UNMOLDED REFRACTORY MATERIALS

Unmolded refractories (castables, ramming mix and gunning mix, adhesives, mastic, etc.) are the fastest growing part of refractory production. In industrially developed countries the share of unmolded refractories over 50% of the total production of refractory materials and tend for his increase. Implementation of the refractory linings of unmolded refractories has many advantages over implementation of refractory products (bricks): mechanized (and in some cases, robotized) implementing of liners possibilities for multiple intermediate repair with preservation of the unabraded area, lower relative cost of fireproof material and etc. By developing production of high quality unmolded refractories and assist in their implementation in Bulgaria Rimpex Ltd. provides additional opportunities to its partners to increase their competitiveness.

REFRACTORY CASTABLES RIMPEXAL

RIMPEX Ltd. manufactures a large variety of refractory castables with a general designation RIMPEXAL on the basis of different refractory components (fireclay, bauxite, corundum, silicon carbide, magnesia, etc.) and cements - castables with medium (MCC), low (LCC) and ultra low (ULCC) cement content as well as no cement (NCC) castables.

REFRACTORY CASTABLE
RIMPEXAL 30

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1350
2.	Main component		fireclay
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥30
5.	Cold crushing strength after 110°C x 24 h	MPa	>10
6.	Bulk density after 110°C x 24 h	g/cm^3	≥1,8
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 35

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1400
2.	Main component		fireclay
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥35
5.	Cold crushing strength after 110°C x 24 h	MPa	>10
6.	Bulk density after 110°C x 24 h	g/cm^3	≥1,9
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 35 S

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1450
2.	Main component		fireclay
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥35
5.	Cold crushing strength after 110°C x 24 h	MPa	≥30
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,05
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE
RIMPEXAL 40

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1450
2.	Main component		fireclay
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥40
5.	Cold crushing strength after 110°C x 24 h	MPa	≥15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,0
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE
RIMPEXAL 45

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1450
2.	Main component		fireclay, bauxite
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥45
5.	Cold crushing strength after 110°C x 24 h	MPa	≥15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,1
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE
RIMPEXAL 50

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1450
2.	Main components		fireclay, high alumina materials
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥50
5.	Cold crushing strength after 110°C x 24 h	MPa	≥15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,1
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE
RIMPEXAL 60

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1450
2.	Main component		high alumina materials
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥60
5.	Cold crushing strength after 110°C x 24 h	MPa	≥10
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,1
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 80

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1600
2.	Main component		bauxite
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥80
5.	Cold crushing strength after 110°C x 24 h	MPa	≥25
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,5
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 80 L

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1600
2.	Main component		bauxite
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥80
5.	Cold crushing strength after 110°C x 24 h	MPa	≥50
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,7
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE
RIMPEXAL 80 S

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1600
2.	Main component		bauxite
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥80
5.	Cold crushing strength after 110°C x 24 h	MPa	≥40
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,6
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE
RIMPEXAL 90 N

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1700
2.	Main component		corundum
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥90
5.	Cold crushing strength after 110°C x 24 h	MPa	≥35
6.	Bulk density after 110°C x 24 h	g/cm^3	≥3,0
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 90 K

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1750
2.	Main component		corundum
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥95
5.	Cold crushing strength after 110°C x 24 h	MPa	≥35
6.	Bulk density after 110°C x 24 h	g/cm^3	≥3,0
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 95 KL

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1750
2.	Main component		corundum
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥95
5.	Cold crushing strength after 110°C x 24 h	MPa	≥45
6.	Bulk density after 110°C x 24 h	g/cm^3	≥3,05
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 95 KTB

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1800
2.	Main components		corundum, tabular Al_2O_3
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥95
5.	Cold crushing strength after 110°C x 24 h	MPa	≥45
6.	Bulk density after 110°C x 24 h	g/cm^3	≥3,0
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL 95 TB

