



ARRILLAGA REFRACTORIES L.C.







ARRILLAGA REFRACTORIES



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Integrated in **ARRILLAGA GROUP** (specialized in the production and distribution of refractory products and dolomitic lime), **ARRILLAGA REFRACTORIES Limited Company** has been providing their services for over 40 years. During all this time has marketed multiple refractory products according to the needs of each client.

These products includes a wide range of refractory bricks (with a big variety of formats an qualities) and refractory masses. Additionally, it has recently launched a new production line based on the use of dolomitic lime as a material for steel refining ladles, with succesful results obtained.

ARRILLAGA REFRACTORIES Limited Company has a large clients portfolio, which could highlight Gerdau, C.A.F., Acería Compacta de Bizkaia, Arcelor Group, Global Steel Wire, ArcelorMittal Sestao, ArcelorMittal Zaragoza, ArcelorMittal Zumarraga, Global Steel Wire, Productos Tubulares, Hidronitro, Ferroatlántica, Celsa France.

Located in Aia, a small town in the north of the Basque Country, the production plant has 15.000 m² built on a 20.000 m² parcel.

The storage capacity of raw materials is about 12000 Tns, that allows us to guarantee supplies in long-term contracts.

ARRILLAGA REFRACTORIES L.C. has the following presses:

- Laeis HDPA 2000: 2.000 kN/cm² pressing power.
- Laeis HPF II 1250: (2 presses): 1.250 KN/cm² pressing power.
- Bucher RP 900: 900 KN/cm² pressing power.

The brick production capacity at full production is around 15.000 Tns/year.

Likewise has 2 Ceric Wistra hearth movable furnaces that ensure a production capacity of 8.500 Tn/year of baked and tempered bricks.

ARRILLAGA REFRACTORIES L.C. has two Eirich mixers, that allow us to produce the mixes for brick production and also alúmina, magnesite and silica concrete and masses.

DIFFERENTIATION FACTOR

CUSTOMER ORIENTATION: In addition to the standard qualities that are indicated in the following pages, due to the carefully monitored by the performance of our materials, we can supply personalized products to each customer in order to their own specifications..

QUALITY/PRICE: One of the principles of ARRILLAGA REFRACTORIES is to offer an excellent price / quality ratio product..

FLEXIBILITY: As the production capacity is not totally compromised and the possibility of offering a high quality product, Arrillaga Refractories has the flexibility as one of the aims to deliver the orders on the expected time to their customers

Our production capacity is focused onto siderometalurgica industry, that allows us a great specialization. Now there is showed a list of materials for stell making:

ELECTRIC FURNACE TOP AND VACUUM CAP

- Alumina fired bricks, chemically bonded, in many qualities.
- High alumina concrete in different alumina contents.

