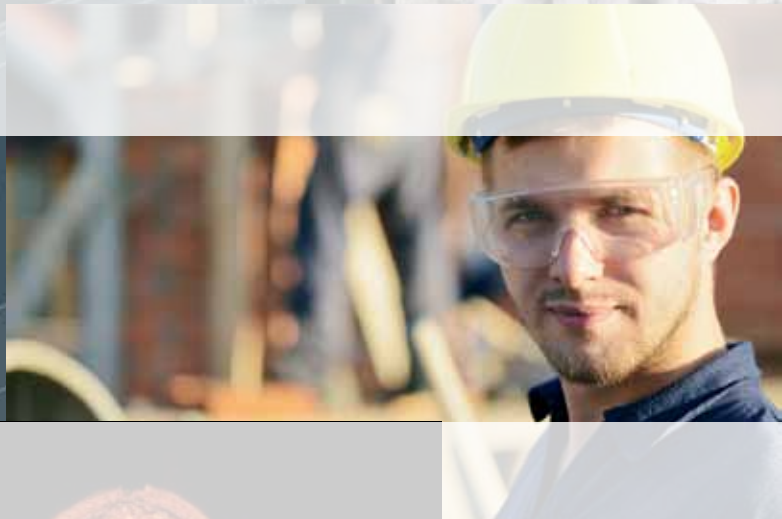


FIRECLAYS

FOR FOUNDRY



Production Since 1958

DESCRIZIONE:

I prodotti REFRAX sono mattoni sagomati in argilla refrattaria con struttura a grana fine per una maggiore resistenza alla penetrazione del metallo fuso. I prodotti REFRAX sono caratterizzati da ottima facilità di lavorazione attraverso molatura o taglio.

USO:

I prodotti REFRAX sono usati nella composizione di canali di colata destinati alla realizzazione di getti in acciaio e ghisa di tutte le dimensioni e nella fabbricazione di tubi asta e sedie per siviera.

SPECIFICHE:

Proprietà / Property:	Valore garantito Guaranteed Value	Procedura test Test Procedure
Peso specifico / Specific Weight	1.950 Kg/m ³	CSN EN 1094-4
Porosità apparente / Apparent Porosity	Max. 25%	CSN EN 993-1
Refrattarietà / Refractory	Min. 1650° C	CSN EN 993-12
Contenuto Al ₂ O ₃ / Al ₂ O ₃ content	Min. 35%	CSN EN 955-2
Contenuto di umidità / Humidity	Max 2%	CSN 721080

DESCRIPTION:

REFRAX products are shaped bricks in refractory clay with a fine-grained structure for greater resistance to the penetration of molten metal. REFRAX products are characterized by excellent ease of processing through grinding or cutting.

USE:

REFRAX products are used in the composition of casting channels for the production of cast iron and steel castings of all sizes and in the manufacture of rod tubes and ladle chairs.

SPECIFICATIONS:

Proprietà: Property:		Valore Normale Norma Value	Procedura test Test Procedure
Coefficiente conduttività termica a: Coefficient of thermal conductivity:	200°C	0,17 W/mK	CSN EN 993-14
	400°C	0,17 W/mK	
	600°C	0,21 W/mK	
	800°C	0,25 W/mK	
	1000°C	0,28 W/mK	
	1200°C	0,32 W/mK	

VARIAZIONI DI QUALITA' PERMESSE / permitted quantity variations

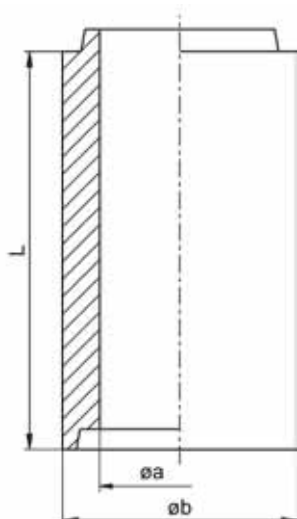
Tolleranze dimensionali: Dimensional tolerances:	Dimensione / Dimension < 100 mm	± 4 mm
	Dimensione / Dimension ≥ 100 mm	± 4 %
Crepe: Cracks:	Larghezza / Width:	Max 1 mm
	Somma totale delle lunghezze di rottura: Total sum of crack lengths:	Max 200 mm
Difetti bordo: Edge defects:	Lunghezza / Length:	Max 65 mm
	Profondità / Depth:	Max 10 mm
	Numero totale di difetti bordo / Total number of edge defects	Max 5
Fuori forma / fuori quadratura Out of shape / out of square	Max 3% della lunghezza del bordo misurato / of the measured edge length	
Tolleranza distorsione Distortion tolerance	Max 3% della lunghezza della diagonale o diametro / of diagonal length or diameter	

IMBALLO: Prodotti sistemati su bancali, fissati con cinghie metalliche ed imballati con plastica restringibile.

