

THE MONOPOLIES COMMISSION

British Insulated Callender's
Cables Ltd
and
Pyrotenax Ltd

A report on the proposed merger

*Presented to Parliament in pursuance of section 9 of the
Monopolies and Restrictive Practices (Inquiry and Control) Act 1948
(as applied by section 6(5) of the Monopolies and Mergers Act 1965).*

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Note by the Board of Trade.

In accordance with (a) of the proviso to section 9 of the Monopolies and Restrictive Practices (Inquiry and Control) Act 1948, the Board of Trade have omitted from the report, as laid before Parliament, a sentence the publication of which would, in their opinion, be contrary of the public interest. No omissions have been made from Chapter 7, Conclusions.

Introduction

1. On 7th December 1966 the Board of Trade, under the powers given them by section 6(7) of the Monopolies and Mergers Act 1965, referred to the Commission for investigation and report the matter of the proposed merger of British Insulated Callender's Cables Limited and Pyrotenax Limited. We were required to make our report within six months of the date of the reference, the text of which is reproduced in Appendix 1. The Board of Trade did not exercise their powers, under section 6(11) of the Act, to stay the proposed merger until we had made our report.

2. On 9th December 1966 the Chairman (in accordance with the provisions of section 1 of, and paragraph 9 of Schedule 1 to, the 1965 Act) directed that the functions of the Commission in relation to the investigation under this reference should be discharged through a group consisting of eight members of the Commission.

3. At the time when the reference was made it appeared to the Board of Trade that arrangements were in progress or contemplation which, if carried into effect, would result in section 6(1)(a) and (b) of the 1965 Act being satisfied as stated in the reference. Section 6(7) of that Act requires the Commission in such a case to proceed 'in relation to the prospective and (if events so require) the actual results of the arrangements proposed or made as they might proceed in relation to the results of arrangements made immediately before the reference'. The merger was, in fact, completed during the period of our investigation.

4. Under section 6(2) of the 1965 Act we are required to investigate and report on the facts, that is whether sections 6(1)(a) and (b) of the Act are satisfied and, if we find they are, to report whether the merger operates or may be expected to operate against the public interest. If we so find, we are to consider whether any and if so what action should be taken to remedy or prevent any resulting mischiefs and, if we think fit, we may include in our report recommendations as to such action.

5. In investigating and reporting upon the facts we are not to consider whether the provisions of section 6(1)(b)(ii) are satisfied, and we are not, therefore, concerned with the value of the assets taken over.

6. When the inquiry began a public notice was inserted in the *Financial Times* inviting evidence on the reference. We have held eleven hearings in all. These have been with representatives of :

British Insulated Callender's Cables Ltd.

Pyrotenax Ltd.

National Coal Board

Electrical Wholesalers Federation

Electrical Contractors Association

and also with other cable manufacturers and users.

7. Written comments were also invited and received from shipbuilders, steel manufacturers, electricity boards, Government Departments and local authorities, insurance companies and other interested parties. Some of the evidence received was of a commercially confidential nature and our report contains only such information as we consider necessary for an understanding of our conclusion.

8. We should like to take this opportunity of thanking all those who have helped us in our inquiry, particularly British Insulated Callender's, Cables and Pyrotex upon both of whom we have necessarily made considerable demands.

CHAPTER 1

Mineral Insulated Cable

9. Our reference requires us to investigate the effects of a merger between British Insulated Callender's Cables Ltd. (BICC) and Pyrotenax Ltd. (Pyrotenax). It particularly directs our attention to the effects on the supply in the United Kingdom of mineral insulated electric cable. We shall consider the two companies mentioned in the reference in the following chapters, but in this chapter we consider the only other manufacturer of mineral insulated cable in the United Kingdom and we set out the main relevant facts about mineral insulated cable itself.

10. Mineral insulated cable* consists of one or more metal conductors surrounded, and separated from each other, by an insulant made of compressed inorganic powder, the conductors and insulant being contained in a metal sheath. For certain purposes, for example for installation in situations where corrosion of the metal sheath might occur, the finished cables is supplied with an outer covering of PVC. Normally, for wiring cable copper is used for both the conductors and the metal sheath, but recently a range of aluminium (conductors and sheath) cables has been developed and marketed. The same principle of construction extends also to thermocouples† and heating cables, but in these cases a variety of metals for conductors and sheaths are used, depending on the application. The mineral insulant is magnesium oxide. Finished cables are normally made with one, two, three, four or seven conductors, and in sizes designed for 660, 500, 440 or (more recently) 250 volts. A British Standard specification (B.S. 3207, Part 1)‡ gives requirements and dimensions for copper-sheathed mineral insulated cables of 440 and 660 volt ranges for general use in electrical installations.

