

# Vardar Dolomit



High Quality Dolomite Bricks And Mixes

Vardar Dolomit is a European manufacturer of sinter dolomite, dolomite bricks and monolithics located in Gostivar, Macedonia and owned by Haznedar Refractories Group.

Having direct access and control of its main raw material through the high-grade dolomite mines owned by the company, Vardar attains a strategic competitive advantage in contrast to the other few dolomite producers in the world. Processing the materials that are attained from the adjacent mine, this highly efficient production method minimizes ecological impact and enhances the sustainability of our business.

Dolomite usage in the steelmaking industry has been rapidly increasing in the past decades as a result of its favorability in the making of clean steel with a clean environment. Dolomites' high degree of refractoriness, inertness to steel, great service performance and low cost make it a more conscious and reasonable preference for the steelmakers of the 21<sup>st</sup> century.

With a manufacturing capacity over 60,000 tons annually, Vardar Dolomit is proud to supply the highest quality of dolomite refractories with the highest standards to its customer base.

# CONTENT

04	.....	<b>Application Areas</b>
05	.....	BOF Converter Lining Concept
06	.....	Electric ARC Furnace Lining Concept
07	.....	Ladle Lining Concept
08	.....	<b>Products</b>
09	.....	Resin Bonded Dolomite-Carbon Bricks
09	.....	Dolomite Mixes
10	.....	Standard Brick Shapes
11	.....	Ladle Bricks
15	.....	Ladle Heat Up Schedule with Dolomite Lining
16	.....	ISO 9001 Quality Management System Certificate & ISO 14001
16	.....	Environmental Management System Certificate

