



INDUSTRIAL PROTECTIVE LININGS

Specialists in high
quality corrosion,
thermal and
abrasion-resistant
materials

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ABOUT US

Anti-Corrosion Cement Specialists (ACCS) Ltd

Specialising in high quality corrosion, thermal and abrasion-resistant materials, ACCS Ltd helps customers across the world who are involved in the processing and storage of acidic and alkaline (basic) materials.

With more than 50+ years of knowledge and experience, we supply to a wide variety of industries, ranging from heavy chemical and petrochemical to nuclear processing, mining and food preparation.

With an equal spread of UK and overseas project sales, we have seen year-on-year growth despite economic challenges. ACCS Ltd is well established in the chemical industry and is also part of the MinChem Group (see pages 26-27 for more details).

Product Innovation

In the past, ACCS Ltd was the main manufacturer of NORI branded mortars and screeding materials – famed for their strength and durability. Today, we continue to manufacture the same materials under our own brand names, and we have also introduced new products to complement our impressive range. Traditionally dealing in cementitious mortars and screeds, we continue to innovate and have also diversified into epoxy and vinylester resins, which provide extreme chemical resistance to a wider variety of corrosive substances.

Design And Installation Excellence

Experienced teams of installation experts ensure that our materials reach their full potential for customers on site. Highly trained, our professional installation teams now form a significant sector of our business, enjoying regular and repeat work with our contracting partners. In addition, we offer technical assistance in the design or enhancement of any corrosion management system, with experienced personnel using sophisticated CAD systems to provide unparalleled support in the development stages.

Health, Safety, Environmental & Quality Compliance

Our office and factory staff are highly trained in the packaging, quality control and shipment of goods both within the UK and for export, and are fully compliant with the latest Health, Safety and Environmental regulations. We are fully certified with BS EN ISO 9001:2015 protocols.



Fascinating fact It has been suggested that the name 'Nori' was due to a misspelling by the mould maker. The original enquiry was for bricks that were as hard as 'iron', but the letters were placed in the mould incorrectly.

HISTORY

ACCS Ltd has been operating in the anti-corrosion market for over 50+ years. Previously known under trading names such as Greenbrook Cements, Kemkor, Greenbank Engineering, and FW Howarth-(ARC), we have been manufacturing and supplying protective linings to the chemical industry around the world.

Since the first inception of high quality and long lasting corrosion resistance, silica and silica-derivatives have been at the forefront of protective technology. ACCS Ltd utilises this naturally occurring material in a large number of protective linings. Combined with our specially formulated bonding agents we can provide a variety of protection levels dependant on the process and environmental conditions.

Expanding the company through the use of more modern materials such as carbon-based fillers, epoxies, vinylesters, plastics and rubber, we continue to invest in our future whilst maintaining the quality of the past.

NORI

Nori Bricks or Accrington Bricks, used around the world for a variety of different applications, are famed for their strength and durability. Made from the local clay in Accrington, UK, the bricks were designed to be as hard as iron – which is fabled to be the rationale for the name (iron is Nori spelt backwards).

These ‘iron hard’ bricks were fired in the kiln to a much higher temperature than traditional housing bricks; the temperature producing a highly vitrified (glass-like) and low porosity brick, hence providing excellent corrosion-resistance properties. As such, Nori bricks have been used extensively around the world for work involving acidic and alkaline materials, to provide protection against corrosive attack.



Prior to closure of the Nori Brick Factory, ACCS Ltd was the manufacturer of all Nori-branded corrosion resistant paints/coatings, membranes, mortars/ cements, screeds and concrete materials. We manufactured brands such as Norisil, Noricrete, Norifur and Nori Epoxy.

We continue to manufacture the same materials under our own brand names, maintaining the same excellent standard and quality of materials. We have even introduced some new products which complement our impressive range.



Our brick and tile brand, named ACCSIL, has replaced the Nori brick with a superior product. Stocks are held in the UK and we offer competitive pricing on containerised shipments direct to project sites around the world.



Fascinating fact Nori bricks are incredibly strong and have been used in the foundations for notable public buildings such as the Empire State Building in New York, USA and Blackpool Tower in the UK.

MEETING THE CHANGING NEEDS OF INDUSTRY

With a wealth of materials knowledge and the experience and capability to tackle new challenges, ACCS Ltd manufactures and supplies materials for an extremely diverse number of markets. We supply to a wide range of industries including:

■ **Brewing**

Increased use of high strength acids and alkalis, for ensuring clean pipework, vessels and storage tanks prior to bottle filling, has meant improved protection against the effluent stream is required. We have extensive experience in effluent processing systems.

■ **Chemical**

It is almost certain that concentrated acid and alkalis will be stored somewhere on a chemical plant because of the vast number of materials requiring processing. We can offer comprehensive protective linings to ensure the continued productivity of your plant.

■ **Fertiliser**

The extensive use of acids in the fertiliser industry, in particular sulphuric acid and phosphoric acid, have meant protective linings are required at nearly all stages of the production process.

■ **Food** (e.g. sugar refining)

The formation of organic acids in the food industry has seen a significant increase of attention as hygiene standards continue to rise. Protection against these naturally formed materials is a growing sector of our business. We are also involved in Biofuels.

■ **Mining**

The processing of rock and ore from a mine relies heavily on purifying the end product, and can generally make use of concentrated acids and alkalis. In addition the transport of the rock and ore demands high levels of abrasion resistance.

■ **Nuclear fuels**

During the refinement of Uranium ore, nearly all routes require the processing of material with acids and alkalis to separate nuclear elements and remove waste material.

■ **Oil and Gas**

Possibly our largest market, the processing and storage of acids and alkalis in the oil and gas industry is very important to ensure the production of high quality products. Extensively used in the refinement of crude oil and natural gas to remove the sulphur content, our protective linings can offer a range of solutions to ensure the continued operation of the plant.

■ **Paper**

During the paper manufacturing process, acids and alkalis are used to ensure the bleaching process is contained. Abrasion-resistant materials are also used during the pulping process.

■ **Petrochemical**

Following the initial refinement of the oil and gas,

further processing at specialist manufacturers uses acidic and alkaline materials to produce materials used in the manufacture of plastics, solvents, acetates, lubricants and epoxies, to name but a few.

■ **Power generation**

Power generation utilising fossil fuels can generate a large amount of corrosive, thermal and abrasive damage to the internal workings of the power plant. We can provide comprehensive protection at a number of stages in the process.

■ **Steel and metal working**

The requirement for refractory protection in the manufacture of steel is well known and we are able to offer competitive materials to this industry. However, we excel in areas where acids and alkalis are used, such as pickle and galvanising lines, thickeners, acid regeneration units and leach reactors.

■ **Water and effluent processing**

The increase in legislation and the media spotlight on areas of bacterial or viral release have propagated a large increase in the use of concentrated acids and alkalis to reduce the threat posed. We are also often asked to solve problems associated with specialist engineering applications.

Due to the temperatures involved, the majority of projects have traditionally used inorganic and cementitious-based ACCS Ltd products such as Potsil, Silcrete and Furan*.

These products have been applied as coatings, renders, mortars, gunning mixes and castable varieties. Providing extreme resistance to a large range of chemicals at varying temperatures, in particular concentrated acids, these materials have been the mainstay for protective linings in the chemical industry for many years.

However, as acid/alkali concentration has increased during processing and storage, and progressive legislation has made companies more aware of their environmental impact, the need for relatively low cost, easily applied (for minimum shutdown requirements) and extremely chemically-resistant organic coatings has flourished.

We have met this demand with an alternative range of flexible and cost effective chemical-resistant options. Consequently, there has been an expansion in the use of ACCS Ltd products such as Epitek, Novolac Epoxy and Novolac Vinylester*.

*Please see the Product overview on pages 4–7 for further details

OUR PRODUCTS AT A GLANCE – NON-SHAPED ITEMS

ACCS Ltd has developed a range of products with chemical-resistant, abrasion-resistant and thermal-resistant properties capable of withstanding the harshest industrial environments.

MATERIAL	PRODUCTS	COMPONENTS	RECOMMENDED	TYPICAL MAXIMUM OPERATING TEMPERATURE	NOT RECOMMENDED
Silicate-based ASTM – C466	<i>Potsil</i> <i>Silcrete SG</i> <i>Silcrete Gunning</i> <i>Silcrete R</i> <i>Sodasil</i>	Alkali silicate-based solution, Catalyst powder (halogen free available).	All acids, such as high concs of HNO ₃ , H ₂ SO ₄ & chromic acids. Ideal for acid fumes, jointing acid resistant brick and rendering, e.g. for chimney and sulphur pit applications.	900°C. (Special variants available to 1400°C)	HF or fluorine containing acids/salts. Any alkalis. Steam. Freeze-thaw applications.
Furan ASTM – C395	<i>Furan S</i> <i>Furan ST</i> <i>Furan T</i> <i>Furan C</i>	Furan solution, Silica/carbon filled catalyst powder.	All non-oxidising acids, alkalis, salts and solvents. Ideal for glass fibre/matt membrane system and jointing AR brick. Excellent for glass reactor repairs. Carbon filled – electrically dissipating. Low porosity (<0.5%).	180°C	Do not use silica filled with strong alkalis and fluorine containing acids/salts.
Vinylester-based materials ASTM – C395	Novolac Vinylester-range <i>VE50</i> <i>VE55</i> <i>VE60</i> <i>VEGF30</i>	Styrene resin, Silica/carbon filled catalyst powder.	All non-oxidising acids, alkalis, salts and some solvents. Good for dilute HNO ₃ and chromic, NaOCl to 110°C. Ideal for glass fibre/matt membrane system, jointing AR brick. Good adhesion to steel, brick and concrete. Fast setting. Low porosity (<0.5%).	125°C	Do not use silica filled with strong oxidising acids, and concentrated HF.
Epoxy-based materials ASTM – C395	<i>PE120</i> Epitek-range <i>Epitek Paint</i> <i>Epitek Membrane</i> <i>Epitek Mortar</i> <i>Epitek Screed</i> Novolac Epoxy-range <i>NE50</i> <i>NE55</i> <i>NE60</i> <i>NEGF30</i>	Epoxy resin, Epoxy hardener, Silica/carbon filler powder.	Excellent to aqueous salt solutions, non-oxidising acids (e.g. H ₃ PO ₄ , HCl, H ₂ SO ₄ , NaOH, NaOCl and HF). Strongest of resin mortars. Excellent adhesion to concrete, metal, brick, glass and ceramics. Good for monolithic linings to steel tanks/floors. Low odour variant for food industry. Low porosity (<0.5%). Low shrinkage.	105°C	Do not use silica filled with oxidising acids, concentrated HNO ₃ and H ₂ SO ₄ .
Supporting Products	AC95 Bitutek Epitek QS Almax Epitek Flexicoat	Epoxy resin, Epoxy hardener. Bituminous coating. Refractory castable.	Varying applications from damp proofing, fast setting repair, flexible coatings and insulating castables.	105°C	

Potsil Mortar

Potassium Silicate is an extremely corrosion-resistant material that has excellent stability against nearly all acidic materials. This level of protection is also provided up to high temperatures and its cementitious nature allows for good abrasive strength as well.

