

THE MANUFACTURED ABRASIVES TRADE

Note.—For information regarding the scope of the Census, instructions given to firms for making returns, and definitions of the terms used in this report, reference should be made to the Introductory Notes on pages v to xviii.

Introductory

This trade comprises firms that were engaged wholly or mainly in the manufacture of emery and other abrasive cloth and paper, oil stones, grinding wheels and other abrasives. As separate particulars for England and Wales and for Scotland cannot be published for the year 1930 owing to the risk of disclosure of information relating to individual firms, the summary table (I) and the tables showing details of power equipment (IV) and coal, coke and electricity used (V) are not appended to this report. The whole of this information is available in the tables given in the report itself.

The following table shows the main results of the Censuses of 1930 and 1924 in respect of firms in Great Britain that employed an average of more than ten persons :—

Particulars	Unit	1930	1924
Value of goods made and work done (Gross output)	£'000	1,515	1,296
Cost of materials used	"	790	681
Paid for work given out to other firms	"	*	19
Net output	"	725	596
Average number of persons employed	No.	2,487	1,929
Net output per person employed	£	291	309
Mechanical power available :—			
Prime movers	H.P.	1,658	1,448
Electric motors driven by purchased electricity	"	2,507	1,483
Number of returns	No.	23	19
Number of establishments	"	23	†

* Less than £500.

† Not available.

Deficiencies in 1930 aggregates.—The aggregate number of persons employed in 1930 by firms that stated that they employed not more than ten persons on the average was 71, the corresponding figure for 1924 also being 71. The value of the gross output

of the small firms in 1924 was £72,000, and particulars of the principal classes of goods included in this figure are given below:—

		£'000	
Grinding wheels:—			
Of carborundum	2
Of other hard abrasives	1
Abrasive cloth and paper:—			
Glass and sand paper	8
Other abrasive cloths and paper	2
Other abrasives and refractories	58
Other products	1
TOTAL			72

Size of firms.—In the following table the main particulars recorded at the Census of 1930 are grouped according to the average numbers of persons shown in the returns:—

Size of firm (average numbers employed)	Number of returns	Gross output	Net output	Average number of persons employed	Net output per person employed
	No.	£'000	£'000	No.	£
11-24 ...	6	41	25	94	261
25-49 ...	5	159	65	200	325
50-99 ...	5	206	96	350	274
100-199 ...	4	359	191	532	360
200-749 ...	3	750	348	1,311	265
TOTAL ...	23	1,515	725	2,487	291

Regional distribution.—In the following table the results recorded at the Censuses of 1930 and 1924 are grouped according to the principal areas* of Great Britain in which firms in this trade are situated:—

Area	Number of returns	Gross output	Net output	Average number of persons employed	Net output per person employed	
	No.	£'000	£'000	No.	£	
1 ...	1930	7	500	231	563	410
	1924	6	579	227	542	419
2 ...	1930	9	634	287	1,270	225
	1924	8	546	273	1,017	268
Other areas ...	1930	7	381	207	654	317
	1924	5	171	96	370	259
TOTAL...	1930	23	1,515	725	2,487	291
	1924	19	1,296	596	1,929	309

* For particulars see page xviii.

Northern Ireland.—No production of manufactured abrasives was recorded in Northern Ireland either for 1930 or for 1924.

Production

Principal products.—The following table shows the value and, where available, the quantity of the chief classes of abrasives manufactured in 1930 and 1924. The particulars for 1930 include 43 tons (£7,000) of "Grinding wheels of emery" (one entry), and £5,000 in respect of "Other abrasives and refractories, etc.," (one entry) returned on schedules for other trades.

Kind of goods	1930			1924	
	Quantity	Value	Entries	Quantity	Value
	Tons	£'000	No.	Tons	£'000
Grinding wheels:—					
Of artificial corundum (including alundum, aluxite, etc.)...	2,488	384	13	1,110	185
Of carborundum ...	581	108	11	540	103
Of emery ...	701	107	7	390	58
Of other hard abrasives ...	239	11	5	* 305	35
Not separately distinguished ...	—	—	—	780	92
TOTAL—Grinding wheels	4,009	610	...	...	483
	Th. reams†			Th. reams†	
Abrasive cloth and paper:—					
Emery cloth and paper‡ ...	162	406	10	151	391
Glass and sand cloth and paper‡ ...	210	155	9	218	194
Other abrasive cloth and paper ...	14	55	7	6	19
TOTAL—Abrasive cloth and paper ...	386	616	...	375	604
Abrasive powders (grain, flour, etc.)§ ...	...	183	10	...	96
Other abrasives and refractories (including oil stones and grinding machines) ...	...	102	11	...	149
TOTAL—PRINCIPAL PRODUCTS ...	...	1,511	...	...	1,332

* Quantity not stated.

