1971 No. 625 (S.88)

CLEAN AIR

The Clean Air (Emission of Grit and Dust from Furnaces) (Scotland) Regulations 1971

Made - - -	31*st March* 1971
Laid before Parliament	20*th April* 1971
Coming into Operation	1*st November* 1971

In exercise of the powers conferred on me by section 2(1) of the Clean Air Act 1968(**a**), and of all other powers enabling me in that behalf, I hereby make the following regulations:—

Title and commencement

1. These regulations may be cited as the Clean Air (Emission of Grit and Dust from Furnaces) (Scotland) Regulations 1971 and shall come into operation on 1st November 1971.

Interpretation

2.—(1) In these regulations—

"indirect heating appliance" means a heating appliance in which the combustion gases are not in contact with the material being heated;

"multiflue chimney" means a chimney structure which for the whole or the greater part of its vertical length carries separate flues from more than one furnace; and

"schedule 1 furnace" and "schedule 2 furnace" mean respectively a furnace described in schedule 1 and a furnace described in schedule 2 to these regulations, being in either case a furnace to which section 2 of the Clean Air Act 1968 applies.

(2) The Interpretation Act 1889(**b**) shall apply for the interpretation of these regulations as it applies for the interpretation of an Act of Parliament.

Postponed application of regulations in certain cases

3. The provisions of these regulations shall not apply until 1st January 1978 to any furnace which has been installed, or the installation of which has been

(**a**) 1968 c. 62.

(**b**) 1889 c. 63.

begun, or an agreement for the purchase or installation of which has been entered into, before the commencement of these regulations.

Limits on emission of grit and dust from certain furnaces

4.—(1) The quantities of grit and dust which may be emitted during any period from the chimney of a schedule 1 furnace or a schedule 2 furnace with a heat output or input which is within the highest and lowest values specified in column (1) of the relevant schedule shall not exceed the quantities prescribed by that schedule.

(2) For the purposes of this regulation, where a chimney serves more than one furnace—

(*a*) if it is a multiflue chimney, each flue shall be taken as a separate chimney serving a separate furnace ; and

(*b*) in any other case, it shall be taken as a single chimney serving a single furnace with a heat output or input equivalent to the aggregate of the heat outputs or inputs of the furnaces concerned ;

and for these purposes any part of the emission which derives from a furnace to which these regulations do not apply shall be disregarded.

(3) The provisions of the next following paragraph shall have effect for applying the foregoing provisions to cases where the rating of a schedule 1 furnace or the heat input of a schedule 2 furnace is a value intermediate between two adjacent values in column (1) of the table in that schedule.

(4) In a case described in the preceding paragraph, the prescribed quantities in respect of the chimney of the furnace shall be arrived at as follows :—

(*a*) by interpolating the intermediate value into column (1) of the table between the two adjacent values (in this paragraph called "the two values") ;

(*b*) by calculating the interval between the lower of the two values and the intermediate value as a proportion of the interval between the two values, carried to two places of decimals ; and then

(*c*) by interpolating a figure, likewise carried to two places of decimals, into column (2) or (3), as the case may be, against the intermediate value at the same proportionate interval between the quantities prescribed in that column against the two values.

Circumstances in which the prescribed limits apply

5. These regulations shall apply to a furnace in respect of any period of standard operation, that is to say, any period during which the furnace is operating—

(*a*) at or close to the loading to which it is subject for the greater part of its working time or

(*b*) at any higher loading to which it is regularly subject for a limited time (whether or not that loading exceeds its Maximum Continuous Rating or designated heat input).

Regulations not to apply to incinerators

6. These regulations shall not apply to any incinerator, that is to say, to any appliance used to burn refuse or waste matter, whether solid or liquid, and whether or not the resulting heat is used for any purpose.

Gordon Campbell,
One of Her Majesty's Principal Secretaries of State.

St. Andrew's House,
Edinburgh.
31st March 1971.

Regulations 2 and 4

SCHEDULE 1

Furnaces Rated by Heat Output

Schedule 1 furnaces

1. The expression "schedule 1 furnace" means a furnace of—

(*a*) a boiler or

(*b*) an indirect heating appliance in which the material heated is a gas or liquid;

and where any such furnace falls also within the definition of "schedule 2 furnace", it shall be treated for the purposes of these regulations as a schedule 1 furnace.

Heat output

2. The quantities of grit and dust which may be emitted from the chimney of a schedule 1 furnace shall be ascertained by reference to heat output, designated by Maximum Continuous Rating of the boiler or appliance in pounds of steam per hour (from and at 100°C. (212°F.)) or in thousands of British thermal units per hour.