Silcrete SG

A specialised Potassium Silicate material designed for screed and concretes, Silcrete SG offers a further option to the traditional 'bricks and mortar' solution preferred in chemical protection. Designed to be used in a similar manner to civil concrete, Silcrete SG offers a user-friendly chemical protective layer for the modern facility.

Furan

Another mainstay of our product range, Furan is usually a brick mortar but can be employed as a render or coating. It offers medium range thermal resistance and superior corrosion protection, particularly against organic acids and solvents. Traditionally used for effluent treatment due to its low porosity, Furan is the mortar of choice for a number of chemical processing areas.

Novolac Epoxy/Vinylester

Our Novolac materials offer unparalleled corrosion protection to a large range of both acids and alkalis, or even a cocktail of both. Due to the ever changing demands of industry, the need for a material to offer protection against both high strength acids and alkalis, at relatively low cost applications, has seen massive growth for these materials.

Supporting Products

To compliment our protective lining systems we utilise a range of primers and membranes to enhance the installation and lining longevity. We do this using products such as: AC95, which is a damp tolerant epoxy primer, allowing work to be conducted on green concrete within 48 hours of being cast; Epitek Flexicoat, which is a crack bridging primer; Epitek QS, a rapid curing patch repair mortar; Almax, an insulating, refractory castable; and Bitutek, an acid resistant, bituminous, waterproof sealant.



Silicates



Furan



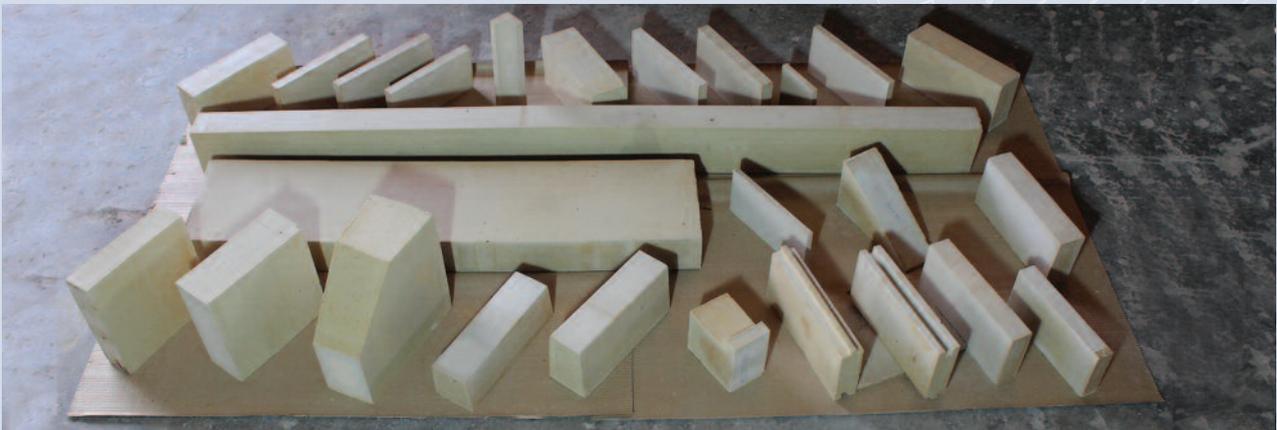
Epoxy/Vinylester

Fascinating fact Our Silicate materials are applied in a similar manner to civil materials, which means that locally sourced labour can be employed during construction with only minimal supervision/instruction from us.

OUR PRODUCTS AT A GLANCE – SHAPED ITEMS

ACCS Ltd has developed a range of products with chemical-resistant, abrasion-resistant and thermal-resistant properties capable of withstanding the harshest industrial environments.

TYPE	PRODUCTS	DESCRIPTION AND USE
Ceramics	ACCSIL Brick – <i>Silica</i> – <i>Carbon</i> – <i>Silicon Carbide</i>	All acidic applications apart from HF. Some moderate alkali environments. All acid and alkali applications. All acid and alkali applications. Areas where high thermal shock is found.
	Ceramic Packing Tower Supports Pipes	All acidic applications apart from HF. Some moderate alkali environments.
Insulation	Cellular Glass Block	All acidic applications apart from HF. Some moderate alkali environments.
	Ceramic Paper Ceramic Rope (Caulking) Rockwool	Moderate acid and alkali environments.
Membranes & Reinforcement	Glass Matting Glass Veil	All acidic applications apart from HF. Some moderate alkali environments.
	PTFE SS Anchors SS Mesh Rubber	Moderate acid and alkali environments. Moderate acid and alkali environments. Moderate acid and alkali environments. Moderate to strong acid and alkali environments.



ACCSIL Shaped Bricks

ACCSIL Bricks

Our ACCSIL bricks are made from high quality raw ingredients, whether this be silica-alumina, carbon or silicon-carbide. ACCSIL bricks are suitable for a variety of concentrated acid/alkali environments at a range of temperatures. They are extremely hard wearing and resistant to freeze-thaw conditions.

ACCSIL bricks, in combination with our corrosion resistant mortars, are traditionally the best form of corrosion protection due to their increased chemical and mechanical toughness leading to some ACCS Ltd brick linings being in operation for over 50+ years.

Ceramic Packing & Tower Supports

We offer a wide range of shapes and sizes for ceramic tower packing and supports. Made from high quality silica-alumina materials, these products have been utilised around the world in a number of acid production facilities.

We can cater for both self supported domes or beam supported designs.

Cellular Glass Block

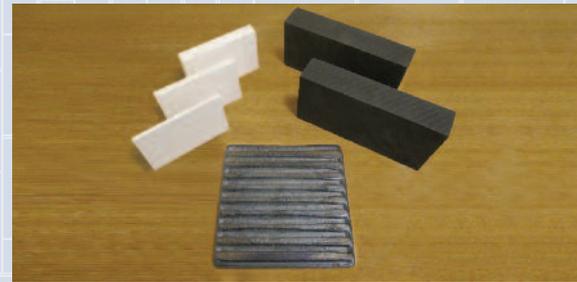
Offering excellent thermal insulation whilst also providing high levels of corrosion protection, cellular glass block is the material of choice for areas where temperature stability is essential. Also due to the low density of this material it is excellent for vertical protection applications, such as chimney internals.

Glass Matting/Veil/PTFE

These materials offer a variety of enhancements to the non-shaped products of a corrosion protection lining.

For example:

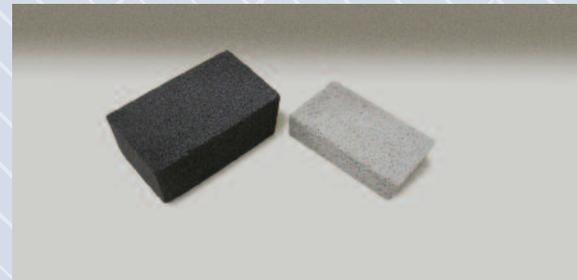
- Glass matt and glass veil offer additional mechanical strength without a significant increase in the thickness of the lining;
- PTFE provides monolithic corrosion protection in areas where a simple coating would be insufficient.



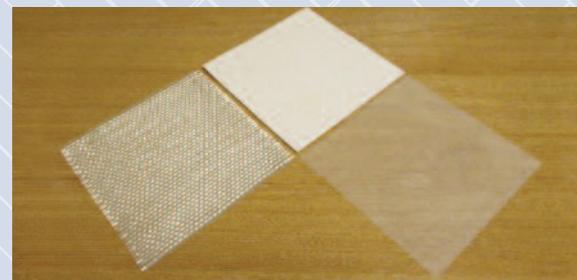
Carbon and Ceramic Bricks



Packing



Cellular Glass Block



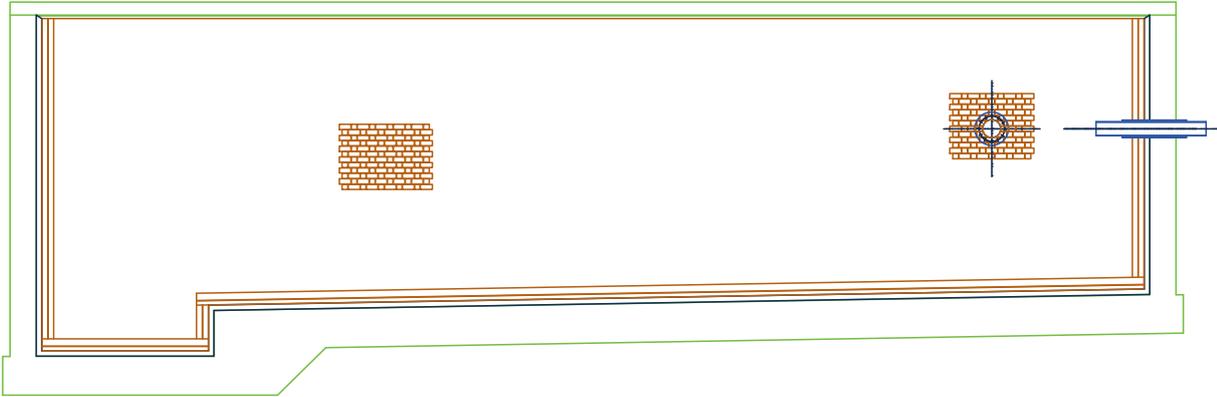
Glass Matt/Veil and Ceramic Paper



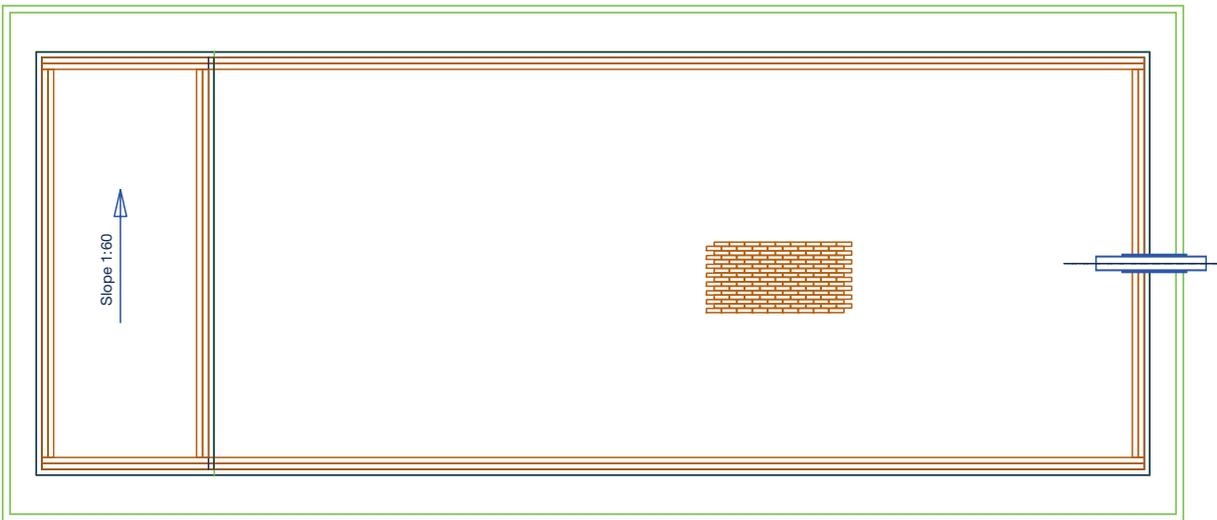
ACCSIL Bricks

TYPICAL APPLICATIONS

Sulphur Pits/ Sulphur Recovery Units (SRU)



