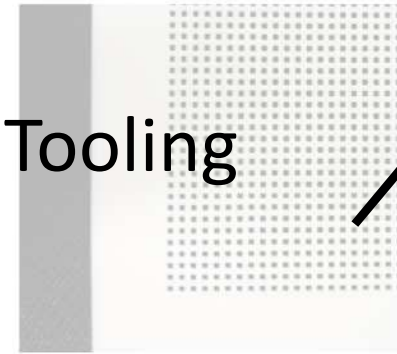
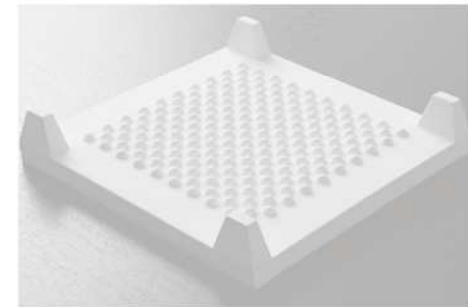
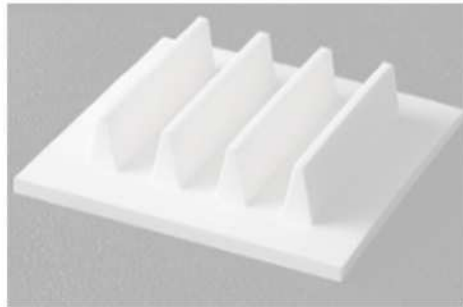
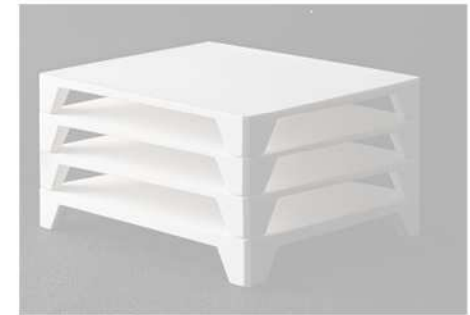


Lightweight Ceramic Sintering Tooling



Product Overview - Sintering Tooling -



NIKKO Company
Functional Ceramics Production Div. Sales Dept.

Address : 383 Ainoki-machi, Hakusan, Ishikawa,
924-8686 JAPAN

TEL : 81-76-276-2115

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Sintering tooling/Introduction

❑ Ceramic Sintering Tooling







- Ceramics offer high thermal resistivity and chemical resistivity
- Commonly used for sintering tooling of electronic components

❑ Features of NIKKO Sintering Tooling Products

- Superior surface flatness – $Ra = 0.1 - 0.3\mu m$
- Thin plates (less than 1.6mmt) make it lightweight
- Custom designs available

Sintering tooling/Introduction

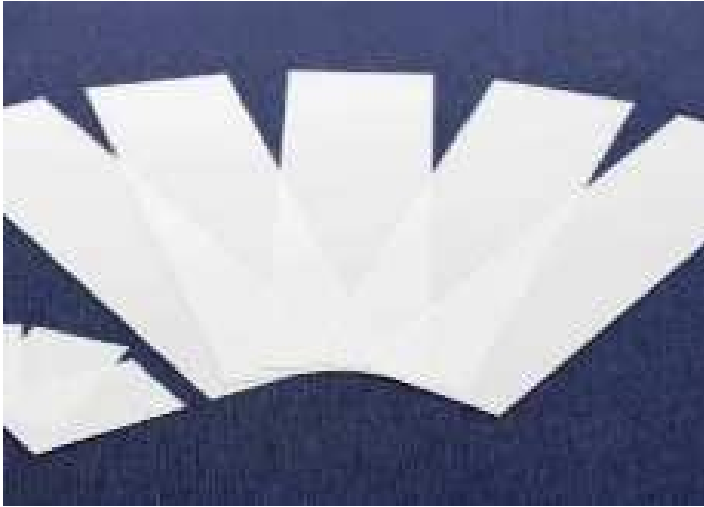
Available in various thicknesses, mesh types, and custom designs!

Thickness	Porous	Form	Samples	Page
Thin 1.6mmt or less	No	Square		P4
	Yes	Square		P5-6
	No	Square mesh		P7
Thick 3mmt or more	No	With Supports		P8
	No	Large disc		P9
	No	Custom		P10

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Sintering tooling/Introduction

Standard Alumina Substrate NA-96_Thin plate (nonporous, square)



96% alumina substrate (NA-96)

Properties		
Item	Unit	Standard alumina NA-96
Material	-	96% alumina
Porosity	%	0
Density	g/cm ³	3.7
Bending strength	MPa	400
Surface roughness Ra	μm	0.3
Maximum temperature	°C	-
Maximum size	mm	350x350
Standard thickness	mm	0.38~1.6

