

전부 주조관 제작을 위한 내화모형재 분리에 관한 연구

원광보건대학 치기공과

= Abstract =

A Study about the Separation of the materials Used in Refractory Cast Dies For Making All Ceramic Crowns

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I attempted to suggest a better method to separate a refractory cast in order to solve the problems caused by bonding between refractory casts and ceramics in the firing-processing of all ceramic crowns as a part of dental prosthodontics. I emphasize the advantages and effectiveness of easy separation after firing by using the separating materials about the refractory cast dies.

1. We must not use HF(55%) that is used as the chemical separating methods.
2. We decrease such methods as grinding, blasting, bur, and point
3. We can save time, costs and manual labors by using this methods.
4. This method regulates the expansion and constriction of heat because of the chemical reaction of the separating materials.
5. This method contribute to the breaking down without modification by minimizing the chemical and mechanical damages of the marginal and interior parts.

차 례

2. (1), (2)

1. 機器

I. 서론

古今 人類 缺損

17~19
Fierre Fauchad Charies. H. Land
Jacket Crown

Mclean Hughes. Alumina Core
防止
J.W. Mclean,
I.R. Sced Coating

19 Taggart, Chrostensen.
Granger, E.R.

R.F. Vines, J.V. Semmelman F.D.
Forvielle Kuwata. 眞空燒成 産

混用,
M. Weinstein A.B. Weinstein S. Katz, Geoller,
I., Nally, J.N. Gold

Ralph. B.
Sszio Sato, T. Wohlwend, A.
가
Rochett, Simonsen, Calamia Horn

In-ceram, Hi-ceram,
Laminate, Castable Ceramic
apatite,
Silicate 가

In-ceram Paris Michael
Sadourm (0.5~0.35 μ m) Alu-
mina 50% Core
(Flexural strength 400Mpa) 0.3%
Dr. Sorensen

margin gap 25 μ m
Shoulder type

Alumina core

가 特殊 가

Dicor

耐火 (Core) 13 9

ㅎ 改發 가
補綴學教室

()
坂清子

Masking

Opaque)

個社 (

術

新素材

가

特殊製造

分離材

除法

Core

Masking

除法

50%) (Etching)

() , blasting

本有海 猛毒性

人 內面損傷

II. 실험도구 및 방법

1. 실험 재료 및 機器

(1) (Porcelain furnace) : 1 (

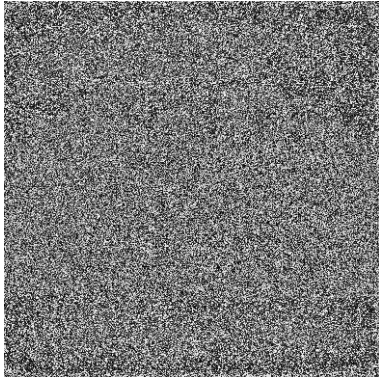
-)

(2) Ring() : 1

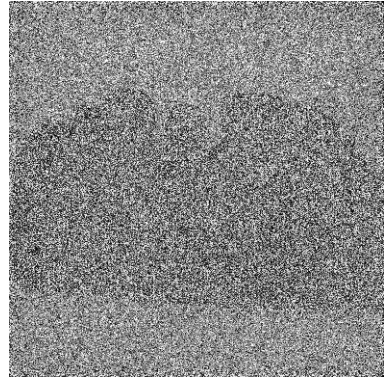
(3) (Ultrasonic cleaner) : 1

Table 1.

도 재	시간, 전기로예열	온도, 소성	승온, 매분	진공, 대기	계류시간
Cervical	5~10분	500℃~960℃	30~50	진공	30~60초
Dentin, E	7~10분	500℃~930℃	50~60	진공(760 mHg)	30~60초
Glage. S	5~7분	600℃~920℃	50~60	대기	
Collector	5~7분	600℃~930℃	50~60	진공	

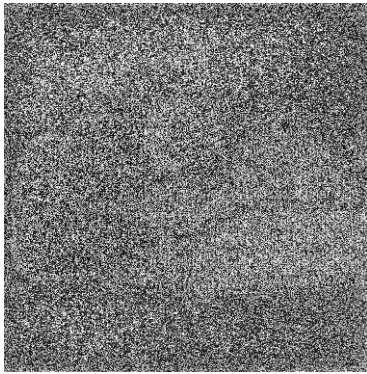


1.

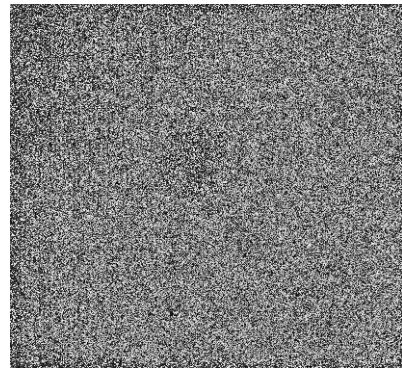


2.

