

가
 lost-wax mold , 1906
 Taggart
 wax pattern
 wax pattern 가
 wax pattern ,
 mold ,
 mold 가
 가
 Peregrina Hamanaka
 pattern

Wax ;
 Sheet wax, Dae-Dong INC., Korea
 Casting wax, Dae-Dong INC., Korea
 Electric furnace ; Electric furnace,
 Sea Ki Electronics Co., Korea
 High frequency casting machine ;
 Engel Jelenko., USA
 Sandblaster ; Sandblaster DUOSTER
 Z2, BEGO Co., Germany
 Ultrasonic Cleaner ; Ultrasonic
 cleaner, Suc-25, SHOFU Co., Japan
 Profilometer ; SURFTEST 402,
 surfstest ANALYZER, Mituyoyo, Japan
 Magnifier(× 10), Korea

2. 실험방법

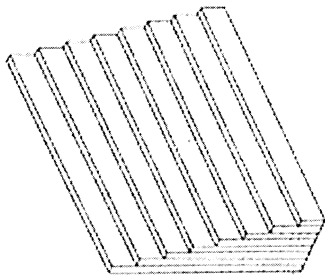
1)
 gauge sheet wax 8 sheet wax 32
 sheet wax
 10mm × 3mm
 sheet wax 1.5mm
 , 8
 sheet wax가
 sheet wax

II. 실험재료 및 방법

1. 실험재료

Metal ;
 T-3, Ticonium Co. USA
 Verabond, ALLBA DENT INC., USA
 Sankin CB 80(Hard), Sankin KOGYO
 K.K., Japan
 Sankin CB 80(Soft), Sankin KOGYO
 K.K., Japan
 Washi NC-100, KAMEMIZU CHIEMICAL
 INC., Japan
 Investment ; Uno-vest, Boo Pyung
 Dental Chemicals Co., Korea

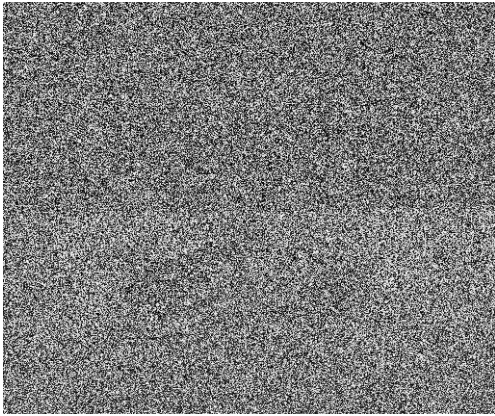
10gauge round wax
 5mm 가
 가
 25 pattern
 wax pattern pattern
 1 2



1.

1.

Phase	Time
Burn out 100°C to 300°C	60분
Hold temperature	30분
Processing cycle 300°C to 800°C	60분
Hold temperature	30분



2. wax pattern

< 1> .
 Ni-Cr T ;
 Talladium, V ; Vera-bond, C ; CB 80(Hard
 type), CS ; CB 80(Soft type), N ; NC

3)

3
 가 8
 가

가

2) , ,

agent , pattern wetting
 Uno-vest

50µm alumina
 sandblasting

2
 profilometer(tracing length
 1.75mm, cutoff value 0.25mm)

