

Double-poured Alginate Impression Material

Our alginate's user instructions state that an impression could be cast twice. To cast an impression twice the impression material must remain sufficiently strong and elastic for the cast to be removed without damaging the impression. Because the cast offers little grip a certain amount of tugging is often needed to remove the cast from the impression. During removal there is a risk of damaging and/or distorting the impression. The second cast should not differ significantly from the first regarding plaster surface and dimensions.

In order to examine the change in characteristics over time the physical characteristics of Cavex CA37SP and Cavex Impressional Fast were assessed in accordance with ISO 1563. Two casts were made: one after several minutes after curing and another after 1 hour's storage at 100% relative humidity. Impressions were made using a metal mould. Casts were made of Moldano (class III) and Moldastone (class IV).

All casts were evaluated for detail reproduction and surface quality. Distortion of the impressions was also examined by measuring the lengths of the diagonals of both the first as well as the second cast.

After one hour characteristics of the alginate did not differ significantly from those immediately after curing. After one hour the impression had gotten slightly bigger in strength and a little tougher. Recovery, the ability to get back into shape, had gotten somewhat better as well. It seems reasonable to conclude that an impression could be cast twice as long as the first cast is removed from the impression with some skill.

Exact measurement revealed all casts to be larger than its original (approx. 0.1%). The second cast was always slightly larger than the first (approx. 0.1 % larger in comparison with the 1st cast). This was presumably due to a combination of factors: shrinkage of the alginate, expansion of the gypsum and distortion of the impression when removing the first model. These discrepancies are of a very acceptable level in all cases. In comparison, C silicones shrink by 0.6 - 0.8 %.

Conclusion

In general impressions taken with Cavex CA37 and Cavex Impressional could be cast twice. Quality of the second cast is in no way inferior to the first. However, it is advisable to remove the first cast very carefully from the impression and it is wise to make sure the impression does not dry out. Removal of casts should be done by an experienced person to avoid any breakage or distortion.

Literature:

Oper Dent 1998 Mar-Apr;23(3):128-31 Using double-poured alginate impressions to fabricate bleaching trays. Haywood VB, Powe A Medical College of Georgia, School of Dentistry, Department of Oral Rehabilitation, Augusta 30912-1260, USA.