Quantities which may be emitted

3.—(1) Subject to the provisions of paragraph 4 below, the quantities of grit and dust, in pounds per hour, which may be emitted by the chimney of a schedule 1 furnace the heat output of which is within the highest and lowest values specified in column (1) of the following table shall not exceed—

(*a*) if the furnace burns solid matter, the quantities prescribed in column (2) against the value representing the output of that furnace or

(*b*) if the furnace burns liquid matter, the quantities prescribed in column (3) against that value.

Maximum Continuous Rating in pounds of steam per hour (from and at 100°C. (212°F.)) or in thousands of British thermal units per hour (1)	Maximum permitted quantities of grit and dust in pounds per hour	
	Furnaces burning solid matter (2)	Furnaces burning liquid matter (3)
825	1·10	0·25
1,000	1·33	0·28
2,000	2·67	0·56
3,000	4·00	0·84
4,000	5·33	1·12
5,000	6·67	1·4
7,500	8·50	2·1
10,000	10·00	2·8
15,000	13·33	4·2
20,000	16·67	5·6
25,000	20·0	7·0
30,000	23·4	8·4
40,000	30	11·2
50,000	37	12·5
100,000	66	18
150,000	94	24
200,000	122	29
250,000	149	36
300,000	172	41
350,000	195	45
400,000	217	50
450,000	239	54·5
475,000	250	57

Limitation on grit

4. In the case of a schedule 1 furnace which burns solid matter, the prescribed quantities may not contain more than the following proportion of particles exceeding 76 microns in diameter, that is to say—

(*a*) 33% where the Maximum Continuous Rating does not exceed 16,800 pounds per hour of steam or 16,800,000 British thermal units per hour or

(*b*) 20% in any other case.

Regulations 2 and 4

SCHEDULE 2

Furnaces Rated by Heat Input

Schedule 2 furnaces

1. Subject to the provisions of paragraph 1 of schedule 1 above, the expression "schedule 2 furnace" means a furnace—

(*a*) of an indirect heating appliance or

(*b*) in which the combustion gases are in contact with the material being heated, but that material does not itself contribute to the grit and dust in the combustion gases.

Heat input

2. The quantities of grit and dust which may be emitted from the chimney of a schedule 2 furnace shall be ascertained by reference to the designated heat input, expressed as British thermal units per hour.

Quantities which may be emitted

3. Subject to the provisions of paragraph 4 below, the quantities of grit and dust, in pounds per hour, which may be emitted by the chimney of a schedule 2 furnace the heat input of which is within the highest and lowest values specified in column (1) of the following table shall not exceed—

(*a*) if the furnace burns solid matter, the quantities prescribed in column (2) against the value representing the heat input of that furnace or

(*b*) if the furnace burns liquid matter, the quantities prescribed in column (3) against that value.

Heat input in millions of British thermal units per hour	Maximum permitted quantities of grit and dust in pounds per hour	
	Furnaces burning solid matter	Furnaces burning liquid matter
(1)	(2)	(3)
1·25	1·1	0·28
2·5	2·1	0·55
5·0	4·3	1·1
7·5	6·8	1·7
10	7·6	2·2
15	9·7	3·3
20	11·9	4·4
25	14·1	5·5
30	16·3	6·6
35	18·4	7·7
40	20·6	8·8
45	22·8	9·8
50	25	10·9
100	45	16
200	90	26
300	132	35
400	175	44
500	218	54
575	250	57

Limitation on grit

4. In the case of a schedule 2 furnace which burns solid matter, the prescribed quantities may not contain more than the following proportion of particles exceeding 76 microns in diameter, that is to say—

(*a*) 33% where the designed heat input of the furnace does not exceed 25 million British thermal units or

(*b*) 20% in any other case.

EXPLANATORY NOTE

(This Note is not part of the Regulations.)

Section 2 of the Clean Air Act 1968 contains provisions with respect to the emission of grit and dust from the chimneys of certain furnaces, and in particular empowers the making of regulations which prescribe specific limits on the quantities which may be emitted in particular cases. These Regulations prescribe limits applicable to certain furnaces, namely—

(*a*) furnaces of steam boilers and of appliances for the indirect heating of gas or liquid with a Maximum Continuous Rating of between—

(i) 825 and 475,000 pounds of steam per hour (from and at 100°C. (212°F.)) or (the alternative being an equivalent)

(ii) 825,000 and 475 million British thermal units per hour

and

(*b*) other furnaces of indirect heating appliances or in which the material being heated does not contribute to the emission, with a designated heat input of between 1·25 million and 575 million British thermal units per hour.

The section provides that emission of grit and dust at a higher rate will (subject to a statutory defence of "best practicable means") constitute an offence.

The Regulations will come into force on 1st November 1971 ; but their application to existing furnaces (as described in Regulation 3) is postponed until 1st January 1978.