



Product Brochures

Casting and Transfer Ladles



P.O. BOX 264334
THREE RIVERS. RSA. 1935.
9A TELFORD STEET
DUNCANVILLE
VEREENIGING. RSA. 1930

TEL: +27 (016) 422 9955
FAX: +27 (016) 422 9991
CELL: +27(0) 82 774 3632
E-MAIL: info@deltaref.com
Website: www.deltaref.com

SACAS
ISO 9001:2015

SACAS
ISO 14001:2015

SACAS
OHSAS 18001:2007

Iron & Steel Industry

Products and services

Background of Delta Refractories

We supply the following services:

- Production of acid and basic monolithic refractories
- Design and development of own mixes in accordance with the client's needs
- Representation of a number of overseas and local suppliers
- An independent testing laboratory
- Turnkey project management
- Design and estimation, including CAD drawings
- Refractory consultation and arbitration

Our production facility:

- Is situated in Vereeniging, 60 km south of Johannesburg
- Has a capacity of ~1600 ton per month for single shift production
- Employs ~30 permanent staff

Products and services range:

- Ramming, gunning, plaster, pumpable, mortars and others.
- Dense and light weight castables (acid and basic)
- Special monolithics for continuous casting
- Special monolithic refractory materials on request
- Imported products:
 - Fusion cast refractories from Motim in Hungary.
 - Magnesia chrome, SiC, magnesia carbon, magnesia alumina carbon and others direct from Wonjin in Korea and China
- Installation services and supervision over product application are available
- Consultancy services with regards to process development in pyro-metallurgical industries

Product Range	Description
Delta Cast [®]	LCC, ULCC and NCC range 1300 to 2000 OC
Delta Crete [®]	Conventional castable range 900 to 2000 OC
Delta Gun [®]	Acid and basic gunning, hot/cold, 1200 to 2000 OC
Delta Ram [®]	Acid and basic ramming for ladles and furnaces
Delta Plast [®]	Acid and basic plaster materials 1300 to 1800 OC
Delta Flow [®]	Free flow acid range 1300 to 2000 OC
Delta Fiber Crete [®]	Stainless steel fiber and ceramic matrix composite materials
Delta Floc [®]	Slag coagulant range
Delta Cover [®]	Ladle and tundish insulating cover materials
Delta Thermo Cover [®]	Range of refractory paints for protection of carbon containing refractories
Delta Chem [®]	A cement free chemically bonded range 1300 to 2000 OC
Delta Pump [®]	Range of pumpable materials 1300 to 2000 OC
Delta Set [®]	Acid and basic mortar ranges 1300 to 2000 OC
Delta Fill [®]	Ladle well filler and furnace taphole fillers
Delta Melt [®]	Slag viscosity modifiers