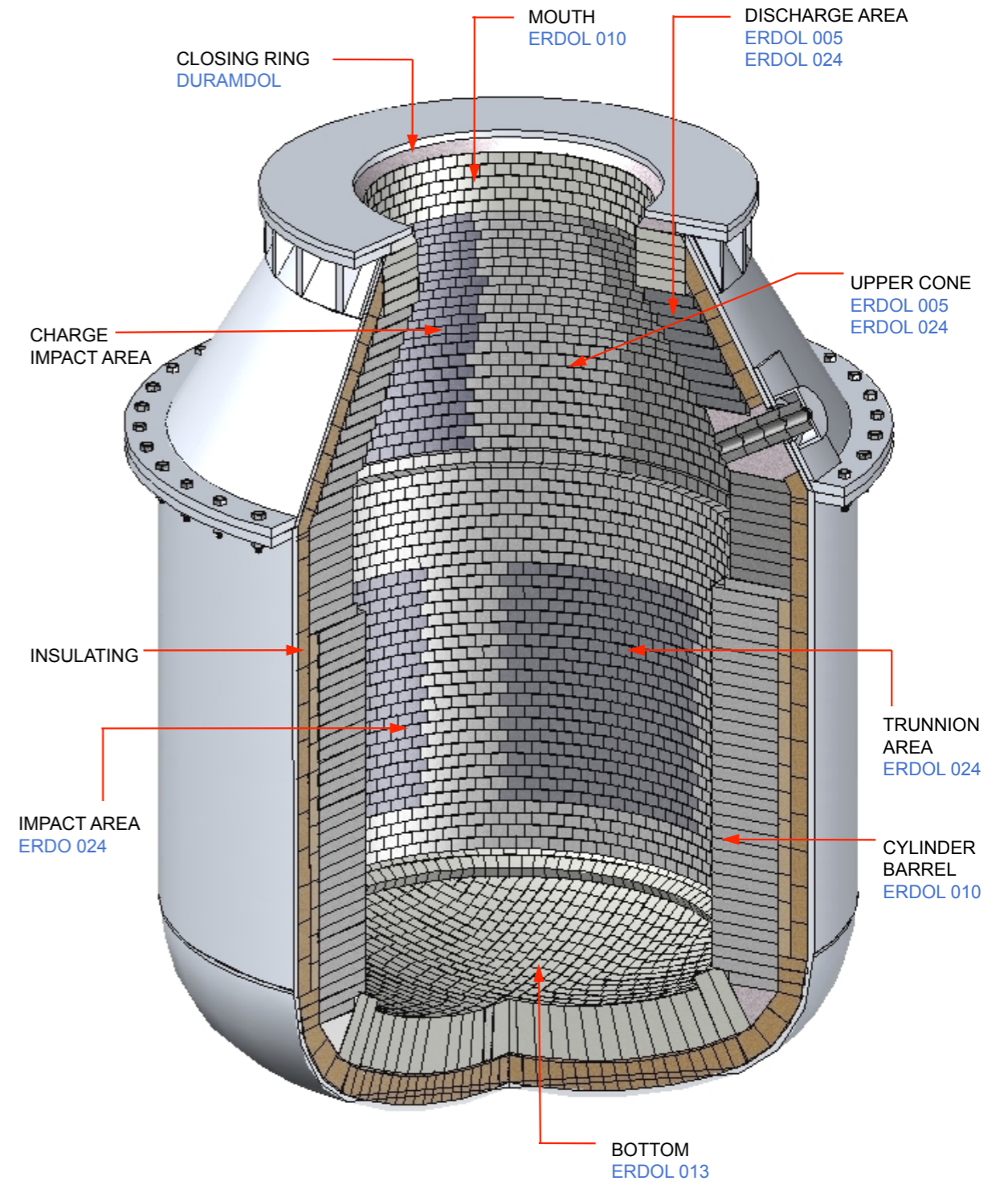




# APPLICATION AREAS

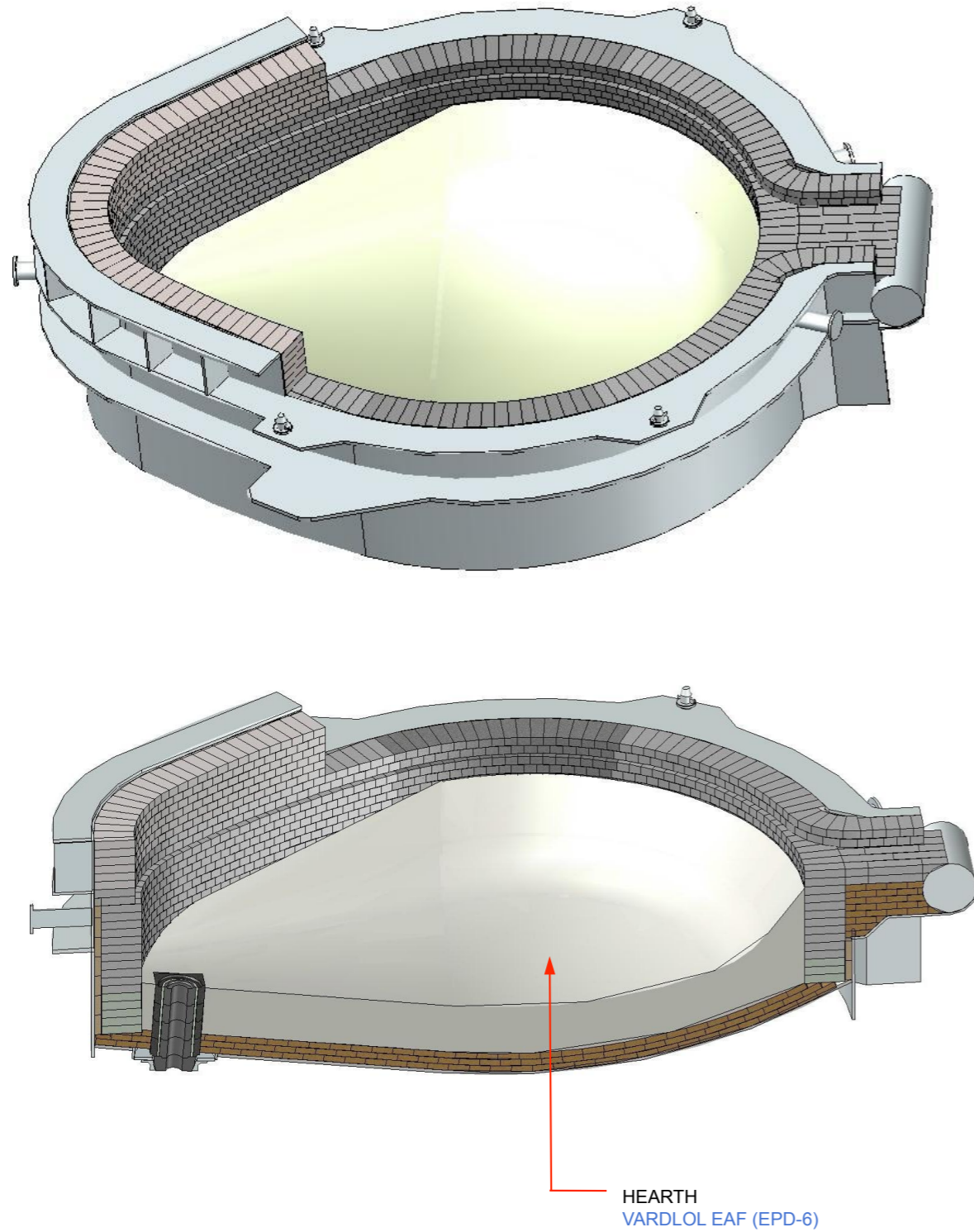


# BOF CONVERTER LINING CONCEPT

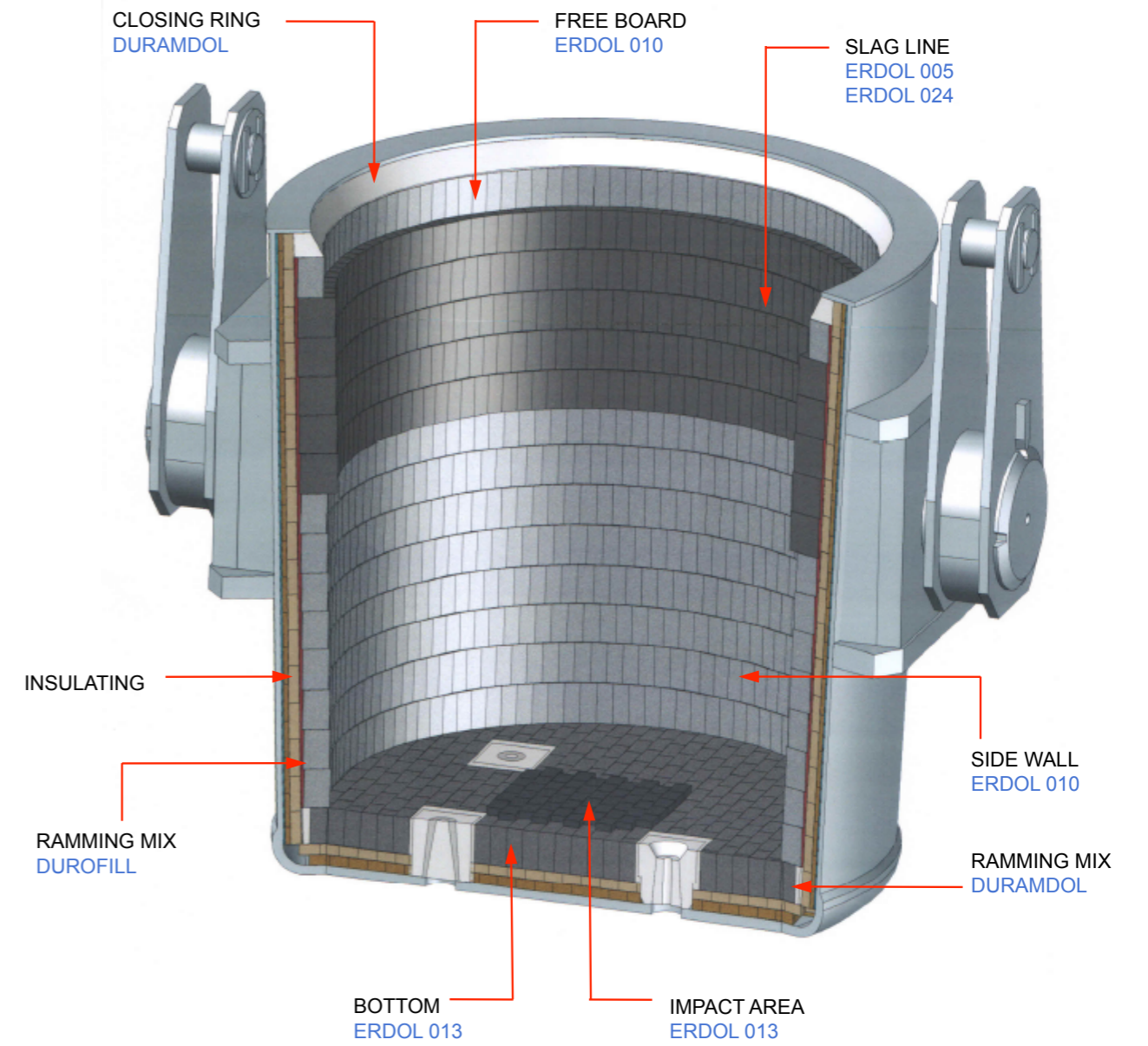




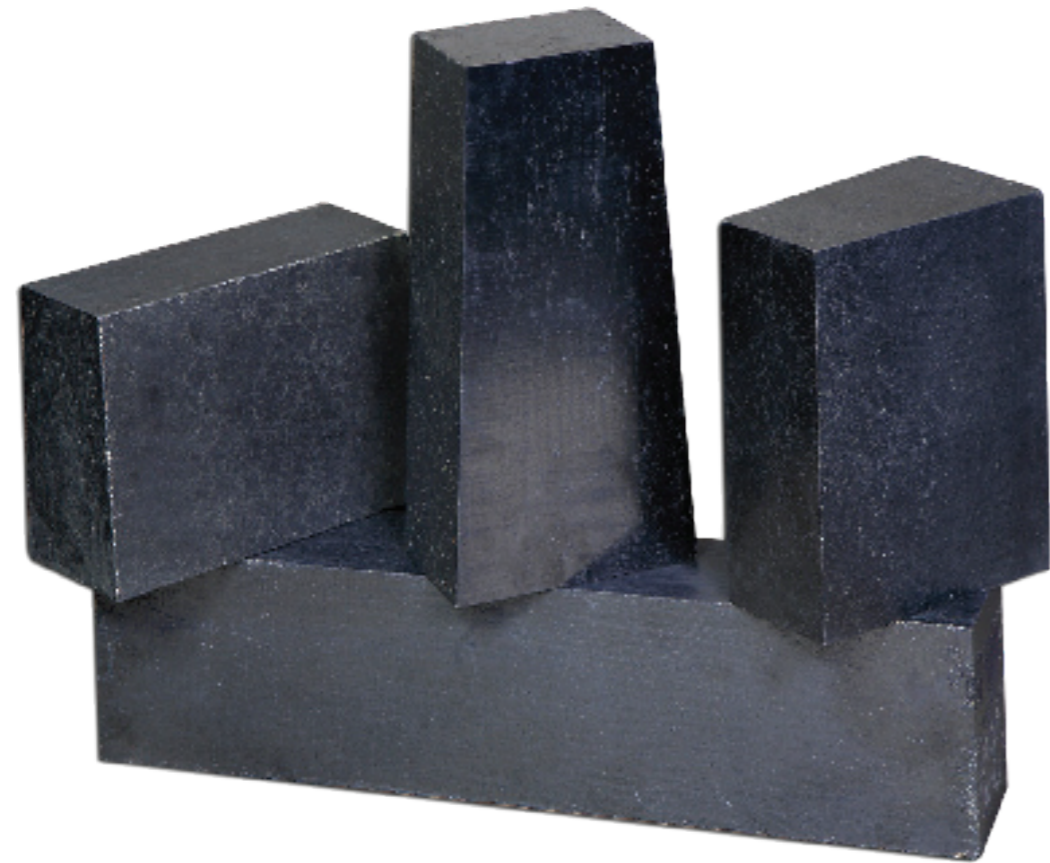
# ELECTRIC ARC FURNACE LINING CONCEPT



# LADLE LINING CONCEPT



## PRODUCTS



## RESIN BONDED DOLOMITE-CARBON BRICKS

Product Name	Chemical Analysis						Physical Properties		
	MgO	CaO	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	C	Bulk Density	APP Porosity	C.C.Strenght
							g/cm <sup>3</sup>	vol. %	kg/cm <sup>2</sup>
ERDOL 005 R	39	59	0,5	0,5	0,5	9	2,75	10,5	65
ERDOL 010 R	39	59	0,5	0,5	0,5	5	2,80	9,7	75
ERDOL 013 R	39	59	0,5	0,5	0,5	6	2,80	9,8	70
ERDOL 021 R	45	52	0,5	0,5	0,5	4	2,82	9,0	80
ERDOL 024 R	52	45	0,5	0,5	0,5	8	2,83	9,3	75