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1800
2.	Main component		tabular Al_2O_3
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥97
5.	Cold crushing strength after 110°C x 24 h	MPa	≥45
6.	Bulk density after 110°C x 24 h	g/cm^3	≥3,0
7.	Method of application		casting, vibrocasting

REFRACTORY CASTABLE

RIMPEXAL SP

N°	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1750
2.	Main component		electro fused spinel
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥65
5.	MgO content	%	≥6
6.	Cold crushing strength after 110°C x 24 h	MPa	≥9
7.	Bulk density after 110°C x 24 h	g/cm^3	≥2,80
8.	Method of application		casting, vibrocasting

RIMPEXAL 90 TSP

N°	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1750
2.	Main component		
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥90
5.	MgO content	%	≥5
6.	Cold crushing strength after 110°C x 24 h	MPa	≥67
7.	Bulk density after 110°C x 24 h	g/cm^3	<2,95
8.	Method of application		casting, vibrocasting

INSULATING REFRACTORY CASTABLE

Refractory castables on the basis of light refractory materials and refractory cement. Main components of the lightweight refractory castables of RIMPEX Ltd. under the general designation RIMPEXAL LIB are perlite, lightweight fireclay, etc. They are usually cast, vibrocast or rammed. Gunning is also possible.

INSULATING REFRACTORY CASTABLE
RIMPEXAL LIB 1.2

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1100
2.	Main component		lightweight fireclay
3.	Grain size	mm	0 - 5
4.	Cold crushing strength after 500°C x 2 h	MPa	≥3
5.	Bulk density after 500°C x 2 h	g/cm^3	<1,2
6.	Method of application		casting, vibrocasting

INSULATING REFRACTORY CASTABLE
RIMPEXAL LIB 0.9

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1000
2.	Main component		perlite, lightweight fireclay
3.	Grain size	mm	0 - 5
4.	Cold crushing strength after 500°C x 2 h	MPa	≥2
5.	Bulk density after 500°C x 2 h	g/cm^3	<0,9
6.	Method of application		casting. vibrocasting

INSULATING REFRACTORY CASTABLE
RIMPEXAL LIB 1.5

N°	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1300
2.	Main components		perlite, lightweight fireclay
3.	Grain size	mm	0 - 5
4.	Cold crushing strength after 500°C x 2 h	MPa	≥9
5.	Bulk density after 500°C x 2 h	g/cm^3	<1,5
6.	Method of application		casting, vibrocasting

INSULATING REFRACTORY CASTABLE
RIMPEXAL LIB 1.6

N°	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1300
2.	Main component		lightweight fireclay
3.	Grain size	mm	0 - 5
4.	Cold crushing strength after 500°C x 2 h	MPa	≥9
5.	Bulk density after 500°C x 2 h	g/cm^3	<1,6
6.	Method of application		casting, vibrocasting

SEMY-DRY RAMMING MIX ***RIMPEXIT***

SEMY-DRY RAMMING MIX
RIMPEXIT 45

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1400
2.	Main component		fireclay
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥45
5.	Cold crushing strength after 110°C x 24 h	MPa	>15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,1
7.	Method of application		ramming

SEMY-DRY RAMMING MIX
RIMPEXIT 70-2

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1550
2.	Main component		high alumina materials
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥60
5.	Cold crushing strength after 110°C x 24 h	MPa	≥15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,2
7.	Method of application		ramming

SEMY-DRY RAMMING MIX
RIMPEXIT 70

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1600
2.	Main component		bauxite
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥70
5.	Cold crushing strength after 110°C x 24 h	MPa	≥15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,4
7.	Method of application		ramming

SEMY-DRY RAMMING MIX
RIMPEXIT 75

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1630
2.	Main component		bauxite
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥75
5.	Cold crushing strength after 110°C x 24 h	MPa	≥15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,5
7.	Method of application		ramming

SEMY-DRY RAMMING MIX
RIMPEXIT 80

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1650
2.	Main component		corundum
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥80
5.	Cold crushing strength after 110°C x 24 h	MPa	≥20
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,65
7.	Method of application		ramming

