



GENERAL CATALOGUE

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Verdés

Clay Preparation & Shaping Experts



+ The key of our success



After more than 100 years of leadership in the ceramic industry we have specialized in designing and manufacturing tile and brick making machines as well as machinery for processing non ferrous minerals and wastes. Thanks to the wide knowledge we've acquired we are able to assist and guide our Clients to achieve the best results.

OUR STRENGTHS

Facilities

Verdés headquarters facilities located in Vilanova del Camí (Barcelona) comprise 23.000 m² including offices, manufacturing plant and warehouse.

Integrated Production

This integrated production system allows us to entirely manufacture all Verdés machines and parts in our headquarters facilities.

Quality

Because our best reward is the satisfaction of our Clients, Suppliers and Partners, at Verdés we adapt our production and service to the highest international quality standards.

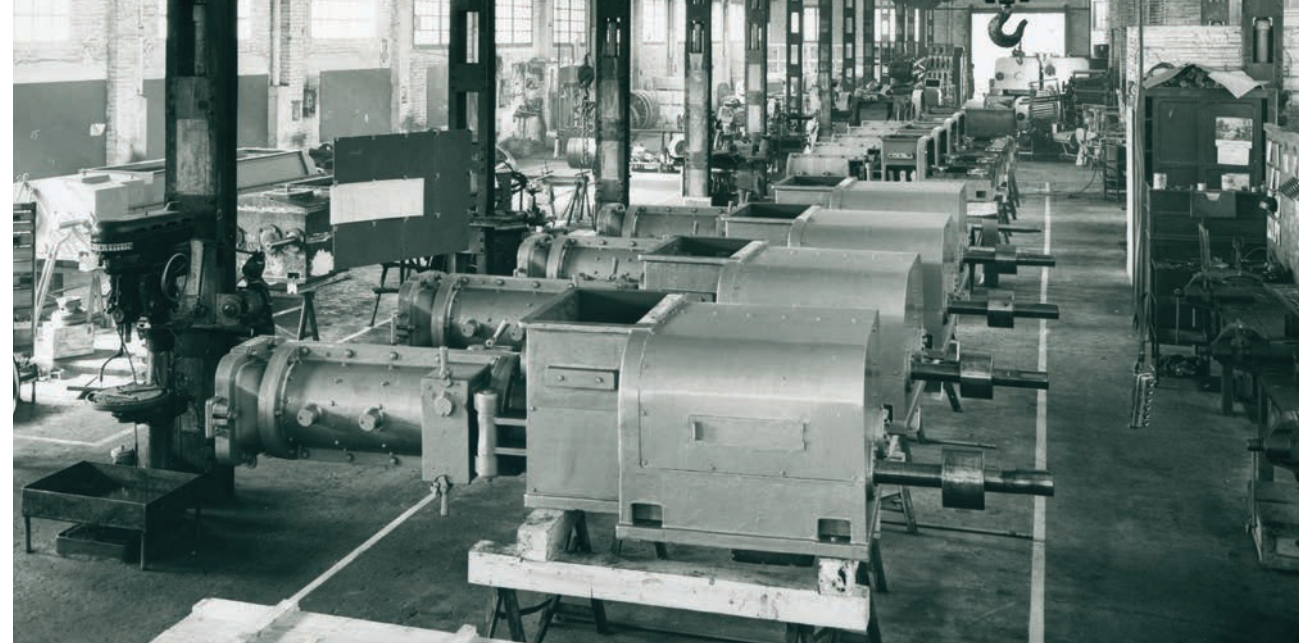
R&D

Investing in technology and in a highly skilled team let us offer machines and solutions even more productive and with a higher added value for our Clients.



+ Since 1908

Verdés history starts here



The capacity of planning the future, investing in new improvements and also travelling beyond our borders has been the key to achieve a leadership role in our sector. Thus, we will keep on developing and offering new products, services and solutions that solve both the present and future challenges.