## ECO - PITCH BONDED DOLOMITE-CARBON BRICKS

Product Name	Chemical Analysis						Physical Properties		
	MgO	CaO	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	C	Bulk Density	APP Porosity	C.C.Strenght
							g/cm <sup>3</sup>	vol. %	kg/cm <sup>2</sup>
ERDOL 005	39	59	0,5	0,5	0,5	9	2,70	11,0	35
ERDOL 010	39	59	0,5	0,5	0,5	5	2,75	10,0	40
ERDOL 013	39	59	0,5	0,5	0,5	6	2,75	10,2	40
ERDOL 021	45	52	0,5	0,5	0,5	4	2,77	9,6	50
ERDOL 024	52	45	0,5	0,5	0,5	8	2,78	9,7	45

## DOLOMITE MIXES

Product Name	Chemical Analysis						Physical Properties	
	MgO	CaO	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	C	Bulk Density	APP Porosity
							g/cm <sup>3</sup>	vol. %
DUROFIL	38	60	0,5	0,5	0,5	-	2,45	0-6
DURAMDOL	38	60	0,5	0,5	0,5	-	2,8	0-8
VARDOL EAF (EPD-6)	38	60	0,5	0,5	0,5	6	2,1-2,2	0-6
VARDOL MIX (Plastic)	50	48	0,5	0,5	0,5	-	2,8	0-3

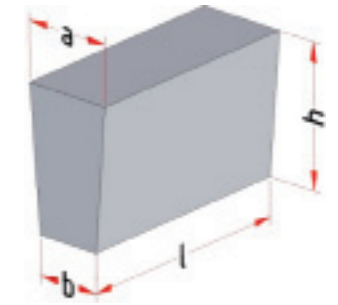


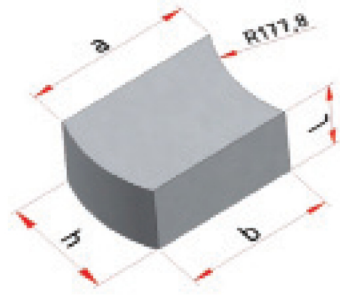
## STANDARD BRICK SHAPES



## LADLE BRICKS P - FORMAT

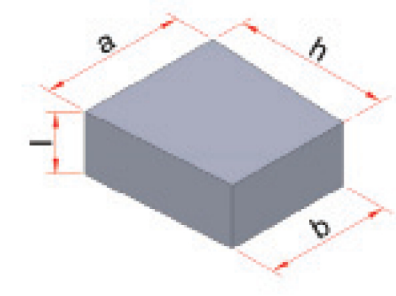
Shape	Dimensions (mm)					Volume dm <sup>3</sup>	Radius r (mm)
	a	b	h	l	k (a-b)		
1P 0	125	125	90	250		2,81	
1P 8	129	121	90	250	8	2,81	1.384
1P 18	134	116	90	250	18	2,81	590
1P 26	138	112	90	250	26	2,81	395
1P 37	143	106	90	250	37	2,80	263
1P 8-2/3	86	78	90	250	8	1,85	
1P 8-3/4	97	89	90	250	8	2,09	
2P 0	125	125	124	250		3,88	
2P 10	130	120	124	250	10	3,88	1.513
2P 24	137	113	124	250	24	3,88	594
2P 10-2/3	87	77	124	250	10	2,54	
2P 10-3/4	98	88	124	250	10	2,88	
3P 0	100	100	155	250		3,88	
3P 8	104	96	155	250	8	3,88	1.899
3P 10	105	95	155	250	10	3,88	1.504
3P 20	110	90	155	250	20	3,88	713
3P 26	113	87	155	250	26	3,88	525
3P 10-2/3	70	60	155	250	10	2,52	
3P 10-3/4	79	69	155	250	10	2,87	
4P 0	100	100	187	250		4,68	
4P 8	104	96	187	250	8	4,68	
4P 12	106	94	187	250	12	4,68	
4P 22	111	89	187	250	22	4,68	
4P 12-2/3	71	59	187	250	12	3,04	
4P 12-3/4	80	68	187	250	12	3,46	
5P 0	100	100	220	250		5,50	
5P 8	104	96	220	250	8	5,50	2.695
5P 16	108	92	220	250	16	5,50	1.293
5P 22	111	89	220	250	22	5,50	8
5P16-2/3	72	56	220	250	16	3,52	
5P 16-3/4	81	65	220	250	16	4,02	





