

Chapter NR 274

**INTERIM EFFLUENT LIMITATIONS FOR THE
NON-FERROUS METAL INDUSTRY
WISCONSIN POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

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Note: Pursuant to Chapter 74, Laws of 1973, in sections 147.04 (3) and (5) and under the procedure of section 227.027, Wis. Stats., the department of natural resources has promulgated interim effluent limitations which become effective February 1, 1974 and will remain in effect for a period of one year. These interim effluent limitations will be periodically replaced by permanent effluent limitations.

NR 274.01 Purpose. The purpose of this chapter is to establish interim effluent limitations for discharges from industrial point sources identified herein as authorized by section 147.04 (5), Wis. Stats.

History: Emerg. cr. eff. 2-1-74.

NR 274.02 Applicability. These limitations apply to the aluminum industry and Standard Industrial Classification Codes 2819, 3334, and 3361. These include rolling and drawing of wire, rod, bars, and structural shapes; and extrusion of tubes and shapes.

(1) Subcategories Considered. Limitations for the aluminum industry are considered under the following subcategories; refining of bauxite; primary smelting; ingot casting and foundry operations; rolling of plate and sheet; rolling of foil; rolling and drawing of rod, bar and structural shapes; and extrusion of aluminum shapes and tubes.

(2) Operations Excluded. These interim limitations cover only the listed operations.

(a) Metal cleaning and coating is included in Metal Finishing Operations.

(b) Secondary smelting is not included. This operation uses scrap aluminum as raw material and is significantly different from the primary operation in regard to water usage.

(c) Discharges of non-contact cooling water and boiler water blowdown are not included under these limitations.

(3) Other Limitations. Other interim effluent limitations in chapter NR 217 are applicable to discharges from facilities which belong in the classifications for this section but are excluded from, or not specifically included in, its provisions.

History: Emerg. cr. eff. 2-1-74.

NR 274.03 Application of interim limitations. The use of the interim limitations is limited solely to bauxite refining.

History: Emerg. cr. eff. 2-1-74.

NR 274.04 Description of abatement models. The following paragraphs describe in general terms the type of treatment facilities considered to be best practicable treatment technology for the purpose of establishing the interim effluent limitations of this chapter. This description is included to illustrate the type of treatment required. Other treatment technology may be acceptable.

(1) Bauxite Refining—The mud slurries discharged from this operation can be impounded in lagoons where the solids will settle out. The solids should be allowed to accumulate in the bottom of the lagoon and the water evaporated to prevent any discharge of solids.

(2) Primary Smelting—this subcategory covers only scrubber water used to wash the gas from the electrolytic cells. It includes pre-bake and Soderberg type operations. It does not include other water uses such as non-contact cooling of rectifiers. The limitations can be attained by recycling wash water and treatment using lime addition, clarification, and detention time sufficient to attain the required limits.

(3) Ingot Casting and Foundry Operations—The discharge from these operations comes from water sprayed over the molds and ingot surfaces. The minimum treatment is skimming and clarification, assu-
ming recycle, and treatment of the concentrated blowdown by clarification and air flotation or filtration.

(4) Rolling of Plate and Sheet—This subcategory includes the first reduction of ingots to plate and sheet by hot rolling and cold rolling mills. The minimum treatment should be lime addition, emulsion breaking, skimming, air flotation, and clarification with recycling assumed.

(5) Rolling of Foil—Cold reduction of sheet to foil normally requires a mineral base oil and in some cases an oil emulsion. The limits assume extension of plate and sheet rolling; if separate facilities are used, the water usage may be significantly higher. The minimum treatment should be emulsion breaking, skimming, and clarification with recycling assumed.

(6) Rolling and Drawing of Rod, Bar, and Structural Shapes—A low oil-content emulsion is used in this operation to lubricate and cool the aluminum being rolled into rods, bars and structural shapes. The model treatment system is emulsion breaking, skimming and clarification, with recycle assumed. Water used for equipment cooling or in die casting or forging operations, where the water does not come in contact with the metal, is not included under the limitations.

(7) Extrusion of Tubes Shapes—The water from this category comes from leakage and maintenance of the water-hydraulic presses. The discharge could be continuous or batch. The model treatment system is again emulsion breaking, skimming and clarification, with recycle assumed.

History: Emerg. cr. eff. 2-1-74.

NR 274.05 Table of interim effluent limitations.

Process	Parameter	Pounds Per 1000 Pounds ²
(1) Refining of Bauxite.....		No discharge essentially
(2) Primary Smelting.....	Fluoride.....	0.88
	TSS ¹	0.5
	Oil and Grease.....	0.25
(3) Ingot Casting & Foundry Operations.....	TSS.....	0.08
	Oil.....	0.08
(4) Rolling of Plate and Sheet.....	TSS.....	0.056
	Oil.....	0.028
	Phosphate as P.....	0.006
(5) Rolling of Foil.....	TSS.....	0.167
	Oil.....	0.083
(6) Rolling & Drawing of Rod Bar and Structural Shapes	TSS.....	0.0834
	Oil.....	0.0417
(7) Extrusion of Aluminum Shapes.....	TSS.....	0.11
	Oil.....	0.054

NOTES:
¹TSS means the total suspended solids.
²Pounds per 1000 pounds of daily production based on the highest 7 consecutive days of production.
History: Emerg. cr. eff. 2-1-74.