

10 CSR 10-5.451 Control of Emissions from Aluminum Foil Rolling

(1) Applicability. This rule shall apply to all aluminum foil rolling facilities with potential volatile organic compound (VOC) emissions greater than or equal to one hundred (100) tons per year throughout St. Louis City and Jefferson, St. Charles, Franklin and St. Louis Counties.

(2) Definitions.

(A) Cold rolling mill--Batch process aluminum sheet rolling mill with a preset gap between the work rolls used to reduce the sheet thickness. The process generally occurs at temperatures below two hundred sixty-five degrees Fahrenheit (265°F.). A cold rolling mill is used mainly for the production of aluminum sheet at gauges between 0.3 inches to 0.002 inches. Reductions to finish gauge may occur in one (1) pass or several passes.

(B) Intermediate foil mill--Batch process aluminum foil rolling mill with the work rolls in contact to reduce foil gauge. This process reduces finished sheet to intermediate foil gauges. An intermediate foil mill is used mainly in the production of aluminum foil at gauges between 0.010 inches to 0.0004 inches. Reductions to finish gauge may occur in several passes through the mill.

(C) Finish foil mill--Batch process aluminum foil rolling mill with work rolls in contact to reduce foil gauge. This process reduces intermediate foil and in some cases finished sheet to final gauges. A finish foil mill is used mainly in the production of aluminum foil at gauges between 0.005 inches to 0.00018 inches. Reductions to finish gauge may occur in several passes through the mill.

(D) Rolling lubricant--Petroleum based oil usually mixed with additives. The lubricant is used to cool the work rolls and provide lubrication for the product in contact with the work rolls.

(E) Definitions of certain terms specified in this rule may be found in 10 CSR 10-6.020.

(3) Emission Limits.

(A) Rolling Lubricants.

1. Cold rolling mill.

A. Rolling lubricants used on the cold mill shall consist of low vapor pressure lubricants composed of saturated oils and additives. For purposes of this subparagraph, low vapor pressure shall be defined as less than 1.0 mmHg at one hundred degrees Fahrenheit (100°F).

B. The initial boiling point of the as-received oils shall be three hundred eighty degrees Fahrenheit (380°F) or greater.

C. The initial boiling point of the as-applied rolling lubricants shall be greater than three hundred eighty degrees Fahrenheit (380°F).

D. The inlet or as-applied rolling lubricant temperatures at each mill shall not exceed one hundred fifty-five degrees Fahrenheit (155°F) and such temperatures shall be monitored at all times that the mill is in operation.

2. Intermediate and finishing mills.

A. Rolling lubricants used on the intermediate and finish mills shall consist of low vapor pressure lubricants composed of saturated oils and additives. For purposes of this subparagraph, low vapor pressure shall be defined as less than 1.0 mmHg at one hundred degrees Fahrenheit (100°F).

B. The initial boiling point of the as-received oils shall be three hundred thirty-five degrees Fahrenheit (335°F) or greater.

C. The initial boiling point of the as-applied rolling lubricants shall be greater than three hundred degrees Fahrenheit (300°F).

D. The inlet or as-applied rolling lubricant temperatures at each mill shall not exceed one hundred sixty degrees Fahrenheit (160°F) and such temperatures shall be monitored at all times that the mill is in operation.

(B) Large Emission Sources.

1. For any rolling mill that has ever had actual VOC emissions equal to or greater than one thousand (1000) tons per calendar year--

A. Emissions capture methods and emissions control equipment must be installed and used, which will result in an overall VOC emission reduction of at least eighty percent (80%).

B. An affected facility shall submit a compliance plan that details how the required VOC emissions will be controlled. The compliance plan shall include:

(I) A physical description and the operating characteristics of the rolling mill;

(II) A physical description of the capture methods to be used and the operating characteristics and design specifications of the control equipment;

(III) Expected annual quantities of material throughputs to the mill and the control equipment;

(IV) Potential VOC emissions, expected actual VOC emissions from the mill, both controlled and uncontrolled, and total operating hours from the two (2) previous calendar years to be used as a baseline for determination of overall emissions reductions;

(V) Proposed methods of testing, monitoring, record keeping and reporting for determining compliance with this rule;

(VI) A compliance schedule detailing all important interim dates up to and including final compliance testing; and

(VII) Any additional information as requested by the director.

