

Molded shapes for molten aluminum vessel

TOMBO™ No. 4723

LUMISUL™

LUMISUL™ is molded and sintered shapes for use in the inner lining of the molten aluminum vessel where LUMISUL™ is in direct contact with molten aluminum. LUMISUL™ is excellent in non wettability, mechanical strength, thermal insulation and machinability. We have a proprietary molding technology that allows us to respond to requests for various shapes.



Advantages

- **Excellent in non wettability and inertness to erosion (erosion resistance)**

LUMISUL™ is excellent in non wettability and inertness to erosion (erosion resistance) to molten aluminum.

- **Excellent in thermal insulation**

Since LUMISUL™ is lighter in weight and lower in thermal conductivity than conventional refractory products, temperature drop during the transfer of molten aluminum can be reduced.

- **Sintered product**

Since LUMISUL™ is thoroughly factory-sintered, it contains almost no moisture, which is harmful to molten aluminum, and is excellent in thermostability.

- **Ease of handling**

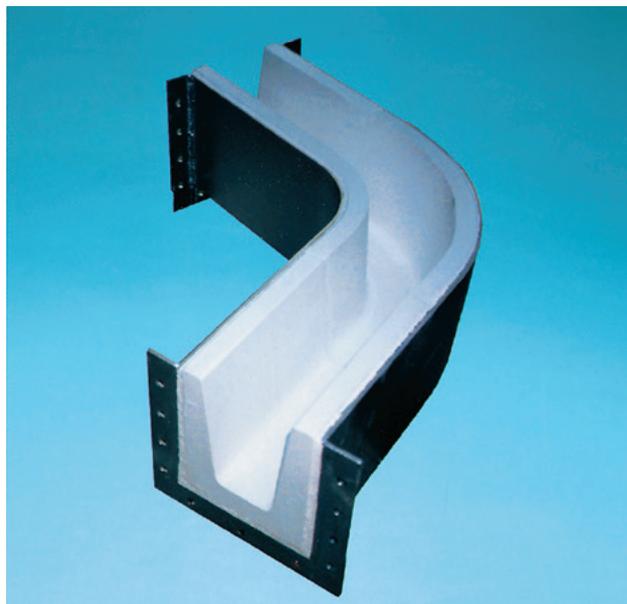
Machining is not needed and product is easy to handle since LUMISUL™ is a formed product.

- **Ease of machining**

Machining is easy if needed.

Applications

- Launders, Baths for holding furnace, Inner sleeves, Transfer pipes, Troughs, Pouring gates, Ladles, Stokes and various molded shapes

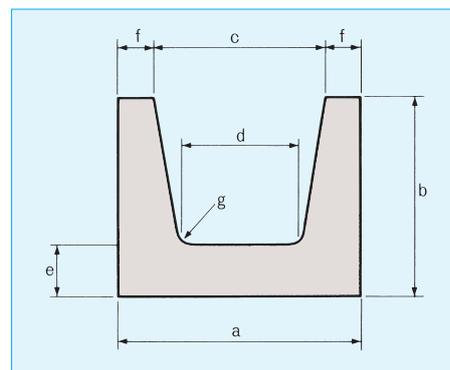


Laundry

Standard dimensions (Launders)

Product type	Standard dimensions (mm)								Unit weight (kg)
	a	b	c	d	e	f	g	Length	
LS-4	194	233	134	90	40	30	R15	800	26
LS-5	220	200	150	120	50	35	R20		26
LS-6	280	150	180	150	50	50	R15		28
LS-7	175	105	115	95	35	30	R15		12
LS-8	104	101	64	54	26	20	R15		7
LS-11	280	240	200	160	50	40	R30		37
LS-13	320	300	240	210	60	40	R40		47

※Please contact us for other shapes and dimensions.



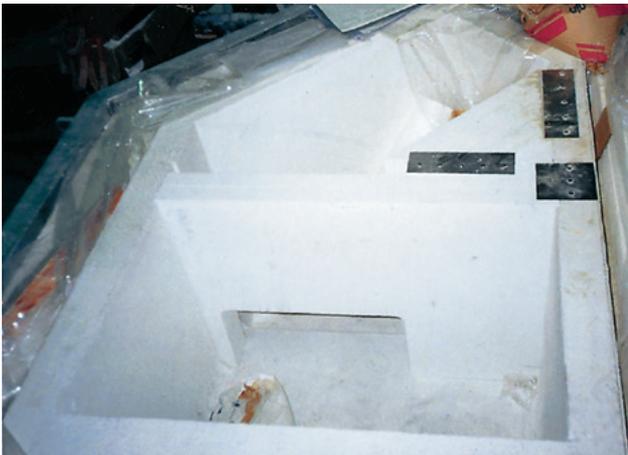
Physical properties

Products	LD	SN-X	FS-6	SN-F	AK	AD	AC
Properties	General-type			Glass fiber reinforced-type	High density-type		
	Standard	Non-wettability	Thermal shock resistance	Non-fragile	Standard	Heat storage	Non-wettability
Main raw material	Wollastonite	Silicon nitride	Amorphous silica	Silicon nitride Glass fiber	Chamotte	Silica carbide	Zircon
Maximum service temperature (°C)	1000	1000	1000	1000	1550	1200	1600
Bulk density (g/cm ³)	1.35	1.70	1.80	1.65	2.35	2.60	3.00
Bending strength (MPa)	4	6	7.5	5	14	14	17
Compressive strength (MPa)	10	20	35	10	60	63	100
Coefficient of thermal expansion (×10 ⁻⁶ /°C)	7	3	1	3	5	3	5
Thermal conductivity (W/(m·K))	0.34 (700°C)	0.73 (700°C)	0.84 (700°C)	0.73 (700°C)	1.9 (500°C)	11.0 (500°C)	2.7 (500°C)

※The above figures are actual values measured by Nichias and not specification values.

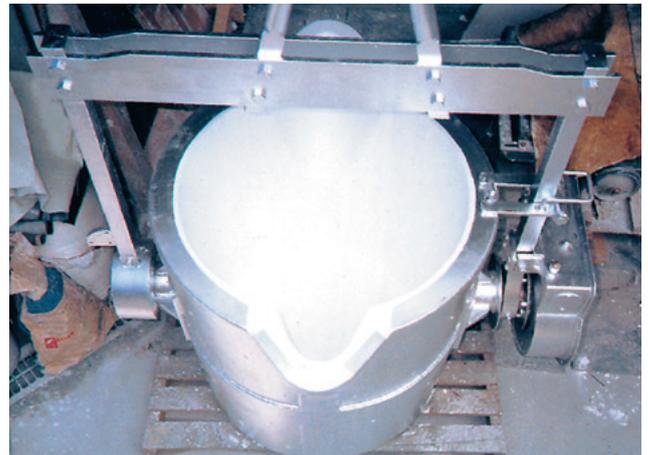
Baths for holding furnace

Various molded shapes of LUMISUL™ that can contain up to 2 metric tons of molten aluminum are available.



Bath

Ladle



Ladle

Cautions for handing the products

- The minimum thickness of LUMISUL™ is 20mm.
- Please dry and preheat because there is a possibility of moisture absorption during storage.
[Standard pre-heating conditions] Rate of temperature increase: 25°C per hour
Keep the temperature: 700°C for 5hours
- Please do not use in direct contact with flux.