Export evolution & opening of subsidiaries and workshops

1908/1950

10%

1960

14%

1970

20%

1980

35%

1990

65%

1992

Portugal
Subsidiary

2000

Morocco
Subsidiary

2005

Algeria
Subsidiary

2010

99%

2011

Russia
Subsidiary

2013

Verdés India



Always close to our Clients

Verdés has 2 Workshops, 4 Subsidiaries and a wide net of Sales Agents spread around the world, offering the best service to our Clients in more than 50 countries.

This proximity allows us to better know their needs so we can assist them in a better way with a deeper and wider know-how.

+ Industries



HEAVY CLAY

We have more than 100 years of experience designing and manufacturing clay preparation and shaping machines, basically oriented to produce clay bricks and other ceramic products. During all this time we have supplied thousands of machines across the five continents, what has given us an excellent know-how in the Heavy Clay Industry that nowadays allow us to offer a better service to our Clients.



MINERAL PROCESSING

Besides making bricks and other ceramic products, our machines are also used for processing and handling of minerals such as: anthracite, barite, bauxite, bentonite, coal, dolomite, feldspar, gypsum, kaolin, lignite, lime, limestone, magnesite, marl, phosphate, pet-coke, potassium, sepiolite, talc...



EXTRUSION AND PELLETIZING

In addition to the mineral processing and heavy clay markets, other applications of our products include: processing, briquetting and pelletizing of mineral and ferroalloys fines and wastes such cakes from filter presses, industrial and sewage sludges, fly ashes and iron and steel industry wastes like blast furnace and converter dusts and sludges, EAF dust and fines of iron pellets, coke, millscale, slag...

+ Services



PROJECT STUDIES

As weather, working conditions, raw materials, technology levels as well as legal requirements vary from one country to another, we make available our broad experience to our customers to ensure that the project will be executable in all aspects and will be developed and performed as scheduled. From the coming into force of the agreements up to a successful commissioning.



MATERIALS TESTING LABORATORY

Thanks to our laboratory, our experts can analyze with great precision the technological behavior of solid materials, both mineral and organic. With this information, we can recommend to our clients suitable equipment and processes to optimize the manufacture of their products.



TECHNICAL ASSISTANCE

Our experienced team guides our clients through every phase of the installation and commissioning of the equipment, and helps them to optimize the total life cycle and productivity of the machinery via a wide range of services including follow-up visits, maintenance, replacement of parts, modernization and upgrading of equipment, detailed manuals and repairs.



TECHNICAL TRAINING

We provide our client's staff with technical training, on site or at our factory in Vilanova del Camí. Our specialists train our client's personnel, passing on knowledge of the manufacturing process as well as preventive maintenance, guiding and recommending in each case those optimal production parameters and good practices to ensure the maximum performance of the installation.

+ Original Parts

THE BEST DECISION

Our machines meet the highest standards of durability, reliability and efficiency. That's why the best way for our Clients to maintain their investment and optimize the performance of their machines is by using original Verdés spare parts.

We are the only company in the sector to manufacture and provide the world over with original spare parts for all our equipment. From nuts and bolts, bearings, electrical and electronic components, to transmission components, auxiliary equipment and wearing elements, either for newly installed machines or older machines that are still in service.

All of this, coupled with the highest quality service, contributes to the smooth functioning of our Clients' factories in the most economical and efficient way possible.



WARRANTY

All our spare parts are completely guaranteed and meet the latest design specifications.



ADDED VALUE

We work every day to improve our parts so that they last longer, are easier to replace and bring added value to your operation.



EFFICIENCY

We offer the safest and most economically efficient long-term solution, thus helping to maintain your operational capacity and protecting your market position.



CUSTOM SOLUTIONS

We provide customer service programs developed exclusively according to your needs and location.

ALWAYS CLOSE BY...

The main Verdés distribution centre is located close to the international airport and Barcelona Port, which guarantees fast and efficient shipping of parts to anywhere in the world. We also have 9 other distribution centres spread across 4 continents, which allow us to always be close to our Clients and offer them the best availability in original spare parts.