Sulphur Pit – Elevation

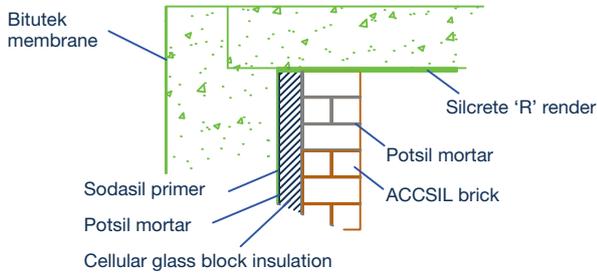


Sulphur Pit – Plan

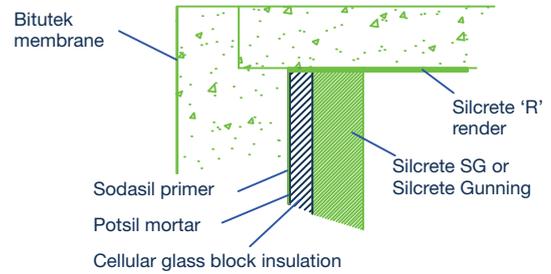


Completed Sulphur Pit in ACCSIL Bricks and Potsil Mortar

Acid resistant brick and mortar



Acid resistant Castable/Gunned Silicate



The vast majority of sulphur produced worldwide is by-product sulphur from oil refineries and other hydrocarbon processing plants, and wherever sulphur is exposed to air, the potential for forming corrosive substances is present.

ACCS Ltd products have been developed for exactly this type of application, for example in the Sulphur Pit, typically a large subsurface storage vessel. We can tailor the design of the sulphur pit to suit your needs.

A typical design can incorporate a primer layer to prepare the civil concrete, with an insulating layer (typically cellular glass block) to provide thermal protection. Finally a protective layer such as: Potsil mortar bonded ACCSIL bricks; section cast Silcrete SG concrete; or even gunned Silcrete Gunning. The roof is then protected by our bespoke render system of Silcrete R.

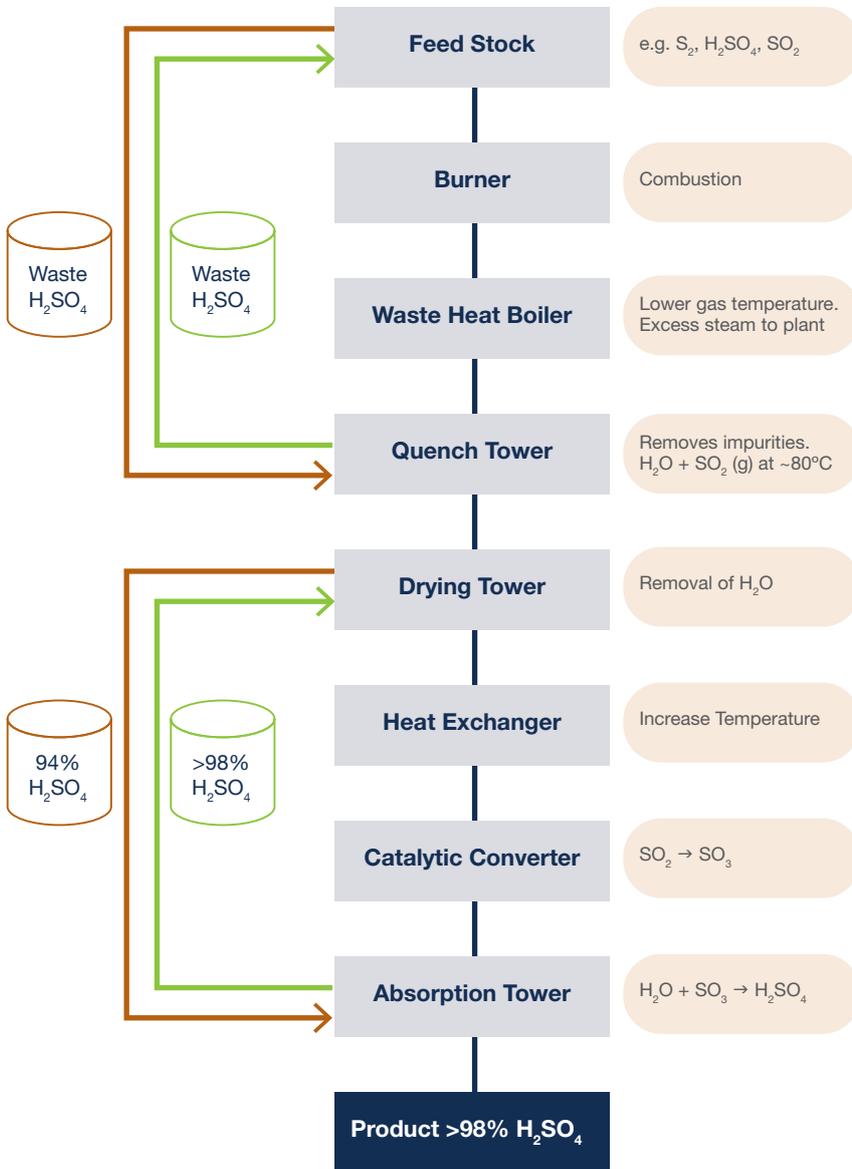
Other SRU processes require extreme thermal protection. We offer a wide range of refractory materials such as coatings, mortars, bricks and concretes to complete the 'protection package'.



Fascinating fact Sulphuric acid is a very important commodity material and its tonnage of production/consumption was once used to gauge the industrial strength of a country.

TYPICAL APPLICATIONS

Sulphuric Acid Plants

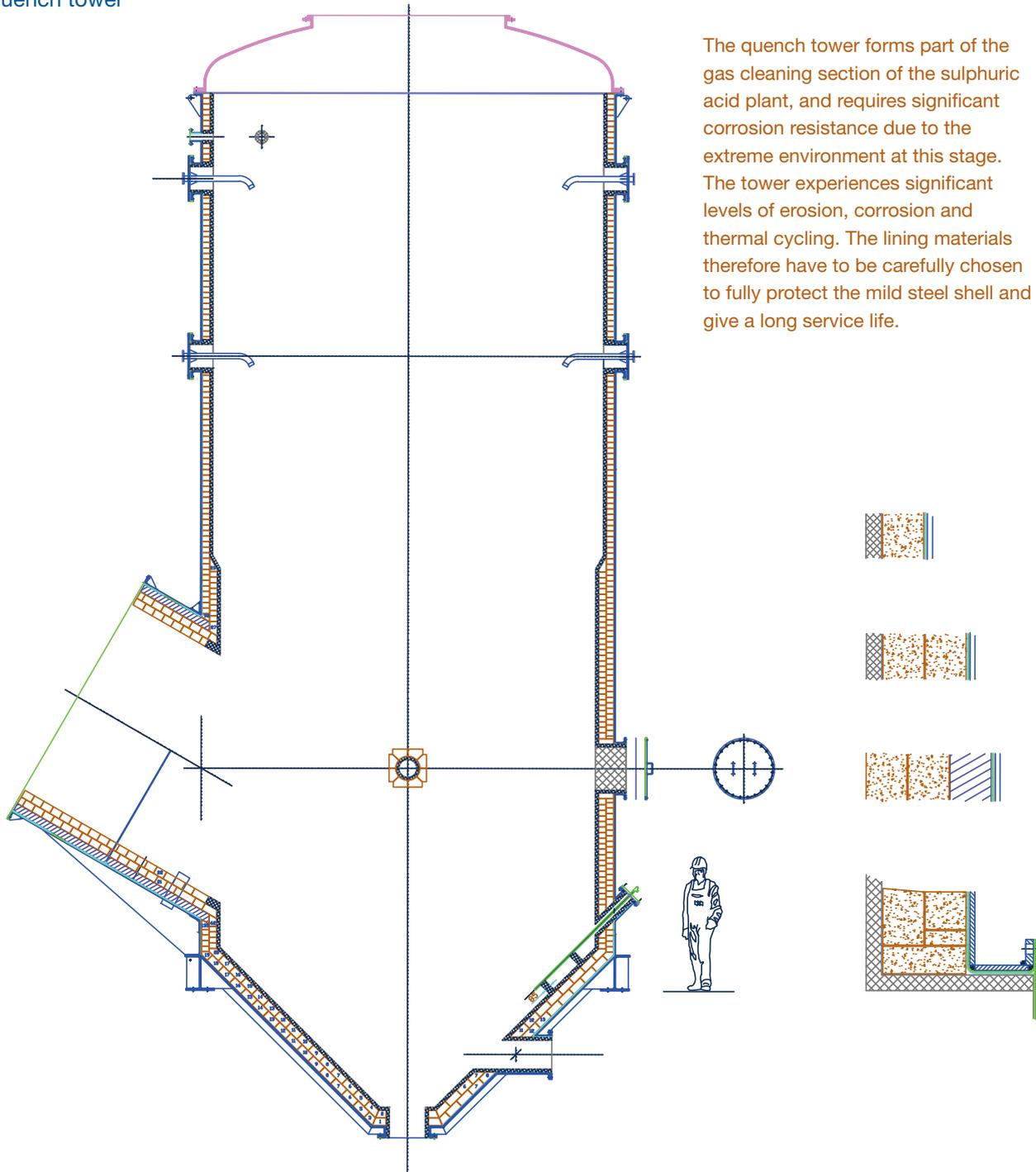


Most sulphur produced from SRUs is used in the manufacture of sulphuric acid (H_2SO_4).

The typical process shown here is extremely efficient at producing and increasing the concentration of sulphuric acid. It is commonly utilised in a number of different chemical plants where sulphuric acid is used during the processing stage. Once consumed in a production process, the spent acid can be sent back through this system to purify and re-concentrate the sulphuric acid.

We offer all the protective lining systems required for the sulphuric acid process, from corrosion, thermal and abrasion-resistant materials in the quench, drying and absorption towers, to the refractory materials required in the burner, waste heat boiler and heat exchanger.