Please ask for other sizes, thicknesses, and characteristics

Sintering tooling/Introduction

High-porosity substrates NA-99F_Thin plate (porous, square)



High-porosity substrate NA-99F

Properties		
Item	Unit	High-porosity substrate NA-99F
Material	-	99% alumina
Porosity	%	25~35
Density	g/cm ³	2.9
Bending strength	MPa	110
Surface roughness Ra	μm	0.2
Maximum temperature	°C	1300
Maximum size	mm	300x200
Standard thickness	mm	0.5~1.6

Please ask for other sizes, thicknesses, and characteristics

Sintering tooling/Introduction

In addition to NA-99F, base materials with various porosity and maximum operating temperatures are available

Properties

Item	Unit	Standard alumina		High-porosity substrate	
		NA-96	NA-99F	NA-99G2	NA-99G3
Material	-	96% alumina	99% alumina	99% alumina	99% alumina
Porosity	%	0	25~35	30~40	30~40
Density	g/cm ³	3.7	2.9	2.5	2.6
Bending strength	MPa	400	110	75	130
Surface roughness Ra	μm	0.3	0.2	0.2	0.1
Maximum temperature	°C	-	1300	1450	1100
Maximum size	mm	350 x 350	300 x 200	139.7 x 190.5	
Standard thickness	mm	0.38~1.6	0.5~1.6	0.5~1.0	0.25~0.5

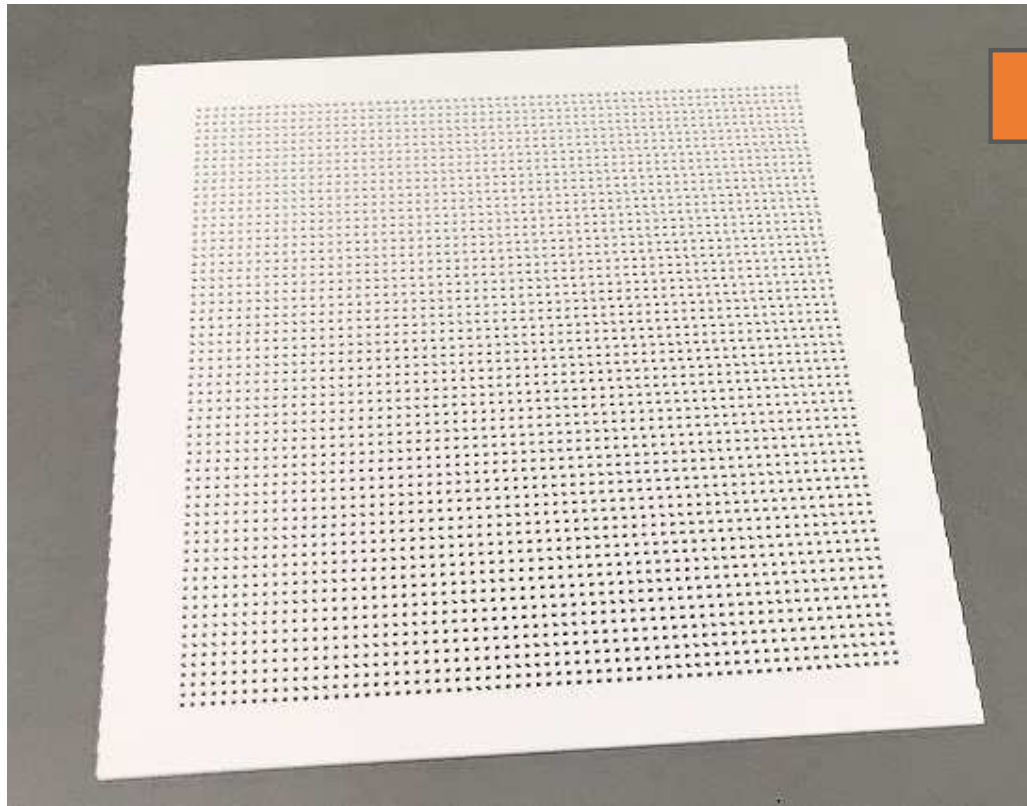
Please ask for other sizes, thicknesses, and characteristics

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Sintering tooling/Introduction

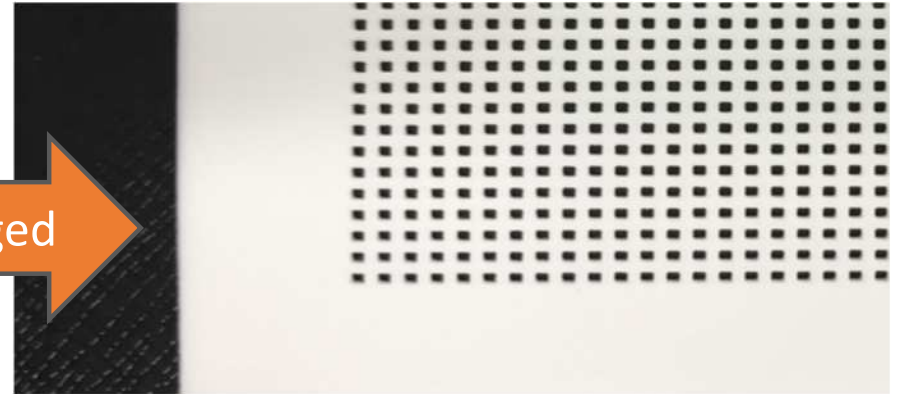
Square mesh substrate (thin plate, nonporous)

