

EU RO Mutual Recognition Technical Requirements

SPARK ARRESTERS	Version	0.3
	Adoption Date	1 April 2016
	Application Date	1 October 2016
	Tier	2
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1. PRODUCT DESCRIPTION

1.a General description of the product

These Technical Requirements apply to devices, commonly known as spark arresters, which prevent the emission of sparks by diesel engines, boilers and equipment containing sources of ignition and which could lead to the ignition of flammable materials.

1.b Application limitations

- a) Limiting engine ratings shall be defined at type approval stage and not to be exceeded;
- b) Where an exhaust system also includes other features which significantly restrict the flow of gases, e.g. flame traps, restrictive silencers, etc., or the engine manufacturer specifies an unusually low back pressure limit, or where specific noise reduction levels are specified, the type and size of the spark arrester shall be chosen according to manufacturer's instructions;
- c) Manufacturer's installation guidelines shall be followed to the EU RO. All the above limitations shall be recorded in the Type Approval Certificate.

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1.c Intended use

Spark arrester intended for use in the exhaust line of diesel engines, boilers and equipment containing sources of ignition installed onboard ships or offshore units.

1.d System context

Exhaust systems for diesel engines, boilers and equipment containing sources of ignition, onboard ships or offshore units.

2. DESIGN EVALUATION

2.a Engineering evaluation requirements

2.a.i. Technical Requirements

The spark arrester shall comply with the requirements defined by one of the standards below in agreement with the Manufacturer:

- a) European Norm EN 1834-1;
- b) SAE standards J350, J342 and J997;
- c) Other standards assessed to be equivalent with standards a) and b).

2.a.ii. Technical documents to be submitted

IMPORTANT: The English Language shall be used for all submitted documents.

The following documentation shall be submitted by the Manufacturer before type testing:

- a) Technical data and characteristics including limiting engine ratings;
- b) Identification of different variants of sub-types;
- c) Construction drawings;
- d) Dimensions and tolerances;
- e) Instructions on fitting and assembly;
- f) Materials specification;
- g) Proposed test program and test schedule as per one of the standards and norms defined in **2.a.i**;

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- h) Description of the test specimen(s) including serial numbers;
- i) Relevant information on the testing facility;
- j) Installation manual and maintenance requirements.

The following documentation shall be submitted by the Manufacturer after the completion of type testing:

- a) Reports of tests as per one of the standards and norms defined in **2.a.i**, including details of test laboratory, place and date of tests;
- b) Builder installation manual and guidelines for maintenance.

2.b Type testing requirements

- a) The spark arrester shall be tested as required in standards and norms mentioned in **2.a.i**.
- b) Test specimens shall be taken from the production line or from stocks†;
- c) Tests shall be carried out in the presence of the EU RO Surveyor. In cases where the tests are conducted at Nationally Accredited Laboratories, the presence of the EU RO's surveyor may be omitted†.

† For further clarification of witnessing of tests and sampling the test specimen(s), refer to paragraphs 6, 7 and 8 of the EU RO "Design Evaluation Scheme" procedure (Appendix V of EU RO Framework Document for the Mutual Recognition of Type Approval found on

<http://www.euromr.org/Guidance%20for%20Mutual%20Recognition>)

3. PRODUCTION REQUIREMENTS

Refer to EU RO "Product Quality Assurance (PQA)" procedure (Appendix VI of EU RO Framework Document for the Mutual Recognition of Type Approval.

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4. MARKING REQUIREMENTS

Manufacturers of the approved equipment are, in principle, to mark the product before shipment for identification of approved equipment as per referenced standard. In addition, and as a minimum, the following items to be marked at the suitable place:

- manufacturer's name or trade mark;
- type number;
- serial number.

5. TYPE APPROVAL CERTIFICATE CONTENT

The EU RO MR Type Approval Certificate shall contain the minimum information as defined in the "EU RO Framework Document for the Mutual Recognition of Type Approval" - see Appendix I EU RO MR Type Approval Certificate Information.

6. APPROVAL DATE AND REVISION NUMBER

Date	Revision	Comment
30 April 2013	0.0	Accepted by Advisory Board
31 January 2014	0.1	Reference to EU RO Framework Document for the Mutual Recognition of Type Approval.
31 January 2015	0.2	CRF018 – Revision to par. 2.a.ii - Test results to be in English; CRF020 – Revision to par. 5 - 'Type Approval Certificate Content'.
1 April 2016	0.3	CRF025 – Updated to new MR TR document format incl. par. 8; CRF026/026a – Witness testing & control of test specimen; CRF028 – addition of 6 month application clause.

7. BACKGROUND INFORMATION / REFERENCES

- European Norm EN 1834-1;
- SAE standard J342 Spark Arrester Test Procedure for Large Size Engines;
- SAE standard J350 Spark Arrester Test Procedure for Medium Size Engines;
- SAE standard J997 Spark Arrester Test Carbon;

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- e) European Norm EN1834-1 Reciprocating internal combustion engines. Safety requirements for design and construction of engines for use in potentially explosive atmospheres. Group II engines for use in flammable gas and vapour atmospheres.
- f) EU RO Framework Document for the Mutual Recognition of Type Approval.

8. MAINTENANCE / CLARIFICATION OF TECHNICAL REQUIREMENTS

Anyone wishing to propose changes to this document or request clarification of technical issues should contact the EU RO MR Group Secretariat in the first instance: Secretariat@euomr.org.

Review and approval of change requests shall follow the EU RO MR Maintenance Process detailed in the EU RO Framework Document for the Mutual Recognition of Type Approval: <http://www.euomr.org/Guidance%20for%20Mutual%20Recognition>.

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