Quench tower

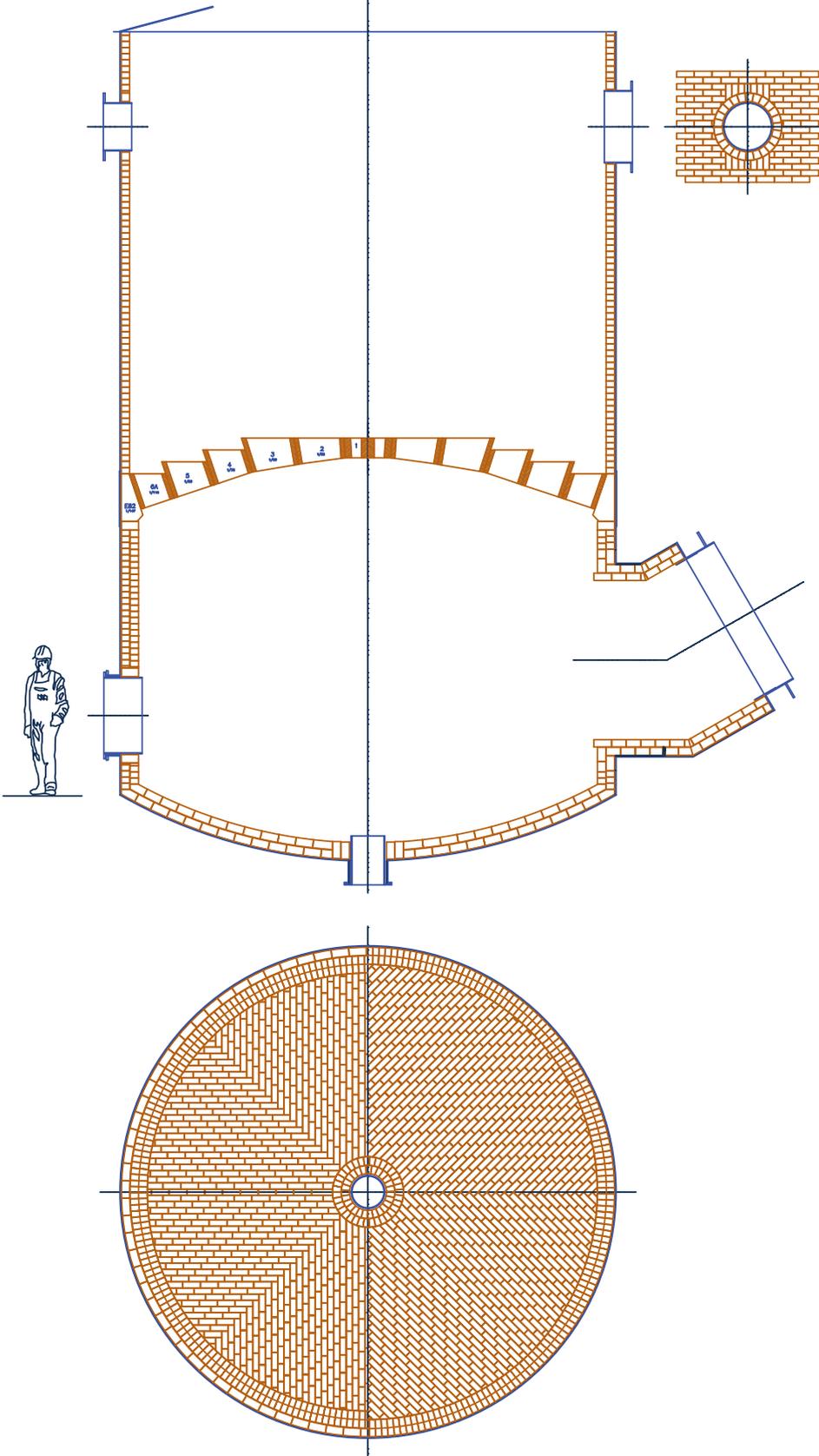


The quench tower forms part of the gas cleaning section of the sulphuric acid plant, and requires significant corrosion resistance due to the extreme environment at this stage. The tower experiences significant levels of erosion, corrosion and thermal cycling. The lining materials therefore have to be carefully chosen to fully protect the mild steel shell and give a long service life.

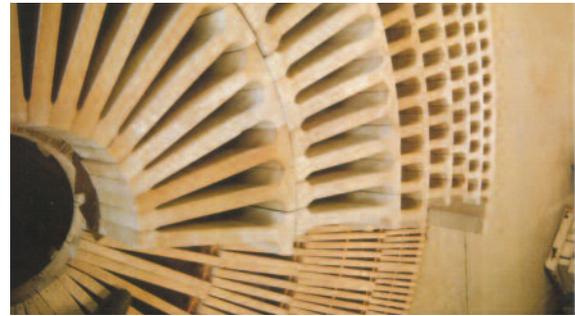
Fascinating fact Sewer systems around the world are prone to corrosive attack due to bacteria present in the sewage, which result in the formation of weak concentrations of sulphuric acid.

TYPICAL APPLICATIONS

Drying tower

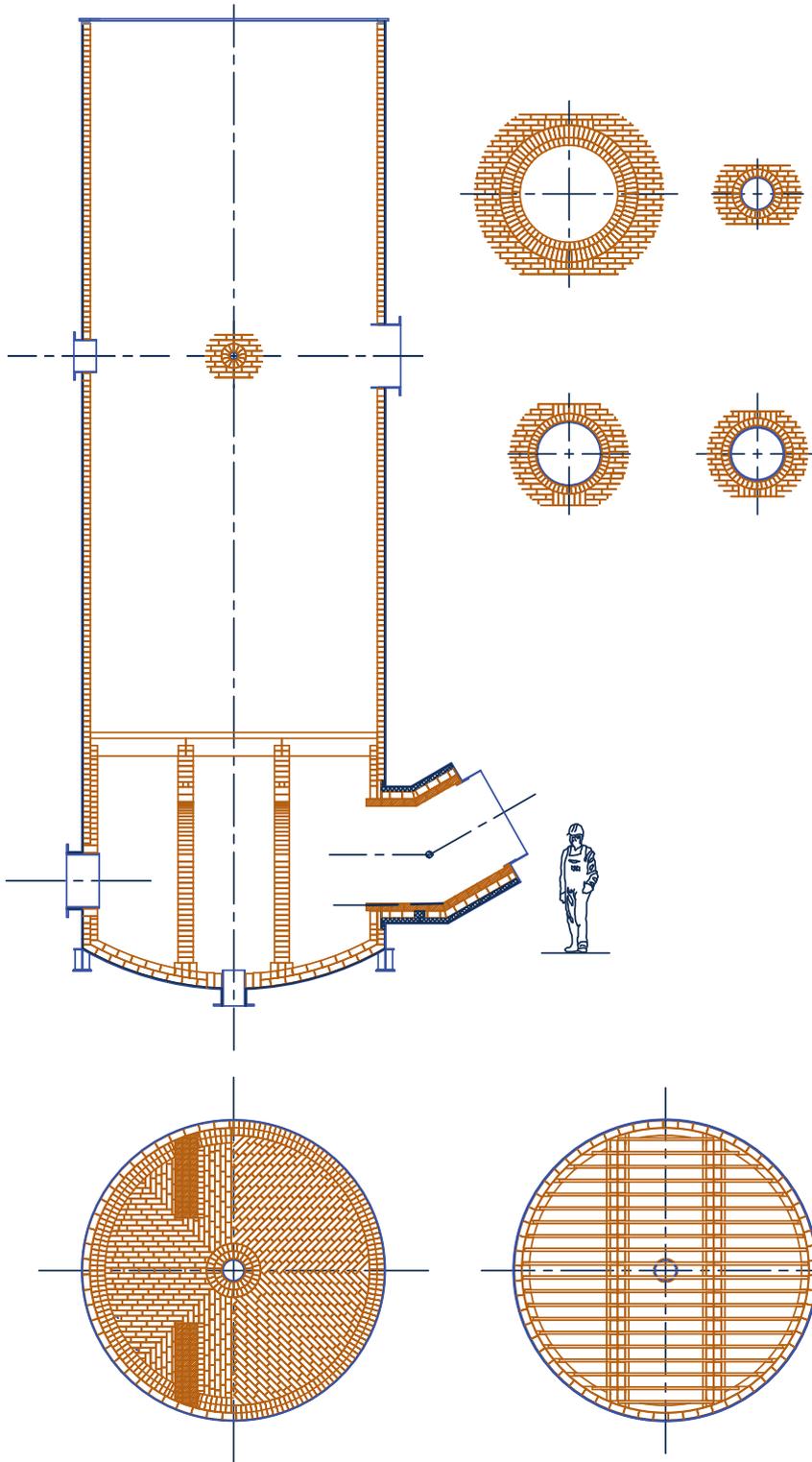


The drying tower removes excess water in the gas. The wet gas enters the tower and is allowed to pass over saddles (high surface area acid-resistant ceramics), which offer a reaction site for the water and sulphuric acid. For the towers, alternative designs for the packing support can be used, such as a beam supported roof or a self-supporting ceramic dome.



Self Supporting Ceramic Dome

Absorption tower



The absorption tower is the final stage of the production process. Similar to the drying tower, a supported intermediate roof is used to house more saddles for the SO_3 gas to react with the water contained in the 'weak' 94% sulphuric acid, raising the acid concentration to above 98%. 'Weak' sulphuric acid is sprayed from above as the gas is funnelled into the tower from below. As the SO_3 gas reacts with 'weak' sulphuric acid, the 98% concentrated sulphuric acid produced by the process drains to the bottom of the tower. Here a significant attack from a range of acid concentrations and temperatures are experienced. Again, saddles are used on either a self-supporting dome or a beam supported roof.