In development



Sample

enlarged



Material	96% alumina
Thickness	1.0mm
Substrate size	120mm x 120mm
Mesh area size	100mm x 100mm
Mesh diameter	0.8mm

Please ask for other sizes, thicknesses, and characteristics

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Sintering tooling/Introduction

With Supports (Thick plate, nonporous)

In development



Sample

With Support Sample	
Material	96% alumina
Porosity	0%
Substrate size	164mm x 130mm
Thickness	4mm
Height	20mm

Please ask for other sizes, thicknesses, and characteristics

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Sintering tooling/Introduction

Large disc (Thick plate, nonporous)

In development



Sample

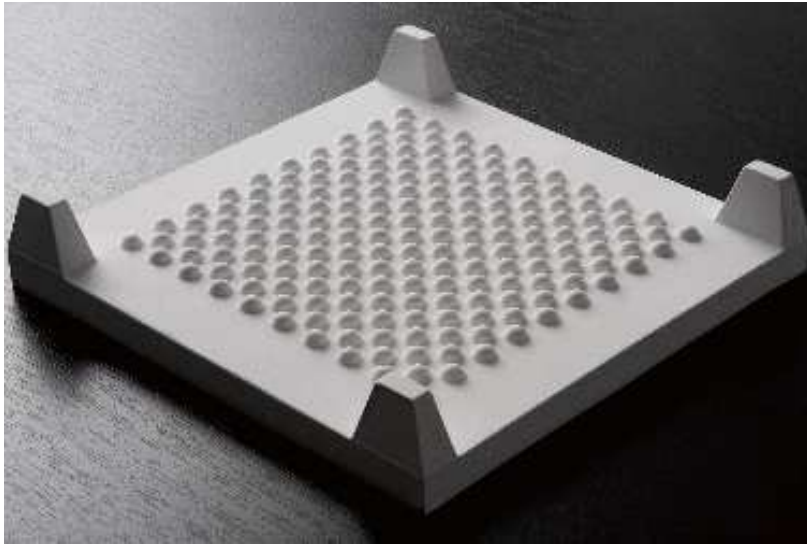
Large disc Sample	
Material	96% alumina
Porosity	0%
Substrate size	250Φ mm
Thickness	4mm

Please ask for other sizes, thicknesses, and characteristics

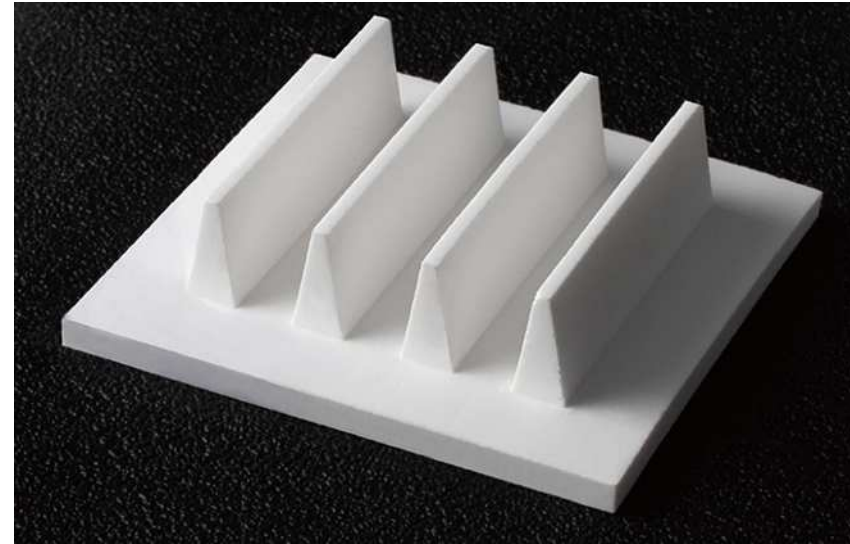
Sintering tooling/Introduction

Custom Designs (Thick plate, nonporous)

In development



Sample



Sample 1

Customized form **Sample 1**

Material	96% alumina
Porosity	0%
Substrate size	80mm x 80mm
Thickness	4mm
Height (plate thickness + protrusion tip)	20mm



Sample

Please ask for other sizes, thicknesses, and characteristics

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NIKKO COMPANY

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