PACKING: Products on pallet, fixed with metal belts

STOCCAGGIO: Immagazzinare in ambiente asciutto (Min 5 °C) su base in legno

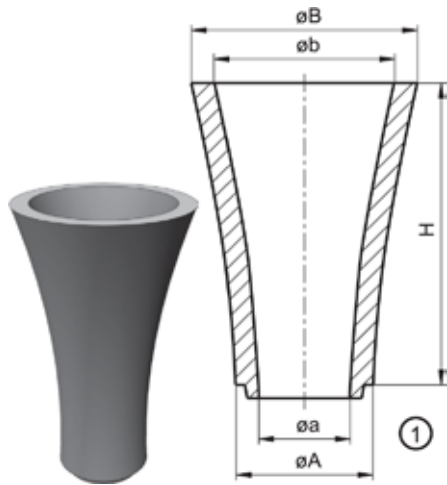
STORAGE: Materials must be stored in a dry place (Min 5 °C) on a wood pallets



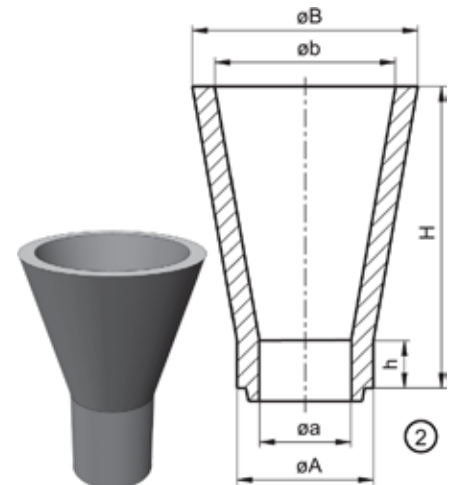
• MR

Tipo Type	a (mm)	b (mm)	L (mm)
MR 30/50	30	55	50
MR 30/100			100
MR 30/150			150
MR 30/200			200
MR 30/250			250
MR 30/300			300
MR 40/50	40	65	50
MR 40/100			100
MR 40/150			150
MR 40/200			200
MR 40/250			250
MR 40/300			300
MR 50/50	50	75	50
MR 50/100			100
MR 50/150			150
MR 50/200			200
MR 50/250			250
MR 50/300			300
MR 60/50	60	90	50
MR 60/100			100
MR 60/150			150
MR 60/200			200
MR 60/250			250
MR 60/300			300
MR 70/50	70	100	50
MR 70/100			100
MR 70/150			150
MR 70/200			200
MR 70/250			250
MR 70/300			300

Tipo Type	a (mm)	b (mm)	L (mm)
MR 80/50	80	55	50
MR 80/100			100
MR 80/150			150
MR 80/200			200
MR 80/250			250
MR 80/300			300
MR 100/50	100	65	50
MR 100/100			100
MR 100/150			150
MR 100/200			200
MR 100/250			250
MR 100/300			300
MR 120/50	120	75	50
MR 120/100			100
MR 120/150			150
MR 120/200			200
MR 120/250			250
MR 120/300			300
MR 140/50	140	90	50
MR 140/100			100
MR 140/150			150
MR 140/200			200
MR 140/250			250
MR 140/300			300
MR 150/50	150	100	50
MR 150/100			100
MR 150/150			150
MR 150/200			200
MR 150/250			250
MR 150/300			300
MR 180/200	180	240	200
MR 180/300			300
MR 200/300	200	240	300



