Ohio Administrative Code

Rule 1501:10-2-05 Exhaust emissions control and conditioning systems.

Effective: November 3, 2011

(A) Underground diesel-powered equipment shall include an exhaust emissions control and conditioning system that has been laboratory tested with the diesel engine, except as provided in paragraph (C) of this rule, using the ISO 8178-1 test and has resulted in diesel particulate matter emissions that do not exceed an average concentration of 0.12 milligrams per cubic meter (mg/m3) of air when diluted by one hundred per cent of the MSHA 30 C.F.R. Part 7 approval plate ventilation rate for that diesel engine. The website for the ISO International Organization for Standardization is http://www.iso.org/iso/home.htm. Should MSHA promulgate new regulations that change the 30 C.F.R. Part 7 approval plate ventilation rate, the dilution percentage relative to the approval plate ventilation rate will be increased or decreased on a direct ratio basis as approved by the chief.

(B) The exhaust emissions control and conditioning system shall be required to successfully complete a single series of laboratory tests conducted at a laboratory accepted by the chief for each diesel engine.

(C) An exhaust emissions control and conditioning system may be approved by the chief for multiple diesel engine applications through a single series of ISO 8178-1 laboratory tests, only if data is provided to the chief and he or she determines that the exhaust emissions control and conditioning system will meet, for each diesel engine, the in-laboratory diesel particulate matter standard established in paragraph (A) of this rule. Data provided to the chief shall include diesel particulate matter production rates for each engine as measured during an ISO 8178-1 test, if available. If ISO 8178-1 test data for diesel particulate matter production is not available for a specific diesel engine, comparable data may be provided to the chief that reliably verifies that the exhaust emissions control and conditioning system will meet, for that diesel engine, the in-laboratory diesel particulate matter standard established in paragraph (A) of this rule. This standard shall only be used for in-laboratory testing for approval of diesel-powered equipment for use underground.

(D) Components of exhaust emissions system. The exhaust emissions control and conditioning system shall include the following:

(1) A diesel particulate matter (DPM) filter that has proven to be capable of a reduction in total diesel particulate matter to a level that does not exceed the requirements of paragraph (A) of this rule. However, the chief may request the technical advisory committee to evaluate, in accordance with rule 1501:10-2-27 of the Administrative Code, alternative technologies that have the ability to meet the standard of paragraph (A) of this rule;

(2) An oxidation catalyst or other gaseous emissions control device capable of reducing undiluted carbon monoxide emissions to one hundred parts per million (ppm) or less under all conditions of operation at normal engine operating temperature range;

(3) An engine surface temperature control capable of maintaining significant external surface temperatures below three hundred and two degrees Fahrenheit;

(4) A system capable of reducing the exhaust gas temperature below three hundred and two degrees Fahrenheit;

(5) An automatic engine shutdown system that shuts off the engine before the exhaust gas temperature reaches three hundred and two degrees Fahrenheit and, if water-jacketed components are used, before the engine coolant temperature reaches two hundred and twelve degrees Fahrenheit. A warning shall be provided to alert the equipment operator prior to engine shutdown;

(6) A spark arrestor system;

(7) A flame arrestor system;

(8) A sampling port for measurement of undiluted and untreated exhaust gases as they leave the engine;

(9) A sampling port for measurement of treated undiluted exhaust gases before they enter the mine atmosphere; and

(10) For permissible diesel equipment, any additional MSHA regulations must be met.

(E) Diagnostics systems. On-board engine performance and maintenance diagnostics systems shall be capable of continuously monitoring and giving readouts to assure compliance with paragraphs (D)(1) to (D)(10) of this rule. The diagnostics system shall identify levels that exceed the engine and/or component manufacturer's recommendation or the applicable MSHA or chief's requirements as to the following:

(1) Engine speed;

(2) Operating hour meter;

(3) Total intake restriction;

(4) Total exhaust gas backpressure;

(5) Cooled exhaust gas temperature;

(6) Cooled temperature;

(7) Engine oil pressure; and

(8) Engine oil temperature.

(F) For dates of federal rules referenced in this rule, see rule 1501:10-1-07 of the Administrative Code.