† Reams of 480 sheets.

‡ For 1924 the headings were "emery cloth" and "glass and sand paper," but the differences in description do not appreciably affect the comparability of the figures for the two years.

§ So far as separately recorded.

Prices.—The average selling values of manufactured abrasives in 1930 and 1924, as calculated from the Census returns, are shown in the following table. It should be borne in mind that these comparisons do not take account of any changes that may have occurred since the earlier year in the quality or type of goods included under the specified descriptions.

Kind of goods	Average value		1930 as a percentage of 1924
	1930	1924	
	£ per ton	£ per ton	Per cent.
Grinding wheels :—			
Of artificial corundum (including alundum, aluxite, etc.) ...	154.3	166.5	92.7
Of carborundum ...	186.4	189.3	98.5
Of emery ...	152.7	148.4	102.9
Of other hard abrasives ...	44.3	32.8	135.1
	£ per ream	£ per ream	
Abrasive cloth and paper :—			
Emery cloth and paper ...	2.51	2.58	97.3
Glass and sand cloth and paper ...	0.74	0.89	83.1
Other abrasive cloth and paper ...	3.88	2.92	132.9

Volume of production in 1930 and 1924.—The following table compares the volume of production of manufactured abrasives in 1930 and 1924 :—

Kind of goods	Total production			1930 as a percentage of 1924
	1930	1924		
	As returned	As returned	At 1930 average values	Per cent.
	£'000	£'000	£'000	Per cent.
Grinding wheels :—				
Of artificial corundum (including alundum, aluxite, etc.) ...	384	185	171	225
Of carborundum ...	108	103	101	107
Of emery ...	107	93	96	111
Of other hard abrasives ...	11	10	14	79
Not separately distinguished ...	—	92	90*	—
TOTAL—Grinding wheels ...	610	483	472	129
Abrasive cloth and paper :—				
Emery cloth and paper ...	406	391	380	107
Glass and sand cloth and paper ...	155	194	161	96
Other abrasive cloth and paper ...	55	19	25	220
TOTAL—Abrasive cloth and paper ...	616	604	566	109
Other abrasive products ...	285	245	234†	122
TOTAL ...	1,511	1,332	1,272	119

* Based on average value of all grinding wheels.

† Based on average value of preceding items.

Production, exports and imports.—The following table shows, in relation to production, the quantities of the principal classes of manufactured abrasives exported from the United Kingdom in 1930 and 1924, together with the quantities imported and retained. The figures for 1924 include the output of the small firms. In the case of "Other abrasive cloth and paper", for which particulars of value only are available in the returns of imports and exports, it should be borne in mind that these values are not strictly comparable with those shown for production since the latter represent values at factory, exports are valued f.o.b., and retained imports c.i.f.

Kind of goods	Production	Exports	Proportion of production exported	Retained imports	Available for use in the United Kingdom	Share of home market held by British products
	Tons	Tons	Per cent.	Tons	Tons	Per cent.
Grinding wheels :—						
Of artificial corundum (including alundum, aluxite, etc.) 1930	2,488	30	1.2	455	2,913	84.4
Of carborundum ... 1930	581	226	38.9	206	561	63.3
Of emery ... 1930	701	126	18.0	87	662	86.9
Of other hard abrasives ... 1930	239	47	19.7	33	225	85.3
TOTAL—Grinding wheels* { 1930	4,009	429	10.7	781	4,361	82.1
{ 1924	3,390†	535	15.8	684	3,539	80.7
	Th. reams	Th. reams		Th. reams	Th. reams	
Abrasive cloth and paper :—						
Emery cloth and paper { 1930	162	52	32.1	6	116	94.8
{ 1924†	151	57	37.7	2	96	97.9
Glass and sand cloth and paper { 1930	210	53	25.2	62	219	71.7
{ 1924§	228	56	24.6	24	196	87.8
Other abrasive cloth and paper { 1930	£'000 55	£'000 27	...	£'000 77	...	...
{ 1924	21	35	...	110	...	...

* Owing to the large unclassified output of grinding wheels in 1924, the share of the home market held by products of home manufacture cannot be stated separately for the different descriptions of grinding wheels.

† Including an estimate in respect of emery wheels, valued at £36,000, for which no particulars of weight were stated.

‡ Emery cloth.

§ Glass and sand paper.

Work done for the trade, etc.—The total amount recorded as received for work done for the trade (including repair work) in 1930 was £6,000, the corresponding total for 1924 being £4,000.

Other products.—In addition to the output shown in the table of principal products on page 337, other goods of the value of £10,000 in both 1930 and 1924 were produced by firms that made their returns on schedules for the Manufactured Abrasives Trade. These goods are dealt with in the reports on those trades in which the principal output was recorded.

