

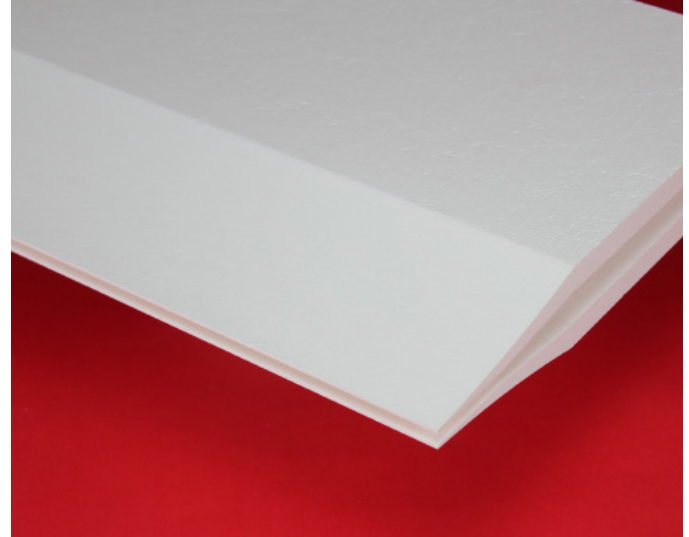


## Castertip Type NKO+

### General Information

ZIRCAR Ceramics' Castertip Type NKO+ is a premium-grade combination of shot-free refractory ceramic fiber and inorganic binders. This high-strength, low-mass refractory material delivers world class "hard tip" performance when used on continuous thin-strip aluminum casting equipment. NKO+'s proprietary manufacturing process makes it completely inorganic with extremely low chemically-combined water. Its unique distribution of binder gives NKO+ high strength and elasticity making it capable of very long casting campaigns. NKO+ is typically coated with Boron Nitride or lined with ceramic-fiber paper.

ZIRCAR Ceramics' NKO+ manufacturing process is set up to manufacture castertips in widths up to 2413mm (95.0"). Custom, precision-crafted Castertip Assemblies are also manufactured, which enable users to lower their cost of ownership by reducing their tip shop costs.



### Characteristics & Properties

Typical Composition, wt %	
Al <sub>2</sub> O <sub>3</sub>	27
SiO <sub>2</sub>	73
Na <sub>2</sub> O	< 0.25
TiO <sub>2</sub>	< 0.05
Fe <sub>2</sub> O <sub>3</sub>	< 0.05
Density, g/cc (pcf)	0.64 (40)
Loss on Ignition, %	0
Surface Area, m <sup>2</sup> /g	~48
Modulus of Rupture**, MPa (psi)	3.1 (450)
Hardness, average, A scale	100
Linear Shrinkage‡, %	
24 hrs at 800°C (1472°F)	0.4
24 hrs at 1000°C (1832°F)	2.2
Thermal Conductivity**, W/Mk (BTU/hr ft <sup>2</sup> °F)	
316°C (600°F)	0.12 (0.83)
538°C (1000°F)	0.15 (1.06)
760°C (1400°F)	0.19 (1.30)

The data presented herein is intended to help the user to determine the appropriateness of this material for their application.

This data is a nominal representation of this product's properties and characteristics and therefore should not be used in preparing specifications.

\*\* Properties expressed parallel to thickness. ‡ Properties expressed perpendicular to thickness.

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Technical Data Bulletin

Castertip Type NKO+

[www.zircarceramics.com](http://www.zircarceramics.com)

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## Suggested Applications

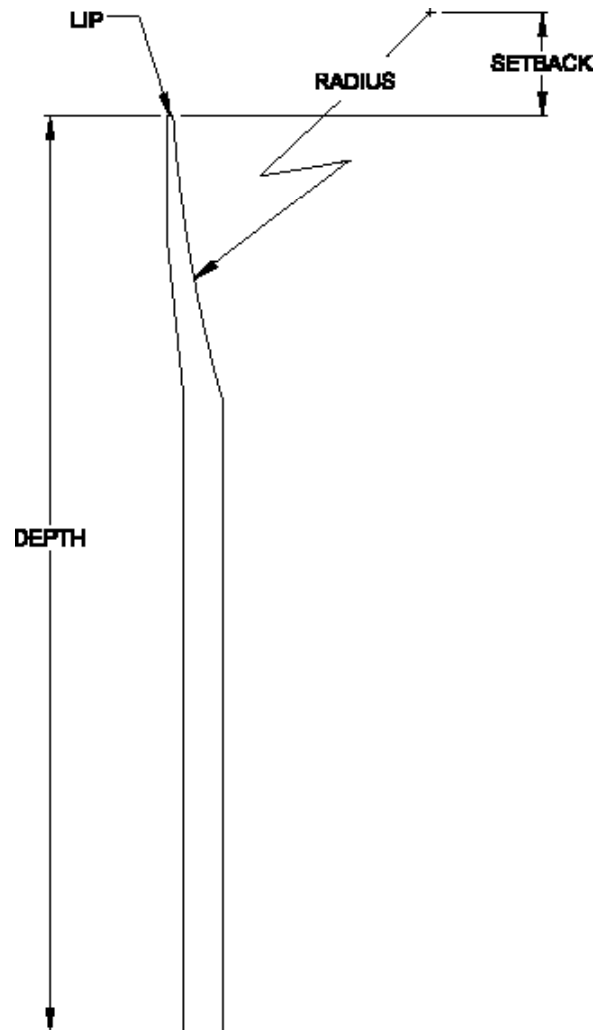
Castertips for continuous casting of aluminum strip.

## Availability

**Standard NKO+ Castertips** and Castertip Assemblies are made to order. Four Standard profiles are available and are described in the table below.

**Non Standard NKO+ Castertips** and Castertip Assemblies are also available.

Castertip Tip Profile, Drawing Number	Radius , mm (in.)	Lip Thickness, mm (in.)	Max width, mm (in.)	Max depth, mm (in.)
<a href="#">Profile 3.</a> <a href="#">D# 1167-00</a>	327.03 (12.875)	1.80 (0.071)	1803.4 (71.0)	315.01 (12.40)
<a href="#">Profile 4.</a> <a href="#">D# 1164-00</a>	495.30 (19.500)	2.03 (0.080)	1870.00 (73.6)	342.9 (13.50)
<a href="#">Profile 6.</a> <a href="#">D# 1166-00</a>	559.99 (22.047)	2.05 (0.081)	2360mm (93.0)	368.3 (14.50)
<a href="#">Profile 7.</a> <a href="#">D# 1165-00</a>	783.45 (30.844)	2.20 (0.087)	2413mm (95.0)	368.3 (14.50)



## To Order

Contact ZIRCAR Ceramics, provide drawings describing castertip requirements, and we will provide an offer.



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