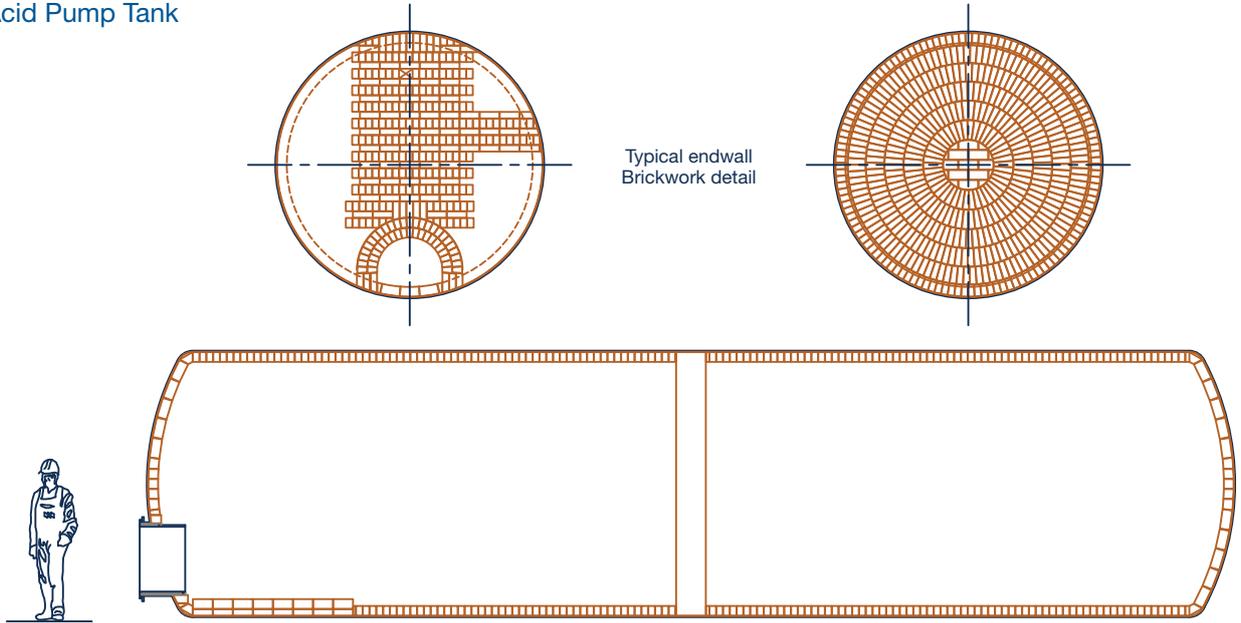


Ceramic Packing

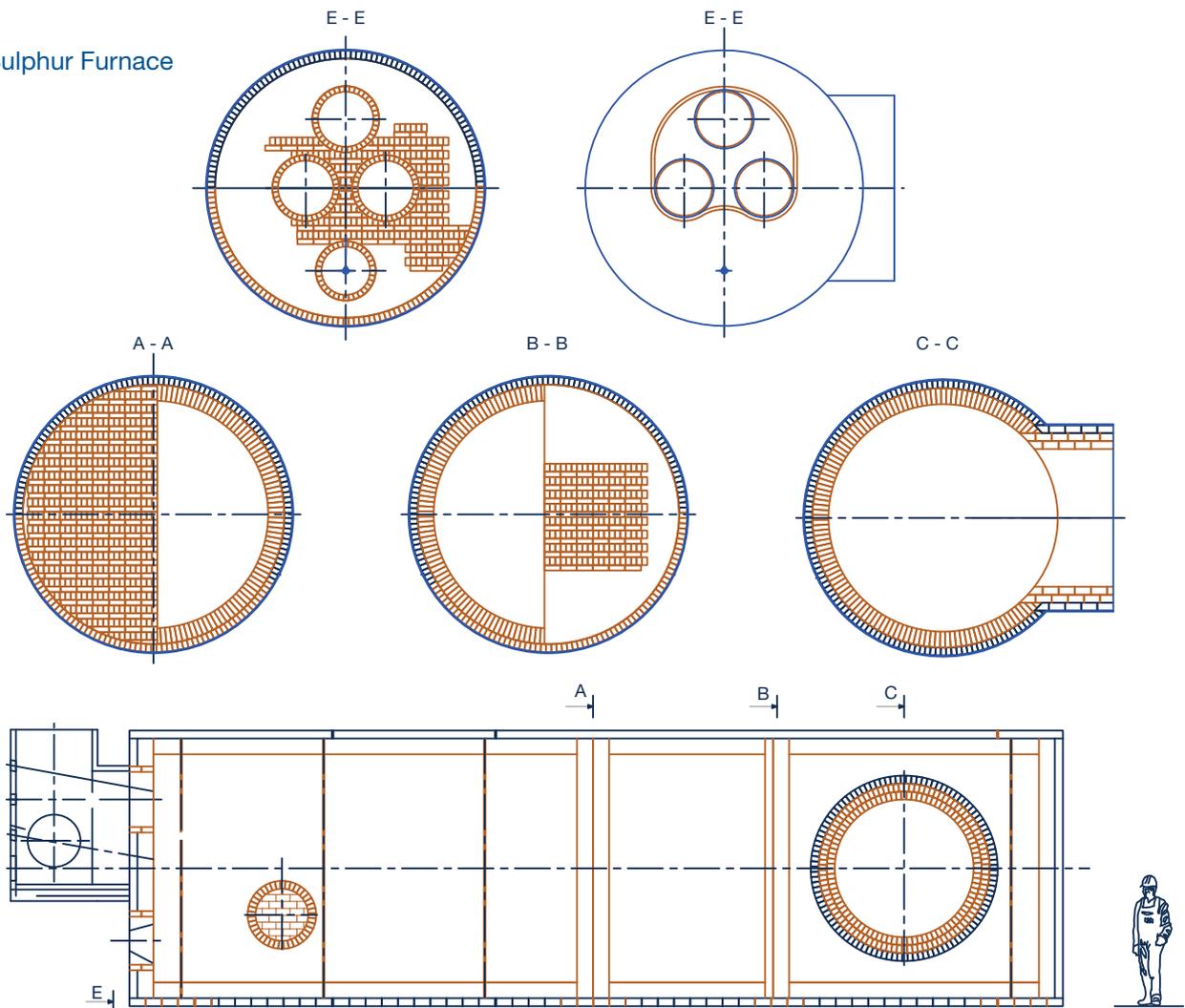
Fascinating fact Around 170 million tonnes of sulphuric acid are produced every year with demand constantly rising due to increasing requirements, primarily from the fertiliser industry.

TYPICAL APPLICATIONS

Acid Pump Tank

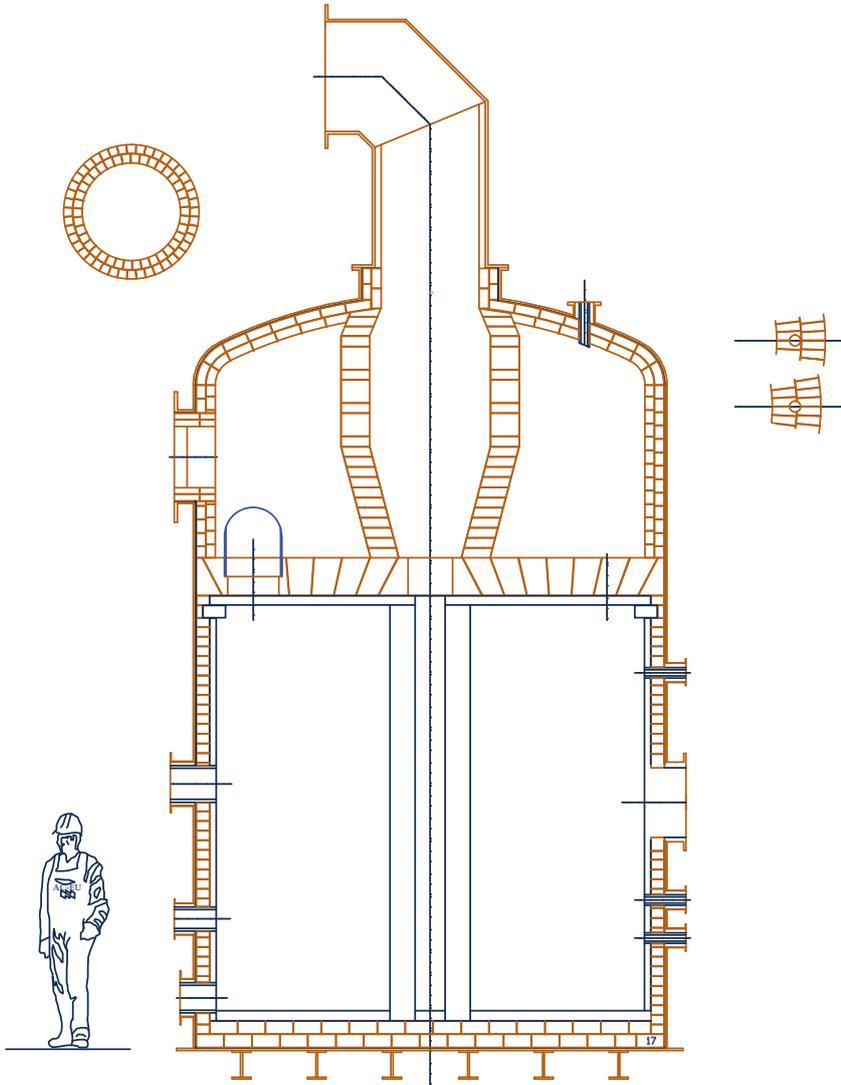


Sulphur Furnace

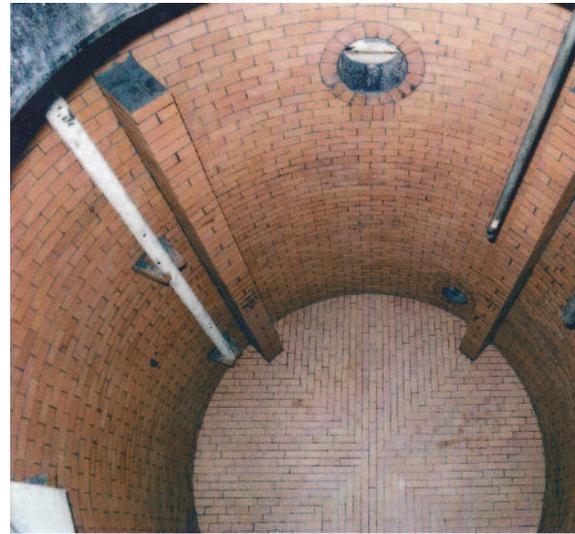


Gas/Petrochemical industry

Acid Re-concentrator



With the extensive use of acids and alkalis in the petrochemical industry, the areas requiring corrosion-resistant materials are numerous. Due to the variety of materials produced, vessel design can vary significantly depending on the products being processed and the licensor. Examples can include Acid Re-Concentrators and Acid Recovery Units.

