

Chapter NR 247

GLASS MANUFACTURING

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NR 247.01 Purpose. The purpose of this chapter is to establish effluent limitations, standards of performance, and pretreatment standards for discharges of process wastes from the glass manufacturing category of point sources and subcategories thereof.

Note: The authority for promulgation of this chapter is set forth in ch. NR 205.
History: Cr. Register, June, 1976, No. 246, eff. 7-1-76.

NR 247.02 Applicability. The effluent limitations, standards of performance, pretreatment standards, and other provisions in this chapter are applicable to pollutants or pollutant properties in discharges of process waste resulting from manufacture in any of the following subcategories.

c1d INSULATION FIBERGLASS. This subcategory covers the manufacture of insulation fiberglass by continuously fiberizing molten glass and chemically bonding it into a wool like material.

c2d SHEET GLASS. This subcategory covers the manufacture of sheet glass by mixing several mineral ingredients, melting the mixture in a furnace, and drawing the sheet vertically from a melting tank.

c3d ROLLED GLASS. This subcategory covers the manufacture of rolled glass by mixing several mineral ingredients, melting the mixture in a furnace, and cooling the melt with rollers.

c4d PLATE GLASS. This subcategory covers the manufacture of plate glass by mixing several mineral ingredients, melting the mixture in a furnace, pressing the melt between rollers, and grinding and polishing the surface.

c5d FLOAT GLASS. This subcategory covers the manufacture of float glass by mixing several mineral ingredients, melting the mixture in a furnace, and floating the melt on a molten tin bath.

c6d AUTOMOTIVE GLASS TEMPERING. This subcategory covers the processes in which glass is cut, the cut edges are ground and polished, and the glass is then bent and tempered to form automobile side and back windows.

c7d AUTOMOTIVE GLASS LAMINATING. This subcategory covers the processes in which glass is cut, bent, washed, and plastic sheet laminated to produce automobile windshields.

c8d GLASS CONTAINER MANUFACTURING. This subcategory covers the process in which raw materials are melted in a furnace and mechanically processed into glass containers.

c9d MACHINE PRESSED AND BLOWN GLASS. cThis subcategory is reserved.d

c10d GLASS TUBING MANUFACTURING. This subcategory covers the process in which raw materials are melted in a furnace and glass tubing is mechanically drawn horizontally from the furnace by the Danner process which requires intermittent cullet quenching.

c11d TELEVISION PICTURE TUBE ENVELOPE MANUFACTURING. This subcategory covers the process in which raw materials are melted in a furnace and made into television picture tube envelopes.

c12d INCANDESCENT LAMP ENVELOPE MANUFACTURING. This subcategory covers the process in which;

cad Raw materials are melted in a furnace and mechanically processed into incandescent lamp envelopes, or
cbd Such envelopes are made and then etched with hydrofluoric acid to produce frosted envelopes.

c13d HAND PRESSED AND BLOWN GLASS MANUFACTURING. This subcategory covers the process in which raw materials are melted in a furnace and hand pressed or blown to produce glassware. The subcategory is further subdivided to cover:

cad The production of leaded glass using hydrofluoric acid finishing techniques,
cbd The production of non-leaded glass using hydrofluoric acid finishing techniques, and
ccd The production of leaded or non-leaded glass without the use of hydrofluoric acid finishing techniques.

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76.

NR 247.03 Definitions. The following definitions are applicable to terms used in this chapter. Definitions of other terms and meanings of abbreviations are set forth in ch. NR 205.

c1d XAdvanced air emission control devicesY means air pollution control equipment such as electrostatic precipitators and high energy scrubbers used to treat air discharge after initial treatment such as by knock-out chambers and low energy scrubbers.

c2d XCulletY means broken or excess glass generated in the process.

c3d XCullet waterY means water which is exclusively and directly applied to molten glass to solidify the glass.

c4d XFurnace pullY means the amount of glass drawn from the glass furnaces.

c5d XMineral ingredientsY means sand, soda ash, limestone, dolomite, cullet and other ingredients.

c6d XNLY means that there are no applicable limitations.

c8d XProduct frostedY means that portion of the total furnace pull for the manufacture of incandescent lamp envelopes used in the manufacture of frosted envelopes.

c9d XT temperingY means the process in which glass is heated nearly to the melting point and then rapidly cooled to improve its mechanical and thermal endurance.

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76; correction in c7d made under s. 13.92 c4d cbd 6., Stats., Register April 2013 No. 688; CR 17-046: r. c7d Register February 2021 No. 782, eff. 6-29-21.

NR 247.04 Compliance with effluent limitations and standards. Discharge of pollutants from facilities subject to the provisions of this chapter may not exceed, as appropriate:

c1d By July 1, 1977 effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available;

c2d By July 1, 1983 effluent limitations representing the de-

gree of effluent reduction attainable by the application of the best available technology economically achievable;

c3d Pretreatment standards for discharges to publicly owned treatment works;

c4d Standards of performance for new sources.

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76; r. and recr. Register, August, 1983, No. 332, eff. 9-1-83.