11. The manufacturing process consists essentially of inserting a rod or rods (the conductors) inside a tube, known as a start tube (the sheath), filling the remaining space within the tube with the insulating powder, ramming the powder, and then drawing the tubes through dies until they have been reduced to the required diameter of the finished cable. It is a property of the tubes, the rods and the insulant (rammed to the correct degree) that all three may be drawn together as one, so that the relative dimensions of the components and their correct spacing relative to each other remain unchanged. During the drawing process, which hardens the metal, annealing is required at intervals to soften it and keep it ductile.

* Mineral insulated cable is sometimes referred to as MI cable, and sometimes as MICC (mineral insulated copper covered) cable. The latter is no longer accurate, since the covering is not now always made of copper. We were also told that the cable is sometimes called Pyrotenax, after the first manufacturer in this country. To avoid confusion, we refer throughout this report to 'mineral insulated cable'.

† A thermo-couple is a device for measuring temperature electrically.

‡ BS 3207, *Mineral-insulated cables. Part 1, Copper sheathed cables with copper conductors.* (5s. from the British Standards Institution, Sales Branch, Newton House, 101-113 Pentonville Road, London N1)

12. The installation of mineral insulated cable requires a different technique from that of the more traditional types of cable, and involves the use of a few special tools (in addition to those normally used by an electrician) and certain accessories*. The most important accessories are those used for making terminations and sealing them in such a way that the mineral insulant is permanently protected from moisture. This is necessary because the insulant is hygroscopic and, to function properly, must be kept dry.

13. Mineral insulated cable was a French invention, but neither in France nor in other countries (except the United Kingdom) where its manufacture has been licensed has it been extensively developed. It was first manufactured in the United Kingdom in 1937, by Pyrotanax. Pyrotanax had acquired exclusive patent rights for its manufacture and sale in the United Kingdom and other parts of the British Commonwealth from the French company which had developed the cable. Although demand for mineral insulated cable grew rapidly, Pyrotanax remained the only manufacturer in the United Kingdom until BICC began to manufacture it in 1953. We consider these companies in detail in chapters 2 and 3. More recently, in 1962, Glynwed Ltd. began making mineral insulated cable; the cable is manufactured by a wholly-owned subsidiary company called The Wednesbury Tube Co. Ltd., and is marketed through another wholly-owned subsidiary, formed for the purpose, called Mineral Insulated Cables Ltd.

14. The Glynwed group of companies carries on business principally as manufacturers, fabricators and stockists of metal products, particularly copper tubes and fittings, and is not, except for its interest in mineral insulated cable, a cable manufacturer. Glynwed told us that it was attracted to the manufacture of mineral insulated cable because it already had experience with copper tubes and because it believed that high profits could be earned. It had a market survey made in 1959, and concluded that the market for mineral insulated cable was expanding sufficiently fast to support a third manufacturer. A development period followed, and production started in 1962, with a small quantity of cable being sold towards the end of that year. Only 660 volt and 440 volt cable is made, but the company is able to make 250 volt cable, and is considering doing so. Up to the end of 1966 Glynwed had no distribution or selling organisation of its own for mineral insulated cable, and all its sales had been made through Sterling Cable Co. Ltd., but since that time it has established its own selling and marketing organisation.

15. Glynwed's share of the market is still small, but the company intends to increase it substantially and is confident that it can do so, as it has spare manufacturing capacity.

16. Pyrotanax, BICC and Glynwed are at present the only manufacturers of mineral insulated cable in the United Kingdom and, as far as is known, there are no imports. In the calendar year 1965 over 90 per cent of the total manufacturers' sales of mineral insulated cable in the United Kingdom were made by BICC and Pyrotanax.

17. Mineral insulated cable was originally developed to meet a requirement for a cable that would neither cause nor contribute to a fire, and would continue to operate when passing through a fire zone. It will continue to function indefinitely in high ambient temperatures, and for short periods in

* Except where the sense requires otherwise in this report, we have taken 'mineral insulated cable' to include the accessories used with it.

temperatures up to about 1,000° Centigrade, which is approaching the melting point of copper. It has other valuable characteristics in addition. Because of its good mechanical properties, great toughness combined with durability, it can be installed without the need for any protection such as steel conduits or trunking, and it can sustain a considerable degree of damage and deformation, such as flattening or twisting, without loss of efficiency. It is highly resistant to most kinds of corrosion, and still more resistant when it is supplied with a PVC outer sheath. Moreover it has a virtually indefinite life, and may be expected to last at least as long as any building in which it has been installed.

