of the University of Cologne), which is largely based on a trial conducted by Luthardt [6], facts determined in vitro and in vivo with relation to impressions of prepared abutment teeth are described.

In vitro:
• Single-step procedure using polyether or A-silicones enlarge reproductions of prepared abutment teeth.
• Double mix and corrective impressions lead to diminished reproductions.
• All impression procedures are subject to concave or convex distortion in the area of the occlusal surfaces.
• The use of ready-made plastic trays mainly generates negative effects, whereas individual trays result in significantly improved precision.
• Correctly-executed impression disinfection has no negative effects on the fidelity of elastomeric materials.

In vivo:
• 30 to 50 percent of the impressions for fixed dentures are to be graded as clinically inacceptable.
• It is necessary, in particular with hydrophobic impression materials, to drain them as much as possible, whereby retraction cords in combination with astringents are recommended. Electrosurgical procedures lead to a larger loss in gingival height than when using the retraction cord technique.
• Two-stage procedures optimise the sub-gingival representation of the preparation margin, but result in increased three-dimensional distortions.
• Clinical and histological trials indicated deviations between the preparation margin and crown margin of 5 to 5340 (!) micrometres, whereby the mean values of the marginal gaps mainly lay within a range of 382 to 647 micrometres.
• If the crown margin is in a sub-gingival position, one must expect a far larger spread for the marginal gap.

These findings result in the following insights: The periodontal-gingival situation has a positive or negative effect on the impression accuracy. The same applies for the position of the preparation margin.

The temporal interval between preparation and impression plays a role with relation to the periodontal-gingival situation. The achievable drainage condition is of particular importance. The individual knowledge and skill of the person carrying out the work and the clinical handling properties of the materials and technical equipment are what decide the quality of the impression result.

Dentist or patient-influenced prosthetic margin production?
In one of the numerous impression trials conducted by the Poliklinik für Zahnärztliche Prothetik des ZMK-Zentrums der Universität Gießen (Polyclinic for Dental Prosthetics at the ZMK Centre of the University of Gießen) [for example 1,2,4,5], patient satisfaction after a dental or patient-influenced optimisation of the margin of full upper jaw prosthetics using impressions with an elastomeric impression material (Xantopren function, Xantopren function light, Heraeus Kulzer) was determined [Wagner et al. 8]. Whereas some patients (20) were able to influence the impression process through pursing of the lips, movement of the cheeks, speaking and swallowing, 16 patients had to leave all manipulations to the dentist. In the end, no significant differences could be determined once the impression had been relined with Palapress (Heraeus Kulzer), so that - with an overall successfully-

improved prosthetic margin design and resulting patient satisfaction - the procedural method does not appear to play a significant role.

"Poor hygiene - impression disinfection"
In an article by I. Denzer and J. Schubert entitled "Poor hygiene - impression disinfection [9], it has been determined that disinfection was already being carried out since the end of the twentieth century, but that the appropriate hygiene recommendations by the RKI [10] and the DGZMK [11] were obviously not always being maintained. However, attention was already being drawn to the necessity of impression disinfection in the 1960's [12].

The authors are correct to maintain their recommendation to include impression disinfection in own hygiene chains in terms of Quality Management, in order to avoid risks both in the practice and in the dental laboratory.

Is it possible to transport alginate impressions safely?
Whereas elastomeric impression materials can easily be treated with suitable disinfectant and then transported within the dental area (practice or external laboratory), alginate impressions cannot. They can be disinfected with suitable preparations, but their dimensional stability is at risk if they are not cast immediately after the impression has been made, rinsed and disinfected. M. Göllner recommends transport in a damp chamber (Algiport II, Elben-Dental) [13], whereby using this transport box could at least minimise the risk of quality losses. However, it is without doubt safer to cast alginate impressions within the practice.

Intraoral scanner considered positive by patients
In particular for patients with a strong gagging reflex or respiratory problems, digital impressions may contribute towards an improved relationship between patient and dentist. In addition, patients lose their fear of impressions, as it is possible to interrupt the process of data recording at any time.