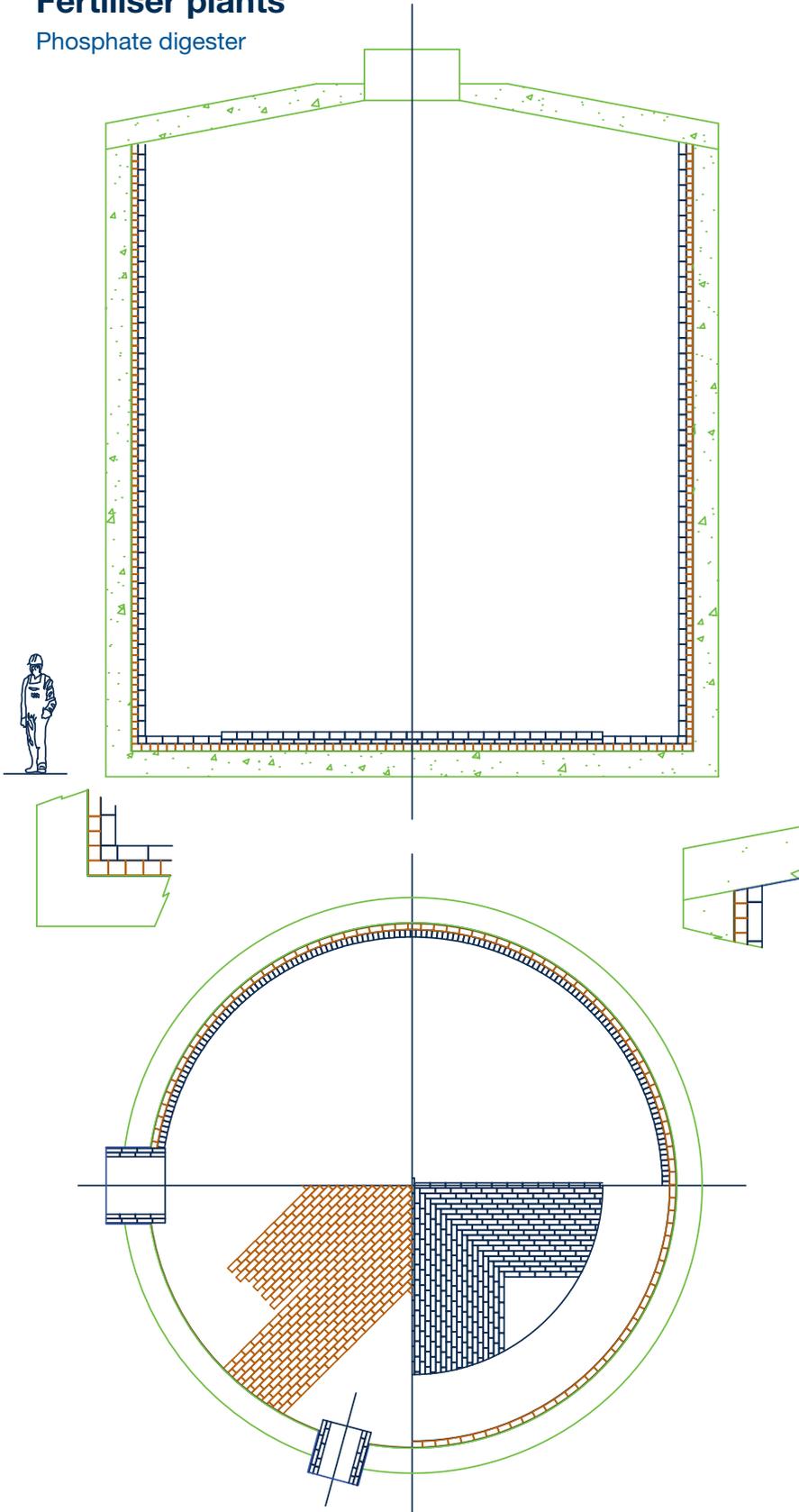


Reactor

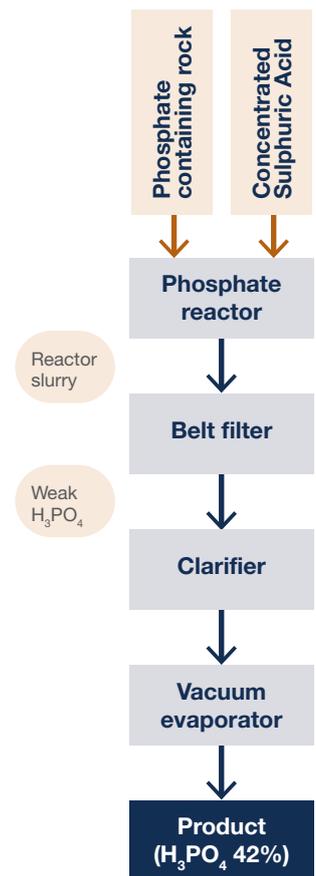
TYPICAL APPLICATIONS

Fertiliser plants

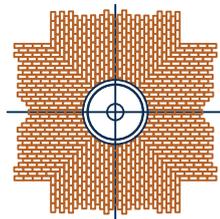
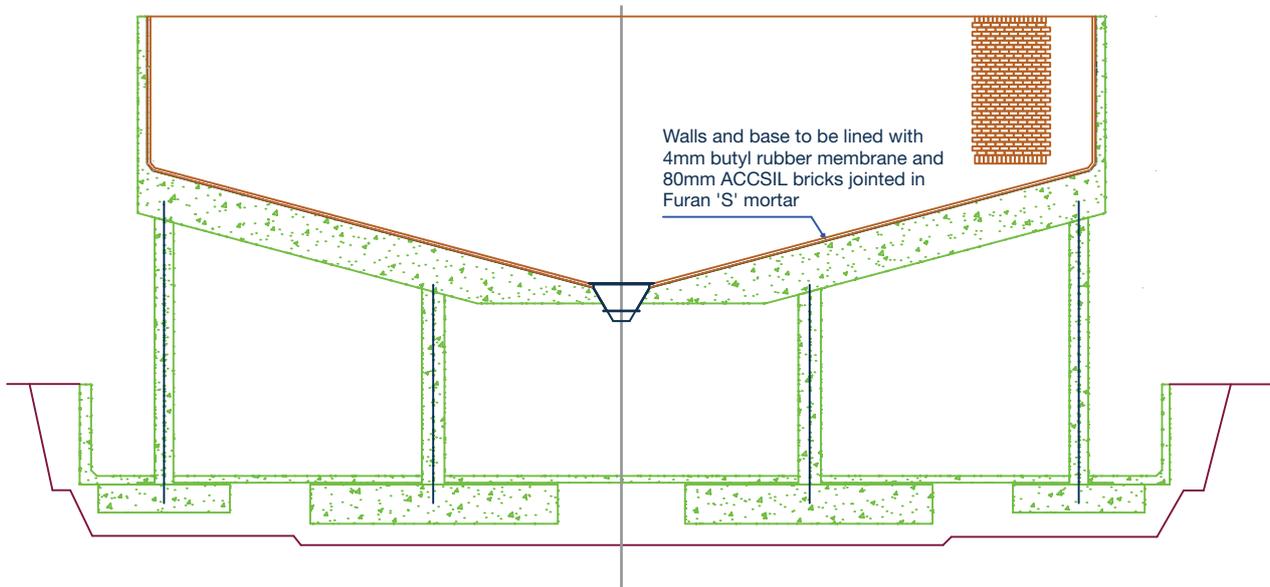
Phosphate digester



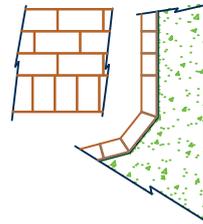
A typical example of a fertiliser plant produces di-ammonium phosphate (DAP) or mono ammonium phosphate (MAP) using the wet process. This method invariably uses sulphuric acid as the leaching agent (meaning a sulphuric acid processing facility is usually required) to remove the phosphates from the raw material. By combining phosphate rock and sulphuric acid in a reactor, phosphoric acid (H_3PO_4) can be formed as a major ingredient in the production of DAP and MAP.



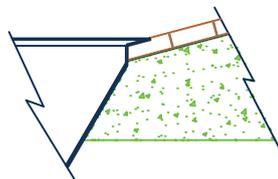
Thickener



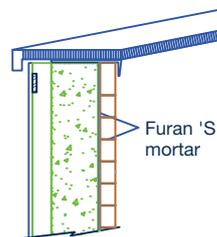
Base brickwork detail



Base/sidewall detail
(SCALE 1:10)



Underflow detail
(SCALE 1:10)



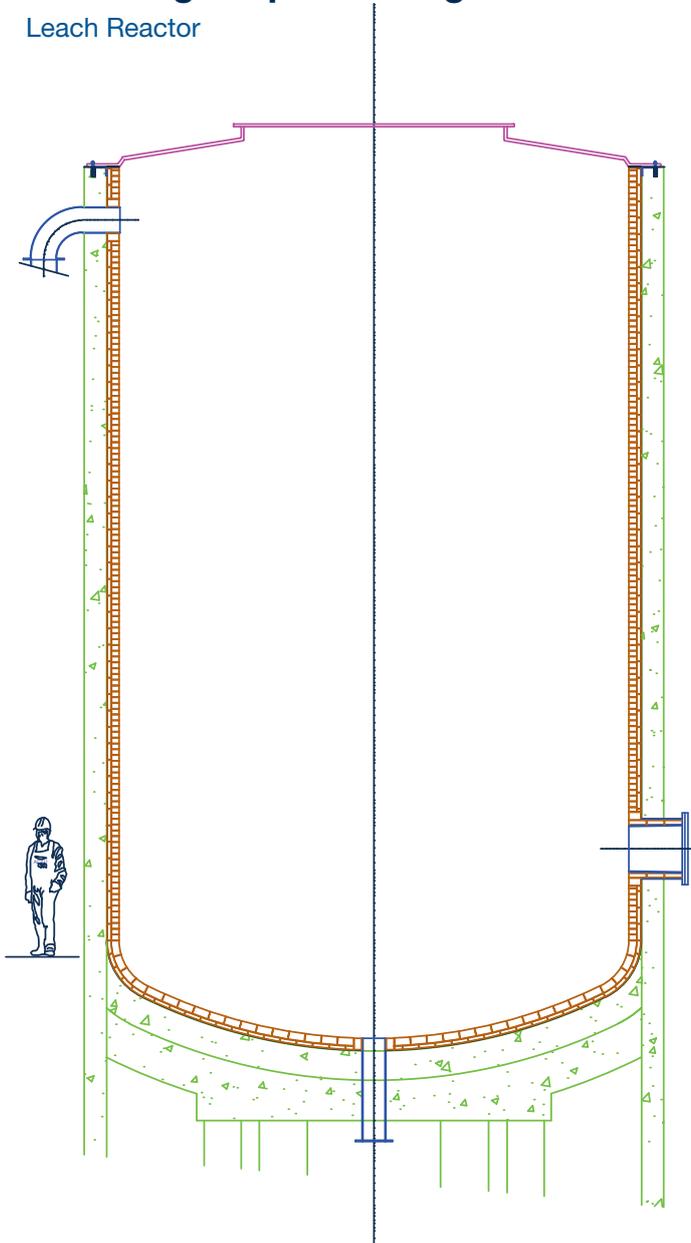
Lining detail
(SCALE 1:10)

Fascinating fact Around 20 million tonnes of hydrochloric acid are produced annually with the largest use for the pickling of steel, to remove rust or iron oxide scale from iron or steel before subsequent processing.