18. Because of these characteristics, a demand has developed for the use of mineral insulated cable in a wide range of situations. In historic buildings mineral insulated cable is used in order to reduce the risk of fire, and it also has the advantage that it can be used unobtrusively because of its small diameter and because steel conduits can be dispensed with. It is used for the wiring of industrial installations, such as factories or quarries, where its ability to withstand physical damage may be valuable, and in situations where resistance to heat is important, for instance in proximity to boilers. In large blocks of flats where much of the work of wiring is repetitive mineral insulated cable can conveniently be supplied from the factory in pre-assembled lengths, to any specification, and with the necessary terminations already fitted (in this report referred to as wiring units). Mineral insulated heating cable can be used for underfloor or wall heating and also for heating roads. A further use is in the manufacture of thermo-couples and compensating cables for temperature measurement.

19. The degree to which mineral insulated cable may be regarded as essential, or even highly desirable, for all these and other purposes for which it is in fact used, and thus the degree to which the market for mineral insulated cable can realistically be considered as distinct, is to some extent a matter for argument. It is relevant in assessing the effect on the public interest of the dominant position in the supply of mineral insulated cable which results from the merger, and we shall discuss this subject in chapter 6. In this chapter we merely record that it is clear that there is, in fact, a demand for mineral insulated cable both in this country and overseas and that this demand has been growing.

20. The output of mineral insulated cable in the United Kingdom has grown rapidly in the past twenty years. In the period of nine years to 31st March 1955, during which it had a complete monopoly of supply, Pyrotanax increased its annual sales of 'standard' cable* from 3.5 m. yards to 10.7 m. yards. In the ensuing ten-and-a-half years to 30th September 1966 Pyrotanax

* The only available common means of aggregating and comparing the two companies' performance in terms of volume of output is 'standard' cable, which is defined as cable having a copper sheath with one, two, three, four or seven copper conductors and being of 250, 440, 500 or 660 volts classification. In the case of BICC the volume of standard cable is determined by reference to sales in calendar years. Pyrotanax's volume figures are for production in the accounting years ended 31st March; for comparative purposes we have regarded Pyrotanax's figures as relating to the calendar year immediately prior to the accounting date. Standard cable represents and has always represented the bulk of each company's output although other mineral insulated products have become of increasing importance. In the year 1965 the aggregate sales of BICC's of standard cable and relevant accessories represented more than 90 per cent by value of the company's total mineral insulated cable sales; in its financial year ended 31st March 1966 the aggregate of Pyrotanax's sales of standard cables and relevant accessories represented more than 80 per cent by value of the company's total sales.

more than doubled its production of standard cable, to a rate of 22 m. yards a year, and also introduced new products based on mineral insulated cable principles. The year 1956 was BICC's first full year of commercial production of mineral insulated cable; in the first six months of 1966 sales of standard cable were at the rate of 24.5 m. yards a year. The introduction of 250 volt cable in 1964 and variations in the proportions of the different types of cables sold between one year and another and between the two companies make exact comparison difficult but there can be no doubt about the general trend in growth since 1946. In Appendix 2 we show in the form of a graph the volume outputs of standard cable in the period 1956-66; for this purpose we have aggregated the figures of Pyrotex and BICC, but have disregarded Glynwed's.

21. Exports from this country were worth about £1½ m. in 1966, and in addition a substantial quantity of mineral insulated cable is manufactured overseas. Pyrotex subsidiary or associated companies manufacture in Australia, Canada and India. Manufacture by domestic companies is carried on to a lesser extent in France, Italy and USA, and BICC has recently sold manufacturing machinery to the USSR.

CHAPTER 2

Pyrotex Ltd.

Origins and development

22. Pyrotex Ltd. was incorporated in England as a private company under the name of P.T. Finance Trust Ltd. on 15th April 1936. The name of the company was changed on 31st March 1937 to Pyrotex Ltd., and on 28th July 1954 the company became a public company.

23. The company was formed for the purpose of manufacturing mineral insulated copper covered cable by a process which had originally been developed in France by the Société Alsacienne de Constructions Mécaniques, from whom Pyrotex had acquired exclusive patent rights for the manufacture and sale of mineral insulated cable in the United Kingdom and other parts of the British Commonwealth.

24. In 1937, with the initial assistance of the French experience, the company established a manufacturing plant at Hebburn-on-Tyne, and production of mineral insulated cable began there in the same year. The company says that demand grew rapidly, and that after the war substantial extensions were made to the Hebburn factory based on a completely new layout and incorporating much new plant and equipment. By 1951, when some of the original patents had expired, the company had developed an entirely new production process, which not only reduced direct production costs but also contributed considerably to increased production capacity at the Hebburn factory. In 1960 Pyrotex purchased an additional factory site and premises at Hebburn and transferred there some of the cable production and development work previously carried out in the main factory. In 1964-65, as a result of competition from BICC, Pyrotex began to diversify. Separate and independent manufacturing facilities were established