C. The compliance plan shall be submitted to the director no later than sixty (60) days after the effective date of this rule.

D. The compliance plan shall be subject to the approval of the director.

2. Contingency plans.

A. Should an affected facility not be able to meet the overall eighty percent (80%) VOC emission reduction, the facility must develop and submit a plan detailing corrective actions to obtain VOC emission reductions equivalent to the shortfall. The contingency plans shall be submitted to the director for approval.

B. The contingency plan shall include the following:

(I) The total VOC emission reductions that will be achieved by the plan;

(II) The emission reduction method of control that will be used to make up for any shortfall in the original compliance plan;

(III) Proposed method of record keeping; and

(IV) A proposed implementation schedule.

C. The contingency plan shall be submitted no later than one hundred twenty (120) days after a determination is made that the compliance plan does not meet the eighty percent (80%) emission reduction.

(4) Record Keeping.

(A) For cold rolling mills--

1. Records of rolling lubricant formulations with identification of all oils and additives shall be maintained;

2. Records of the initial and final boiling points of all as-received oil shipments shall be maintained;

3. Records of the initial boiling points of the as-applied rolling lubricant shall be maintained on a monthly basis;

4. The temperature of the as-applied rolling lubricant shall be continuously recorded; and

5. All records of rolling lubricant formulations, distillation tests for oils, and as-applied rolling lubricants and rolling lubricant temperatures shall be retained for a period of at least three (3) years and be immediately available for inspection upon request by the department or any agency with proper authority.

(B) For intermediate and finishing mills--

1. Records of rolling lubricant formulations with identification of all oils and additives shall be maintained;

2. Records of the initial and final boiling points of all as-received oil shipments shall be maintained;

3. Records of the initial boiling points of the as-applied rolling lubricant shall be maintained on a monthly basis;

4. The temperature of the as-applied rolling lubricant shall be continuously recorded; and

5. All records of rolling lubricant formulations, distillation tests for oils, and as-applied rolling lubricants and rolling lubricant temperatures shall be retained for a period of at least three (3) years and be immediately available for inspection upon request by the department of any agency with proper authority.

(5) Determination of Compliance.

(A) All incoming shipments of oil shall be sampled and a distillation range test shall be performed using American Society for Testing and Materials (ASTM) methods D86-99, Standard Method for Distillation of Petroleum Products or other methods approved by the director. The results of such tests shall be used for compliance with subparagraph (3)(A)1.B. of this rule and subparagraph (3)(A)2.B. of this rule.

(B) A grab sample of the as-applied rolling lubricants shall be taken on a monthly basis from each mill during any month that a mill is in operation. A distillation range test shall be performed using ASTM methods. The results of such tests shall be used to determine compliance with subparagraphs (3)(A)1.C. and (3)(A)2.C.

(C) Compliance with subparagraphs (3)(A)1.D. and (3)(A)2.D. shall be met with continuous monitoring and recording of the rolling lubricant temperature.

(D) Determination of the eighty percent (80%) emission reduction requirement in subparagraph (3)(B)1.A. shall be determined through control efficiency emissions testing.

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EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)
FRM: 66 FR 37906 (7/20/01)
PRM: 66 FR 37942 (7/20/01)
State Submission: 10/25/00
State Final: 10 C.S.R. 10-5 (8/31/00)
APDB File: MO-179
Description: This update contains only minor revisions. References to the final boiling point of the rolling lubricants were revised for clarification. Section (5)(A) was revised to refer to the most current American Society for Testing and Materials test method and to add clarifying language to which the test method applies.

CFR: 40 C.F.R. 52.1320(c)
FRM: 65 FR 8060 (2/17/00)
PRM: 61 FR 10968 (3/18/96)
State Submission: 11/12/99
State Final: 10 C.S.R. 10-5 (11/30/95)
APDB File: MO-76
Description: This rule specifies operating procedures, materials requirements, and control equipment specifications for the reduction of volatile organic compounds from aluminum foil rolling mills in the St Louis ozone nonattainment area.

Difference Between the State and EPA-Approved Regulation

None.