This means that our geographical proximity, together with the comprehensive advice we provide to our Clients, has for decades led to the creation of long-lasting and trusting relationships.

WHY ORIGINALS?

- ✓ They meet the needs of all Verdés machinery, from the oldest to the most recently installed.
- ✓ Since they are original, they always fit perfectly in your Verdés machinery.
- ✓ They come with the manufacturer's warranty.
- ✓ They have undergone rigorous quality testing to verify their efficiency.
- ✓ They have a long service life and very competitive costing.
- ✓ We supply them rapidly and efficiently thanks to a practical coding system.
- ✓ High availability of spare parts and a steady supply anywhere worldwide.
- ✓ Designed by Verdés to bring value to your business, reducing operating costs and maintaining your competitive position in the market.

RESULTS GUARANTEED

Our research projects are designed to develop and improve wearing elements that provide greater efficiency to our clients' business. In this sense, at the Verdés Research and Quality Departments we focus on increasing their life cycle, making them easier to handle and optimizing replacement times, which in turn means lower operating costs for our clients.

Moreover, to guarantee the sizes and correct performance of our wearing elements, Verdés original spare parts are subject to rigorous quality controls. Thus, we pay special attention to guaranteeing and testing key factors such as tolerance, size, hardness level, material composition, functionality and durability.



+ Turnkey projects

“ We are experts in full plants projects development. From the conceptual and detail oriented engineering to the final tests conducting at our Clients plants and the technical training of their technicians, until the final project delivery. Always working together with our Clients as a real Partner. ”

+ Our Machines

1. Primary crushing

- + Primary Crushers

2. Storing and Dosing

- + Open Air Stackers
- + Box Feeders

3. Dry Grinding Process

- + Hammer Mills
- + Pendulum Mills

4. Wet Grinding Process

- + Disintegrators
- + Wet Pan Mills

5. Lamination

- + Optima Roller Mills
- + Grinding lathes

6. Homogenization and Mixing

- + Double Shaft Mixers
- + Extruder Mixers
- + Filter Mixers
- + Circular Screen Feeders

7. Storing and Homogenization

- + Reclaimers

8. Extrusion and Shaping

- + Magna de-airing extruders
- + Monobloc de-airing extruders

9. Laboratory Machines

- + Disintegrator
- + Hammer Mill
- + Pendulum Mill
- + Roller Mill
- + Mixer
- + De-airing extruder

Primary Crushing



PRIMARY CRUSHERS

Our very robust primary crushers are suitable for crushing the material coming directly from the quarry, reducing its original irregular dimension to uniform sizes less than 80 mm in order to facilitate subsequent dosing and storage. They are designed to accept non-ferrous materials containing moisture levels above 20% with a maximum hardness of 5 Mohs.

Their installation can be arranged in different configurations: by direct loading via dumper/loader or dosed by box feeders or conveyors.

An ideal range of sizes and configurations confers great flexibility and adaptability to various applications with production rates up to 400 t/h.

Storing and Dosing



OPEN AIR STACKERS

The stackers allow creating exterior warehouses automatically, in a very efficient way and with a minimal operating cost. Using stackers for stockpiling has great advantages, especially when compared with the use of earth-moving machinery.

These units ensure a pre-homogenization of material from quarries and allow storing different raw materials. Prolonged exposure of pre-crushed material to weather conditions favors crumbling and improves its behavior during subsequent processes.

These machines are manufactured in various configurations — radial, box-feeder or combined. Their design is fully customized, taking into account the available space and the required production to achieve maximum storage capacity.



BOX FEEDERS

Equipment designed for the storage of material and its continuous, uniform and controlled dosing. Thanks to the precision of its dosing system, it can create mixtures of different materials in a controlled manner. Likewise, its high-capacity hoppers allow the creation of automated storage systems. Slat feeders are mainly used for materials with a certain level of humidity, while belt feeders are more suitable for dry materials generally with finer granulometry. These box feeders are widely used not only in the ceramics industry, but also in other industrial sectors.

