

unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming apparatuses. The forming apparatuses, including the float bath used in flat glass manufacturing and flow channels in wool fiberglass and textile fiberglass manufacturing, are not considered part of the glass melting furnace.

*Glass produced* means the weight of the glass pulled from the glass melting furnace.

*Hand glass melting furnace* means a glass melting furnace where the molten glass is removed from the furnace by a glassworker using a blowpipe or a pontil.

*Lead recipe* means glass product composition of the following ranges of weight proportions: 50 to 60 percent silicon dioxide, 18 to 35 percent lead oxides, 5 to 20 percent total R<sub>2</sub>O (e.g., Na<sub>2</sub>O and K<sub>2</sub>O), 0 to 8 percent total R<sub>2</sub>O<sub>3</sub> (e.g., Al<sub>2</sub>O<sub>3</sub>), 0 to 15 percent total RO (e.g., CaO, MgO), other than lead oxide, and 5 to 10 percent other oxides.

*Pressed and blown glass* means glass which is pressed, blown, or both, including textile fiberglass, noncontinuous flat glass, noncontainer glass, and other products listed in SIC 3229. It is separated into:

- (1) Glass of borosilicate recipe.
- (2) Glass of soda-lime and lead recipes.
- (3) Glass of opal, fluoride, and other recipes.

*Rebricking* means cold replacement of damaged or worn refractory parts of the glass melting furnace. Rebricking includes replacement of the refractories comprising the bottom, side-walls, or roof of the melting vessel; replacement of refractory work in the heat exchanger; replacement of refractory portions of the glass conditioning and distribution system.

*Soda-lime recipe* means glass product composition of the following ranges of weight proportions: 60 to 75 percent silicon dioxide, 10 to 17 percent total R<sub>2</sub>O (e.g., Na<sub>2</sub>O and K<sub>2</sub>O), 8 to 20 percent

total RO but not to include any PbO (e.g., CaO, and MgO), 0 to 8 percent total R<sub>2</sub>O<sub>3</sub> (e.g., Al<sub>2</sub>O<sub>3</sub>), and 1 to 5 percent other oxides.

*Textile fiberglass* means fibrous glass in the form of continuous strands having uniform thickness.

*With modified-processes* means using any technique designed to minimize emissions without the use of add-on pollution controls.

*Wool fiberglass* means fibrous glass of random texture, including fiberglass insulation, and other products listed in SIC 3296.

[45 FR 66751, Oct. 7, 1980, as amended at 49 FR 41035, Oct. 19, 1984; 65 FR 61759, Oct. 17, 2000]

#### § 60.292 Standards for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of a glass melting furnace subject to the provisions of this subpart shall cause to be discharged into the atmosphere—

(1) From any glass melting furnace fired exclusively with either a gaseous fuel or a liquid fuel, particulate matter at emission rates exceeding those specified in Table CC-1, Column 2 and Column 3, respectively, or

(2) From any glass melting furnace, fired simultaneously with gaseous and liquid fuels, particulate matter at emission rates exceeding STD as specified by the following equation:

$$\text{STD} = X [1.3(Y) + (Z)]$$

Where:

STD=Particulate matter emission limit, g of particulate/kg (lb of particulate/ton) of glass produced.

X=Emission rate specified in Table CC-1 for furnaces fired with gaseous fuel (Column 2).

Y=Decimal fraction of liquid fuel heating value to total (gaseous and liquid) fuel heating value fired in the glass melting furnaces as determined in § 60.296(b). (joules/joules).

Z=(1-Y).

(b) Conversion of a glass melting furnace to the use of liquid fuel is not considered a modification for the purposes of § 60.14.

(c) Rebricking and the cost of rebricking is not considered a reconstruction for the purposes of § 60.15.

(d) An owner or operator of an experimental furnace is not subject to the requirements of this section.

(e) During routine maintenance of add-on pollution controls, an owner or operator of a glass melting furnace subject to the provisions of paragraph (a) of this section is exempt from the provisions of paragraph (a) of this section if:

(1) Routine maintenance in each calendar year does not exceed 6 days;

(2) Routine maintenance is conducted in a manner consistent with good air pollution control practices for minimizing emissions; and

(3) A report is submitted to the Administrator 10 days before the start of the routine maintenance (if 10 days cannot be provided, the report must be submitted as soon as practicable) and the report contains an explanation of the schedule of the maintenance.

TABLE CC-1—Emission Rates  
[g of particulate/kg of glass produced]

Col. 1—Glass manufacturing plant industry segment	Col. 2—Furnace fired with gaseous fuel	Col. 3—Furnace fired with liquid fuel
Container glass .....	0.1	0.13
Pressed and blown glass		
(a) Borosilicate Recipes .....	0.5	0.65
(b) Soda-Lime and Lead Recipes ..	0.1	0.13
(c) Other-Than Borosilicate, Soda-Lime, and Lead Recipes (including opal, fluoride, and other recipes) .....	0.25	0.325
Wool fiberglass .....	0.25	0.325
Flat glass .....	0.225	0.225

[45 FR 66751, Oct. 7, 1980, as amended at 49 FR 41035, Oct. 19, 1984; 54 FR 6674, Feb. 14, 1989; 65 FR 61759, Oct. 17, 2000]

**§ 60.293 Standards for particulate matter from glass melting furnace with modified-processes.**

(a) An owner or operator of a glass melting furnaces with modified-processes is not subject to the provisions of § 60.292 if the affected facility complies with the provisions of this section.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of a glass melting furnace with modified-processes subject to the provisions of this subpart

shall cause to be discharged into the atmosphere from the affected facility:

(1) Particulate matter at emission rates exceeding 0.5 gram of particulate per kilogram of glass produced (g/kg) as measured according to paragraph (e) of this section for container glass, flat glass, and pressed and blown glass with a soda-lime recipe melting furnaces.

(2) Particulate matter at emission rates exceeding 1.0 g/kg as measured according to paragraph (e) of this section for pressed and blown glass with a borosilicate recipe melting furnace.

(3) Particulate matter at emission rates exceeding 0.5 g/kg as measured according to paragraph (e) of this section for textile fiberglass and wool fiberglass melting furnaces.

(c) The owner or operator of an affected facility that is subject to emission limits specified under paragraph (b) of this section shall:

(1) Install, calibrate, maintain, and operate a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the affected facility.

(2) During the performance test required to be conducted by § 60.8, conduct continuous opacity monitoring during each test run.

(3) Calculate 6-minute opacity averages from 24 or more data points equally spaced over each 6-minute period during the test runs.

(4) Determine, based on the 6-minute opacity averages, the opacity value corresponding to the 99 percent upper confidence level of a normal distribution of average opacity values.

(5) For the purposes of § 60.7, report to the Administrator as excess emissions all of the 6-minute periods during which the average opacity, as measured by the continuous monitoring system installed under paragraph (c)(1) of this section, exceeds the opacity value corresponding to the 99 percent upper confidence level determined under paragraph (c)(4) of this section.

(d)(1) After receipt and consideration of written application, the Administrator may approve alternative continuous monitoring systems for the measurement of one or more process or operating parameters that is or are demonstrated to enable accurate and representative monitoring of an emission