

Double-poured Alginate Impression Material

For a very long time now the user instructions for our alginates have stated that the impression can be poured twice. To pour an impression twice the impression material must remain sufficiently strong and elastic for the model to be removed from the impression without it being damaged. Because the model offers little in the way of a grip a certain amount of tugging is often needed to remove the model from the impression. In this process there is a risk of damaging or distorting the model. In addition the second model should not differ significantly from the first as regards plaster surface and dimensions.

In order to examine the change in characteristics over time the physical characteristics of Cavex CA37, Cavex Impressional, Cavex Orthotrace and Cavex Tulip Alginate were assessed in accordance with ISO 1563 for several minutes after curing and after 1 hour's storage at 100% relative humidity.

Using these materials, impressions of a metal mould were taken, poured with Moldano (class III) and then repoured after they had cured for approximately 1 hour.

The plaster models were then evaluated for detail reproduction and surface quality. The permanent distortion was also examined by measuring the lengths of the diagonals.

The characteristics of the alginates after 1 hour do not differ essentially from those immediately after curing. The strength is rather greater, the material becomes rather tougher, and the recovery, i.e. the ability to spring back into shape, is also somewhat better. It therefore seems reasonable to assume that an impression can be repoured as long as the first model has been extracted with some skill. Measuring the plaster models revealed that they were in all cases larger than the original (approx. 0.05%) and that the second model was larger than the first (approx. 0.1 % compared with the 1st model). This was presumably due to a combination of factors: shrinkage of the alginate, expansion of the plaster and distortion of the impression when removing it from the metal block and/or the first model. In total, however, the discrepancies were of a very acceptable level in all cases. In comparison, C silicones shrink by 0.6 – 0.8 %.

Conclusion

Impressions taken with Cavex CA37, Cavex Impressional, Cavex Orthotrace, Cavex ColorChange, Cavex Cream and Cavex Tulip Alginate can, generally speaking, be poured twice. The quality of the second model is in no way inferior to that of the first. It is advisable, however, to remove the first model from the impression very carefully and to make sure that the impression does not dry out.

Data

	CA37		Impressional		Orthotrace		Tulip		ISO1563	
	Direct	1 hour	Direct	1 hour	Direct	1 hour	Direct	1 hour		
Compressive strength	0.99	1.34	1.06	1.29	1.11	1.42	0.63	1.07	>0.35	Mpa
Strain in Compression	15.5	12.5	15.0	13.3	15.8	9.7	15.8	12.5	5 - 20	%
Recovery from Deformation	96.3	97.8	97.0	98.3	96.2	97.9	96.7	98.1	> 95	%
Dimensional stability (Moldano)	0.1	0.3	0.1	0.05	0.1	0.3	0.2	0.3	not specified	%

Literature

Oper Dent 1998 Mar-Apr;23(3):128-31

Using double-poured alginate impressions to fabricate bleaching trays.

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