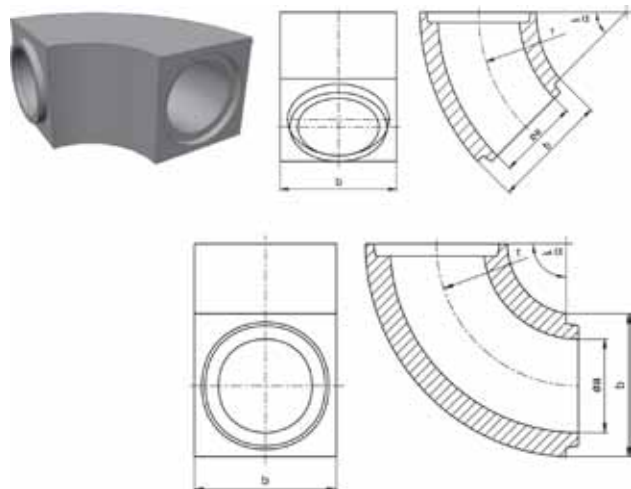
• MI



Tipo Type	Mod	a (mm)	A (mm)	b (mm)	B (mm)	h (mm)	H (mm)
MI 30/110/145	1	30	55	110	134	-	145
MI 40/100/145	2	40	65	100	130	50	145
MI 40/100/195	1	40	65	100	130	-	195
MI 40/100/245	2	40	65	100	130	140	245
MI 40/125/245	1	40	75	125	150	-	245
MI 40/130/195	1	40	65	130	150	-	195
MI 40/163/30	2	40	70	134	160	30	193
MI 50/90/195	2	50	75	90	114	80	195
MI 50/90/245	2	50	75	90	114	130	245
MI 50/90/295	2	50	75	90	114	180	295
MI 50/100/95	1	50	75	100	130	-	95
MI 50/100/145	1	50	75	100	130	-	145
MI 50/100/195	1	50	75	100	130	-	195
MI 50/120/20	2	50	75	110	134	20	140
MI 50/170/20	2	50	75	120	145	20	190
MI 50/170/70	2	50	75	120	145	70	240
MI 50/125/195	2	50	75	125	149	10	195
MI 50/125/225	2	50	75	125	149	40	225
MI 50/125/245	2	50	75	125	149	60	245
MI 50/125/295	2	50	75	125	149	110	295
MI 50/140/150	1	50	75	140	170	-	150
MI 50/140/195	1	50	75	140	170	-	195
MI 50/140/245	1	50	75	140	170	-	245
MI 50/140/285	1	50	75	140	170	-	285
MI 60/120/20	2	60	90	110	140	20	140
MI 60/100/180	2	60	90	110	140	180	280
MI 60/120/195	1	60	84	120	150	-	195
MI 60/120/215	1	60	84	120	150	-	215
MI 60/120/240	1	60	84	120	150	-	240
MI 60/120/295	1	60	84	120	150	-	295
MI 60/135/60	2	60	90	140	170	60	195

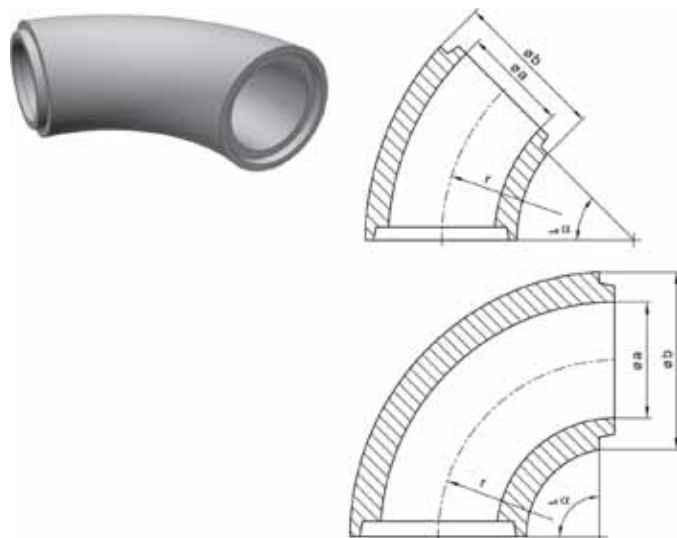
Tipo Type	Mod	a (mm)	A (mm)	b (mm)	B (mm)	h (mm)	H (mm)
MI 60/145/160	2	60	90	145	175	10	160
MI 60/145/295	2	60	90	145	175	145	295
MI 60/145/330	2	60	90	145	175	180	330
MI 60/150/195	2	60	90	150	180	25	195
MI 60/150/245	2	60	90	150	180	75	245
MI 60/170/220	2	60	90	150	180	220	390
MI 60/200/20	2	60	90	180	210	20	220
MI 70/155/150	2	70	100	155	185	30	150
MI 70/155/195	2	70	100	155	185	75	195
MI 70/155/245	2	70	100	155	185	125	245
MI 70/190/220	2	70	100	190	220	20	220
MI 70/200/20	2	70	100	190	220	20	220
MI 80/170/25	2	80	115	160	200	25	195
MI 80/200/200	2	80	120	200	230	25	200
MI 80/200/240	2	80	120	200	230	65	240
MI 80/250/30	2	80	115	225	265	30	280
MI 100/170/30	2	100	140	190	230	30	200
MI 100/250/30	2	100	140	225	265	30	280
MI 100/270/220	2	100	160	270	320	45	220
MI 120/170/30	2	120	160	210	250	30	200
MI 120/250/30	2	120	165	225	265	30	280
MI 120/240/250	1	120	165	240	280	-	250
MI 120/280	2	120	160	240	280	-	280