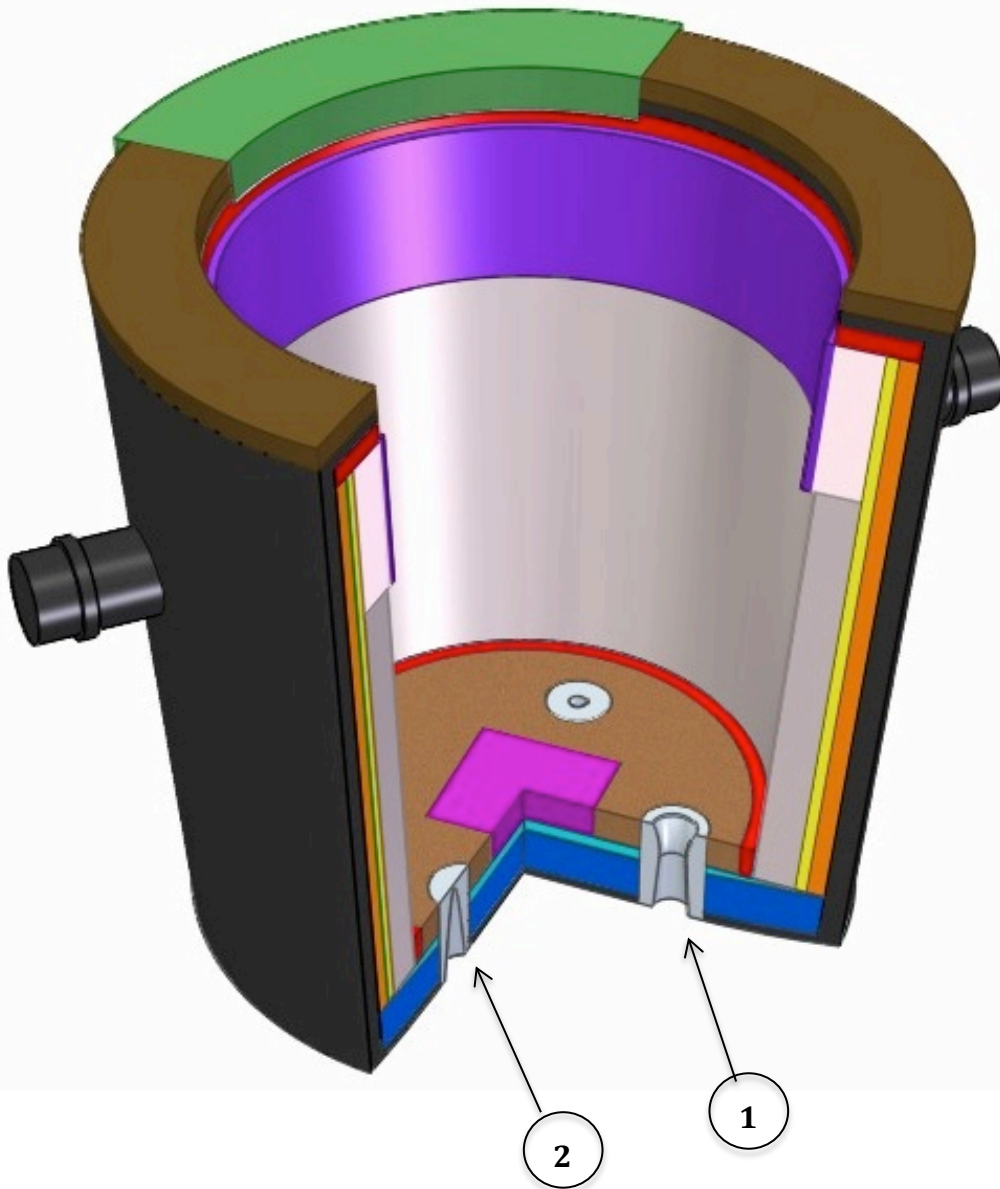
Delta Refractories (Pty) Ltd
9a Telford Street
Vereeniging, South Africa

Telephone
+27 16 422 9955

Website
www.deltaref.com

Iron & Steel Industry

Casting Ladle



Safety lining	
	Delta Cast® 300 Delta Cast® 415 Delta Chem® 400 Delta Ram® 300
Ladle backfill	
	Delta Ram® 203 Delta Ram® 222 Delta Ram® 300 Delta Ram® 304
Ladle lip ring	
	Delta Crete® 400 Delta Fiber Crete® 200
Floor leveling	
	Delta Ram® 153 Delta Ram® 200 Delta Ram® 203
Floor safety lining	
	Delta Crete® 200 Delta Crete® 215 Delta Cast® 206
Impact (Wall, Floor)	
	Delta Cast® 105 Delta Cast® 106 Delta Cast® 150 Delta Chem® 200 Delta Crete® 200
Floor ramming	
	Delta Ram® 153 Delta Ram® 200 Delta Ram® 203 Delta Ram® 219 Delta Ram® 237
Slag line gunning	
	Delta Gun® 203
Casting ladle cover	
	Delta Cover® 300 Delta Cover® 400 Delta Cover® 450
Well filler sand	
	Delta Fill® 201



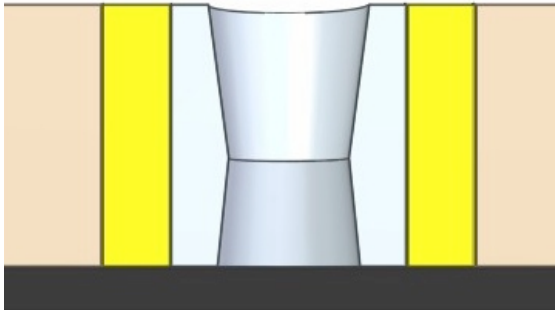
Delta Refractories (Pty) Ltd
9a Telford Street
Vereeniging, South Africa

Telephone
+27 16 422 9955

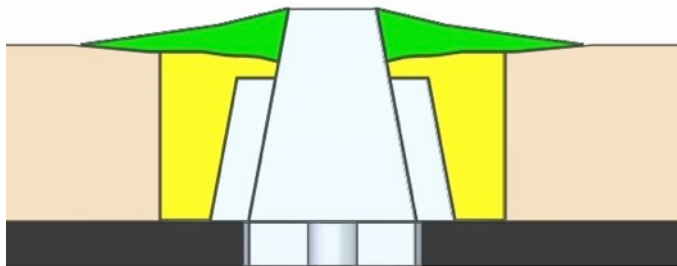
Website
www.deltaref.com

Iron & Steel Industry

1



2



Well & Purge blocks

Delta Cast® 100
Delta Cast® 102
Delta Cast® 105
Delta Cast® 106
Delta Chem® 200
Delta Crete® 200