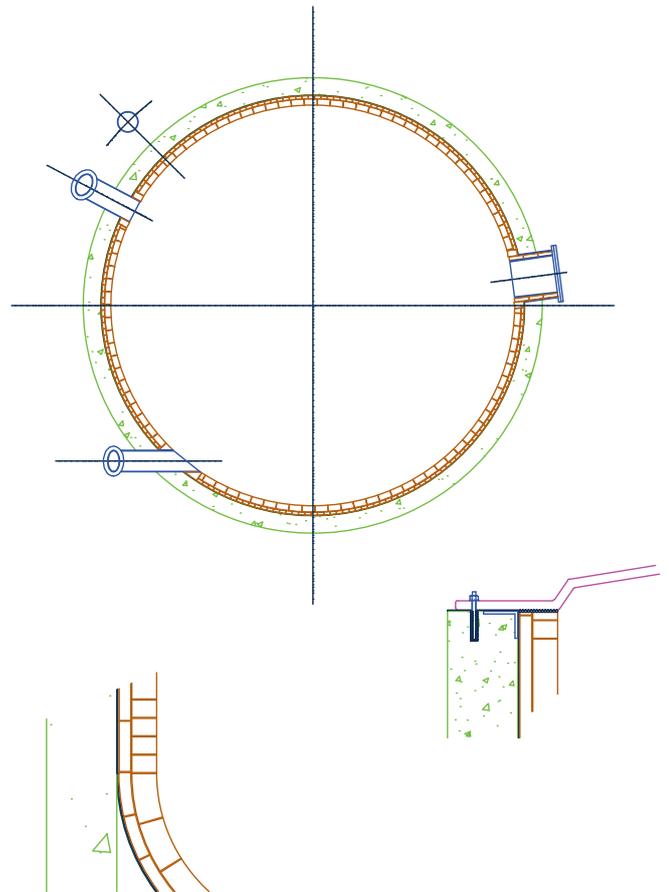
TYPICAL APPLICATIONS

Metallurgical processing

Leach Reactor

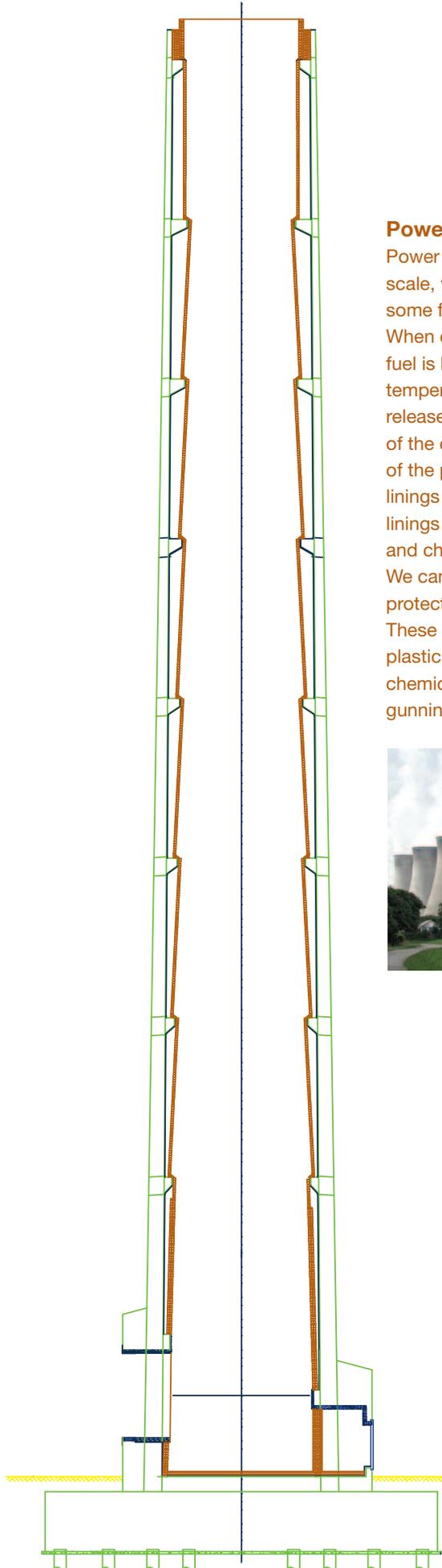
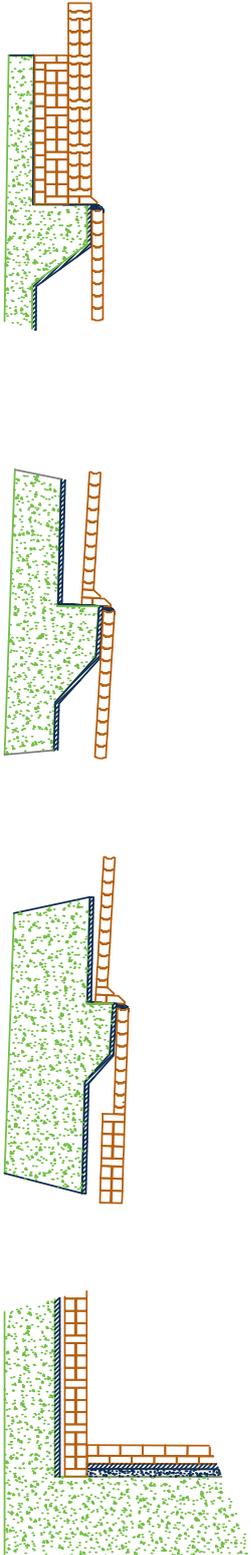


The presence of chemically-resistant materials in the processing stages of metallurgical plants is significant. We can provide protective linings to important sectors of the manufacturing process such as leach reactors, pickle tanks, acid recovery units, thickeners, ductings, chimneys, sumps, pits, channels and flooring.



Power Generation

Chimney (Brick Lining)



Power production

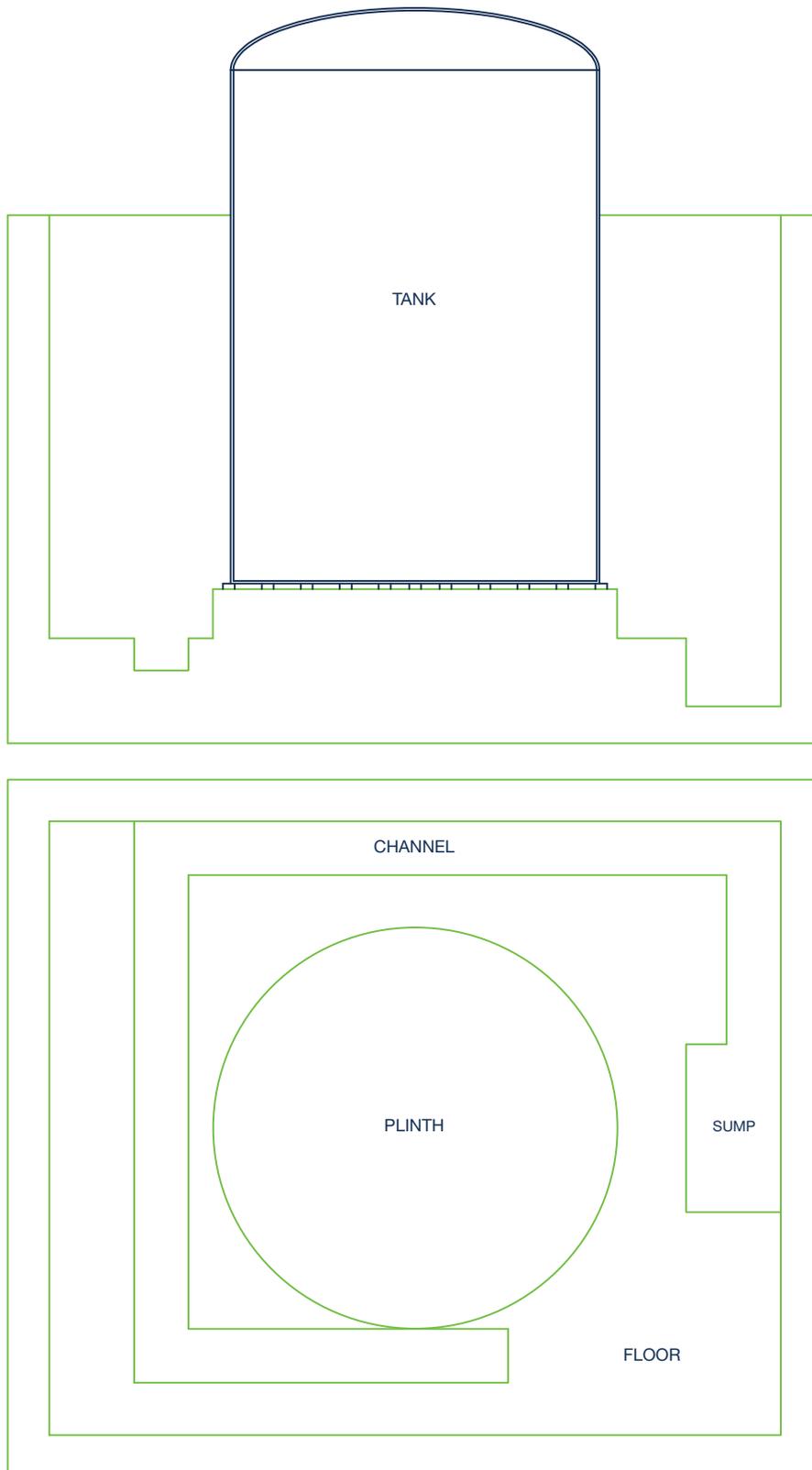
Power production has a worldwide scale, with all countries operating some form of fuel burning process. When coal, oil or waste recycling fuel is burnt, coke, ash and high temperature gases such as SO_2 are released. To prevent deterioration of the concrete or steel structures of the power plant, protective linings are required. These protective linings require thermal, abrasion and chemical-resistant qualities. We can offer a variety of solutions for protective linings to chimney flues. These include bricks, glass reinforced plastic, cellular glass block and chemically resistant concrete and gunning materials.



TYPICAL APPLICATIONS

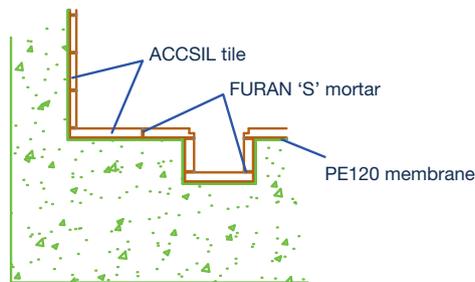
Flooring, Channels and Sumps

Typical storage tank bund

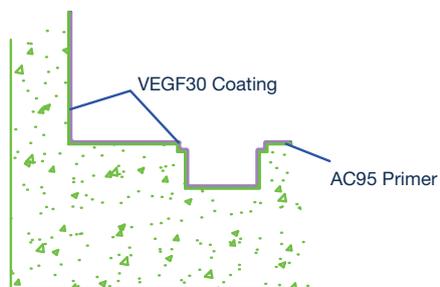


Throughout the chemical industry, wherever concentrated or even weak corrosive materials are handled, the majority of the unmonitored exposure will be to flooring, channels and sump areas. The wide variety of corrosive chemicals used in these general processing areas can lead to significant levels of damage to the chemical plant.

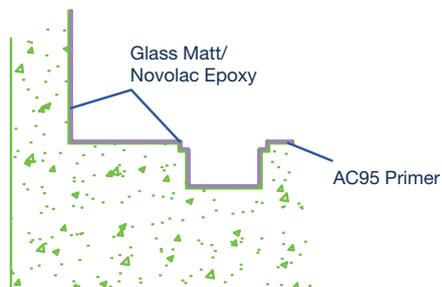
We can provide a variety of different protection packages dependant on the local environment conditions. These can be a simple coating/membrane design, or can have a more comprehensive approach such as screed and reinforcement finishes, or even a tile/brick design. The options can easily be tailored to suit the specific demands and budget of the project.



Brick and tile linings



Glass fibre reinforced resin coatings



Glass Matt reinforced resin coatings



Fascinating fact Corrosion resistance is required anywhere the storage and processing of acids or alkalis occurs.

DESIGN AND CONSULTANCY

Technical design and consultancy during the initial stages of planning allows our materials to be specified in the correct environment and section of the intended facility, maximising their effectiveness and ensuring excellent value for money.

Computed Aided Design (CAD)

Our design consultants are experts with many years' experience in the industry. This means we have unparalleled insight into the layout, selection and deployment of ACCS Ltd materials for a number of different industries. We recognise that each customer has unique requirements so we provide bespoke technical designs for each specific project, ensuring that the materials selected will maximise the efficiency and life expectancy of the facility.

