



**Auto Cluster Development and Research Institute Limited.**

**Test Examination Certificate**

Certificate No.: ACDRIL/RPL 132

This certificate consists of 6 pages.

This is to certify that the  
**Silicone Hoses**  
with type designation(s)

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Manufactured by  
Shore Auto Rubber Export Pvt Ltd

Is found to comply with  
ISO/DIS 13363 Rubber or plastic hoses for marine wet systems-Specification  
SAE J2006-R3 -Marine Exhaust Hose

Application of Test sample Hose submitted : The hoses may be used in  
marine wet exhaust systems (where the exhaust gases are mixed with the  
discharge of cooling water)

Certificate Date: 1.10.2011

Place & date  
ACDRIL, Chinchwad, Pune

*D. Javari*

Daahar Mujavar  
Sr. Manager Technical

**Auto Cluster Development and Research Institute Limited.**  
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Date : 7.9.2011

This is to certify that the marine wet exhaust silicone rubber hoses supplied by “**Shore Auto Rubber Exports Pvt. Ltd.**”, located at Gat 7, Mauje Chimbli, Tal – Khed, Pune 410501, comply with specification SAE J2006 R3.

Application: These marine wet exhaust hoses are used in the combustion engines on yachts, where the water-cooled exhaust gases are mixed with the discharge of cooling water. The hoses are not supposed to be used where the coolants in contact are abrasive.

Standard size range is from 6mm to 457.20mm Inner Diameter for straight, elbow or hump (corrugated) hoses. Hump hoses have 1, 2 or 3 corrugations, as required.

**Construction:**

6 to 50.8mm Inner diameter: 1.5mm thick inner liner of silicone rubber + 4 plies of silicone coated polyester fabric; total thickness: minimum 5mm

55 to 177.80mm Inner diameter: 1.5mm thick inner liner of silicone rubber + 5 plies of silicone coated polyester fabric; total thickness: minimum 6mm

184.15 to 219.08mm Inner diameter: 1.5mm thick inner liner of silicone rubber + 6 plies of silicone coated polyester fabric; total thickness: minimum 6.35mm

222.25 to 304.80mm Inner diameter: 2mm thick inner liner of silicone rubber + 6 plies of silicone coated polyester fabric; total thickness: minimum 7mm

311.15 to 457.20mm Inner diameter: 2mm thick inner liner of silicone rubber + 6 plies of silicone coated polyester fabric; total thickness: minimum 7.6mm

The materials used for the build of these hoses have been tested, and have been found to comply to the following requirements of the SAE J2006 R3 .

**Specification.**

- Tensile Strength
- Elongation
- Adhesion
- Ozone Resistance
- Burst

*D. Javar*



Burst Test done at : Shore Auto Rubber Exports Pvt Ltd, Gat no.7,

Post Chimbali, Taluka Khed, Pune 410501

Test done in presence of : Dahar Mujavar, Sr. Manager Technical, ACDRIL

**Working pressure of a range of hoses were tested and observed as follows:**

Inner Diameter (mm)	Working Pressure (Bar)	Inner Diameter (mm)	Working Pressure (Bar)
6	21.1	51	4.6
8	17.2	54	4.1
10	14.5	60	3.8
13	11.8	63	3.8
16	10.2	76	3.1
18	9.5	89	2.8
20	8.8	100	2.5
22	8.1	102	2.3
25	7.5	108	2.3
28	6.9	110	2.1
32	6.1	114	2.1
34	6.0	120	2.0
35	5.8	133	2.0
38	5.6	140	1.8
40	5.2	152	1.4
42	5.2	168	1.2
45	4.8	180	1.2
48	4.7	203	1.2
50	4.6	220 to 508	0.9

*Dahar Mujavar*

Photo graphs of Samples to be tested for pressure.