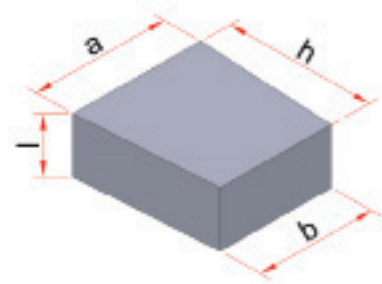
Shape	Dimensions (mm)				Volume dm <sup>3</sup>	Diameter D (mm)
	a	b	h	l		
S U 430	210	188,7	101,6	100	2,03	1500 - 2500
S U 445	210	195,8	101,6	100	2,06	2100 - 3400
S U 530	210	183,4	127	100	2,50	1500 - 2500
S U 545	210	192,3	127	100	2,55	2100 - 3400
S U 560	210	196,7	127	100	2,58	2800 - 4500
S U 630	210	178,1	152,4	100	2,96	1500 - 2500
S U 645	210	188,7	152,4	100	3,04	2100 - 3400
S U 660	210	194	152,4	100	3,08	2800 - 4500
S U 745	210	185,2	177,8	100	3,51	2100 - 3400
S U 760	210	191,4	177,8	100	3,57	2800 - 4500
S U 830	210	168	203,2	100	3,78	1500 - 2500
S U 845	210	181,6	203,2	100	3,98	2400 - 3600
S U 860	210	188,7	203,2	100	4,05	3400 - 4600
S U 930	210	163	228,6	100	4,20	1500 - 2500
S U 945	210	178,1	228,6	100	4,44	2100 - 3400
S U 960	210	186,1	228,6	100	4,53	2800 - 4500

Shape	Dimensions (mm)					Volume dm <sup>3</sup>	Radius r (mm)
	a	b	h	l	k(a-b)		
12/11 - 10	211	200	125	100	11	2,57	2282
12/21 - 10	221	200	125	100	21	2,63	1207
12/33 - 10	233	200	125	100	33	2,71	784
12/50 - 10	250	200	125	100	50	2,81	539
15/13 - 10	213	200	150	100	13	3,10	2308
15/25 - 10	225	200	150	100	25	3,19	1200
15/40 - 10	240	200	150	100	40	3,30	750
15/60 - 10	260	200	150	100	60	3,45	540
18/16 - 10	216	200	180	100	16	3,74	2250
18/30 - 10	230	200	180	100	30	3,87	1200
18/48 - 10	248	200	180	100	48	4,03	750
18/72 - 10	272	200	180	100	72	4,25	540
22/19 - 10	219	200	220	100	19	4,61	2300
22/37 - 10	237	200	220	100	37	4,81	1200
22/59 - 10	259	200	220	100	59	5,05	750
22/16 - 10	216	200	250	100	16	5,20	3131
25/30 - 10	230	200	250	100	30	5,38	1670
25/16 - 10_2/3	149	133	250	100	16	3,53	2087
25/30 - 10_2/3	163	133	250	100	30	3,71	119
25/16 - 10_3/4	166	150	250	100	16	3,95	2348
25/30 - 10_3/4	180	150	250	100	30	4,13	1258