At the IDS 2011, nine different systems for the digital recording of intraoral data were presented. They were based on the triangulation principle. In these systems, measurement takes place through a laser beam projected by a sensor, the backscattering of which is guided by the surface of the object being measured via a lens in an oblique viewing angle onto an optoelectronic receiver unit. The distance from the sensor to the object being measured is calculated via the position of the received laser beam on the chip [B. Maier 14].

Even if the hybrid polyethersiloxanes previously mentioned are not yet listed in the Dental Vademekum, the BZÄK/KZBV/IDZ (Federal Association of Dentists/Federal Medical Association/Institute of German Dentists) product guide [Pfeiffer 15], this publication does provide a complete overview with comprehensive data material. The same applies for the Dental-kompakt-Jahrbuch 2011 (Condensed Dental Yearbook) [16], in which the introductory article by Rehmann et al. [2] and a table listing the digital scanners are also contained.

Again a quote from the scientist from Gießen, who has concerned himself for many years with the subject of impressions. He wishes that this topic would generate more interest: "Here we are not thinking sufficiently in terms of economics; many dentists see only the time expenditure. However, from an economic point of view it is far better to invest five more minutes in the impression in order to save a quarter of an hour of grinding. The necessity for repetition is a problem of which many laboratories, no matter how high their quality, are aware. There is high potential for optimisation here", says Wöstmann [1].

It isn't only about the dentist, but also about the team member participating in this working process being aware of and fulfilling the requirements for an optimum procedural method with the respective impression method [Kimmel 17].

There are at present numerous reasons why the classic impression will continue to remain the standard method, whereby the cost-benefit ratio will of course continue to play a role. Substantial research is required before digital impressions can expand into other indications. Seen overall, patients and dentists, but also dental technicians, are thankful for any progress made. The main aim remains to execute an impression with as few faults as possible, with the least possible stress for the patient and with the lowest possible amount of effort.
Kimmel

The Bibliography can be requested via email from leserservice@dzw.de at the DZW Editorial Office

Mechanical Properties of Device- vs. Hand-mixed Irreversible Hydrocolloids

E. KILINC, Ege Universitesi, Ýzmir, Turkey, E. CAL, Ege Universitesi, Ýzmir, Turkey, M. SONUGELEN, Ege Universitesi, Ýzmir, Turkey, A. KESERCIOGLU, Ege Universitesi, Ýzmir, Turkey, and B. UYULGAN, 9 Eylül Üniversitesi, Ýzmir, Turkey)

Objectives:

The aim of this study was to compare the two types of mixing methods with and without disinfection on the compressive strength, recovery from deformation and particule characteristics of two types of irreversible hydrocolloid materials.

Materials and Methods:

A total of 88 standardized samples were prepared both by hand and device mixing (Algimax Dancer DM21) according to ANSI/ADA specification no.18 using Orthoprint-fast setting (Zhermack) and CA37-regular setting (Cavex) irreversible hydrocolloids.

Half of the samples were subjected to 2% sodium hypochloride disinfection.

Recovery from deformation and compressive strength tests were conducted using universal testing machine (cross-head speed : 0.5 mm/min) according to ANSI/ADA specification no.18. Additionally, particule characteristics of the prepared samples were examined under light microscope (Nikon Eclipse ME600) and the scanned images were analyzed using Lucia G software.

Results:

The fast setting irreversible hydrocolloid material showed recovery from deformation results which can not be in accordance with the ANSI/ADA specifications (93.557 %) and neither the mixing method nor the disinfection procedure affected the results. On the other hand, the results of the regular setting material were in the acceptable range (95.043 %) .

Statistical analysis (Student t-test) showed favourable results for device mixing , though disinfection was not effective. In the compressive strength test regular setting material had lower values than the fast setting one. The viewed surfaces of the fast setting material consisted of 30% air entrapment in both of the mixing methods while in the regular setting material there were more air entrapment in the hand mixing method than the device (38% and 27% respectively).

The pores were seemed to be filled with the disinfectant on the surface, forming a layer.

Conclusion:

Device mixing of the regular setting irreversible hydrocolloids showed better mechanical results.