wax pattern , 가

가 2

1

300 30

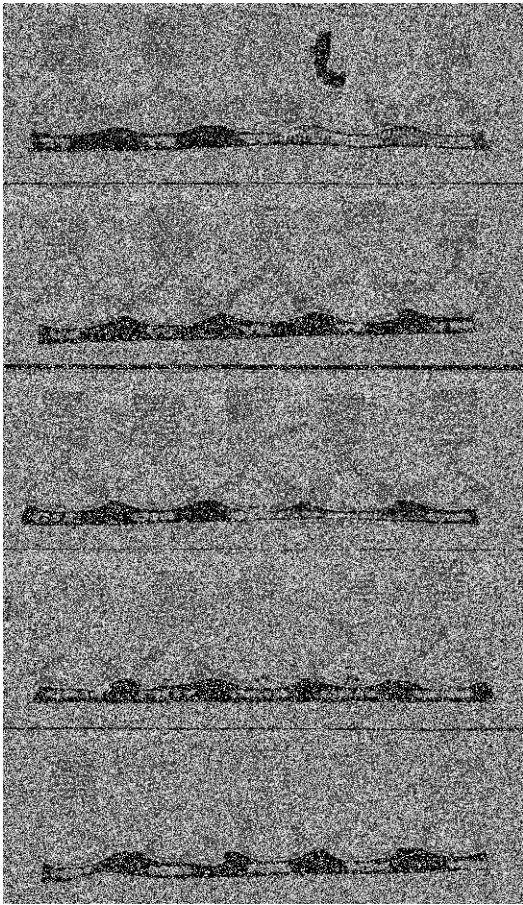
800

30

5 6

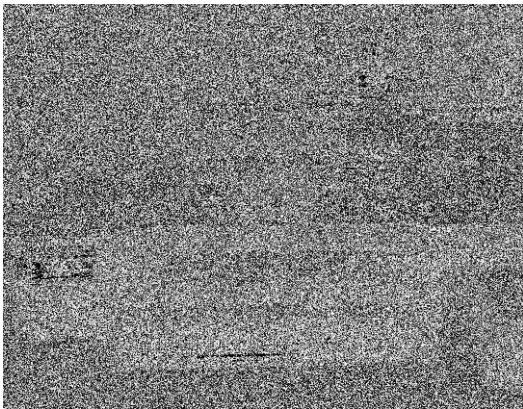
III. 결과 및 고찰

pattern



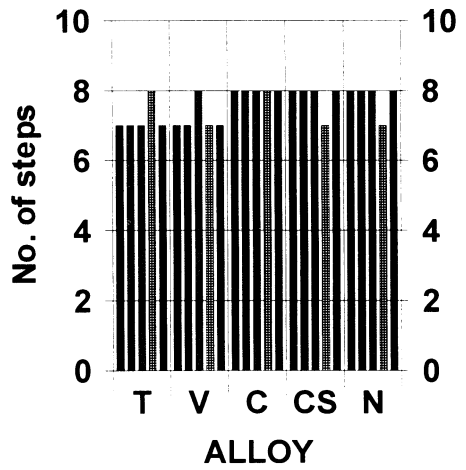
3.

T ; Talladium, V ; Veara-bond, C ; CB80(Hard type), CS ; CB 80(Soft type), N ; NC

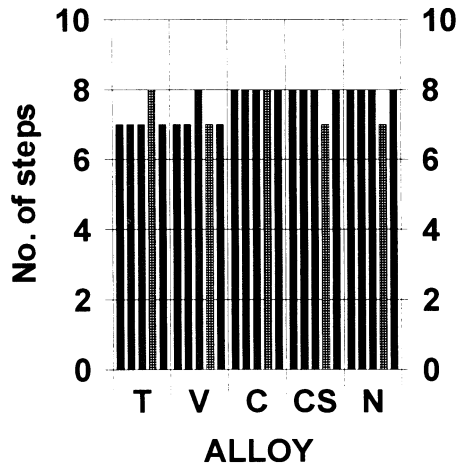


4.

< 2 >
 C 8.0±0.0000 가
 , CS N 7.8±0.4472
 , T V 7.2±0.4472
 가



5.



6.

2.

Alloys	No. of steps
T	7.2 ± 0.4472
V	7.2 ± 0.4472
C	8.0 ± 0.0000
CS	7.8 ± 0.4472
N	7.8 ± 0.4472

T ; Talladium, V ; Vera-bond, C ; CB 80 (Hard type), CS ; CB 80(Soft type), N ; NC, * $M \pm SD$

< 3 >

T 2.0 ± 0.6205 가
 , V 2.34 ± 0.7162 , C 2.30 ± 0.57101 , CS 2.06 ± 0.5128
 , N 2.64 ± 0.3847 가 가
 7 가 가
 T(5) 가 V(7)

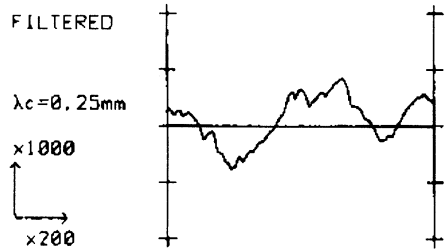
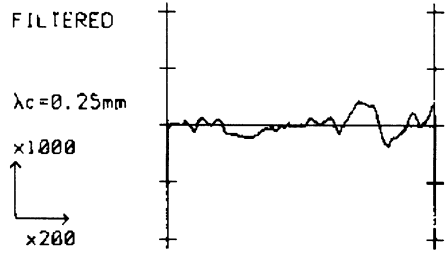
3.