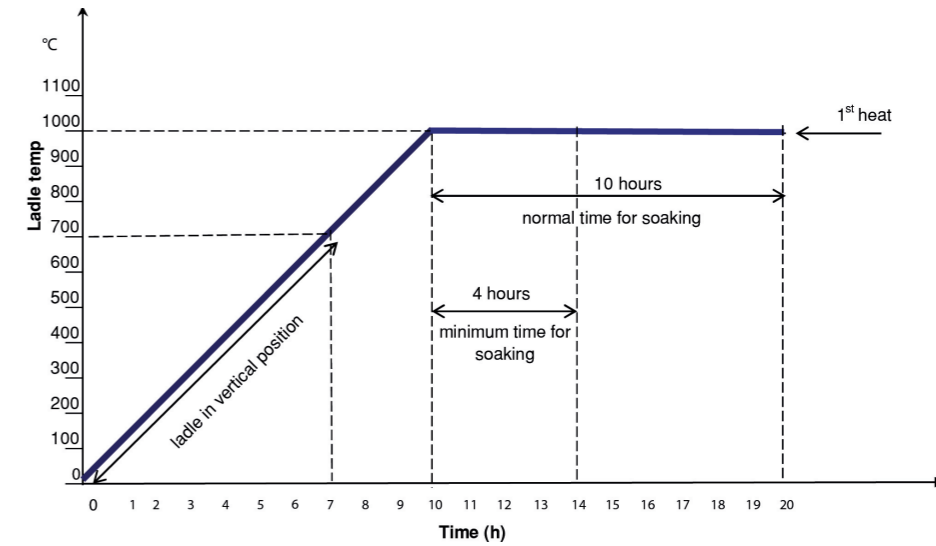


# LADLE BRICKS MINI KEY

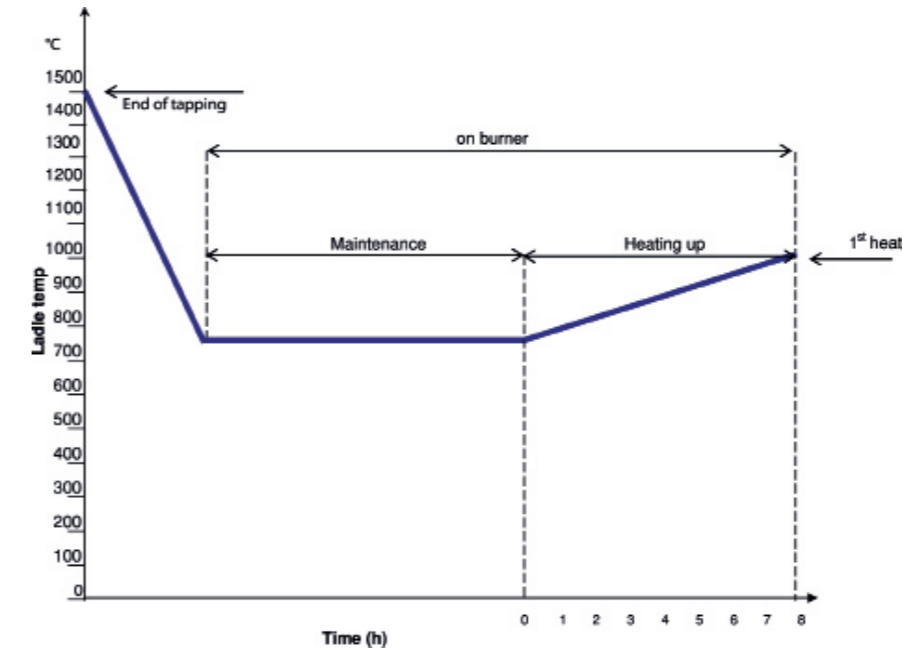


Shape	Dimensions (mm)					Volume dm <sup>3</sup>	Radius r (mm)
	a	b	h	l	k (a-b)		
MK 4/0	150	150	101,6	100	0	1,52	
MK 4/6	153	147	101,6	100	6	1,52	2496
MK 4/12	156	144	101,6	100	12	1,52	1229
MK 4/20	160	140	101,6	100	20	1,52	726
MK 5/0	150	150	127	100	0	1,91	
MK 5/8	154	146	127	100	8	1,91	2324
MK 5,20	160	140	127	100	20	1,91	901
MK 5/32	166	134	127	100	32	1,91	549
MK 5/20 K	130	110	127	100	20	1,52	708
120 6/0	150	150	152,4	100	0	2,29	
MK 6/8	154	146	152,4	100	8	2,29	2787
MK 6/13	157	144	152,4	100	13	2,29	1696
MK 6/20	160	140	152,4	100	20	2,29	1077
MK 6/30	165	135	152,4	100	30	2,29	700
MK 6/40	170	130	152,4	100	40	2,29	513
MK 6/20 K	130	110	152,4	100	20	1,83	846
120 7/0	150	150	177,8	100	0	2,67	
MK 7/8	154	146	177,8	100	8	2,67	3251
MK 7/13	157	144	177,8	100	13	2,68	1976
MK 7/16	158	142	177,8	100	16	2,67	1586
MK 7/20	160	140	177,8	100	20	2,67	1254
MK 7/30	165	135	177,8	100	30	2,67	812
MK 7/40	170	130	177,8	100	40	2,67	593
