

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Spark Arrestor**

with type designation(s)

MSA 1, MSA 2, MSA 3, MAA 1, MAA 2, MAA 3

Issued to

**Industrial & Marine Silencers (IMS) Limited
Shepshed Leicestershire, United Kingdom**

is found to comply with

DNV GL class programme DNVGL-CP-0282 – Type approval – Spark arrestors**DNV GL rules for classification – Ships****DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018****Application :****The combined silencer/spark arrestors are approved for use in the exhaust line of diesel engines, boilers and equipment containing sources of ignition installed onboard ships or offshore units classed by DNV GL.**Issued at **Høvik** on **2018-03-20**This Certificate is valid until **2022-12-31**.for **DNV GL**DNV GL local station: **Manchester**Approval Engineer: **Amir Dzaferi**

**Oddvar Deinboll
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-013898-3**
Certificate No: **TAM00000V2**

Product description

The Spark Arrestors are of a cyclone/centrifugal design, and perform a part of the combined silencer/spark arrestor types:
MSA 1, MSA 2, MSA 3, MAA 1, MAA 2 and MAA 3.

Application/Limitation

Material:	316L stainless steel (ATEX)	Carbon steels
Paint:	Firwood 75 High temperature resisting paint	
Media temperature range of spark arrestor:	-20 C up to 800C	-20 C up to 430C
Exhaust gas volume flow – total gas flow:	145.4 m3/min @ 490° C or 72.7 m3/min per 125.0mm engine outlet	
Flow speed:		
6” MAA1, single 125.0mm inlet	68.6 m/s	
7”	50.4 m/s	
8”	38.6 m/s	
10” MSA3, single 125.0mm inlet	49.4 m/s	
12” MSA1, twin combined 125.0mm inlet	34.3 m/s	

Type of arrestor to be chosen according to the maker's instructions.

Tests carried out

Test report 2002-3410, test according to EN-1834-1.

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years after the issue date of the Type Approval Certificate to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

In cases where the Type Approved product is manufactured at other companies, the Periodical Assessment shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore, periodical Assessment shall be carried out randomly at these companies performed at renewal of the certificate.

Other conditions

DNV GL Product certificate is not required.

END OF CERTIFICATE