

	<b>SPECIFICATION</b>	
<b>PORT MAIN ENGINE SILENCER INSULATION REPLACEMENT</b>		

**Part 1: SCOPE:**

- 1.1** The intent of this specification shall be to remove the existing insulation and re install two layers of 1” thick removable insulated blankets. On the port main engine exhaust silencer.
- 1.2** Work to be carried out between: May 14 to 23, 2013.
- 1.3** Insulation Contractor is referred to as Contractor in this work package.
- 1.4** Contractor shall supply all staging, parts, materials, tools, equipment and rigging to carry out the work in this specification.
- 1.5** Contractor must be a certify insulation company and must use only certify Red Seal insulators removing old insulation and installing the new insulation material.

**Part 2: REFERENCES:****2.1 Guidance Drawings/Nameplate Data/Manuals**

- 2.1.1.** Exhaust System piping as fitted Drawing number 590-52 sheet 1 of 2 and 590-52 sheet 2 of 2.

**2.2 Standards****2.3 Regulations****2.3.1****2.4 Owner Furnished Equipment**

- 2.4.1 Parts / Materials / Equipment / Rigging** Contractor shall supply consumables, tools, equipment and rigging to carry out the work in this specification unless otherwise stated in the description of work.

**Part 3: TECHNICAL DESCRIPTION:****3.1 General**

- 3.1.1.** The Ship’s crew with Contractor will isolate and lockout and tag out controls/supply air to Port main Engine so that it cannot be started.
- 3.1.2.** Contractor locks out and tagged out (two main engine room supply fans).
- 3.1.3.** Contractor shall fill out all forms required lockout tag outs and working aloft as per ISM.

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- 3.1.4.** Contractor must have staging erected by certified Red Seal scaffolding personal only. Copies off the personals Red Seal Certificates must be supplied to Chief Engineer prior to any work starting.
- 3.1.5.** Contractor once staging is in place must use Red Seal insulation installer to remove and depose off existing insulation material (Calcium silicate). Copies off the personals Red Seal Certificates must be supplied to Chief Engineer prior to any work starting.
- 3.1.6.** Contractor must make sure that all debris is cleaned up, in the immediate area and the area below in the engine room after the insulation is removed.
- 3.1.7.** The dimensions of the silencer without insulation: height 101 inches, diameter 56 inches. There is also a section toward the top its shape like a half circle that is attached to the silencer its 45 inches in length and the radius is 8 inches. I have attached a photo. The main engine exhaust piping that is going into and out off the silencer is 18 inches in diameter.
- 3.1.8.** Contractor must leave staging in place so that repairs can be done to a leak in the silencer which may take up to three days.
- 3.1.9.** Contractor after repairs are made is to install new removable insulation covers which are to be secured to silencer surface with 10 gauge steel weld pins and washers to prevent movement.
- 3.1.10.** Contractor to supply insulation material and fabricate from this material two layers off one inch thick removable blankets.
- 3.1.11.** Contractor to install two layers of removable insulation blankets. The inner layer blanket shall consist of a high temperature insulation core (Superwool 607 blanket by Morgan Thermal Ceramics) with stainless steel mesh on both faces. Outer layer blanket shall consist of insulation core (Tri-L vitreous silicate needled blanket insulation) with stainless steel mesh on the inner face and silicone cloth on the outer face.
- 3.1.12.** Contractor when installing must make sure all covers can be sewn, stapled or hog-ringed. (sewn seams to be of a heavy high temperature thread) All covers to fit snugly around equipment being insulated.
- 3.1.13.** Contractor to make sure all covers to be made to include, all openings including pipe, packing glands, valve stems and handles, hangers, and other obstacles.
- 3.1.14.** Contractor to make sure covers to be made so as no force bending or folding required for installation and no visible strain on the fabricate once in place.

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**3.1.15.** Contractor to ensure a minimum 2 inch overlap seam where joining to other covers or insulation and where a cover has to be made in more than one piece.

**3.1.16.** The insulation covers shall be drawn together with stainless steel wire secured through lacing anchors that are place no less than 25mm from any seam edge and secured through the entirety of the pad with a backing plate. Wire shall be woven through the anchors to draw the pad together and allow the overlap to fall in place around seams.

**3.1.17.** Contractor after insulation is completed and it's to the satisfaction off the Chief Engineer the staging is to be disassembled and take away.

**3.1.18.** Contractor to remove all lock out tagged locks and fill out all necessary form for vessel's ISM booklets.

**3.1.19.** All work to be carried out to the satisfaction of Chief Engineer.

## **3.2 Location**

**3.2.1.** Main Engine room

## **3.3 Interferences**

**3.3.1** N/A

## **Part 4: PROOF OF PERFORMANCE:**

### **4.1 Inspection**

**4.1.1.** 100% visual by Chief Engineer.

**4.1.2.** All work shall be completed to the satisfaction of the Chief Engineer

### **4.2 Testing**

### **4.3 Certification**

**4.3.1.**

## **Part 5: DELIVERABLES:**

### **5.1 Drawings/Reports**

**5.1.1** The Contractor shall supply the Chief Engineer with two typed copies and one electronic of the Contractors work that was carried out. The report shall

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include all measurements off total area covered. The types off insulation used for each layer and the temperature rating for each.

**5.2 Spares**  
N/A

**5.3 Training**  
N/A

**5.4 Manuals** N/A