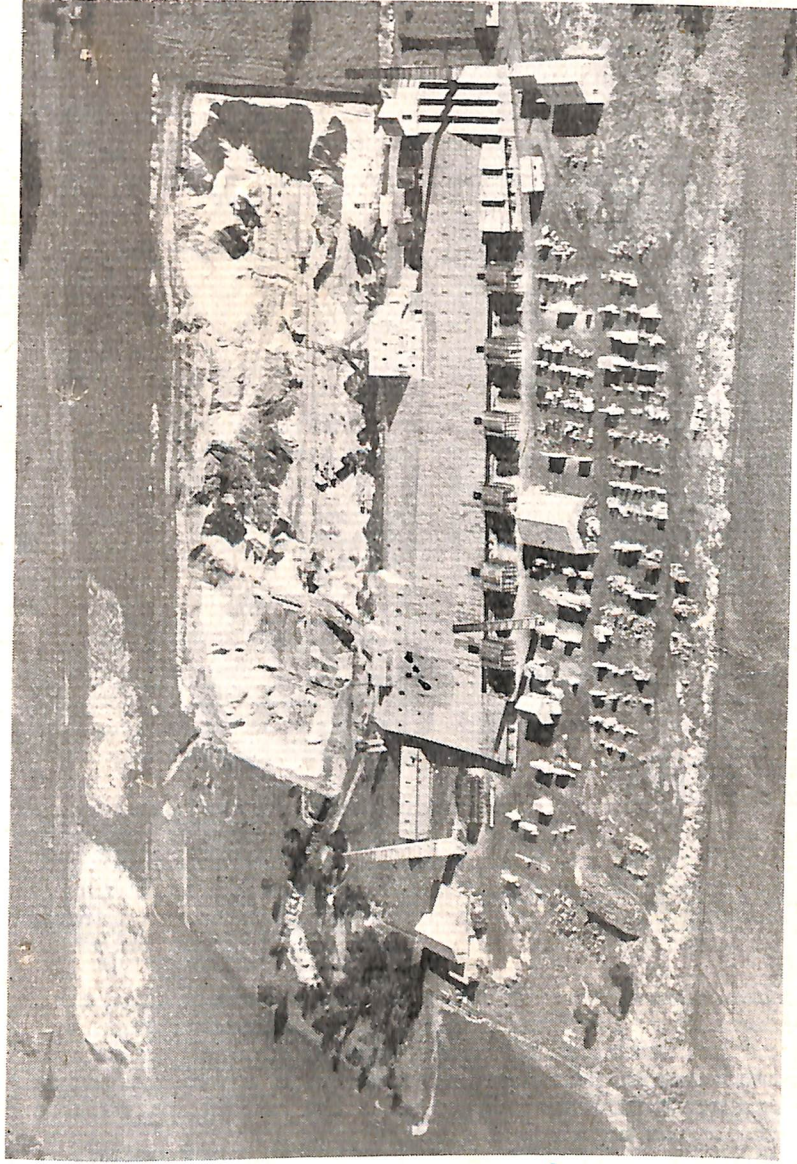


The
ORDISH FIREBRICK
CO. PTY. LTD.
DANDENONG
VICTORIA

List of
Ordish
Refractory Products

LETTERS: P.O. BOX 16, DANDENONG, VICTORIA.
TELEGRAMS: ORDISH, DANDENONG.
TELEPHONES: DANDENONG 90, 124.

*ORDISH
Firebricks
are known
by the
Customers
they
keep.*



VIEW FROM THE AIR OF THE ORDISH FACTORY, DANDENONG.

*ORDISH
Firebricks
Guarantee
Increased
Efficiency—
Reduced
Costs.*

List of Ordish Refractory Products

STANDARD FIREBRICKS	26% Alumina (Al ² O ³)
H.A. FIREBRICK	36% Alumina (Al ² O ³)
ORBAUX FIREBRICK	70% Alumina (Al ² O ³)
ORCELL FIREBRICK	26% Alumina (Al ² O ³)

Special shapes to order in all above materials.

