

Diesel Particulate Matter

(DPM)

Underground Areas of Underground Coal
Mines

Final Rule

Promulgated January 19, 2001

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*Technical Support – Approval and
Certification Center*

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Emission Limit: Permissible Equipment Section 72.500

- Each piece within the mine must emit no more than 2.5 grams per hour of DPM

Effective Date: As of July 19, 2002

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- Compliance accomplished through addition of either a paper filter, a synthetic filter material, or a filter material with fire retardant properties from MSHA's filter list
- Availability of a better exhaust temperature shut down device – sprinkler head
- Testing prototype “low water level sensor in scrubber /flashing headlights” system

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Emission Limits: Nonpermissible Heavy Duty Equipment, Generators, and Compressors

Section 72.501

- Each piece within the mine must emit no more than 5.0 grams per hour of DPM

Effective date: As of July 21, 2003

- Each piece within the mine must emit no more than 2.5 grams per hour of DPM

Effective date: As of January 19, 2005

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Exceptions:

- Generator or Compressor: Exhaust discharged directly into the return or into intake air coursed directly to a return is not subject to the applicable requirement of this section.
- A combination machine such as a rock duster with a built in diesel-powered compressor or a diesel-powered welder would not be considered to be included in section 72.501.

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Compliance

- Diesel Engine's DPM Emission Output meets the 5.0 or 2.5 grams per hour standard
- Installation of a DPM control device:
 - Cordierite Filter at 85% Efficiency
 - Silicon Carbide Filter at 87% Efficiency
 - Paper/Synthetic Filter with heat exchanger

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MSHA Approved Diesel Engines / Filter Efficiency

Example of Engines Used in Nonpermissible Heavy Duty
Machines, Generators, and Compressors

Approval No.	Manufacturer	Engine Model	Rated Horsepower	PI CFM	DPM gr/hr Weighted Avg.	Weighted Avg. Horsepower	DPM gr/bhp-hr	Filter Efficiency To Obtain 5.0gr/hr	Filter Efficiency To Obtain 2.5gr/hr
B001	DEUTZ	MWM916	94	11500	19.54	46.2	0.42	74.4	87.2
B003	CATERPILLAR	3306 PCNA	150	23000	39.08	79.2	0.49	87.2	93.6
B035	DEUTZ	F8L 413FW	182	9500	16.14	100.6	0.16	69.0	84.5
B063	CATERPILLAR	3306PCTA	215	31000	52.68	116.40	0.45	90.5	95.3
B083	DAIMLER CHRYSLER	OM906LA*	275	7000	11.89	147	0.08	58.0	79.0
B060	Deutz	F4L1011*	56.3	2000	3.40	28.04	0.12	0.0	26.4

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Emission Limits: Nonpermissible Light Duty Equipment Section 72.502

- Each piece introduced into the mine must emit no more than 5.0 grams per hour of DPM
Effective date: After May 21, 2001
- Exemptions
 - Engines that meet or exceed EPA DPM emission requirements
 - Ambulances or fire fighting equipment used in accordance with the mine’s fire fighting and evacuation plan under 75.1101-23

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MSHA Approved Diesel Engines

Example of Engines that Meets the EPA Limits Specified in Table 72.502-1

Approval No.	Manufacturer	Engine Model	Rated Horsepower	PI CFM	DPM gr/hr Weighted Avg.	Weighted Avg. Horsepower	DPM gr/bhp-hr	Filter Efficiency To Obtain 5.0gr/hr	Filter Efficiency To Obtain 2.5gr/hr
B023	DEUTZ	F6L 912W*	80	5000	8.50	43.4	0.20	41.2	70.6
B051	Cummins	ISB235* - 1998	235	6000	10.20	113.6	0.09	51.0	75.5
B053	Kubota	V1200*	25.8	1500	2.55	12.25	0.21	0.0	1.9
B076	ISUZU	4LC1MA*	41	4500	7.65	20.3	0.38	34.6	67.3
B055	Deutz	F4M1011F*	61	4500	7.65	32.30	0.24	34.6	67.3
B083	DAIMLER CHRYSLER	OM906LA*	275	7000	11.89	147	0.08	58.0	79.0
B060	Deutz	F4L1011*	56.3	2000	3.40	28.04	0.12	0.0	26.4

Information available on MSHA's homepage at www.msha.gov

“CLICK ON”

**DIESEL PARTICULATE
then
COAL MINING**

SINGLE SOURCE PAGE

- Contacts
- Helpful Resources
 - MSHA Approved Engines – Compliance Information
 - DPM Control Technologies – Filter Lists
 - Action Table
 - NIOSH List Server
- Final Rules/Preamble
- Program Information Bulletins (PIB's)

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