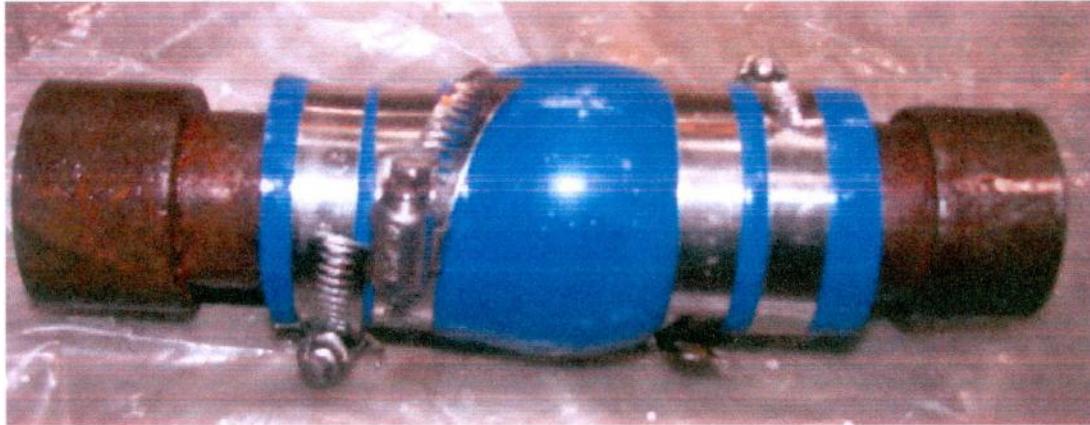


Photo graphs of Instrument used to do this pressure test.



*Djavar*

**Photo graphs of Samples tested for pressure**



**Marking of the hoses:**

All hoses are marked "Marine Wet Exhaust Hose SAE J2006-R3". The hoses are also marked with the month/year of production, for the purpose of traceability.

**Type approval documentation:**

Raw Material Manufacturer's datasheet

Shore Auto Test certificates and Inspection reports

Auto Cluster Tensile, Elongation, Heat Ageing and Ozone test report

For Auto Cluster Development & Research Institute Ltd

A handwritten signature in blue ink, appearing to read "Dahar Mujavar".

**Dahar Mujavar**  
**Sr.Manager Technical**



**TEST REPORT**

Date : 17.02.11      Report No: 275/2/10-11

Service Requested by : M/s - Shore Auto Rubber Export Pvt. Ltd.

Ref<sup>n</sup> : Dated 14.02.2011

Test Name : OZONE RESISTANCE

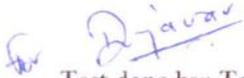
Test Condition : 50pphm, 70Hrs, 40C

Test Sample : Rectangular Strip of Hose ( Inner Red & Outer Blue color)

Test Standard : ASTM D 1149

**Observation Table**

Sr No.	Sample Name	Specification	Observed
1	Rectangular Strip of Hose ( Inner Red & Outer Blue color)	No Cracks	No Cracks

  
Test done by: Tejas Patil  
Technical Associate



  
Signed by: Dahar Mujavar  
Manager Technical



**TEST REPORT**

Report Date : 25.07.2011      Report No: RPL100/11-12

Service Requested by : **M/s –Shore Auto Rubber Export Pvt. Ltd.**  
Gat no. 7, Mauje chimbli, Tal – Khed,  
Pune – 410 501

Test : Tensile & Elongation, Adhesion Strength

Test Standard : SAE J2006

Test Condition : @ ambient Temperature.

Test Sample Name : 2 Nos.

**Observation Table**

Sr. No.	Sample Name	Description	Specification	Observation
1	Inner Liner (Red Color)	Tensile Strength (Mpa)	8	9.83
		Elongation (%)	200	395
2	Outer Liner (Blue Color)	Tensile Strength (Mpa)	7	7.57
		Elongation (%)	200	340
3	Inner Liner (Red Color)	Adhesion Strength (Load required to separate a 25mm width of tube and plies)	54 N	66.8 N
4	Outer Liner (Blue Color)	Adhesion Strength (Load required to separate a 25mm width of Outer Cover and plies)	54 N	73.3 N

Test done by: *Tejas Patil*  
Technical Associate



*Dahar*  
Signed by: Dahar Mujavar  
Sr. Manager Technical