MATERIAL

USES

STANDARD FIRECLAY	Bonding of firebricks and shapes. All temperatures.
HIGH TEMPERATURE CLAY	Bonding of firebricks and shapes. Above 1,000° C.
AIR-SETTING CEMENT	Bonding of firebricks and shapes. Below 1,350° C.
REFRACTORY PUTTY	Jointing of gas, electric stoves, etc.
FURNACE DAUBING	Lining and patching of non-ferrous furnaces.
PLASTIC FIREBRICK	Lining and patching of boilers, furnaces and cupolas. Ramming of special shapes.
H.A. RAMMING MATERIAL	Mainly for special shapes that are thin in section, i.e., electric elements and burner blocks.
REFRACTORY CONCRETE	Foundations for furnace structures, flue linings, furnace doors. Baffles of water tube boilers, ash hoppers, precast units, burner ports, etc.
REFRACTORY INSULATING MATERIAL	For hot face refractory not in excess of 850° C. For insulating behind refrac- tory concrete and standard firebrick- work.
CROG (CRUSHED FIREBRICK) FINES. No. 8, No. 4 or to specification.	For manufacture of cupola daubings, sagger bodies and general patching materials when mixed with clay.

MATERIAL	TYPE of SET	PACKAGE
FIRECLAY	Heat	Bags.
HIGH TEMPERATURE CLAY	Heat	Bags.
AIR-SETTING CEMENT	Air	Drums.
REFRACTORY PUTTY	Air	Drums.
FURNACE DAUBING	Heat	Drums and Bags.
PLASTIC FIREBRICK	Heat	Drums and Bags.
H.A. RAMMING MATERIAL	Heat	Drums and Bags.
REFRACTORY INSULATING MATERIAL	Hydraulic .	Bags.
REFRACTORY CONCRETE	Hydraulic .	Bags.

Ordish High Temperature Clay

This clay is a finely balanced mixture of kaolin, the best Ordish grog and bond clay blended to give smooth workability with high bonding strength over all its temperature range which is above 1650°C.

High temperature clay is recommended for setting up all types of firebrick where a strong gas tight joint is required. Joints will not crumble or fall out.

It is particularly suitable for battering the bricks together because of its fine texture. It can be used for dip jointing to ensure the minimum of clay between surfaces.



High temperature clay is not recommended for temperatures below 1000°C.; although a certain bond is evident below this temperature the ceramic bond does not begin to develop until temperatures of approximately 980°C. are reached. For temperatures below 1000°C. Ordish Air-setting Cement is recommended.

FURNACE WASH

High temperature clay can be thinned down to paint consistency and bagged, brushed or sprayed to form a protective skin which prolongs the life of the brickwork. Covering capacity 50 sq. ft. per gallon.

DIRECTIONS

Mix the high temperature clay with clean water. Best results are obtained by allowing the mixture to soak for six hours before use. Always dry out new work slowly, gradually increasing the temperature to develop the bond.

Supplied in bags of 112 lbs.

Approximately 3.5 cwt. of high temperature clay is required to lay 1,000 bricks. Weight, 88 lbs. per cubic foot.

Refractory Putty

This is a clay bonded asbestos fibre putty with heat resisting properties and similar workability to that of linseed oil putty. It sets hard and will not crumble. Can be thinned down to trowel consistency by adding clean water.

USES

Jointing Gas, Electric and Wood Stoves, metal flanges, etc.

Supplied in 2 gallon tins — 30 lbs.

Supplied in 5 gallon tins — 84 lbs.



Air-Setting Cement

Ordish Air-Setting Cement is a machine mixed plastic paste ready for use straight from the container. It has a high cold strength which increases with temperature up to its limit which is approximately 1350-1400°C. It forms a gas-tight and permanent bond which is usually stronger than the firebrick itself.



FURNACE WASH

When thinned down with clean water, air-setting cement can be applied with brush or spray gun to firebrick surfaces thus forming a protective seal which prolongs the life of the brickwork.

PATCHING

The addition of crushed firebrick (grog) — 1/8 in. mesh — will make an excellent patching material where temperatures do not exceed 1100°C. Supplied in 2 gallon tins — 36 lbs. Supplied in 5 gallon drums — 100 lbs.

Plastic Furnace Daubing

A plastic ramming or moulding material particularly suitable for lining or patching furnaces used in the non-ferrous industry. This material is highly siliceous and non-ferrous metals have no affinity to this plastic. There is no need for re-bricking a furnace when Plastic Furnace



Daubing can be applied to the old surface. This new lining will give longer life than the original brickwork particularly if in direct contact with metal.

Should the material dry out it can be reclaimed by adding clean water to bring it back to its original plastic state.

METHOD OF MIXING

Best results are obtained when mixed with clean water in a Chilian or Pan Mill to a stiff putty-like condition. Too much moisture will cause the finished product to crack.

Use a mastic hammer or pneumatic hammer for furnace linings, etc., build up layer by layer until desired thickness is obtained; care must be taken not to let one layer dry out before the next is applied. Do not smooth off the surface, leave it rough. This enables the moisture to escape in drying. The ready mixed material can be used straight from the drum.