Ramming around blocks

Delta Ram® 203
Delta Ram® 215
Delta Chem® 200
Delta Cover® 300

Hot repair gunning

Delta Gun® 203
Delta Ram® 219
Delta Chem® 208



Hot Repair of Casting Ladles

Note:

- Both materials to be applied onto red-hot ladle floor.
- Both materials can be mixed to pouring consistency with lots of water and poured onto the areas to be patched.
- Both materials can also be applied dry.
- With less water, both materials can be vibro-casted, gunned or rammed, both hot and cold.
- No curing time required.

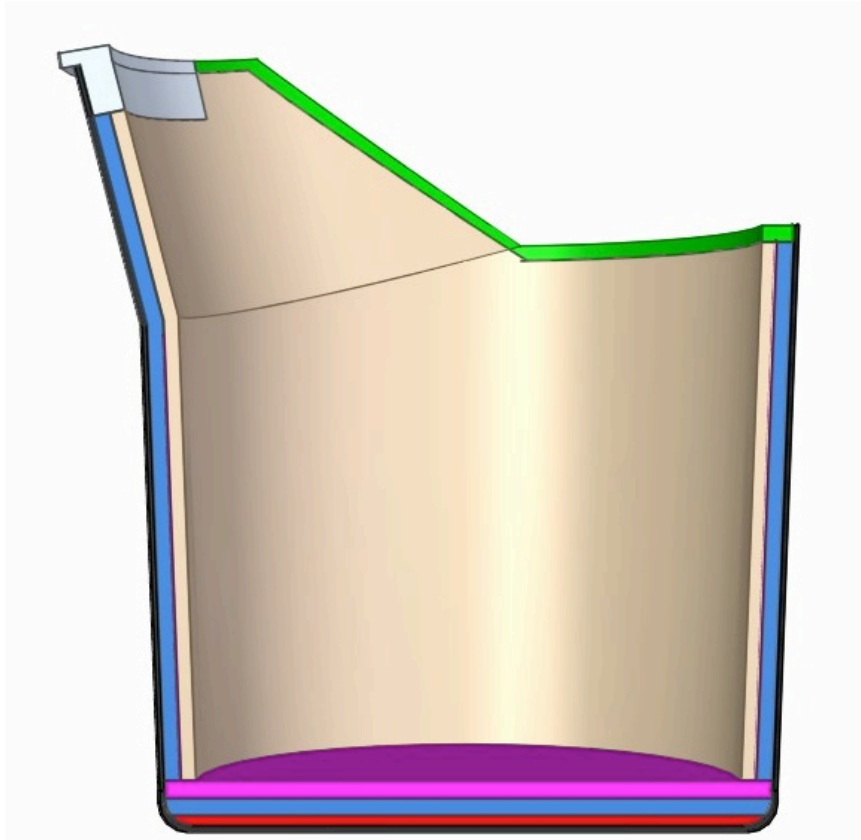
Delta Refractories (Pty) Ltd
9a Telford Street
Vereeniging, South Africa

Telephone
+27 16 422 9955

Website
www.deltaref.com

Iron & Steel Industry

Transfer Ladle



Floor	Delta Cast [®] 324 Delta Cast [®] 415 Delta Cast [®] 603 Delta Cast [®] 605	Working lining	Delta Cast [®] 400 Delta Cast [®] 501
Lip ring	Delta Crete [®] 400 Delta Gun [®] 400 Delta Fiber Crete [®] 200	Leveling layer	Delta Cast [®] 260 Delta Cast [®] 327
Isolation	Delta Gun [®] 1001 Delta Plast [®] 1004	Ladle cover	Delta Cover [®] 400 Delta Cover [®] 450
		Maintenance gunning	Delta Gun [®] 400

