

# 치과 주조에 관한 고찰

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*Abstract*

## **A study of Dental Casting Method**

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According as the density of prosthetic by casting among the prosthetic restorations is increasing now, the definition and the bounds as to the casting, the method of making the right casting and the establishment of concepts about a minute report and so on, the establishment of the basic principles like those are unavoidable, and then the casting shrinkage must be compensated by setting expansion thermal expansion.

Hygroscopic expansion in making the good casting types as we demonstrated that already asbestos lining.

We confirmed the fact that the considerable concern about the surface tension and the gas inspiration?

Is necessary in making better the casting.

## 1. 서론

가

가

crown

가

## II. 치과주조의 역사

가? 가? Taggart 1907 1

Rost wax Peyton 1884 Agullhon Inlay

1887 pipe J.R Knapp가 1897 Philbook 가 가 blow

Solbrig Taggart Rost wax 가 Auinlay

Cu, Sn, Zn, Fe, Au, Al, Sb

4000 Cu가 가 Cu 3 Au, Ag, Karat가

Eggpt 2000 1500 inlay

가 700 Lydia

가 Craesus

Standards Coleman National Buraw of

dicasting 가 Coleman 1.25% Shell 1.71%, Lane 1.64%, Souder 1.6% 1.7%

가 wax wax resin 가 Rost 1913 Fenner 가 crytobalite

가

Cryotalite 가

□

가 가

Hollenback

inly wax

inly wax,

hygoscopic expansion method

Sgheu

hygoscopic expansion

asbestos

flask lining

asbestos

가

asbestos lining

가

### III. 치과주조의 기초

#### 1. 금속의 액체-고체의 반응

가 가 가

, Ni-Cr

Pt,Pd

Co-Cr

가

Fig.1

Cu

가

gas

가

Cu

, arc

가

Cu

가

Cu

가

가

가

Fig.1 a

, b

Cu

colloidal

Cu

, c

Cu

Cu

Fig.2

가

가

, gas

가



가 . Fig. 3  
 가 가 가 가  
 가

viscosity  
 viscosity  
 Table. 1 가

Table. 2

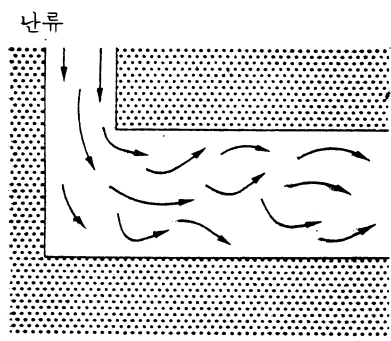
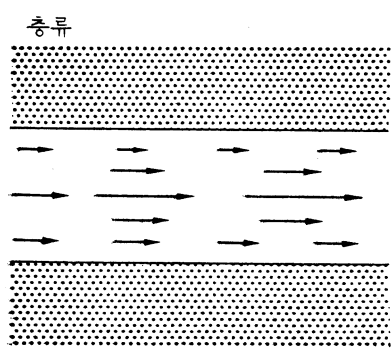


Fig 3.

Table 1.

재 료 종 류	밀 도 ( g/cc )	정 점성계수 ( cp )	동 점성계수 ( cs )	온 도 ( °C )
물	1.00	1.00	1.00	20
Al	2.37	3.00	1.27	700
회주철 ( 3.27% C )	6.1	3.72	0.45	1300
백주철 ( 3.5 % C )	6.1	2.42	0.40	1300
Cu	7.81	3.14	0.40	1200
Fe	6.98	6.2	0.89	1600
Steel	약 6.8	약 3.0	약 0.44	용점식상
Pb	10.51	2.32	0.22	400
Mg	1.54	1.20	0.80	680
Hg	13.55	1.55	0.125	20
Wood Alloy	9.62	1.25	0.13	100
Zn	6.54	3.56	0.55	500
Clycesine	1.26	870	690	20
광 물 성 Oil	0.80	500	625	20

Table. 2

가  
 가  
 가 가 gas  
 가  
 가

Table 2.

재 료	표 면 장 렷 (dyne/cm)	온도 (℃)
물	74	18
Al	520	750
Al 와 그 산화막	840	700
Cu	1120	1140
주 철	915	1300
Pb	442	400
Mg	563	681
Hg	465	20
Zn	785	510
Sn.Pb .Sb의 합금	352	100
용 용 염	35 ~ 180	400 ~ 930
유 기 용 액	15 ~ ~50	0 ~ 115

gas  
 gas  
 Ag, Cu  
 Au,

#### IV. 치과주조법

#### 4. 주조성

wax pattern  
 inlay,  
 crown  
 bridge  
 bar

#### 1. INLAY CROWN의 주조

wax pattern inlay

Fig.4

Fig.5

wax pattern  
 pattern sprue  
 wax

가

asbestos가 lining가  
 sprue  
 가 wax pattern  
 가

Fig. 6 wax pattern ring

Fig. 7 polishing 9, 10, 11

Fig. 8

Fig.