- MC
- ESTERNO QUADRATO
- OUTSIDE SQUARE



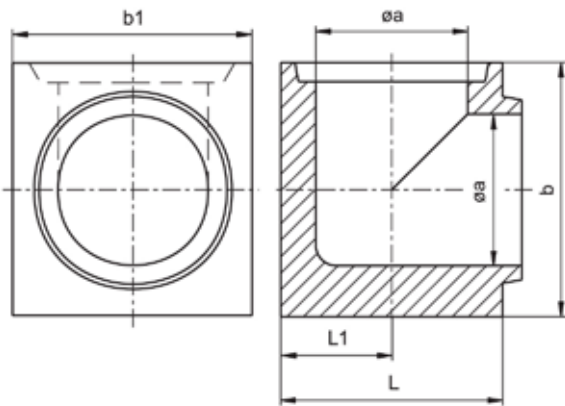
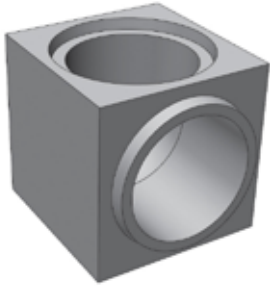
Tipo Type	a (mm)	α (°)	b (mm)	r (mm)
MC 30/45	30	45	55	80
MC 30/90	30	90	55	80
MC 40/45	40	45	65	80
MC 40/90	40	90	65	80
MC 50/45	50	45	75	80
MC 50/90	50	90	75	80
MC 60/45	60	45	90	80
MC 60/90	60	90	90	80
MC 70/45	70	45	100	120
MC 70/90	70	90	100	120
MC 80/45	80	45	120	165
MC 80/90	80	90	120	165
MC 100/45	100	45	140	165
MC 100/90	100	90	140	165
MC 120/45	120	45	165	250
MC 120/90	120	90	165	250
MC 140/45	140	45	180	280
MC 150/45	150	45	200	222

- MCT
- ESTERNO TONDO
- OUTSIDE ROUND



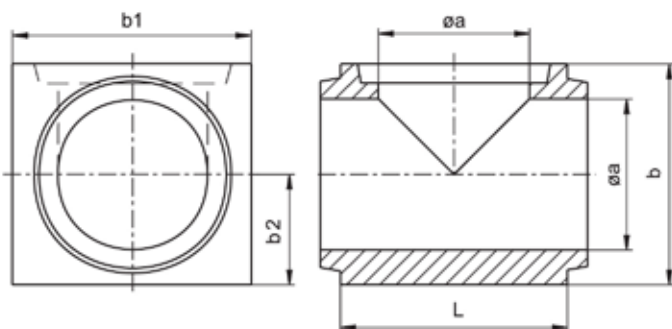
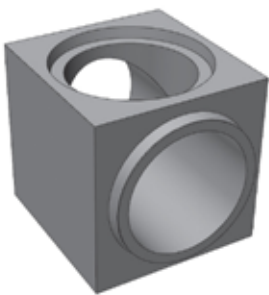
Tipo Type	a (mm)	α (°)	b (mm)	r (mm)
MC 30/90 T	30	90	55	75
MC 40/90 T	40	90	65	80
MC 50/90 T	50	90	75	150
MC 60/45 T	60	45	90	140
MC 60/90 T	60	90	90	140
MC 70/90 T	70	90	100	130
MC 80/45 T	80	45	115	160
MC 80/90 T	80	90	115	160
MC 100/45 T	100	45	140	200
MC 100/90 T	100	90	140	200
MC 120/45 T	120	45	165	250
MC 120/90 T	120	90	165	250

Tipo Type	a (mm)	α (°)	b (mm)	r (mm)
MC 40/45 T	40	45	65	80
MC 40/90 T	40	90	65	60
MC 60/45 T	60	45	100	75
MC 60/90 T	60	90	100	75



