

Firing charts CARMEN[®] ceramics



HOTLINE : +49 7231 / 803-410

Standard program:

	Base temperature	Drying time	Heat rate/ min.	Vacuum start	Vacuum end	Final temperature	Holding time
Oxide bake according to instructions of alloy manufacturer							
Opaque bake 1 + 2 Universal paste opaque	500 °C 932 °F	6 min.	75 °C 167 °F	500 °C 932 °F	930 °C 1706 °F	930 °C 1706 °F	1 min. no vacuum
Opaque bake Flash opaque	500 °C 932 °F	8 min.	50 °C 122 °F	500 °C 932 °F	960 °C 1760 °F	960 °C 1760 °F	1 min. no vacuum
Shoulder bake 1 + 2	500 °C 932 °F	6 min.	50 °C 122 °F	500 °C 932 °F	900 °C 1652 °F	900 °C 1652 °F	1 min. no vacuum
Dentin bake 1	500 °C 932 °F	8 min.	50 °C 122 °F	500 °C 932 °F	870 °C 1598 °F	870 °C 1598 °F	1 min. no vacuum
Dentin bake 2	500 °C 932 °F	6 min.	50 °C 122 °F	500 °C 932 °F	870 °C 1598 °F	870 °C 1598 °F	1 min. no vacuum
Glaze bake	500 °C 932 °F	4 min.	75 °C 167 °F	-	-	870 °C 1598 °F	1 min. no vacuum

This data is valid for fine-silver calibrated furnaces.
Longer drying times will optimize the results.

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	START	□	↑	→	VAC LEVEL	°C ↗ min.	END	→ min:se c	(V)	↘ 1	2 ↘
Opaque bake 1 + 2 Universal paste opaque	500 °C 932 °F	0	6	0	9	75 °C 167 °F	930 °C 1706 °F	1:00		0	0
Opaque bake Flash opaque	500 °C 932 °F	0	8	0	9	50 °C 122 °F	960 °C 1760 °F	1:00		0	0
Shoulder bake 1 + 2	500 °C 932 °F	0	6	2	9	50 °C 122 °F	900 °C 1652 °F	1:00		0	0
Dentin bake 1	500 °C 932 °F	0	6	2	9	50 °C 122 °F	870 °C 1598 °F	1:00		0	0
Dentin bake 2	500 °C 932 °F	0	4	2	9	50 °C 122 °F	870 °C 1598 °F	1:00		0	0
Glaze bake	500 °C 932 °F	0	4	0	0	75 °C 167 °F	870 °C 1598 °F	1:00		0	0

Austromat 3001

Opaque bake 1 + 2 Universal paste opaque	C500 T360 · L9 V9 TO75 · C930 V0 T60 CO LO T2 C500
Opaque bake Flash opaque	C500 T480 · L9 V9 TO50 · C960 V0 T60 CO LO T2 C500
Shoulder bake 1 + 2	C500 T360 · L9 V9 TO50 · C900 V0 T60 CO LO T2 C500
Dentin bake 1	C500 T360 T120 · L9 V9 TO50 · C870 V0 T60 CO LO T2 C500
Dentin bake 2	C500 T360 T120 · L9 V9 TO50 · C870 V0 T60 CO LO T2 C500
Glaze bake	C500 T240 · L9 TO75 · C870 T60 - T120 CO LO T2 C500

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Multimat MCII (Mach1/Mach2)

	Preheating temperature	Drying (min.)	Preheating (min.)	Vacuum (min.)	Firing time (min.)	Firing temperature	Heat rate/min.	Vacuum
Opaque bake 1 + 2 Universal paste opaque	500 °C 932 °F	6	1	1,0	2,0	930 °C 1706 °F	75 °C 167 °F	50 122
Opaque bake Flash opaque	500 °C 932 °F	4	1	1,0	2,0	960 °C 1760 °F	50 °C 122 °F	50 122
Shoulder bake 1 + 2	500 °C 932 °F	6	1	1,0	2,0	920 °C 1688 °F	50 °C 122 °F	50 122
Dentin bake 1	500 °C 932 °F	6	1	1,0	2,0	880 °C 1616 °F	50 °C 122 °F	50 122
Dentin bake 2	500 °C 932 °F	4	1	1,0	2,0	880 °C 1616 °F	50 °C 122 °F	50 122
Glaze bake	500 °C 932 °F	3	1	---	1,5-3,0	880 °C 1616 °F	75 °C 167 °F	---

