

# MSC Guidelines for Review of Diesel Engine Exhaust Systems

Procedure Number: E1-7

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## References

Title 46 CFR 58.10

Title 46 CFR 119.430

Title 46 CFR 128.320

Title 46 CFR 182.430

American Boat and Yacht Council (ABYC), Project P-1

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## Disclaimer

These guidelines were developed by the Marine Safety Center as an aid in the preparation and review of vessel plans and submissions. They were developed to supplement existing guidance. They are not intended to substitute or replace laws, regulations, or other official Coast Guard policy documents. The responsibility to demonstrate compliance with all applicable laws and regulations still rests with the plan submitter. The Coast Guard and the U. S. Department of Transportation expressly disclaim liability resulting from the use of this document.

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## Contact Information

If you have any questions or comments concerning this Guidance, please contact the Marine Safety Center by e-mail or phone. Please refer to Procedure Number: E1-7.

E-mail: [customerservicemsc@msc.uscg.mil](mailto:customerservicemsc@msc.uscg.mil)

Phone: 202-366-6480.

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## General Review Guidance

- Separate exhaust systems shall be provided for each engine.
- Diesel engine exhaust on MODUs shall not discharge into a classified location. (58.10-10(c))

## MSC Guidelines for Review of Diesel Engine Exhaust Systems (continued)

- ❑ The exhaust manifold shall be either water-jacketed and cooled by a discharge from a pump which operates at the same time as the engine operates. Alternatively, woodwork within nine inches of the of the engines shall be insulated. (58.10-5(c))
  
- ❑ Wet Pipe Installations
  - ❑ Pipes for wet exhaust systems shall be schedule 80 or corrosion resistant material.
  - ❑ Cooling water shall be injected into the exhaust pipe as near the engine as practicable
  - ❑ Terminus shall be arranged to prevent backflow of water from reaching the engine.
  - ❑ The section of pipe upstream of the water injection point shall be insulated.
  - ❑ If the exhaust cooling water overboard discharge can not be observed or the cooling water source is separate from that of the engine's cooling water source, a cooling water low flow alarm or high exhaust temperature alarm shall be installed.
  
- ❑ Dry Pipe Installations
  - ❑ Horizontal dry pipes shall not pass through living or berthing spaces.
  - ❑ Terminus shall be located above the deepest load waterline.
  - ❑ Terminus located at the transom shall be located as far outboard as possible.
  - ❑ Terminus shall be arranged to prevent backflow of water from reaching the engine.
  - ❑ Dry pipes shall be insulated.
  - ❑ A means of arresting sparks shall be provided.
  
- ❑ Piping materials in wet and dry systems with pressures in excess of 15 psi or which pass through living or berthing spaces are acceptable based conformance with one of the following references:
  - ❑ Title 46 CFR 56.60
  - ❑ Sections I, III or VIII of the ASME Code
  - ❑ ABYC P-1
  - ❑ Builder certification as outlined in 128.220 {Subchapter (L) only}

## MSC Guidelines for Review of Diesel Engine Exhaust Systems (continued)

- ❑ Flexible metallic hoses are acceptable for short runs where flexibility is required. Non-metallic flexible hoses with double clamps are acceptable for short runs in wet pipe systems. **{Subchapter T vessels only}**
- ❑ Watertight integrity must be maintained where an exhaust pipe passes through a watertight bulkhead.. Noncombustible packing must be used in bulkhead penetrations for dry pipe systems.
- ❑ Noncombustible hangers and blocks shall be used for support.

### Attachments

- ❑ None