- ML
- 2 VIE
- L TYPE

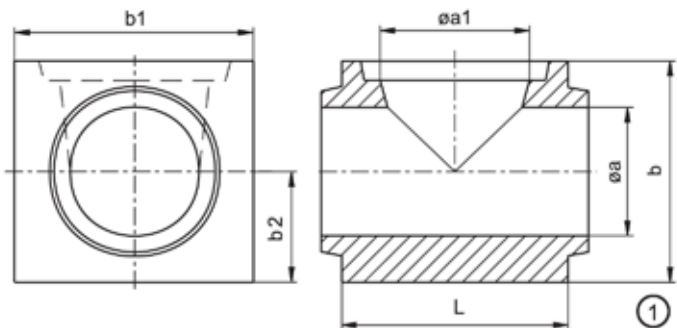
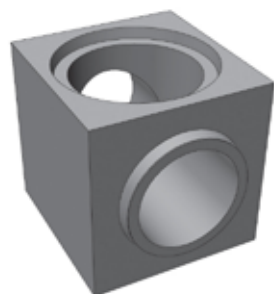
Tipo Type	a (mm)	b (mm)	b1 (mm)	L1 (mm)	L (mm)
ML 30	30	60	60	30	60
ML 40	40	74	74	37	75,5
ML 50	50	74	74	37	75,5
ML 60	60	90	90	45	92,5
ML 70	70	100	100	50	101,5
ML 80	80	115	115	57,5	117,5
ML 100	100	140	140	72,5	142,5
ML 120	120	160	160	80	162,5
ML 140	140	220	200	110,5	210
ML 150	150	226	210	110,5	221



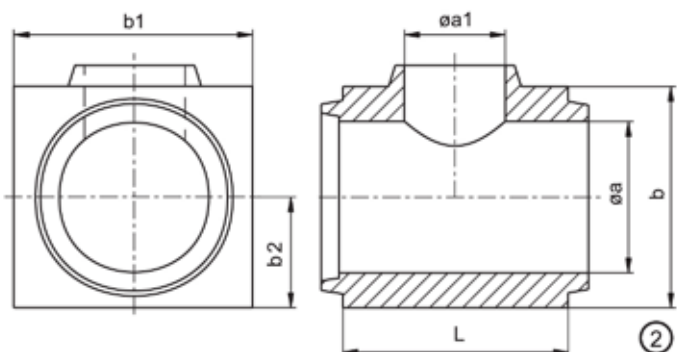
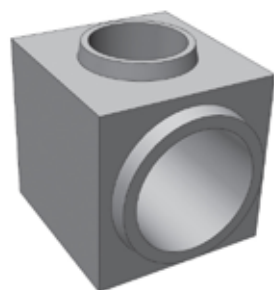
- MT
- 3 VIE
- T TYPE

Tipo Type	a (mm)	b (mm)	b1 (mm)	L1 (mm)	L (mm)
MT 30	30	60	60	30	62
MT 40	40	74	74	37	77
MT 50	50	74	74	37	77
MT 60	60	90	90	45	95
MT 70	70	100	100	50	103
MT 80	80	115	115	57,5	120
MT 100	100	140	140	70	145
MT 120	120	160	160	80	165
MT 140	140	220	200	100	210
MT 150	150	226	210	105	221

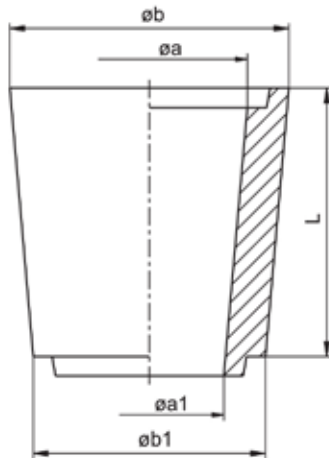
ROSETTE A 3 VIE / T TYPES



• MRT

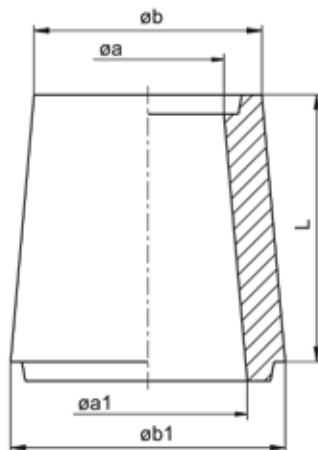
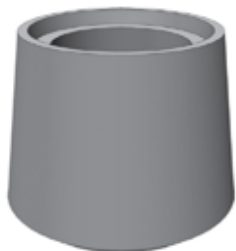


