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Insulation Profile: 2
Turner & Newall Group

COMPANIES IN THE Turner & Newall Group have been producing and installing insulation materials since the latter half of the 19th century. T&N was formed in 1920 by the amalgamation of four companies—Turner Brothers Asbestos Co Ltd, The Washington Chemical Co Ltd, Newalls Insulation Co Ltd and J. W. Roberts Ltd—each of which had pioneered new insulation materials and methods.

In 51 years T&N has grown into one of the United Kingdom's largest companies, with assets and turnover both well in excess of £100m. The manufacture and installation of insulation materials have played a significant part in this growth. Today, five companies in the Group are concerned with insulation—Newalls Insulation, Stillite Products, Turner Brothers Asbestos, TAC Construction Materials and British Industrial Plastics, and between them offer a wide range of materials based on calcium silicate, asbestos, glass and mineral fibres and plastics.

Newalls Insulation Co Ltd

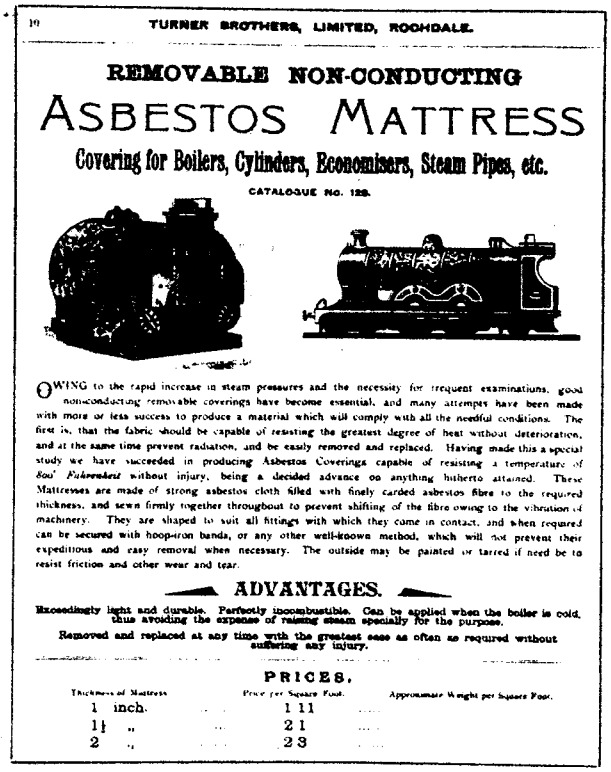
Newalls is Europe's largest insulation manufacturing and contracting company with its head office and plant at Washington, Co Durham, and sales offices and depots throughout the country. The foundation of the modern company goes back to 1893 when the production of 85 per cent magnesia insulation began at Washington. It was an immediate success, but one difficulty was that customers did not know how to apply the new material, and so the makers had to take on the job. The first contract was to insulate steam pipes at Wakefield's new electrical power station in 1898.

Newalls 85 per cent magnesia proved to be the cornerstone of the company's success for many years until it was gradually withdrawn in favour of Newtherm calcium silicate insulation, which Newalls developed during the 1950s.

A variety of insulation materials is manufactured at Washington, and a wide range of operating conditions can be catered for by products based on calcium silicate (Newtherm Extra, Newtherm G, Newfrac 18), glass fibre (Interlay loft insulation, Super Glass) and cellular glass (Foamglas).

In June 1971, the activities of Stillite Products Ltd, another T&N subsidiary, were closely associated with Newalls by the integration of the marketing and research organisations of both companies. Stillite has links which stretch back to the beginning of mineral fibre production in the 1880s. Under the new arrangements Newalls now markets Stillite's range of products—Stilclad pipe insulation, Stilmat sound deadening mat, Stilphon 20 for underfloor heating and Therbloc slab. The Newalls' Pipeline Service and Stillite SOS + S Delivery Service ensure prompt and efficient delivery, within 48 hours, to most parts of the country for over 100 standard items.