DRYING

Use a very slow fire at first, gradually increasing the temperature to develop the bond. This material has a fusion point of 1600°C. Supplied in bags of 112 lbs. or drums, 100 lbs.

Ordish Plastic Firebrick 32% Al²O₃



Ordish Plastic Firebrick is a clay bonded grog aggregate ramming material which requires temperature to develop the bond. Should not be used for temperatures below 1000°C. unless it is supplied as air-setting. It is a material suitable for making shapes or patching furnace walls, etc. When rammed into place it forms a jointless structure with high resistance to spalling capable of withstanding temperatures up to 1650°C. Heat losses are reduced because of absence of joints.

Plastic Firebrick has very little shrinkage in use, although the addition of more water adds to the workability, it will also slightly increase the drying and fired shrinkage.

MIXING

It is either mixed in a concrete mixer or on a flat floor, adding sufficient water to enable the mixture to ball up without sweating when squeezed in the hand. It is then rammed into position with a wooden mallet or similar tool. Do not finish off to a smooth surface as this will trap the moisture in the centre and may cause cracking. Any dried out material can be reclaimed by mixing with water to bring it back to a plastic state.

USES

Door jambs, furnace doors, special shapes, cupolas, receivers, ladles, burner ports, etc.

Plastic Firebrick is supplied ready mixed in 5 gallon drums or dry in 5 ply paper bags.

100 lbs. dry material = 1 cubic foot when rammed into position.

Ordish Refractory Concrete No. 2

RANGE 1350°C.



Refractory Concrete forms a highly aluminous monolithic lining with little or no shrinkage before or after firing. It consists of an hydraulic binder with "Ordish Grog" suitably graded for the aggregate. Added to this is a plasticiser which gives workability to this otherwise harsh material.

Ordish Refractory Concrete is a castable which finds many uses in furnaces and industrial boilers. The concrete is ready for use 24 hours after placing in position.

It is stable under load to 1300°C. and has a melting point of 1450°C., and can be subjected to the widest sudden fluctuations of temperature without fear of spalling.

Precast shapes can be made without risk of distortion or cracking and are of great strength within 24 hours. Shrinkage is nil.

When particularly large shapes are being cast it is essential to keep the concrete damp by pouring water over it during the first 12 hours. The addition of pieces of broken firebrick up to 2 in. cube in size is an advantage when casting particularly large sections.

METHOD OF MIXING

Empty the bag of dry concrete material on a clean floor and mix with water, approximately 1¾ gallons per cwt., until the desired consistency is obtained. The mixture should be wet enough to pour without washing the cement away. If available, a concrete mixer is ideal for mixing. Insufficient mixing will always lead to harshness or lack of workability in the mix. A minimum of three minutes in a mechanical mixer is recommended.

CURING

The time of initial set is between 3-6 hours and the final set takes place within 1½ hours of the initial set. Water or damp bags should be put over the concrete after the initial set takes place. The damp curing of refractory concrete is very important and neglect in this matter can lead to poor strength or possible total failure of the concrete.

PLACING

When the refractory concrete is mixed it should be placed within steel or wooden moulds and gently consolidated by lightly rodding the mixture. Vibrating the sides of the mould by tapping is a useful means of obtaining a good finish.

USES

- Foundations for furnace structures.
- Flue linings.
- Furnace doors and dampers.
- Baffles of water tube boilers.
- Ash hoppers. Precast units. Burner ports.
- Packed in 5 ply paper bags of 112 lbs.
- Density Dry — 100 lbs. per cubic foot.
- Density Cast — 112 lbs. per cubic foot.

Ordish Refractory Concrete No. 5

RANGE 1000°C.

Refractory Concrete No. 5 has been developed mainly for use behind finned tubes in boilers or in a position where it is not desired to erect forms or shuttering. It is very plastic and will hold in a vertical position where No. 2 would fall away. No. 5 also will set much quicker than No. 2, but it has a tendency to shrink above 1000°C. (1832°F.).

Ordish H. A. Ramming Material

36% Al²O₃

This is a clay bonded high alumina ramming material which requires temperature to develop the bond. Should not be used below 1000°C. unless supplied as air-setting. This material is very similar to Ordish Plastic Firebrick except that it has finer aggregates. It is used for making thin sections where a dense surface and sharp edges are required.



MIXING

The addition of a little water may be added to the contents which is supplied ready mixed in drums. Any dried out material can be reclaimed by mixing with water to bring it back to a plastic state. Ordish H.A. Ramming Material is supplied ready mixed in five gallon drums of 84 lbs. 100 lbs. material = 1 cubic foot.

