



**HELLENIC GAS
TRANSMISSION
SYSTEM OPERATOR**

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TECHNICAL JOB SPECIFICATION

199/6

REVISION 0

DATE 05/04/2011

HIGH PRESSURE (HP) TRANSMISSION SYSTEMS

PIPE LOWERING

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

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Job Spec. No. 199/5
[Corrosion protection of field joints and uncoated pipeline components]
Job Spec. No. 456/1
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1.0 SCOPE

This specification specifies the lowering of normal coated pipe and concrete coated pipe for the construction of Natural Gas pipeline transmission systems.

For the lowering of pipe the requirements of the following listed in order of precedence shall be fulfilled this specification

2.0 PIPELINE LOWERING

Pipe lowering shall be carried out in a safe manner, in accordance with applicable safety regulations and normal practices.

Contractor shall provide to the Supervision calculations for pipe stresses during lowering-in, following all relevant Hellenic and European Regulations. In the calculations Contractor must also prove the suitability of all machines to be used, length and strength of spreader beams and slings, type and strength of belts, etc. No lowering-in shall be commenced before all previous are approved by the Supervision and until the relevant permit has been approved by the Client Representative.

Insulated pipe shall be handled with suitable slings which do not damage the pipe neither the insulation. A sufficient number of lifting machines (e.g. side booms) shall be used to ensure that the pipeline is not subject to detrimental stresses. The radius of curvature of any elastic deformation under lowering-in shall not be less than the one indicated in the longitudinal sections.

Contractor before lowering the pipe shall ensure that the bottom of the trench is even and free of stones and other foreign bodies which may damage the coating (Job Specification No. 499/2).

During lowering-in the pipe insulation shall be controlled, as specified in Job Specification No. 199/5.

The lowering-in procedure shall ensure that the pipe is not subjected to strikes or unnecessary stresses. The pipeline shall be laid in as straight line as possible, keeping a distance from the earth walls of the trench of at least 0.20 m. It shall be supported along its whole length and it shall lie free of stresses.

If a section is damaged during lowering, it shall be taken up again, repaired and relowered. Any damage which may affect the structural quality of the pipeline shall be treated as directed by the Client's Representative.

Contractor is liable for all costs associated herewith.

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In areas where the pipe may be buoyant, it shall be secured against uplift, either with concrete saddles or with concrete casing as in details described in **Job Specification No. 456/1**, so that a safety factor of 1.2 against buoyancy shall be achieved. Modification of anchors or any other handling which damages the galvanization of the anchors is not allowed.

Where Liquid Level Controls are required, the trench shall be kept free of water, so that anchors or concrete saddles can be installed in dry conditions. After backfilling the dewatering installations may be switched off and removed.

The ends of all lowered pipeline sections shall be closed with watertight caps. The Contractor is responsible for keeping the pipeline internally clean and free of foreign bodies.

Any additional excavation required after the pipe has been lowered shall be carried out only after the permission and in the presence of the Client's Representative.

In special areas, such as at steep slopes or in urban areas, other methods of lowering-in of pipeline sections, which shall be subject to Supervision's approval, may be used depending on the local conditions. In such cases Contractor has to provide Safety Regulations suitable to the Construction method.