TUNDISH IN CONTINUOUS CASTING

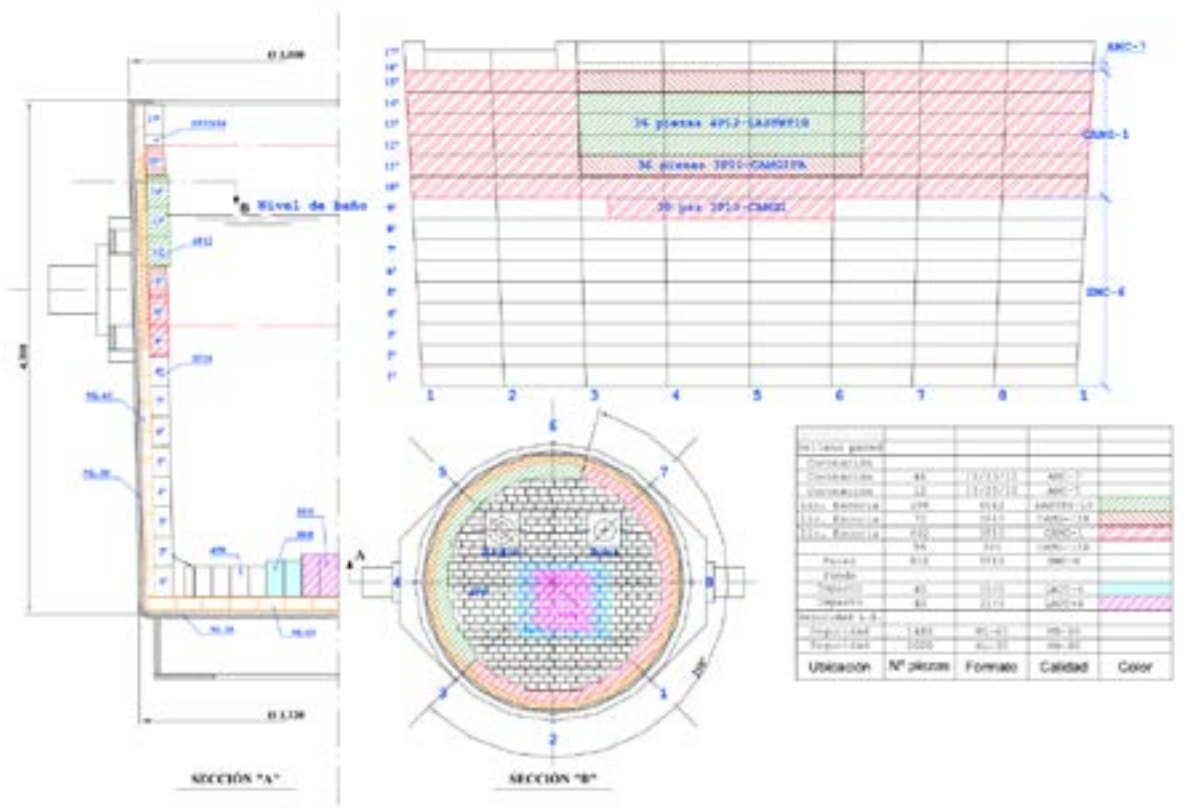
- Impact plates in a lots of formats and qualities.
- Alumina bricks for the wall and the bottom.
- High Alumina concrete for covers.

VARIOUS

- Silica, alumina and magnesite concretes and mases.
- Semiplastic Silca-Graphite masses for the melting pot, taphole and cupola furnace.
- Semiplastic Silica masses for Acid furnaces.

LADLE

- Magnesia-Carbon bricks for slag lining, ladle wall and bottom.
- Magnesia-Carbon and High Alumina bricks for security lining in slag lining, ladle wall and bottom.
- Refractory masses of magnesite to tamp on the ladle bottom (bottom-wall union, nozzle, porous...).
- Refractory mortars of magnesite to be used as filling mass on the back of the brick ladle wall.
- High Alumina concretes for the ladle top.



LADLE APPLICATION COMMODITIES:

- Slag lining : CAMG-1, LASTRY-5, AMC-5
- Wall : MC-15-M, MC-7-M
- Bottom : CR-F, CR-I
- Impact zone: LAOT-6, AMCS
- Security lining: MB-80, CAMG-3, MB-60
- Tapping mass : MP-F
- Filling mass : MR-7
- Concrete: AZ-36, AZ-65, SAZ-90
- Gasket masses : MA-200, OAR-200, MA-98

EAF APPLICATION COMMODITIES

- Slag lining and wall: HMF-50, HMF-75, HME-10, AMC-8, HSA-11
- EBT filling: MABET-90
- Slag conditioner: ALUSLAG

ELECTRIC FURNACE TOP AND VACUUM CAP COMMODITIES

- Fired bricks: CF-80, KM-85T
- Concrete : AZ-36, AZ-40, SA-95

COMMODITIES FOR TUNDISH IN CONTINUOUS CASTI

- Impact plates: SL-30, SCF-24
- Fired bricks for bottom and wall: MB-80, MB-60
- Concretes : AZ-36, SAZ-51

DOLOMITIC LIME

- Dolomitic Lime : RAW (DOLOBET-80), CALCINED



TECHNICAL SHEET

CONCRETES AND MORTARS

QUALITY	Al ₂ O ₃	SiO ₂	Fe ₂ O ₃	MgO	CaO	REF. (°C)	COND.	COLD CRUSHING STRENGTH Kg/cm ²
AZ-30	75,00%	12,00%	1,50%	0,30%	4,00%	1550	0,8	200-300
AZ-33	85,00%	10,00%	1,30%	0,20%	3,00%	1650	0,8	200-300
AZ-34L	80,00%	12,00%	1,30%	-	4,00%	1650	0,8	300-350
AZ-35	82,00%	10,00%	1,00%	0,20%	3,00%	1700	0,82	250-300
AZ-36	85,00%	8,00%	0,80%	0,10%	2,50%	1700	1	300-400
AZ.40	88,00%	6,00%	1,00%	0,30%	2,00%	1800	1,2	300-400
ZM-80	82,00%	12,00%	1,00%	-	3,50%	1700	1	300-400
OAR-200	5,00%	92,00%	1,30%	0,20%	-	1600	0,75	200
SAZ-90	96,00%	1,00%	0,20%	2,50%	-	1750	1,4	400