Delta Refractories (Pty) Ltd
9a Telford Street
Vereeniging, South Africa

Telephone
+27 16 422 9955

Website
www.deltaref.com

Product data sheet for Casting and Transfer Ladles

Description	Remarks	Raw material description	Max temp ° C	Max grain size mm	SiO ₂	Al ₂ O ₃	CaO + MgO	Na ₂ O + K ₂ O	Fe ₂ O ₃ + TiO ₂	Cr ₂ O ₃	CCS MPa 110C	BD g/cm ³
Delta Cast® 100	LCC	Tab	1900	6	<0.1	96.0	1.5				>35	3.15
Delta Cast® 102	LCC	Spinel forming	1900	6	<0.2	94.0	5.4				>70	3.00
Delta Cast® 105	LCC	Spinel	1900	6	<0.2	94.5	5.4				>70	3.00
Delta Cast® 106	LCC	Tab	1900	6	<0.1	99.0	<0.95				120	3.30
Delta Cast® 150	LCC	Tab	1850	6	<0.1	98.0	1.8				>85	3.00
Delta Cast® 206	LCC	Fused Alumina	1800	6	1.6	93.7	2.6		1.8		>70	3.20
Delta Cast® 260	LCC	Andalusite	1750	6	30.0	69.0	2.5		1.8		>80	>2.8
Delta Cast® 300	LCC	Andalusite	1700	6	28.0	68.0	1.8		1.5		>75	>2.75
Delta Cast® 324	LCC	Andalusite	1700	8	36.0	61.0	1.8		0.7		>60	2.60
Delta Cast® 327	LCC	Bauxite	1700	8	18.0	76.6	2.4		3.1		>80	>2.65
Delta Cast® 400	LCC	Andalusite	1600	6	40.0	57.0	2.0		0.7		>50	2.60
Delta Cast® 415 Rev 5	LCC	Andalusite	1600	6	32.0	64.0	2.5		1.3		>70	>2.7
Delta Cast® 501	LCC	Chamotte	1500	6	52.6	43.4	1.5	0.2	2.4		58	2.30
Delta Cast® 603	MCC	Chamotte & Andalusite	1400	6	47.0	45.0	6.0	0.2	0.9		>70	2.18
Delta Cast® 605	MCC	Chamotte & Andalusite	1400	6	47.6	44.2	6.2	0.2	1.7		>50	2.09
Delta Chem® 200	NCC	Tab	1800	6	2.3	96.7					>50	>3.1
Delta Chem® 208	NCC	Magnesia	1800	6	8.0	<3	>85	<0.1	<2		>80	2.70
Delta Chem® 400	NCC	Andalusite	1600	6	39.0	60.0					>50	2.50
Delta Cover® 300	Insulation	Diatomite	1700	1	>90						-	0.30
Delta Cover® 400	Insulation	Diatomite	1600	1	>90						-	0.20
Delta Cover® 450	Insulation	Expanded Clay	1550	1	50.0	37.0	6.0	2.0	3.0		-	<1.0
Delta Crete® 200	HAC	Tab	1800	6	95.6	4.4					>85	2.98
Delta Crete® 215	HAC	Fused Alumina	1800	6	<0.5	>80	4.5		<0.3		>110	>3.1
Delta Crete® 400	HAC	Andalusite	1600	6	<32	>58	<9	0.1	2.4		>70	2.60
Delta Fibre Crete® 200	Composite	SSW & Tab	1200	6		>90	<10				>120	3.2
Delta Gun® 1001	Filling Sand	Chromite and Silica	1800	1	25.0	12.0	9.0		19.0	32.0	-	>2.2
Delta Gun® 1001	HAC	Perlite	1000	3	39.3	29.6	24.9	5.2	1.1		>3	0.57
Delta Gun® 203	NCC	Magnesia	1800	3	4.8	3.6	87.0	2.0	3.0		-	2.72
Delta Gun® 400	HAC	Andalusite	1600	3	28.0	61.0	8.5		2.4		>50	2.40
Delta Plast® 1004	HAC	Perlite	1000	2	48.8	26.5	18.9	5.2	0.6		4	0.50
Delta Ram® 153	Tar-free	Magnesia	1850	6	2.0	2.0	93.0	0.1	2.0		10	2.80
Delta Ram® 200	Tar	Magnesia	1800	6	2.0	2.0	93.0	0.1	2.0		10	2.80
Delta Ram® 203	Organic	Magnesia	1800	6	2.0	2.0	93.0	0.1	2.0		10	2.80
Delta Ram® 215	Tar	Magnesia	1800	6	<2.5	<3	94.0				>45	>2.75
Delta Ram® 219	Chemical	Magnesia	1800	6	<2.5	<3	94.0				>45	>2.75
Delta Ram® 222	Silicate	Magnesia	1800	6	3.0	<5	90.0				>30	>2.8
Delta Ram® 237	Resin	Magnesia	1800	6	<2.5	<3	94.0				>45	>2.75
Delta Ram® 300	Chemical	Andalusite	1700	5	35.0	62.0	1.0	1.0	1.0		>2.2	2.40
Delta Ram® 304	Chemical	Bauxite	1700	6	15.0	80.0		1.0	2.0		>4	2.55

Legend:

HAC - High Alumina Cement
NCC - No Cement Castable
LCC - Low Cement Castable
MCC - Medium Cement Castable
SSW - Stainless Steel Wire