



**HELLENIC GAS
TRANSMISSION
SYSTEM OPERATOR**

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**TECHNICAL JOB
SPECIFICATION**

562/2

REVISION 0

DATE 05/04/2011

HIGH PRESSURE (HP) TRANSMISSION SYSTEMS

ANCHOR FLANGES



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QUALITY ASSURANCE PAGE

CHANGES LOG

REVISIONS LOG

0	05-04-2011	FIRST ISSUE	PQ DPT	VG
Rev. No	Rev. Date	REASON FOR CHANGE	Made By	Approved By

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REFERENCE DOCUMENTS

- Job Spec. No. 199/5
[Corrosion Protection of Field Joints and Uncoated Pipeline Components]
- Job Spec. No. 970/2
[Shop Inspection of Equipment and Materials for NGT Project]
- Job Spec. No 970/3
[Inspection and Test Instructions for NGT Project]
- ELOT EN 1092-1(harmonised with EU Directive 97/23/EC- PED)
[Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated – Part1: steel flanges]
- ELOT EN 10045-1
[Charpy impact test on metallic materials; part 1: test method]
- ELOT EN ISO 3452
[Non destructive testing – penetrant testing]
- Std Drawing -STD-00-11 -07

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1.0 SCOPE

This specification covers minimum requirements for material, fabrication and testing of anchor flanges to be used for anchoring pipelines.

Additional information may be given in the standard drawings and Material Requisition and these documents should be read in conjunction with this Specification.

2.0 GENERAL REQUIREMENTS

Each anchor flange supplied under this Specification shall be designed to absorb an axial pipe force. Type of anchor flanges, dimensions and force to be absorbed is shown in **Std Drawing STD-00-11-07**.

Also each flange shall be designed for a pressure equal to the design pressure of the pipeline and shall also be designed to withstand the pipelines test pressure.

3.0 MATERIAL AND TESTING

All anchor flanges supplied in accordance with this specification shall be fabricated of material GP240 GH (1.0619) as per **ELOT EN 10213-2** steel or other equivalent with written approval from Owner.

One impact test (three specimens) shall be performed for each heat treatment load. All specimens shall be taken with the axis of the specimens transverse to the axis of the flange. The notch shall be perpendicular to the hub surface.

The test shall be performed according to **ELOT EN 10045-1**. The test temperature shall be decided by Owner.

The average shear value of the specimens shall be not less than 50%.

The test results shall meet the requirements of **ELOT EN 10045-1** and shall be reported on the material certificates.

Anchor flanges shall be PT (penetrant test) examined as per **ELOT EN ISO 3452** for cracks and other surface defects internally and externally. No repair welds are permitted after final heat treatment.

A specimen shall be taken from not less than one flange from each heat for determining the yield strength, the tensile strength and the elongation at fracture of the material.

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4.0 INSPECTION AND CERTIFICATION

Inspection will be performed by a third party independent inspection company to be appointed by Owner. Inspection requirements are defined in the following documents:

- a) Material Requisition.
- b) Specification **Job Spec. No. 970/2** "Shop inspection of equipment and materials for NGT projects".
- c) **Job Spec. No. 970/3** "Inspection and Test Instructions for inspection procedures to be followed.
- d) Inspection clauses of applicable codes.

5.0 MARKING

Each flange shall be marked on the outer surface by die stamping with a minimum of 4 mm high rounded dies and each such marking shall show the following :

- Manufacturer's mark.
- Inspection stamp.
- Flange type as per **Std Drawing STD-00-11-07**.
- Outside Diameter of pipe to which the flange shall be attached.
- Type and grade of material.

Owner contract number shall be paint stenciled.

6.0 SHIPMENT

Anchor flanges shall be properly protected for transportation reasons using adequate crating. Anchor flanges shall be coated at site according to Specification **Job Spec. No. 199/5**.