Insulation materials need specialised techniques in application and a vast amount of experience has been acquired by Newalls since that first contract in 1898. Newalls' contracting organisation has depots and offices in London, Birmingham, Cardiff, Glasgow, Manchester, Newcastle-on-Tyne and Grimsby. All types of insulation contracting are undertaken—heat, cold, sound and structural—for power stations, oil refineries, offices, factories and cold stores. Newalls has always been particularly strong in marine insulation and one out of every three ships to be built in Britain is insulated by Newalls. Recent developments have included the provision of a service for the design and erection of suspended ceilings and a new insulated pipe system for district heating schemes.



10 TURNER BROTHERS, LIMITED, ROCHDALE.

REMOVABLE NON-CONDUCTING

ASBESTOS MATTRESS

Covering for Boilers, Cylinders, Economisers, Steam Pipes, etc.

CATALOGUE NO. 128.

OWING to the rapid increase in steam pressures and the necessity for frequent examinations, good non-conducting removable coverings have become essential, and many attempts have been made with more or less success to produce a material which will comply with all the needful conditions. The first is, that the fabric should be capable of resisting the greatest degree of heat without deterioration, and at the same time prevent radiation, and be easily removed and replaced. Having made this a special study we have succeeded in producing Asbestos Coverings capable of resisting a temperature of 800° *Fahrenheit* without injury, being a decided advance on anything hitherto attained. These Mattresses are made of strong asbestos cloth filled with finely carded asbestos fibre to the required thickness, and sewn firmly together throughout to prevent shifting of the fibre owing to the vibration of machinery. They are shaped to suit all fittings with which they come in contact, and when required can be secured with hoop-iron bands, or any other well-known method, which will not prevent their expeditious and easy removal when necessary. The outside may be painted or tarred if need be to resist friction and other wear and tear.

ADVANTAGES.

Exceedingly light and durable. Perfectly incombustible. Can be applied when the boiler is cold, thus avoiding the expense of raising steam specially for the purpose.

Removed and replaced at any time with the greatest ease as often as required without suffering any injury.

PRICES.

Thickness of Mattress	Price per Square Foot.	Approximate Weight per Square Foot.
1 inch.	1 11	
1½ "	2 1	
2 "	2 3	

A price list for TBA asbestos mattresses published at the turn of the century.

Turner Brothers Asbestos Co Ltd

The year 1971 will always have a special place in the history of Turner Brothers Asbestos. Their centenary year, it was further distinguished by the award of the Queen's Award to Industry for export achievement and technological innovation.

The technological ground for the Award was TBA's development in this country of Fortex asbestos yarns. These are produced by a chemical process which has completely revolutionised the manufacture of asbestos textiles. Instead of being carded, asbestos fibres are separated by a wet dispersion process into finer fibres than has previously been possible. These ultra-fine fibres are extracted and spun into yarn which is treated before further processing into cloths, webbing, listing and tubing. Fortex textiles are purer, lighter, stronger and more resistant to heat than conventional textiles; they are smooth and clean in appearance and much less prone to shed dust. They are particularly suited for the outer covering of lagged boilers and pipes.



TBA Fortex cloth provides a clean and very tough outer covering for thermal insulation.

Fortex cloth is a long stride from the primitive insulation systems employed at about the time the company was formed, when mixtures of clay and sand, reinforced by vegetable fibres, were used for cladding boilers and steam pipes to reduce heat losses.

TBA first used asbestos for insulation soon after commercial quantities of asbestos fibre were discovered in Canada in 1878. By late 1879 they had received their first order, for 10 tons of asbestos yarn and 500cwt of asbestos cloth, which were manufactured on converted cotton textile machinery. From this small beginning it has made itself the world's largest manufacturer of asbestos textiles, with factories at Rochdale and Hindley Green, Wigan.

Besides Fortex materials the company's recent developments of asbestos textiles for thermal insulation include aluminised asbestos cloth and dust-suppressed webbing and cloth, the latter affording a five-fold reduction in dust emission during handling and application without any reduction in insulation properties.