NR 247.06 Application of effluent limitations and standards. **c1d** The effluent limitations and standards set forth in this chapter shall be used in accordance with this section to establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this chapter, except as;

cad They may be modified in accordance with subch. IV of ch. NR 220,

cbd They may be superseded by more stringent limitations and standards necessary to achieve water quality standards or meet other legal requirements, or

ccd They may be supplemented or superseded by standards or prohibitions for toxic pollutants or by additional limitations for other pollutants required to achieve water quality.

c2d The production basis for application of the limitations and standards set forth in this chapter shall be the daily average of a maximum month in each subcategory subject to the provisions of this chapter.

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76; correction in c1d cad made under s. 13.92 c4d cbd 7, Stats., Register April 2018 No. 748.

NR 247.10 Effluent limitations, best practicable treatment. The following effluent limitations for all or specific subcategories establish, except as provided in subch. IV of ch. NR 220, the quantity or quality of pollutants or pollutant properties which may be discharged by a facility subject to the provisions of this chapter after application to process wastes of the best practicable control technology currently available.

c1d For subcategories c2d and c3d identified in s. NR 247.02 there shall be no discharge of process wastes to surface waters.

c2d The pH of all discharges shall be within the range of 6.0 to 9.0.

c3d The 30-day average limitations for suspended solids and other parameters are set forth in table 1;

cad In lbs{ 1000 lbs. or kg{1000 kg. of product for subcategories c1d, c4d, and c5d,

cbd In lbs{1000 sq. ft. for subcategories c6d and c7d, which may be converted to g{ sq m by multiplying by 4.9 and rounding off to 2 decimal places,

ccd In lbs{ 1000 lbs. or kg{ 1000 kg. of furnace pull for subcategories c8d, c10d, c11d and c12d cad, and of frosted product for subcategory c12d cbd, and

cdd In mg{l for subcategory c13d.

c4d Daily maximum limitations are;

cad Twice the 30-day average limitations for subcategories c1d, c4d, c8d, c10d, c11d, and c12d, and

cbd The same as the 30-day average limitations for subcategories c5d, c6d, and c7d except for the suspended solids limitation for subcategory c6d where it is 1.6 times the 30-day average limitations.

**TABLE 1
BPT EFFLUENT LIMITATIONS**

Sub-category*	Susp. Solids	Oil	Fluoride	Other Parameters
c1d	.015			.012 BOD .165 COD .0003 phenol
c4d	1.38			
c5d	.002	.0014		.00005 phosphorus
c6d	.25	.13		
c7d	.90	.36		.22 phosphorus
c8d	.07	.03		
c9d	reserved			
c10d	.23			
c11d	.15	.13	.07	.0045 lead
c12d cad	.115	.115		
c12d cbd	.23		.115	NL ammonia
c13d cad	NL		NL	NL lead
c13d cbd	NL		NL	
c13d ccd	NL			

*Subcategories are identified in s. NR 247.02

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76; correction in cintrod made under s. 13.92 c4d cbd 7, Stats., Register April 2018 No. 748.

NR 247.11 Effluent limitations, best available treatment. The following effluent limitations for all or specific subcategories establish the quantity or quality of pollutants or pollutant properties which may be discharged by a facility subject to the provisions of this chapter after application to process wastes of the best available technology economically achievable.

c1d For subcategories c1d, c2d, and c3d identified in s. NR 247.02 there shall be no discharge of process wastes to surface waters.

c2d The pH of all discharges shall be within the range of 6.0 to 9.0.

c3d The 30-day average and daily maximum limitations for suspended solids and other parameters are set forth in table 2;

cad In lbs{1000 lbs. or kg{1000 kg. of product for subcategories c4d and c5d,

cbd In lbs{1000 sq. ft. for subcategories c6d and c7d, which may be converted to g{sq m by multiplying by 4.9 and rounding off to 2 decimal places,

ccd In lbs{ 1000 lbs. or kg{1000 kg. of furnace pull for subcategories c8d, c10d, c11d and c12d cad, and of frosted product for subcategory c12d cbd, and

cdd In mg{l for subcategory c13d.

c4d Daily maximum limitations are:

cad Twice the 30-day average limitations for subcategories c4d, c8d, c10d, c11d, and c12d, and

cbd The same as the 30-day average limitations for subcategories c5d, c6d, and c7d.

TABLE 2
BAT EFFLUENT LIMITATIONS

Sub-category*	Susp. Solids	Oil	Fluoride	Other Parameters
c4d	.045			
c5d	.0007	.0014		.00005 phosphorus
c6d	.05	.10		
c7d	.18	.36		.06 phosphorus
c8d	.0008	.0008		
c9d	reserved			
c10d	.0002			
c11d	.13	.13	.06	.00045 lead
c12d cad	.045	.045		
c12d cbd	.04		.052	.12 ammonia
c13d cad	10	13		.10 lead
c13d cbd	10	13		
c13d ccd	10			

*Subcategories are identified in s. NR 247.02

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76.

NR 247.12 Standards of performance. The effluent limitations for all or specific subcategories set forth in s. NR 247.11 establish the quantity or quality of pollutants or pollutant properties which may be discharged by a facility which is a new source subject to the provisions of this chapter.

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76.

NR 247.13 Pretreatment standards. The pretreatment standards for discharges to publicly owned treatment works from sources subject to the provisions of this chapter shall be as set forth in ch. NR 211.

History: Cr. Register, June, 1976, No. 246, eff. 7-1-76; r. and recr. Register, August, 1983, No. 332, eff. 9-1-83