The combination of various sizes and special configurations offers excellent flexibility and adaptability for different applications and performance with storage capacities that can exceed 150 m³ and assure dosing up to 110 m³/h.

Dry Grinding Process



PENDULUM MILLS

Pendulum mills are used in various industries to process a wide variety of materials economically and effectively. Their grinding efficacy combined with the fact of being able to grind, classify and, if necessary, dry in a single system gives them a clear advantage over other systems.

They admit the supply of various grain sizes while obtaining a range of fines of up to 15 microns in a single run, resulting in high yields and exceptional final product quality.

They can process materials with high plasticity and humidity indexes, also achieving high efficiency in simultaneous drying. These include clays, bentonites, calcium carbonate, chalk, dolomite, lime, limestone, phosphates, barite, talcum, petroleum coke, coal, etc. We offer everything from laboratory equipment to large-capacity mills.



HAMMER MILLS

Their versatility makes them suitable for grinding non-ferrous materials. They are essential in dry-process lines and particularly suitable for grinding clay to be used for the manufacture of high-added-value ceramic products. They provide a high degree of milling capacity, with a great percentage of fines under 500 microns and optimal granulometry curves for the manufacture of ceramic products.

They have been specially designed to facilitate visual inspection and quick access for maintenance tasks that can be performed by a single operator without auxiliary mechanical means.

These mills are available in a wide range of sizes and configurations, ensuring excellent flexibility and adaptation to different raw materials and working conditions, reaching a production of 100 t/h.

Wet Grinding Process



WET PAN MILLS

These are the most universal and highest-performance machines for wet-process preparation, particularly suitable for grinding hard, compact clay or even containing stones. These mills grind materials uniformly achieving a high degree of homogenization.

Its design — based on a system of central supply with lower driving system — allows a perfect distribution of material on the grinding track, low power consumption, minimal wear and quiet operation. Moreover, the various grill shapes make it possible to obtain different degrees of grinding.

They feature easy access for maintenance and replacement of wearing parts. The current range of wet pan mills features sizes that can result in production of 120 t/h.



DISINTEGRATORS

These machines are suitable for secondary and eventually primary grinding of dry and semi-wet materials. Input materials of various grain sizes are allowed, usually following a primary crusher.

The grinding is performed by shearing by means of two counter-rotating cylinders of different diameters and adjustable aperture. One of them is equipped with interchangeable blades and rotates at high speed. The equipment can be fitted with a lathe to keep the smooth cylinder surface in optimal conditions and ensure the maximum particle size control.

A wide range of disintegrators is available, offering flexibility and adaptability to different raw materials and working conditions, reaching production of 200 t/h.

Lamination



OPTIMA ROLLER MILLS

The Optima roller mill range has been designed to provide high performance, working with total reliability due to the design with a robust, oversized bedplate and high-precision and high-load bearings.

The pressure between rollers is hydraulic in the entire Optima roller mill range, making it possible to work in a stable manner with 0.6 mm minimum openings.

There are different roller shell options depending on the application and working conditions.

One of its outstanding features is the innovative separation system between rollers of the H and R models, providing the desired gap with a precision of less than 0.01 mm.

Optima roller mills come in versions from 600 to 1400 mm in width with tangential speeds of up to 21 m/s.



GRINDING LATHES

These machines are designed for frequent, practical and efficient grinding in order to maintain cylinders in good condition and ensure optimal grinding result.

They feature an electro-welded, non-deformable steel frame to rectify without vibrations, also incorporating a blocking system to rectify in the most demanding conditions. High-durability carriage rails are manufactured in steel with tempered chrome.

A clutch system enables manual movement of the carriage so it can be moved quickly to the work position, shortening the total time required for grinding.

These units have a frequency converter integrated into a control panel that can be installed in different arrangements. Thanks to the simple and compact design, they are very easy to adapt to machines of different configurations.

Homogenization and Mixing



DOUBLE SHAFT MIXERS

Critical equipment in the preparation process to ensure accurate and homogeneous mixing of various types of materials and solid or liquid additives.