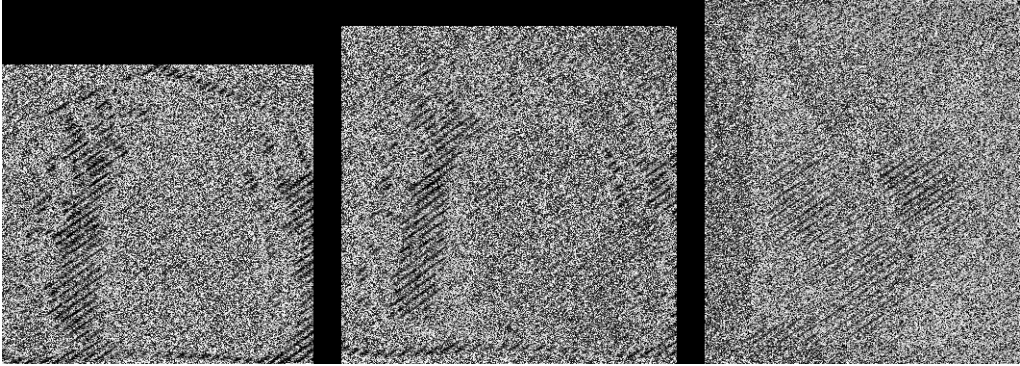


Fig 4.

Fig 5. Wax Pattern

Fig 6.

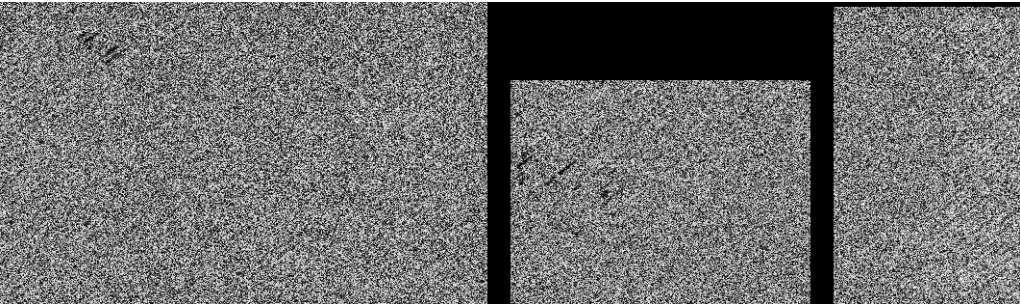


Fig 7.

Fig 8. Polishing

Fig 9.

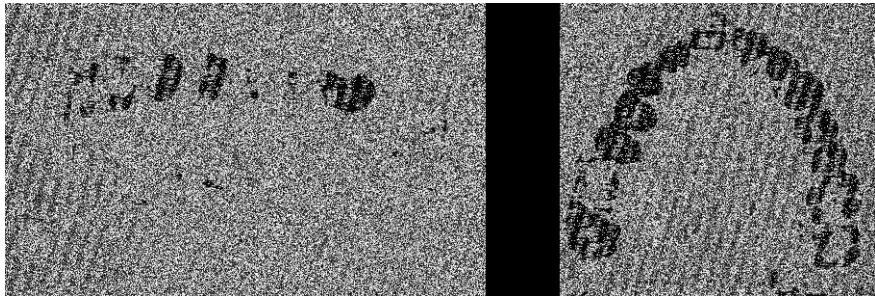


Fig 10.

Fig 11.

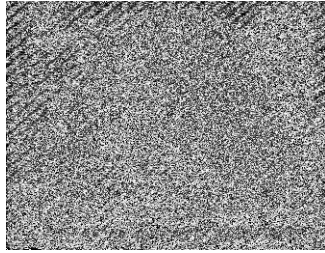


Fig 12. Releafe

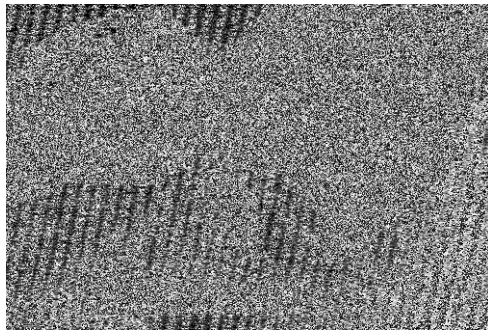


Fig 13.