Tipo Type	Mod	a (mm)	a1 (mm)	b (mm)	b1 (mm)	b2 (mm)	L (mm)
MRT 40/30/30	1	30	40	74	74	37	77
MRT 40/30/40	2	40	30	74	74	37	77
MRT 50/40/40	1	40	50	74	74	37	77
MRT 50/40/50	2	50	40	74	74	37	77
MRT 60/40/40	1	40	60	90	90	45	95
MRT 60/40/60	2	60	40	90	90	45	95
MRT 60/50/50	1	50	60	90	90	45	95
MRT 70/50/50	1	50	70	100	100	50	103
MRT 70/60/60	1	60	70	100	100	50	103
MRT 80/60/60	1	60	80	115	115	57,5	120
MRT 80/60/80	2	80	60	115	115	57,5	120
MRT 80/70/70	1	70	80	115	115	57,5	120
MRT 100/80/80	1	80	100	140	140	70	145
MRT 100/80/100	2	100	80	140	140	70	145
MRT 120/100/100	1	100	120	160	160	80	165
MRT 120/100/120	1	120	100	170	180	90	185



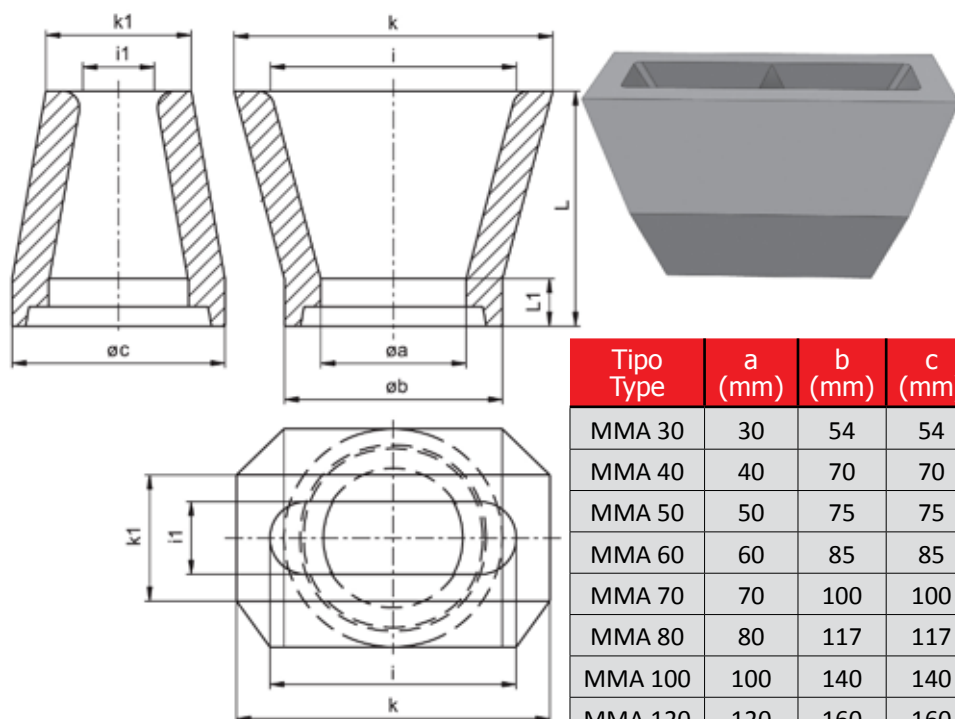
- MRR
- RIDUZIONI
- REDUCERS

Tipo Type	a (mm)	a1 (mm)	b (mm)	b1 (mm)	L (mm)
MRR 40/30	40	30	65	54	50
MRR 50/40	50	40	75	65	60
MRR 60/50	60	50	84	75	80
MRR 70/50	70	50	100	75	80
MRR 70/60	70	60	100	84	80
MRR 80/60	80	60	120	84	100
MRR 80/70	80	70	120	100	100
MRR 100/80	100	80	140	120	100
MRR 120/100	120	100	165	140	100



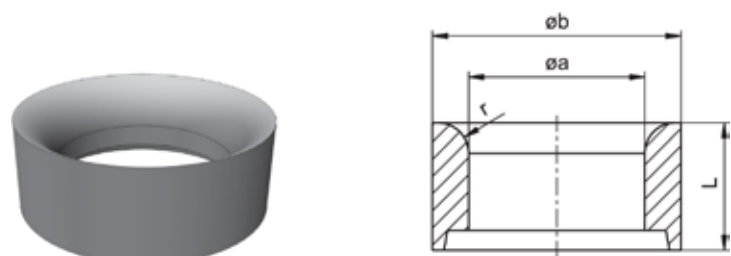
- MRE
- ESPANSIONI
- EXPANSIONS

Tipo Type	a (mm)	a1 (mm)	b (mm)	b1 (mm)	L (mm)
MRE 30/40	30	40	55	65	50
MRE 40/50	40	50	65	75	50
MRE 40/60	40	60	65	90	100
MRE 50/60	50	60	75	84	80
MRE 50/70	50	70	75	100	100
MRE 60/80	60	80	90	115	100
MRE 70/80	70	80	100	115	100
MRE 80/100	80	100	115	140	100
MRE 100/120	100	120	140	165	100
MRE 120/140	120	140	165	180	200



