401 KAR 61:070. Existing ferroalloy production facilities.

RELATES TO: KRS Chapter 224
STATUTORY AUTHORITY: KRS 224.10-100
CERTIFICATION STATEMENT:
NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the Environmental and Public Protection Cabinet to prescribe administrative regulations for the prevention, abatement, and control of air pollution. This administrative regulation provides for the control of emissions from existing ferroalloy production facilities.

Section 1. Applicability. The provisions of this administrative regulation are applicable to the following affected facilities commenced before the classification date defined below: electric submerged arc furnaces which produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide; and dust-handling equipment.

Section 2. Definitions. As used in this administrative regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Electric submerged arc furnace" means any furnace wherein electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.
(2) "Furnace charge" means any material introduced into the electric submerged arc furnace and may consist of, but is not limited to: ores, slag, carbonaceous material, and limestone.
(3) "Product change" means any change in the composition of the furnace charge that would cause the electric submerged arc furnace to become subject to a different mass standard applicable under Section 3 of this administrative regulation.
(4) "Slag" means the more or less completely fused and vitrified matter separated during the reduction of metal from its ore.
(5) "Tapping" means the removal of slag or product from the electric submerged arc furnace under normal operating conditions such as removal of metal under normal pressure and movement by gravity down the spout into the ladle.
(6) "Tapping period" means the time duration from initiation of the process of opening the tap hole until plugging of the tap hole is complete.
(7) "Furnace cycle" means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.
(8) "Tapping station" means that general area where molten product or slag is removed from the electric submerged arc furnace.
(9) "Blowing tap" means any tap in which an evolution of gas forces or projects jets of flame or metal sparks beyond the ladle, runner or collection hood.
(10) "Furnace power input" means the resistive electrical power consumption of an electric submerged arc furnace as measured in kilowatts.
(11) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the air pollution control device (and located at or near such device) serving any electric submerged arc furnace subject to this administrative regulation.
(12) "Control device" means the air pollution control equipment used to remove particulate matter generated by an electric submerged arc furnace from an effluent gas stream.
(13) "Capture system" means the equipment (including hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected electric submerged arc furnace to the control device.

(14) "Standard ferromanganese" means that alloy as defined by ASTM A-99-66(71). (ASTM designations are filed by reference in 401 KAR 50:015.)
(15) "Silicomanganese" means that alloy as defined by ASTM A-483-64(74).
(16) "Calcium carbide" means material containing seventy (70) to eighty-five (85) percent calcium carbide by weight.
(17) "High-carbon ferrochrome" means that alloy as defined by ASTM A-101-73 grades HC1 through HC6.
(18) "Charge chrome" means that alloy containing fifty-two (52) to seventy (70) percent by weight chromium, five (5) to eight (8) percent by weight carbon, and three (3) to six (6) percent by weight silicon.
(19) "Silvery iron" means any ferrosilicon, as defined by ASTM A-100-69(74), which contains less than thirty (30) percent silicon.
(20) "Ferrochrome silicon" means that alloy as defined by ASTM A-482-66(71).
(21) "Silicomanganese zirconium" means that alloy containing sixty (60) to sixty-five (65) percent by weight silicon, one and five-tenths (1.5) to two and five-tenths (2.5) percent by weight calcium, five (5) to seven (7) percent by weight zirconium, 0.75 to 1.25 percent by weight aluminum, five (5) to seven (7) percent by weight manganese, and two (2) to three (3) percent by weight barium.
(22) "Calcium silicon" means that alloy as defined by ASTM A-495-64(70).
(23) "Ferrosilicon" means that alloy as defined by ASTM A-100-69(74) grades A, B, C, D, and E which contains fifty (50) or more percent by weight silicon.
(24) "Silicon metal" means any silicon alloy containing more than ninety-six (96) percent silicon by weight.
(25) "Ferromanganese silicon" means that alloy containing sixty-three (63) to sixty-six (66) percent by weight manganese, twenty-eight (28) to thirty-two (32) percent by weight silicon, and a maximum of 0.08 percent by weight carbon.
(26) "Classification date" means October 21, 1974.
(27) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one (1) or more) or openings on the device's top or side which has (have) a total area less than five (5) percent of the corresponding top or side and which has (have) a length of not more than twice the width.
(28) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding five (5) percent of the corresponding top or side or which has (have) a length more than twice the width. A control device may have both dispersed and concentrated discharges.

Section 3. Standard for Particulate Matter.
(1) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this administrative regulation shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which:
(a) Exit from a control device and exhibit an opacity equal to or greater than three (3) percent where control device has dispersed discharge.
(b) Exit from any building opening and exhibit an opacity equal to or greater than:
1. Fifteen (15) percent for these gases which are the result of routine smelting/melting operations where no auxiliary operations will occur;
2. Twenty (20) percent for those gases which are from a furnace associated with metallurgical treatment while no auxiliary operations are occurring;
3. Twenty-five (25) percent for those gases which are the result of tapping operations;
4. Forty (40) percent for those gases which occur only during a metallurgical treatment; or

5. Forty (40) percent for those gases which occur during the pouring of metal from slag ladles into castbeds or molds.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this administrative regulation shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit fifteen (15) percent opacity or greater.

Section 4. Test Methods and Procedures. The Reference Method 9 in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 of this administrative regulation.

(5 Ky.R. 486; 1053; eff. 6-6-1979; TAm eff. 8-9-2007; Crt eff. 1-25-2019; Crt eff 1-20-2026.)