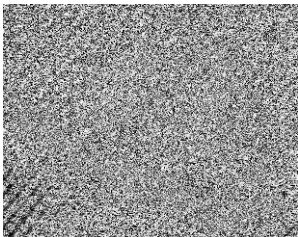


Fig 14. Sprue  
Crucible formor

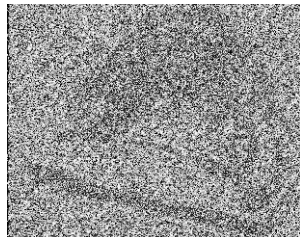


Fig 15. Adaptation

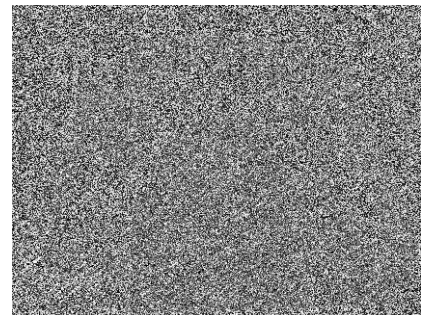


Fig 16. Adaptation

## 2. 주조상의 주조

Inly crown  
wax pattern

wax pattern

. 가

. Sand blast

2

Fig.15,16

가

, under cut

wax releafe brockout

Fig. 13

wax pattern

sprue Fig. 14

flask

가 flask

## 3. 주조에 의해 만드는 수복물

Fig. 17 bridge Fig. 18

percela in simple crown

Fig.19 Fig. 20

atchement . Fig. 21,22

가



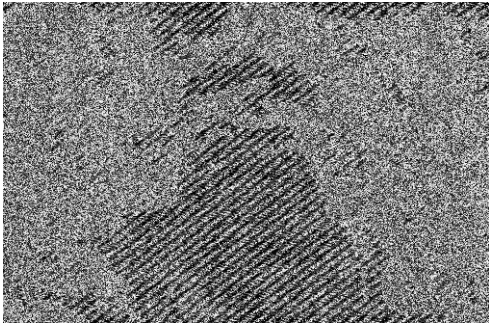


Fig 17. Bridge

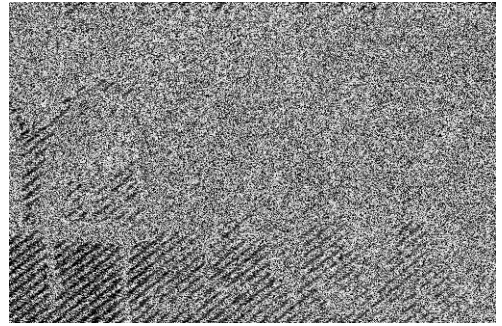


Fig 18. Simple Crown

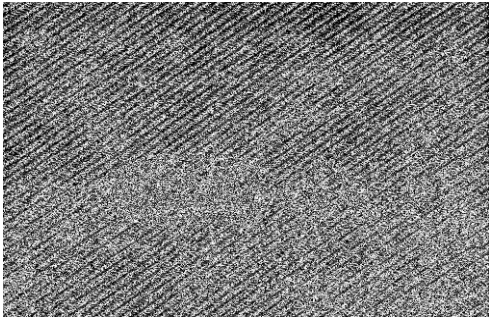


Fig 19. Attachment Crown

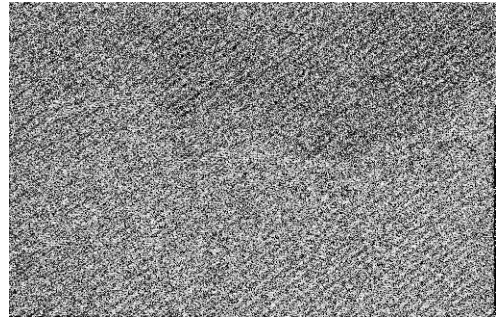


Fig 20. Attachment Crown

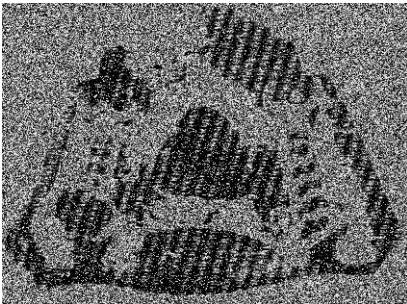


Fig 21.

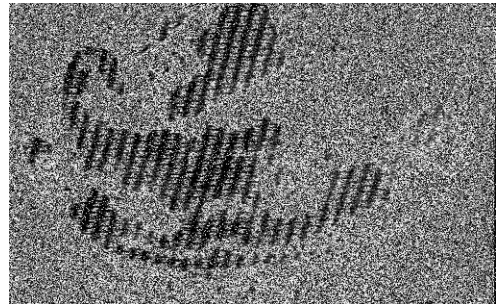


Fig 22.

## V. 결론

1. 1) Crystobalite Setting expansion  
2) thermal expansion

- 3) hygroscopic expansion
2. 1.7%가
3. asbestos 가 hygroscopic expansion

4. viscosity
5. 가  
gas

## 참 고 문 헌

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