SEMY-DRY RAMMING MIX
RIMPEXIT AL

N^{O}	PROPERTIES	UNIT	VALUE
1.	Maximum application temperature	°C	1200
2.	Main component		fireclay
3.	Grain size	mm	0 - 5
4.	Al_2O_3 content	%	≥35
5.	Cold crushing strength after 110°C x 24 h	MPa	≥15
6.	Bulk density after 110°C x 24 h	g/cm^3	≥2,1
7.	Method of application		ramming

DRY RAMMING MIX FOR ELECTRIC ARC FURNACES ***RIMPEXIT***

The dry vibration mixes are used for maintenance of blast furnace runners and also for induction furnaces for iron, steel and non-ferrous metals in foundries.

PROPERTIES	**RIMPEXIT CHK**	**RIMPEXIT CHM**	**RIMPEXIT CKM**	**RIMPEXIT CKME**
Maximum application temperature ^{o}C	1650	1780	1750	1750
Main components	quartzite	magnesite, corundum	magnesite, corundum	corundum
Content of SiO_2, %	>97			
Content of Al_2O_3, %		<35	<85	<85
Content of Fe_2O_3, %	<0,3			
Content of MgO, %		>65	>12	>12
3Grain size, mm	0 - 4	0 - 4	0 - 4	0 -4
Required material for installation, t/m^3	2,1 – 2,2	2,4 – 2,5	2,6 – 2,7	2,6 – 2,7
Application	cast and non-ferrous metallurgy	steel industry	steel industry	steel industry

GUNNING MIX FOR BLAST FURNACS TROUGHS

Shapes most commonly produced by RIMPEX Ltd. are pocket blocks and nozzles for steel casting , burner blocks for fuel oil and/or natural gas, details for burning chambers, tunnel kiln cars, etc.

RIMPEXAL 7 (REFRACTORY CASTABLE)

PROPERTIES	UNIT	VALUE
Content of Al_2O_3 + TiO_2	%	>70
Content of SiC + C	%	>15
Grain size	mm	0 - 10
Cold crushing strength after 1350°C x 2 h	MPa	≥35
Bulk density	g/cm^3	>2,5
Method of application		vibrocasting

RIMPEXAL 5 (DRY RAMMING MIX)

PROPERTIES	UNIT	VALUE
Content of $Al_2O_3 + TiO_2$	%	>65
Content of SiC + C	%	>15
Grain size	mm	0 - 10
Cold crushing strength after (350^oC x 2h)	MPa	≥25
Bulk density (350^oC x 2h)	g/cm^3	>2,3
Method of application		vibrocasting

RIMPEXIT 60RC (RAMMING MIX)

PROPERTIES	UNIT	VALUE
Content of $Al_2O_3 + TiO_2$	%	>60
Content of SiC + C	%	>15
Grain size	mm	0 - 10
Cold crushing strength after (1350^oC x 2h)	MPa	≥25
Bulk density (1350^oC x 2h)	g/cm^3	>2,3
Method of application		vibrocasting

RIMPEXAL 80TC (GUNNING MIX)

PROPERTIES	UNIT	VALUE
Content of Al_2O_3 + TiO_2	%	>60
Content of SiC + C	%	>15
Grain size	mm	0 - 4
Cold crushing strength after (1350^{o}C x 2h)	MPa	≥25
Bulk density (1350^{o}C x 2h)	g/cm^3	>2,1
Method of application		gunning

REFRACTORY MASTIC

PROPERTIES	RIMBOND A	RIMBOND B
Maximum application temperature, ^{o}C	1800	1600
Main components	corundum / Cr_2O_3	bauxite/ corundum
Grain size, mm	0 - 0,2	0 – 0,2
Content of Al_2O_3+TiO_2, %	≥80	≥75
Content of Cr_2O_3, %	≤3	-