P90/P95

	Base temperature	Heat rate/min.	Firing temperature	Closing time (min.)	Holding time (min.)	Vacuum ON	Vacuum OFF
Opaque bake 1 + 2 Universal paste opaque	400 °C 752 °F	75 °C 167 °F	930 °C 1706 °F	8 *	1	400 °C 752 °F	929 °C 1704 °F
Opaque bake Flash opaque	400 °C 752 °F	50 °C 122 °F	950 °C 1742 °F	8	1	400 °C 752 °F	949 °C 1740 °F
Shoulder bake 1 + 2	400 °C 752 °F	50 °C 122 °F	900 °C 1652 °F	6	1	400 °C 752 °F	899 °C 1650 °F
Dentin bake 1	400 °C 752 °F	50 °C 122 °F	870 °C 1598 °F	8	1	400 °C 752 °F	869 °C 1596 °F
Dentin bake 2	400 °C 752 °F	50 °C 122 °F	870 °C 1598 °F	6	1	400 °C 752 °F	869 °C 1596 °F
Glaze bake	400 °C 752 °F	75 °C 167 °F	870 °C 1598 °F	4	1-3	---	---

* 8 min. closing time (depending on furnace)

Vacumat

	Final temperature	Predrying time (min.)	Heat rate (min.)	Holding time	Vacuum (min.)	Cooling
Opaque bake 1 + 2 Universal paste opaque	930 °C 1706 °F	6	7	1	7	---
Opaque bake Flash opaque	960 °C 1760 °F	8	9	1	9	---
Shoulder bake 1 + 2	900 °C 1652 °F	6	8	1	8	---
Dentin bake 1	870 °C 1598 °F	8	7	1	7	---
Dentin bake 2	870 °C 1598 °F	6	7	1	7	---
Glaze bake	870 °C 1598 °F	4	6	1-3	---	---

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Remarks:

- Base temperature of the dentin bakes has to be lower than 500°C for all furnaces.
- High precious alloys must eventually be treated with acid after the oxide bake (see manufacturer's instructions).
- The CARMEN[®] system does not require glaze material. In general, additional glaze can be obtained by prolonging the holding time. Do not increase the temperature.

Note:

The values given are only guidelines and should be adjusted individually depending on the respective situation, age and manufacturer of the furnace.

The firing charts are based on newly fine-silver calibrated furnaces.

All data have been compiled with due care, however, they cannot be guaranteed.

Furnace control:

In order to adjust the firing temperature of your furnace, we recommend a firing test, as this is the only way to judge the correct bake sequence. For that purpose, use CARMEN[®] NT material (neutral transparent) mixed with modelling liquid LV universal and fire at the following temperatures:

- base temperature 500 °C / 932 °F
- drying time 8 minutes
- heat rate 50 °C / 122 °F per min.
- vacuum start 500 °C / 932 °F
- vacuum end at final temperature 870 °C / 1598 °F
- holding time 1 minute without vacuum

Put the bake specimen on platinum foil, not on firing cotton, as this may cause dulling. The temperature of the furnace is correct when the specimen is clear and translucent with sharp edges. If the final temperature is too high, the specimen has a glossy appearance and the edges are not sharply defined. If the final temperature is too low, the specimen appears milky white. According to your result, please raise or lower the final temperature in steps of 10°C/50°F and fire a new specimen.

Important:

Maintain furnace always closed. Close furnace after use or switch to night modus to prevent up-take of humidity.