- (4) Vibrator, spatula, Rubber bowl, 1 , 1)
1切, Lecron knife
 - (5) Micro-motor : 1
 - (6)
 - (7) Air turbine
 - (8) Tray Rubber :
 - (9) (Powder) :
3 - Vita : 一切 Glage powder
Vintage : 一切 Glage powder
ceramico : 一切 Glage powder
 - (10) Investment(耐熱性) : 3
 - (11) 가 (Distill water : Glycol)
 - (12) HF(50%)
 - (13) (液)
 - (14) (各種)
 - (15) Plaster, Stone
 - (16) Tissue paper
 - (17) ,
- : type
 - 1 , margin
 - Repair
 - stone die Die spacer Coating,
Rubber Duplicating
case 2
 - Fifer system.(G.C. Ceravest 20g ×5ml)
 - (Die) Shoulder Bevel
margin Line Pencil
 - Degassing(
)
Ring (550 ~1,050)
50
가
gas
가



3.



4.

- 1 () 3~5 (Sandblast (50%))
- () Stain가)
- (Stone die)
- Fritting
- Glycol
- 0.1~0.2mm (, Die
- 2 500 ~ 900 5
- 1. 가
- 2. 가
- 3. 가) (가
- 4. 耐久性
- 5. (5
- 6. ()
- 7.)
- 2) 가
- , Moffa
- :

2. ()

순서	A 형	B 형
1	복제된 내화모형	- 복제된 내화 모형
2	Core or masking	- 내화 Die에 분리재 도포
3	치관 도재 축, 소성	- 내화재 모형 열처리
4	형태수정	- 도재 축성, 소성
5	광택	- 치관 형태 수정
6	내화모형 제거	- 내화재 제거
7	적합	- 광택후 적합

- (Dentin, 550
- Enamel) (5~10) 500~930 30
- (Repair) ;
- 2 Die
- Bur

A, B 共通點

가 , 가
가

, 가 ,

坂清子

, (B) 가

(C) 가

(B)

Core Masking
Opaque 混合

, A

die

5. %

내화모형	제조사	경화팽창	가열팽창
도재용 Cristobakite	A사	1.75%	0.9%
인산염매몰재	B사	1.8%	0.7%
주조용매몰재	C사	1.2~1.5%	1.0~1.3%

3.

도재 제조사	치관도재	치경도재	불투명도재
A사	13%	10.5%	10%
B사	12%	11%	9%
C사	15%	11%	11%

A社

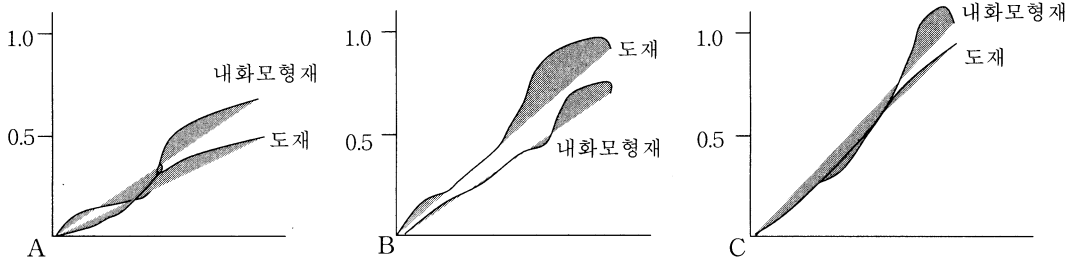
, 가

- 가 가 , 가
가

가

가

4.



6. 가

제품명	건조후 강도 Kg/cm ²	Degassing 후 Kg/cm ²	도재소성후 Kg/cm ²
A	280	260	270
B	250	-	400
C	550	400	240
D	380	300	300

500 ~ 1060 , 50 / 1030 5
D 3 가

III. 결과 및 고찰

結合 分離

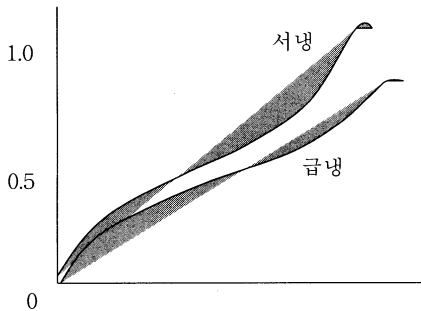
分離()

. 粒子 粒子,

條件 正密

가

7.



Taggart

金屬酸化物

Cascon

Porcelain fused to metal crown 가 J.W. Mclean, I.R. Sced

M.Weindtein,

S. Katz

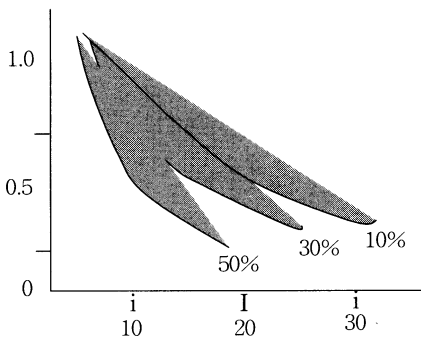
Dr. Ralph B, Sszio,

A. Rochette

R.J. Simonsen, J.R. Calamia
etching

undercut

8.



가

Steps

17 Charis H.Land Porcelain Jacket
Crown 金屬迫

Mclean, Hughes Inner core
Platinum foil , Maynard inlay foil

(HF50%) 强酸

金屬問

(

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