MK 7/20 K	130	110	177,8	100	20	2,13	985
120 8/0	150	150	203,2	100	0	3,05	
MK 8/8	154	146	203,2	100	8	3,05	3714
MK 8/16	157	144	203,2	100	16	3,05	1836
MK 8/20	160	140	203,2	100	20	3,05	1431
MK 8/30	165	135	203,2	100	30	3,05	925
MK 8/40	170	130	203,2	100	40	3,05	674
MK 9/0	150	150	228,6	100	0	3,43	
MK 9/8	154	146	228,6	100	8	3,43	4178
MK 9/16	157	144	228,6	100	16	3,43	2064
MK 9/30	165	135	228,6	100	30	3,43	1039
MK 9/40	170	130	228,6	100	40	3,43	755
MK 9/50	175	125	228,6	100	50	3,43	586
25/0	150	150	250	100	0	3,75	
25/8	154	146	250	100	8	3,75	4569
25/16	158	142	250	100	16	3,75	2225
25/30	165	135	250	100	30	3,75	1134
25/60	180	120	250	100	60	3,75	515
30/0	150	150	300	100	0	4,50	
30/8	154	146	300	100	8	4,50	5481
30/20	160	140	300	100	20	4,50	2107
30/40	170	130	300	100	40	4,50	985
30/70	185	115	300	100	70	4,50	507

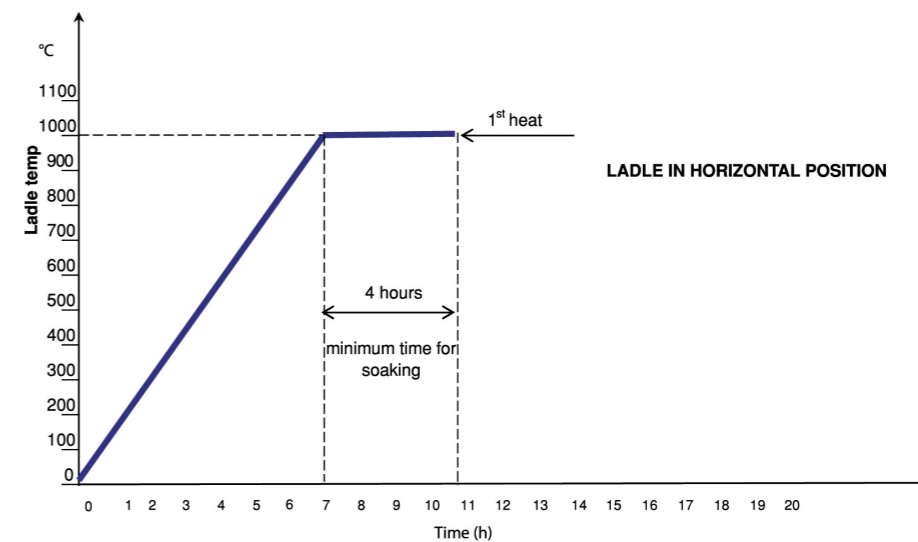
## DOLOMITE LINING, LADLE PRE-HEATING CURVE



## DOLOMITE LINING, LADLE MAINTENANCE CURVE



## DOLOMITE LINING, LADLE RE-HEATING CURVE



# CERTIFICATES







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