Alloy	Ra(value of roughness), μm
T	2.00 ± 0.6205
V	2.34 ± 0.7162
C	2.30 ± 0.5701
CS	2.06 ± 0.5128
N	2.64 ± 0.3847

T ; Talladium, V ; Vera-bond, C ; CB 80 (Hard type), CS ; CB 80(Soft type), N ; NC, * $M \pm SD$

, T V C 가 가
 , T V 가 가

Wax pattern



7. T () V ()

mold

, mold

가

가

가

blow torch

margin

Perston

Asger, Ryge, Leinfelder

가

Vaidyanathan

, Roberto

가

, Peregrina

가

, 가

가

Serickland

mold 가

pattern

, ring

가

가

, wax

pattern,

Hamanaka

mold cavity

가

< 2>

, N

가

T 가

가

가

IV. 결 론

pattern

NI-Cr

가

1.

C

8.0±0.0000

가

, CS

N

7.8±0.4472

, T

V

7.2±0.4472

가

가

2.

T

2.0±0.6205

가

, V

, C

, CS

, N

가

참고 문헌

1. Moffa, J.P. : DHEW Publication, No. (NIH)77-1277 : 81-93, 1977.
2. Hinman, R.W., J. A. Tesk, R.P. Whitlock, E.E. Parry, and J. S. Durkowski : Int. Dent. Res., Abster. No. 374, 1981.
3. Phillip R. W.: W. B. Saunders Co., Phila - delphia, 547, 1982.
4. Gettleman, L., J.P. Moffa, A.A. Lugassy, and A.D. Guckes : J. Prosthet Dent., 30 : 424-431, 1973.
5. Sced, I. R. and J. W. McLean : Br. Dent. J., 132 : 232-234, 1972.
6. McLean, John W. : Quintesence Pub - lishing Co., Inc., 223, 1980.
7. Huget, E.F., et al : IADA annual met - ting, London, 1978.
8. Asgar, K. : DHEW Publication, No. (N - IH) 166 : 77-1227, 1977.
9. Vincent, P. F., Stevens, L., K. E., Basford : J. Prosthet. Dent., 37 : 25, 1977.
10. Nitkin, D.A., and K. Asgar : J. Am Dent., 93 : 622, 1976.
11. Huget, E. F. and S. Civijan : J. Am. Dent. Assoc., 89 : 383, 1974.
12. Duncanson, M. G. : Dent. Clin. North Am., 20 : 423, 1976.
13. Hollenback G. M. : Science and Technic of the cast Restoration, ed 1. St Louis Mosby, 1964.
14. Hollenback G.M., Rhoads J.E. : I. J. South Calif State Dent Assoc., 27 : 1-11, 1959.
15. Hollenback G. M., Rhoads J. E. : Part II. South Calif State dent Assoc., 27 : 419-434, 1959.
16. Phillips R .W., Biggs D.H. : J Am Dent Assoc., 41 : 28-37, 1950.
17. White G.E. Quintessence, 115(1993)
18. Presswood R.G. : J. Prosthet Dent., 50 : 36-39, 1983.
19. Jarvis R. H., Jenkins T. J., Tedesco L. A.: J. Prosthet Dent., 51 : 490-494, 1984.
20. Asgar K., Arfaei A.H. : J. ProsthetDent., 54 : 60-63, 1985.
21. Rasmussen S. T., Doukoudakis A. A. : J Prosthet Dent., 55 : 447-453, 1986.
22. Hong JM, Razzoog ME. : J. Prosthet Dent., 59 : 420-425, 1988.
23. Vermilyea S.G., Kuffler N. J., Tamura J.J.: J. Prosthet Dent., 50 : 651-653, 1983.
24. Rieger M.R., Tanquist R. A. : J. Prosthet Dent., 55 : 686-690, 1986.
25. Peregrina A, Schorr B. L. : J. prosthet. Dent., 64 : 162-166, 1990.
26. Strikland W.D., Sturdevant C.M. : J. Am. Dent. Assoc., 9 : 69-78, 1959.
27. Hamanaka H. Yoneyama T. Okuno O : J. Dent. Res., 68 : 1529-1533, 1989.
28. Roberto von Krammer : Quintessence Int., 28 : 127-133, 1997.
29. Preston J.D., Berger R. : Dent. Clin. North Am., 21 : 717-728, 1977.
30. Asgar K., Peyton F.A. : J. Prosthet. Dent., 9 : 449-456, 1959.
31. Ryge G., Kozak S.F., Fairhrst C. W.,: J. Am. Dent. Assoc., 54 : 746 -754, 1957.
32. Leinfelder K. F., Fairhrst C.W., Ryge G.: J. Am. Dent. Assoc., 67 : 817-821, 1963.
33. Vaidyanathan T.K., Schlman A., Niel - sen J.P., Shalita S. : J. Dent. Res., 60: 59-66, 1981.