• **MMA**

Tipo Type	a (mm)	b (mm)	c (mm)	i (mm)	i1 (mm)	k (mm)	k1 (mm)	L1 (mm)	L (mm)
MMA 30	30	54	54	104	10	120	30	-	120
MMA 40	40	70	70	68	20	90	50	12	100
MMA 50	50	75	75	85	25	110	45	20	100
MMA 60	60	85	85	102	30	132	53	20	100
MMA 70	70	100	100	120	35	150	65	12	100
MMA 80	80	117	117	136	40	175	70	20	100
MMA 100	100	140	140	200	50	240	90	50	120
MMA 120	120	160	160	205	60	245	100	20	100
MMA 140	140	180	180	240	70	280	110	20	100



• **MAR - MAS**

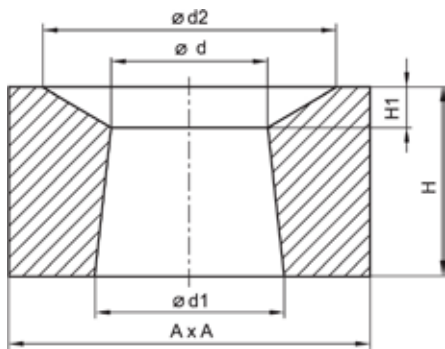
- **ATTACCHI**
- **INGATES**

Tipo Type	a (mm)	b (mm)	r (mm)	L (mm)
MAR 30/50	30	55	12	50
MAR 40/50	40	65	12	50
MAR 50/50	50	75	12	50
MAR 60/50	60	90	12	50
MAR 70/50	70	100	15	50
MAR 70/100	70	100	15	100
MAR 80/50	80	120	30	50
MAR 80/100	80	120	30	100
MAR 100/50	100	140	30	50
MAR 100/100	100	140	30	100
MAR 120/50	120	165	30	50
MAR 150/50	150	200	30	50

Tipo Type	a (mm)	b (mm)	r (mm)	L (mm)
MAS 30/50	30	60	12	50
MAS 40/30	40	65	12	30
MAS 40/50	40	65	12	50
MAS 50/30	50	75	9	30
MAS 50/50	50	75	9	50
MAS 60/30	60	90	12	30
MAS 60/50	60	90	12	50
MAS 70/30	70	100	12	30
MAS 70/50	70	100	12	50
MAS 80/30	80	115	12	30
MAS 80/50	80	115	12	50
MAS 100/50	100	140	12	50
MAS 100/100	100	140	12	100
MAS 120/100	120	165	17	100
MAS 140/100	140	180	17	100

AMBITO DI APPLICAZIONE

I tappi e gli ugelli di grafite sono prodotti refrattari che formano una parte del meccanismo di chiusura della siviera nella colata di metallo nelle fonderie e impianti di fusione.

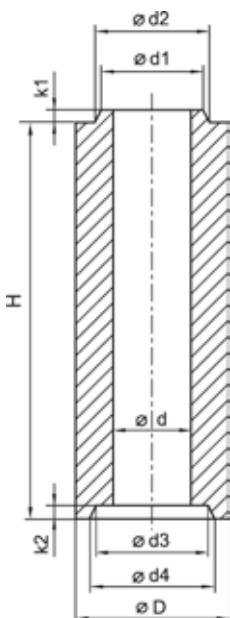


- MPSD
- PORTA SEDIE DI COLATA
- POCKET BLOCKS

Tipo Type	d (mm)	d1 (mm)	d2 (mm)	A (mm)	H (mm)	H1 (mm)
MPSD L0	125	143	220	250	107	17
MPSD L1	149	169	260	320	123	23
MPSD L2	143	169	260	320	165	35
MPSD L3	163	194	300	360	190	35
MPSD L6	143	123	260	320	123	23

SCOPE OF USE

The graphite stoppers and nozzles are shaped refractory products forming a part of the closing mechanism of casting ladles in a metal casting in foundries and smelting plants.