The size and large capacity of the trough combined with the possibility of adjusting the knives' mixing angle, results in a perfect homogenization and allows adjusting the mixture processing time inside the machine.

Its high efficiency is based on the concept of "knife-against-knife" mixing. A unique characteristic of Verdés mixing machines whereby the distribution and geometry of the knives intensify the perfect kneading and cohesion of the mixture, contributes to the blend-in of water and facilitates the uniform distribution of additives, to achieve a completely homogeneous batch.

An ideal size range can achieve productions up to 200 t/h.



EXTRUDER MIXERS

Designed to ensure perfect cohesion of mixtures from various clays and an optimal blend-in of additives of various textures and densities. Extruder mixers also ensure more efficient wetting and highly homogeneous re-processing of off-cuts coming from shaping area.

The design and layout of the mixing trough, and especially the knives, increase the mixing effect, driving the material forward while pressing it between the knives of both shafts. The pressure zone located at the end of the shafts and subsequent cutting by means of a system of star-shaped combs ensure impeccable homogenization and uniform size of particles, and thus make it easy to transport and dose.

Homogenization and Mixing



FILTER MIXERS

Filter mixers are suitable in cases where the material to be processed contains impurities that may alter mixture qualities and subsequent processing. Built similarly to Extruder mixers, they also incorporate all the elements required for material wetting and mixing via two parallel shafts with adjustable knives that allow regulating the mixing intensity and the processing speed within the trough, feeding out to the compression area prior to filtering.

The filter consists of a hydraulic drive chassis housing and a double-section grill which filters out the impurities on one side while the other is free for cleaning.



CIRCULAR SCREEN FEEDERS

This machine, also known as a vertical mixing machine, is specially designed to achieve perfect homogenization and mixture of clays, and for constant and uniform dosing of extruders.

Its compact and multifunctional design provides high performance with low power consumption. This machine concept is essential when large amounts of off-cuts need to be processed and at the same time the dry and hardened lumps in the mix need to disappear.

Its large kneading trough and robust rotor shape, coupled with the water or steam addition system, ensure the perfect homogenization of the mixture.

Storing and Homogenization



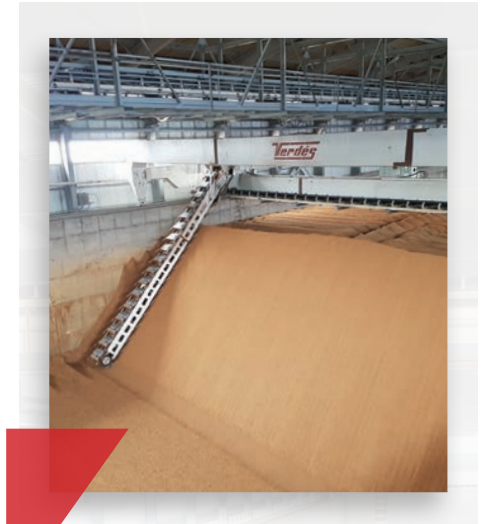
LINEAR RECLAIMERS

Longitudinal Reclaimers, Chevron system storage rooms.

Reclaimers are essential equipment when we aim to optimize the exploitation of warehouses, automating the extraction of material, reducing operating costs and improving the properties of outgoing mixture.

The extraction method in warehouses, using reclaimers, enhances mixture homogenizing since equal quantities of each warehouse layer are extracted, compensating for the different particle sizes and humidity variations.

These machines are available in two different designs featuring various customizable configurations tailored to process needs, given available space and required production.



OVERHEAD RECLAIMERS

Overhead Reclaimers, Windrow system storage rooms.

Extrusion and Shaping



MAGNA DE-AIRING EXTRUDERS

The Magna de-airing extruders range concentrates all our experience in the field of clay extrusion together with the latest operational improvements and technological advances developed by Verdés. They have been designed to provide the highest performance while working with total reliability under the toughest working conditions.