Employment and Wages

Employment.—The following table shows the average numbers of persons employed in 1930 and 1924:—

Persons employed	Males		Females		Total	
	Under 18	All ages	Under 18	All ages	Under 18	All ages
1930						
Operatives (average for the year)	143	1,679	39	247	182	1,926
Administrative, technical and clerical staff (as at 18th October)	19	385	20	176	39	561
TOTAL	162	2,064	59	423	221	2,487
1924						
Operatives (average for the year)	141	1,314	48	249	189	1,563
Administrative, technical and clerical staff (as at 18th October)	17	263	13	103	30	366
TOTAL	158	1,577	61	352	219	1,929

Wages.—The available information as to the amount of wages paid in 1930 and 1924 is given on pages 210 and 211.

Power

The following table shows the capacity of prime movers, electric generators and electric motors ordinarily in use and in reserve or idle in 1930 and 1924:—

Power equipment	1930			1924		
	Ordinarily in use	In reserve or idle	Total	Ordinarily in use	In reserve or idle	Total
PRIME MOVERS						
Reciprocating steam engines	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Internal combustion engines:—						
Gas	1,275	145	1,420	808	475	1,283
Petrol, kerosene, or other light oils	168	18	186	150	15	165
Heavy oils	19	19	38	—	—	—
	14	—	14	—	—	—
TOTAL	1,476	182	1,658	958	490	1,448

Power equipment	1930			1924		
	Ordinarily in use	In reserve or idle	Total	Ordinarily in use	In reserve or idle	Total
ELECTRIC GENERATORS						
Driven by	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.
Reciprocating steam engines	451	46	497	303	210	513
Internal combustion engines:—						
Gas	30	—	30	—	—	—
Petrol, kerosene, or other light oils	—	12	12	—	—	—
TOTAL	481	58	539	303	210	513
ELECTRIC MOTORS						
Driven by	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Electricity generated in same works	1,035	64	1,099	394	220	614
Purchased electricity	2,395	112	2,507	1,399	84	1,483
TOTAL	3,430	176	3,606	1,793	304	2,097

Consumption of fuel

The following table shows the quantities of coal, coke and electricity recorded as used in 1930:—

Kind of fuel used	For power (driving engines)	For other purposes (so far as recorded)
	Tons	Tons
Coal	6,086	8,328*
Coke	1,546	2,319*
Electricity used for all purposes:—		
Generated in same works		B.T.U. (Kw.-hrs.) '000
Purchased		1,533
		1,679
TOTAL—Electricity		3,212

* These figures were recorded by firms representing 82·4 per cent. of the net output of the whole trade.

TABLES

Note.—Owing to the possible disclosure of information relating to individual firms, separate particulars for England and Wales and for Scotland cannot be given.

I. Summary of results (see page 335)

II. Production

Kind of goods made and work done	Quantity		Value
	Tons	£'000	
Grinding wheels :—			
Of artificial corundum (including alundum, aluxite, etc.)	2,488	384	
Of carborundum	581	108	
Of emery	658	100	
Of other hard abrasives	239	11	
TOTAL—Grinding wheels	3,966	603	
	Th. reams†		
Abrasive cloth and paper :—			
Emery cloth and paper	162	406	
Glass and sand cloth and paper	210	155	
Other abrasive cloth and paper	14	55	
TOTAL—Abrasive cloth and paper	386	616	
Abrasive powders (grain, flour, etc.)* ... ..	...	183	
Other abrasives and refractories (including oil stones and grinding machines) ... ..	...	97	
Other products ... ..	...	10	
Work done for the trade (including repair work) ... ..	...	6‡	
TOTAL VALUE OF GOODS MADE AND WORK DONE (GROSS OUTPUT) ... ..	...	1,515	

† Reams of 480 sheets. * So far as separately recorded. ‡ Amount received.

III. Employment

A.—NUMBERS EMPLOYED IN WEEK ENDED 18TH OCTOBER, 1930

Persons employed	Males		Females		Males and females	
	Under 18	All ages	Under 18	All ages	Under 18	All ages
Operatives	135	1 590	37	234	172	1,824
Administrative, technical and clerical staff	19	385	20	176	39	561
TOTAL	154	1,975	57	410	211	2,385

B.—OPERATIVES EMPLOYED IN ONE WEEK IN EACH MONTH OF 1930

Week ended	Males and females	Week ended	Males and females
January 18	1,986	July 19	1,978
February 15	1,985	August 16	1,924
March 15	1,939	September 13	1,852
April 12	1,978	October 18	1,824
May 17	2,038	November 15	1,791
June 21	2,011	December 13	1,805
AVERAGE FOR THE TWELVE MONTHS ... ..	...	...	1,926

IV. Power (see page 340)

V. Consumption of fuel (see page 341)