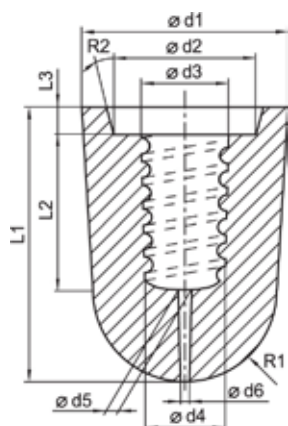


- MTA
- TUBI ASTA
- STOPPERS TUBES

Tipo Type	d (mm)	D (mm)	H (mm)	d1 (mm)	d2 (mm)	d3 (mm)	d4 (mm)	k1 (mm)	k2 (mm)
MTA 0/270	40	90	270	60	66	62	69	10	12
MTA 1/330	47	105	330	70	75,3	72	76,4	10	12
MTA 2/330	47	120	330	70	81,5	72	84	10	12
MTA 2/D200	47	120	200	70	81,5	80	95	10	15
MTA 3/330	47	140	330	70	81,5	72	84	10	12
MTA 4/1-330	47	155	330	70	82	72	86	10	12
MTA 4/2-330	60	155	330	95	107	97	109	10	12
MTA 5/330	60	170	330	95	107	97	111	10	12

TIPO GRAFITE / GRAPHITE TYPE

SPECIFICHE / SPECIFICATIONS		35/12-16	65/12-16
REFRATTARIETA' / REFRACTORINES	min	1650 °C	1750 °C
POROSITA' APPARENTE / APPARENT POROSITY	%	23	25
DENSITA' / BULK DENSITY	Kg/m3	1850	2150
TEMPERATURA DI SERVIZIO / SERVICE TEMPERATURE	°C	1550 °C	1730 °C
CONTENUTO AL2O3 / AL2O3 CONTENT	max	35%	65%
CONTENUTO Fe2O3 / Fe2O3 CONTENT	max	3%	2%



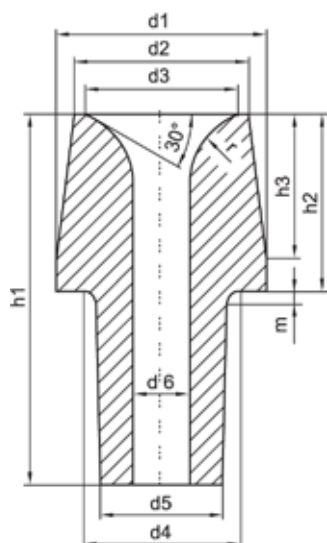
- **MTP**

- **TAPPI DI COLATA**
- **STOPPERS**

- **DISPONIBILI / AVAILABLE**

- **GRAFITE/GRAPHITE**

Tipo Type	L1 (mm)	L2 (mm)	L3 (mm)	d1 (mm)	d2 (mm)	d3 (mm)	d4 (mm)	d5 (mm)	d6 (mm)	R1 (mm)	R2 °
MTP S0	120	80	12	90	62	38	35	6	4	40	15°
MTP S1	130	95	12	105	72	42	39	6	4	45	15°
MTP S2	135	95	12	120	72	42	39	6	4	53	30°
MTP S3	145	95	12	140	72	42	39	6	4	60	30°
MTP S4/1	155	90	12	155	72	42	39	6	4	65	30°
MTP S4/2	155	90	12	155	97	42	39	6	4	65	30°
MTP S5	170	90	12	170	97	42	39	6	4	68	30°



- **MSD**

- **SEDIE DI COLATA**
- **NOZZLES**

- **DISPONIBILI / AVAILABLE**

- **ALLUMINA / ALUMINA 35-38%**
- **GRAFITE/GRAPHITE**

Tipo Type	d1 (mm)	d2 (mm)	d3 (mm)	d4 (mm)	d5 (mm)	d6 (mm)	h1 (mm)	h2 (mm)	h3 (mm)	m (mm)	r (mm)
MSD 0A	135	120	105	100	90	20, 25, 30, 35, 40, 45, 50, 60	160	90	75	10	50
MSD 1A	155	139	115	117	99	30, 35, 40, 45, 50, 55, 60	210	100	80	10	50
MSD 1A	155	139	115	120	109	70, 80	210	100	80	10	50
MSD 2A	155	133	115	117	99	25, 30, 35, 40, 45, 50, 55, 60, 65	240	130	110	10	50
MSD 2A	155	133	115	120	109	70, 80	240	130	110	10	50
MSD 3A	180	153	135	140	115	30, 40, 50, 60, 70	275	155	135	20	50
MSD 3A	180	153	135	164	135	80, 90, 100	275	155	135	20	50