USES

Mostly for small shapes where the Ordish Plastic Firebrick is too coarse.

Ordish Plastic Insulating Material

This material has a diatomaceous earth base with a porous grog and hydraulic binder. It has very little shrinkage when used as a hot face insulation at temperatures not in excess of 850°C. Its fusion point is 1200°C.

Precast shapes can be formed from this material or it can be cast in situ on the job.

Method of mixing and placing is the same as for "Ordish Refractory Concrete".

USES: Mainly as an insulating backing behind Refractory Concrete or as a hot face insulation.

Packed in 5 ply paper bags of 65 lbs = 1 cubic foot when mixed with 12 quarts of water.

Ordish Standard Firebrick 26% AL²O³

The best all-purpose firebrick obtainable, made from the highest quality fireclay. This brick is renowned for its high resistance to spalling and is used almost exclusively by the principal power houses and railways throughout Australia.

ANALYSIS

Silica SiO ₂	69.58%
Alumina Al ₂ O ₃	26.85%
Ferric Oxide Fe ₂ O ₃	0.93%
Titanium Oxide TiO ₂	0.90%
Magnesia MgO	0.03%
Lime CaO	0.56%
Alkalines	0.65%
Ignition Loss	

Refractoriness	Seger Cone 32 (1710°C.)
Crushing Strength	45/50 tons sq. ft.

Special shapes to order.

Ordish H. A. Firebricks 36% AL²O³

This brick is somewhat harder and denser than the standard firebrick and was developed to meet the need for a refractory having a good resistance to abrasion and spalling with a high crushing strength. This brick has a fair resistance to metal slag and is ideal for furnace hearths, door jambs, bridge walls, etc.

ANALYSIS

Silica SiO ₂	59.66%
Alumina Al ₂ O ₃	36.00%
Ferric Oxide Fe ₂ O ₃	2.56%
Titanium Oxide TiO ₂	
Magnesia MgO	Trace
Lime CaO	0.34%
Alkalines	
Ignition Loss	3.87%

Refractoriness	Seger Cone 32.
Crushing Strength	140/144 tons per sq. ft.

Special shapes made to order.

Ordish Orbaux Firebricks 70% AL²O³

This brick was first developed for use in lime and cement kilns where it met with instant success. It also has a very high resistance to metal slags and abrasion.

ANALYSIS

Alumina Al ₂ O ₃	70%
Silica SiO ₂	20%
Ferric Oxide Fe ₂ O ₃	5%
Titania TiO ₂	4%

Special shapes to order.

Ordish Orcell Insulating Firebrick

26% AL²O³

The low thermal conductivity and the relatively high crushing strength enables this brick to be used in the dual capacity of a high refractory and an effective insulation.

The economic value of insulation at the hot face of furnace walls is definitely established, and the process of manufacture of Orcell with a base of Ordish fireclay, results in a unique cellular structure without impairment to refractoriness.

Hot face service temperature is 1350°C. max.

ANALYSIS

Silica SiO ₂	69.58%
Alumina Al ₂ O ₃	26.85%
Ferric Oxide Fe ₂ O ₃	0.93%
Titanium Oxide TiO ₂	0.90%
Magnesia MgO	0.03%
Lime CaO	0.56%
Alkalines	0.65%
Ignition Loss	

Refractoriness	Seger Cone 32 (1710°C.)
Crushing Strength	350 lbs. per sq. ins.

Special shapes to order.



General Information

All firebricks should be kept dry. Ordish firebricks should be laid in the same material of which they are made. To ensure the best results a thin tight joint is required and this can be obtained by following the instructions with Ordish High Temperature Clay or Ordish Airsetting Cement.

Brickwork is weakest at its joints and if a low grade fireclay is used then the firebricks themselves will be attacked and the structure weakened by the action of gases and flame. Close, tight joints will prove real economy and add life to the brickwork.

After the brickwork is completed a slow drying fire should be used to expel all moisture.

Within recent years considerable research has been done on spalling and this has shown that the most dangerous time for thermal spalling in firebricks is from cold to 300°C. This danger can be lessened if care is taken in heating and cooling at these temperatures.

One square yard of 4½" brickwork will take 45 standard 9 x 4½ x 3 bricks. Three hundred and eighty-five bricks occupy one cubic yard. The weight of one 9 x 4½ x 3 brick is 8 lbs.

One 16 ton rail truck holds approximately 4,500 bricks and one 11 ton truck approximately 3,200 bricks.