ALUMINA BRICKS

QUALITY	Al ₂ O ₃	SiO ₂	Fe ₂ O ₃	MgO	CaO	DENSITY gr/cm ³	A.P.*	COLD CRUSHING STRENGTH N/mm ²
CF-80	78,00%	13,00%	1,35%	0,15%	-	2,80	17,00%	60
CF-85	82,00%	11,00%	1,25%	0,40%	-	2,85	15,00%	65
HC-50	51,00%	40,50%	1,20%	-	-	2,42	15,00%	55
HC-60	61,00%	31,00%	1,50%	0,50%	-	2,60	14,00%	60
KM-85T	77,50%	12,00%	1,00%	0,20%	-	2,90	18,00%	60
KM-90T	83,00%	12,00%	1,00%	0,20%	-	2,90	16,00%	65
MB-70	68,00%	26,00%	1,40%	0,80%	-	2,80	15,00%	75
MB-80	75,00%	18,00%	1,30%	0,70%	-	2,85	12,00%	80
MB-82	80,00%	14,00%	1,20%	0,40%	-	2,85	14,00%	85

* A.P.=Apparent porosity

MAGNESIA CARBON BRICKS

QUALITY	Al2O3	SiO2	Fe2O3	MgO	CaO	DENSITY gr/cm3	A.P.*	APPLICATIONS
AMC-5	0,05%	1,20%	1,00%	94,50%	2,00%	2,95	7,00%	SLAG LINING
AMC-10	0,05%	1,00%	0,70%	96,50%	1,50%	3,00	6,00%	SLAG LINING
CAMG-1	0,05%	0,90%	0,50%	96,50%	1,80%	3,00	6,00%	SLAG LINING
CAMG-7	0,10%	0,60%	0,30%	97,00%	1,50%	3,05	5,00%	STAINLESS STEEL
CAMG-8	0,10%	0,70%	0,50%	97,00%	1,40%	3,00	5,00%	SLAG LINING
LASTRY-3	0,05%	0,70%	0,50%	97,00%	1,40%	3,00	5,00%	SLAG LINING
LASTRY-6	0,10%	0,75%	0,45%	97,00%	1,60%	3,05	5,00%	SLAG LINING
CAMG-1FA	0,05%	0,75%	0,45%	97,00%	1,60%	3,05	6,00%	LADLE WALL
CAMG-68	0,10%	0,60%	0,40%	97,00%	1,80%	3,05	6,00%	LADLE WALL, POROUS
LASTRY-8	0,05%	0,40%	0,13%	97,50%	2,00%	3,05	5,00%	LADLE WALL, POROUS
LASTRY-10	0,10%	0,70%	0,50%	97,50%	1,40%	3,10	5,00%	LADLE WALL, POROUS
MC-7M	0,30%	0,80%	0,90%	95,30%	2,50%	2,90	7,00%	LADLE WALL
MC-15M	0,30%	0,80%	1,00%	95,00%	2,50%	2,90	7,00%	LADLE WALL
AMC-7	0,10%	1,30%	1,20%	96,00%	1,30%	2,95	7,00%	LADLE WALL
CR-I	0,10%	1,00%	0,50%	96,00%	1,40%	2,90	7,00%	LADLE BOTTOM
CR-F	0,00%	1,50%	1,40%	95,20%	1,50%	2,90	7,00%	LADLE BOTTOM
HME-9	0,15%	0,45%	0,20%	97,00%	1,50%	3,07	5,00%	ELECTRIC ARC FURNACE
HME-12	1,45%	0,30%	0,10%	97,50%	0,80%	3,15	5,00%	EAF
HME-15	1,70%	0,40%	0,10%	97,00%	0,90%	3,10	5,00%	EAF
HMF-50A	0,05%	0,70%	0,30%	97,00%	1,70%	3,07	5,00%	EAF

* A.P.=Apparent porosity



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