Its modular design combines a large volume vacuum chamber with a mixer body available in two configurations, long or short, according to the Clients needs that also provides an excellent accessibility for maintenance tasks and replacing of wearing parts. It can be mounted in line or at an angle of 90° on the extrusion body which allows for the best fit to the installation.

A wide range of sizes and configurations — Ø 400 mm to Ø 775 mm augers — deliver excellent flexibility and adaptability to different extrusion conditions.



MAGNABLOC DE-AIRING EXTRUDERS

Designed for maximum performance at low power consumption and minimal maintenance costs, they are based on the experience of over 70 years in clay shaping. Highly recommended for multi-product plants, their design stands out for a large-capacity mixing machine and three main shafts driven by a single reducer assembly, synchronized and driven by a single motor.

This proven and efficient concept also provides maximum operator accessibility for the replacement of all components.

Magnabloc equipment is available with augers up to Ø 575 mm. They can be configured as cylindrical, conical or extra-conical to deliver excellent flexibility and adaptation to different extrusion requirements.

Laboratory Machines

Verdés has developed a range of specific machines for testing raw materials (wood, calcium carbonate, sepiolite, clay, ash, etc.) in different process conditions. The idea is to analyze performance prior to the industrial-scale production process and thus determine the most appropriate process.



Disintegrator 120

Dimensions	mm	480 x 735 x 390
Ø x knives roller length	mm	100 x 120
Ø x smooth roller length	mm	140 x 120
Installed Power	kw	1,5



Hammer Mill 030

Dimensions	mm	850 x 655 x 1065
Motor Power	kw	5,5
Input material size	mm	0÷50
Maximum production (depending on the screen used)	kg/h	1.000



Pendulum Mill 270 LAB

Dimensions	mm	ø1000 x 1575
Installed Power	kw	4 - 5,5
Input material size	mm	0÷8
Inside ring Ø	mm	390
Pendulum Ø	mm	120
Air flow	m³/h	1500



Roller Mill 080

Dimensions	mm	480 x 735 x 390
Ø x rollers length	mm	140 x 120
Installed Power	kw	1,5



Mixer 040

Dimensions	mm	680 x 825 x 932
Mixing trough capacity	l	50
Motor Power	kw	0,75



De-airing extruder 050

Dimensions	mm	550 x 1858 x 1382
Auger Ø in feeding area	mm	100
Auger Ø in compression area	mm	68
Installed Power	kw	4
Volumetric Production	dm³/h	70



ects
european ceramic technology suppliers



GENERAL CATALOGUE

Talleres Felipe Verdés. S.A.

SPAIN

C. Metalurgia, 2
08788 Vilanova del Camí
Tel. +34 93 806 0606
Fax +34 93 806 0411
comercial@verdes.com

Verdés Maroc, S.A.R.L.

MOROCCO

Zone Industrielle Bir Rami
Lotissement 33, Kenitra
Tel. +212 37 36 41 02
Fax +212 37 36 40 58
maroc@verdes.com

Тальерес Фелипе Вердес, С.А.

РОССИЙСКАЯ ФЕДЕРАЦИЯ

Бизнес-центр «Хамовническая слобода»
ул. Льва Толстого, д. 5/1, офис В-710 (7-й этаж)
119021, г. Москва
Тел. +7 495 544 77 92
russia@verdes.com

Verdés Al-Djazair, S.A.R.L.

ALGERIA

Hai Galloul - Bordj el Bahri
Alger
Tel. +213 23 96 97 29
Fax +213 23 96 97 30
algerie@verdes.com

Verdés Maquinaria para Cerâmica, Lda.

PORTUGAL

Z. Industrial dos Meires
3105 289 - Pelariga (Pombal)
Tel. +351 236 215 118
Fax +351 236 215 134
portugal@verdes.com

Verdés Clay & Minerals Equipments Pvt. Ltd.

INDIA

635109 Hosur
Tel. +91 43472 94717
india@verdes.com

Verdés

www.verdes.com