TBA has considerable interests in glass fibre and is the largest manufacturer and exporter in the UK, and EFTA, of reinforcement glass fibre. An extensive range of internationally approved glass fibre thermal insulation materials has been developed to meet market needs. The range includes a variety of fabric weights, constructions, surface coatings and sewing yarns designed to meet specific application requirements. Production units are situated in Dungannon, Hindley Green and Camberley.

The asbestos textile and glass fibre interests are grouped into separate divisions, each with complete responsibility for the manufacture and worldwide sale of its products. Other TBA divisions cover reinforced plastics, PTFE materials, sealing materials and belting.

TAC Construction Materials Ltd

TAC Construction Materials Ltd was formed in October 1970 by the amalgamation of two T&N companies well-known to the insulation industry—Turners Asbestos Cement Co Ltd and J. W. Roberts Ltd. Both had long histories of manufacturing insulation products and their combined resources and technical knowledge now enable TAC Construction Materials Ltd to provide a comprehensive range of products.

TAC's head office is at Trafford Park, Manchester, where asbestos-cement building products have been manufactured since 1913. Insulation boards for the building industry were originally evolved from the methods of production used for asbestos-cement sheeting materials. Subsequent developments have produced a wide range of insulation products extending to all forms of construction, including shipbuilding and electrical insulation. A low density composite insulation board was produced in 1935 for fire protection in the *Queen Mary*.

The current range of products available for insulation in construction includes Turnabestos insulation board and ceiling panels, Turnall LDR boards, Turnall asbestos wood, Turnall Shipsboard, Limpet asbestos mattresses, sprayed Limpet asbestos and sprayed Limpet mineral fibre. Materials for electrical insulation include various types of Siluminite asbestos paper and Sindanyo asbestos-cement sheets.

J. W. Roberts Ltd first registered the trade name Limpet for asbestos insulation products in 1901, at about the time their asbestos mattresses began to be in demand for the insulation of steam locomotive boilers. Boiler mattresses remained the mainstay of the company until 1931, when sprayed Limpet asbestos was developed and patented, originally for use by the railways, but later extended to a wide range of industries. The versatility and excellent performance of sprayed Limpet asbestos as a heat insulant, for acoustic control, fire protection and condensation control has ensured its application in building and engineering throughout the world.

British Industrial Plastics Ltd

Plastics materials have made a considerable contribution to the development of modern insulation materials and two BIP group companies have important products in this field.

BIP Reinforced Products, Streetly, near Birmingham, began production of Filon glass-reinforced polyester translucent cladding sheet in 1957. Filon is strong but light and has found numerous applications in the building industry for complete roofs, roof lights, cladding and canopies. Double-glazing systems have been introduced which greatly enhance Filon's insulation values. Glare-free daylight is provided without the problems of condensation, heat loss or solar gain, which has enhanced the use of this system for sports halls and swimming pools.

The use of cellular plastics, such as urea-formaldehyde foam has steadily increased for cavity wall insulation. BIP Chemicals Ltd, Oldbury, has developed a Beetle resin and foam hardener which is suitable for most types of foaming machine. Beetle UF foam has been used in thousands of homes, and factories. The system can save up to three-quarters of the heat normally lost through external walls.

Research and Development

As one of the UK's leading materials producers, Turner & Newall places great emphasis on the work carried out by the Research and Development laboratories of its various subsidiary companies.

Each company is responsible for its own research effort and the regular exchange of information between the various laboratories encourages co-operation in projects of mutual interest and avoids duplication. Research conferences are also held each year. Insulation was the subject of the 1971 Research Conference, where over 40 of the Group's leading research staff presented and discussed papers relating to T&N's involvement with insulation materials.

Over £2m a year is spent by T&N on research and a number of outstanding developments have been made, both in the past and more recently. In the insulation field, sprayed Limpet asbestos was invented and its method of application improved both technically and hygienically; Newalls pioneered the development of calcium silicate insulation; TAC have made a considerable contribution to the development of improved low density insulation panels. TBA's work in the field of asbestos cloth has already been described.

Expertise in materials science has always been a basic asset of T&N. For as long as people expect increasing comfort and warmth at work, at play and in the home, T&N development will continue to satisfy the demand for improved insulation standards and more efficient insulation materials.

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