Stress – Strain

Using specialist software, we can offer Stress-Strain designs to provide examples of how materials are likely to behave during lifetime installation. This can be exceedingly important on capital projects where environmental conditions can involve more than just the corrosive environment for which the materials are designed.

Thermodynamics and Heat Transfer

We also use specialist software to offer alternative designs to suit your particular requirements, maximising the efficiency of the process vessels while remaining within environmental and budgetary constraints.

ASTM and EN standards testing

Our materials are designed and manufactured to comply with ASTM and EN standards, and quality control systems (as part of ISO 9001:2015) ensure that these standards are maintained for both large and small orders. Certificates can be provided on request.

Risk Assessment

We can offer risk assessment advice during the design phase, together with consultancy in mitigating and reducing the risks associated with working in corrosive, abrasive and thermal environments.

Site Inspection

Site inspections ensure that the right products are being selected and the working environment is conducive to producing a suitable finished product for your needs.

Product Development

We are fully aware that products on occasion need to be tailored specifically to a processing environment. We have always taken pride in our flexibility and willingness to develop bespoke solutions specifically to match your requirements. By altering and improving on our existing range of products, we are capable of providing the complete package, precisely tailored to your exact processing and facility conditions.

Complementary Products

We have a large range of affiliate companies with contacts developed over a number of years and our design consultants are well-versed in alternative technologies which can complement our products. Where preferable, we will even offer an alternative solution that is more suitable and cost effective to your individual requirements.

INSTALLATION AND SUPERVISION

To ensure accurate and quality installation of our products and materials, ACCS Ltd can provide trained installation teams, offer a list of preferred third party installers or even provide an ACCS Ltd approved supervisor for the project. These can all be tailored towards your specific site or business requirements.

In all cases, with sufficient information from you, we can provide complete installation method statements, materials safety data sheets, technical data sheets, quality certificates, Certificate of Origin and other related documentation.

Overseas

Due to the nature of overseas business and the movement of personnel and equipment, we generally recommend preferred third party installers who have prior experience of working with our products. Alternatively, we can provide an approved ACCS Ltd supervisor who can offer instruction and assistance to locally sourced labour. Our supervisors are fully qualified engineers with years of experience on a number of international chemical processing installations.



Please contact us for further information about approved installers in your region.

UK

In the UK, we operate a highly skilled and extremely professional team of installation engineers. Drawing on years of experience, our personnel have frequently won repeat business from existing customers, and also generated new business through recommendations for the quality of work completed.

The provision of an installation team allows us to regularly site test and improve our current range of products. In addition, new site requirements lead to the development of new technologies, which continue to expand our extensive range. However, where requested, third party installers or a supervisor can be employed to ensure accurate installation to your particular requirements.

All our installers are fully CCNSG qualified, Confined Space trained and have years of experience in the chemical protection industry.

Fascinating fact We are always happy to work with you to develop a bespoke product to fit your exact requirements.

ACCS ACROSS THE WORLD



PAST PROJECTS AND CLIENTS

Overseas

Al Yamamah Steel – Saudi Arabia – Galvanising tanks
Aramco – Saudi Arabia – Sulphur pit roof protection
BMS Sword Labs – Ireland – Bunding
Chevron – Kazakhstan – Sulphur pits
China Steel Corporation – Taiwan – Multiple chimneys
Codelco – Chile – Vessel linings
Coppex – Chile – Absorption tower
Dragon Steel – Taiwan – Chimney
EI-Kureimat Power Station – Egypt – Chimney
Enami – Chile – Absorption tower
Engro Chemicals Ltd – Pakistan – General chemical flooring
ETI – Turkey – Acid plant vessel linings
Exxon – Thailand – Sulphur pit linings
Hertz Teknik – Malaysia – Multiple lining applications
Huntsman Tioxide – Worldwide – Digestor linings
JAC – Singapore – Sulphur pit lining
JINCO – China – Reactor lining
JPMC – Jordan – Phosphate digester lining
Kazzinc – Kazakhstan – Acid plant vessel linings
Khursaniyah Gas Project – Saudi Arabia – Sulphur pits
Lamma Island Power Station – Hong Kong – Chimney
LG Nikko – South Korea – Acid plant vessel linings
Lynas – Malaysia – Rare Earth reactors
Ministry of Environment – Qatar – Sulphur pit roof protection
Money Point Power Station – Ireland – Chimney
Port Kelang Power Station – Malaysia – Chimney
Ruwais Refinery Expansion Project – UAE – Sulphur pits
Sidi Krir Power Station – Egypt – Chimney
Schering Plough – Ireland – Bunding
SKEC – Asia/Middle East – Multiple SRU projects
SPCC – Peru – Quencher linings
Thai VCM – Thailand – Quencher linings
Tuas Incinerator – Singapore – Chimney
Turkmengas – Turkmenistan – 4 x Sulphur pits, 1 x Sulphur pelletization pit
Vidrios Lirquen – Chile – Chimney
Xstrata – Chile – Acid plant vessel linings
YAP Construction – Malaysia – Spent acid tank lining
Zinifex – New Zealand – Reactor linings

UK

Ames Goldsmith – General process flooring
Baker Hughes – Tanker loading bay, storage bunds, storage flooring
Banner Chemicals – Internal tank lining
BIP Oldbury – Reline ball mill
BNFL – Large number of projects for floor and bund repairs
BP – Large number of projects for floor and bund repairs
British Sugar – Process chutes and floorings
Ciba Geigy – Brick vessel linings
Diageo – General chemical flooring and effluent process areas
Drax Power Station – Supply of various materials, ash hoppers and storage areas
D.S.M Ltd – Wall repairs to tank farm
Egborough Power Station – Supply of various materials, ash hoppers and storage areas
Essar Oil Refinery – Repair and reconstruction materials of sulphur pits
Fiddlers Ferry Power Station – Supply of various materials, ash hoppers and storage areas
Goodwin Group – Reline ball mill
GrowHow UK – General processing areas
IAE – Pickle tanks, process areas, bunded areas and general flooring
ICI – Multiple process areas
Ineos Chlor – Sulphuric acid tanker loading bays, storage areas, process areas and bunded areas
John Hyde – General process flooring
Klenzan – General process flooring
Lucite – Spent acid tanks
M & CT – Reline ball mill
Mexichem Fluor – Effluent treatment vats, storage bays, washdown bays, bunded areas
Nestlé – Food processing areas, effluent treatment and storage areas
Novartis Vaccines – Acid bunds
Perstorp – Acid bunds, monomer bunds, effluent pits
PQ Corp – Process and bunded areas
Rolls Royce – Acid storage area
Westinghouse – Large number of projects for floor and bund repairs

Fascinating fact Sulphuric acid is extensively used in fertiliser production, with usage accounting for roughly 60% of total world wide production of H₂SO₄.

THE MINCHEM GROUP

The MinChem Group comprises three wholly owned and independent companies, namely, MinChem Ltd, MinChem HMP Ltd and ACCS Ltd. All three companies operate in the Minerals and Chemical fields (as our name suggests), providing a range of niche products and services for special applications in diverse markets.

Our world-class expertise dates back over 40 years and encompasses long-established technologies through to new, state-of-the-art technologies, providing high-tech solutions to today's demanding raw material selection and application processes.

MinChem Limited

MinChem Ltd was formed in 2000 by a management buy-out of the well-established Minerals and Chemicals division of Palabora Europe Ltd (then Mandoval Ltd), a wholly-owned subsidiary of Palabora Mining Co Ltd, South Africa, which in turn is part of Rio Tinto plc, the large UK based global mining company.

MinChem Ltd offers a range of specialised inorganic and mineral-based products for use in world markets in abrasives, animal feed, catalysts (automotive and industrial), ceramics (advanced, dental, fine and technical), chemical manufacture, coatings, electronics, healthcare, leather tanning, metal finishing, paper and board, pharmaceuticals, refractories (cement, glass and steel) and related areas.

Carrying on from Palabora's market leader position in baddeleyite zirconium (Zr) products, MinChem' baseline is Zr oxides and reactive Zr chemicals. In addition, we supply various forms of aluminium, cobalt, potassium, sodium, titanium, nickel and other salts. Marketing of these niche products is covered by agency/distributorship/special arrangements with leading manufacturers around the world.

For further information please contact:

MinChem Limited,
The Old Pottery,
4 Hillside Road,
Aldershot, Hampshire,
GU11 3NB, United Kingdom.

Tel: +44 (0) 1252 350504

Fax: +44 (0) 1252 350770

Email: enquiries@minchem.co.uk

Website: www.minchem.co.uk



MinChem HMP Limited

MinChem HMP Ltd (formerly known as Hines Milling & Processing Ltd) is based in the heart of the Potteries in Stoke-on-Trent, UK. It is a well-established manufacturer of a range of wet and dry ground products based on zircon, zirconia, alumina and related ceramic/refractory raw materials.

MinChem HMP Ltd offers a unique brand of zircon specialities, such as our Zircozon™ range. These are world-class materials accepted in all ceramic manufacturing countries, and used by major players in investment casting, foundry, tableware/tile, sanitaryware applications and related areas. Zircozon 5 is our top selling, high quality grade opacifier giving high-white glaze opacification results, meeting international standards.



MinChem HMP's range includes zircon, zirconia and alumina products such as cements, paints, coatings, patches, castables and ramming compositions. These products are used to serve the above and other diverse markets worldwide in abrasives, ceramics, ceramic colours, electrical insulation, frits, glass, glazes, kiln furniture, metal filtration, paints, pigments, refractories, welding electrodes and a host of other technical applications.

MinChem HMP Ltd also offers blending, contract milling, sieving, spray drying and other processing services. Raw materials, zircon, zirconia, alumina and other ceramic/refractory materials can be processed and supplied to your own formulation and specifications under strict confidentiality.

For further information please contact:

MinChem HMP Limited,
Scott Lidgett Industrial Estate,
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Stoke-on-Trent,
ST6 4NQ,
United Kingdom

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Fax: +44 (0) 1782 837 174

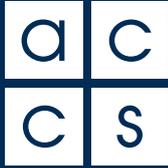
Email: info@minchemhmp.co.uk

Website: www.minchemhmp.co.uk





Fascinating fact Stoke-on-Trent is considered to be the home of the ceramics and pottery industry in the UK and is commonly referred to as 'The Potteries'. The image above shows a traditional bottle oven, a type of kiln once commonly found all over the local area.



Contact us

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Based in Stoke-on-Trent, UK, with easy access to public transport, ACCS Ltd is in a prime location for supply and manufacture to key areas of heavy industry such as the Northwest and Midland regions of the UK. In addition, our transport links allow easy access to UK shipping ports to transfer materials to overseas destinations in a quick and efficient manner.

Contact us by telephone or email to discuss your project and find out how we can support your business, or visit our website to find out more.

Overseas affiliates

At ACCS Ltd, we are acutely aware that local knowledge is invaluable in offering advice and assistance to our customers. Therefore, we have appointed a number of trusted agents around the world to act in our place, allowing direct face-to-face contact with our customers.

Please call or email us and we will put you in touch with our local representatives in your part of the world.



www.accsltd.co.uk

