

DEP SPECIFICATION

ONSHORE FABRICATION OF DEEPWATER PIPELINES, FLOWLINES, RISERS AND THEIR APPURTENANCES

DEP 37.81.41.30-Gen.

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ECCN EAR99

DESIGN AND ENGINEERING PRACTICE



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PREFACE

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These views are based on the experience acquired during involvement with the design, construction, operation and maintenance of processing units and facilities. Where deemed appropriate DEPs are based on, or reference international, regional, national and industry standards.

The objective is to set the standard for good design and engineering practice to be applied by Shell companies in oil and gas production, oil refining, gas handling, gasification, chemical processing, or any other such facility, and thereby to help achieve maximum technical and economic benefit from standardization.

The information set forth in these publications is provided to Shell companies for their consideration and decision to implement. This is of particular importance where DEPs may not cover every requirement or diversity of condition at each locality. The system of DEPs is expected to be sufficiently flexible to allow individual Operating Units to adapt the information set forth in DEPs to their own environment and requirements.

When Contractors or Manufacturers/Suppliers use DEPs, they shall be solely responsible for such use, including the quality of their work and the attainment of the required design and engineering standards. In particular, for those requirements not specifically covered, the Principal will typically expect them to follow those design and engineering practices that will achieve at least the same level of integrity as reflected in the DEPs. If in doubt, the Contractor or Manufacturer/Supplier shall, without detracting from his own responsibility, consult the Principal.

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- 2) Other parties who are authorised to use DEPs subject to appropriate contractual arrangements (whether as part of a Service Agreement or otherwise).
- 3) Contractors/subcontractors and Manufacturers/Suppliers under a contract with users referred to under 1) or 2) which requires that tenders for projects, materials supplied or - generally - work performed on behalf of the said users comply with the relevant standards.

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Without prejudice to any specific terms in respect of confidentiality under relevant contractual arrangements, DEPs shall not, without the prior written consent of Shell GSI, be disclosed by users to any company or person whomsoever and the DEPs shall be used exclusively for the purpose for which they have been provided to the user. They shall be returned after use, including any copies which shall only be made by users with the express prior written consent of Shell GSI. The copyright of DEPs vests in Shell Group of companies. Users shall arrange for DEPs to be held in safe custody and Shell GSI may at any time require information satisfactory to them in order to ascertain how users implement this requirement.

All administrative queries should be directed to the DEP Administrator in Shell GSI.

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1. INTRODUCTION

1.1 SCOPE

This Specification covers onshore pipe fabrication for deepwater pipelines, flowlines, risers and their related hardware and appurtenances, including piping for pipeline end terminations (PLETs or "sleds"), in-line sleds, jumpers and spool pieces. "Deep water" is generally defined as water depth in which diver access is not possible or impractical. For general purposes, this depth is approximately 300 m (985 ft.).

This DEP specifies the requirements and recommendations for all onshore fabrication of pipe and pipe appurtenances as described in the Contract Scope of Work. However, the omission of any essential provisions from this document cannot be construed to relieve the Contractor of any duty or obligation necessary for the complete installation and testing of the facilities ready for use and operation.

This same DEP may be applied to onshore pipe fabrication for shallow water applications if so specified by the Principal. All requirements of this specification apply, unless a deviation for shallow water construction is specifically identified by the Principal. Where appropriate, the adjective "deepwater" may then be removed from the specific language in this DEP.

This DEP covers the following main topics:

- project Management;
- material Receipt, Handling, Sorting and Storage;
- pipe Assembly to include: Welding, NDE, and Field Joint Coating (refers to other applicable DEPs);
- reporting, Record Keeping and Documentation.

This DEP is often used in conjunction with DEP 37.81.41.33-Gen., for example to cover fabrication of stalks for subsequent reeling. This DEP may also be used without inclusion of DEP 37.81.41.33-Gen. in the Contract, e.g., if the Principal contracts separately for fabrication of double or quadruple joints. Therefore, some overlap/duplication in requirements in these two DEPs may exist. In general, where there are conflicting requirements or duplication, then the more stringent requirements apply unless agreed upon otherwise with the Principal.

This is a revision of the DEP of the same number dated February 2015; see (1.5) regarding the changes.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by Shell GSI, the distribution of this DEP is confined to Shell companies and, where necessary, to Contractors and Manufacturers/Suppliers nominated by them.

This DEP is intended for use in facilities related to deepwater pipeline, flowline and riser projects. Application in other situations may also apply to include: shallow water, subsea pipeline structure fabrication, pipeline coating application, etc.

When DEPs are applied, a Management of Change (MOC) process shall be implemented; this is of particular importance when existing facilities are to be modified.

If national and/or local regulations exist in which some of the requirements may be more stringent than in this DEP, the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable with regard to the safety, environmental, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this DEP which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned, the objective being to obtain agreement to follow this DEP as closely as possible.

1.3 DEFINITIONS

1.3.1 General definitions

The **Contractor** is the party that carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party that manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party that initiates the project and ultimately pays for it. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement.

The word **should** indicates a recommendation.

The word **may** indicates a permitted option.

1.3.2 Specific definitions

Term	Definition
Field Joint	A Field Joint is part of the pipeline where pipes have been welded together and where, as a consequence, there is a discontinuity in the pipe coating

1.3.3 Abbreviations

Term	Definition
AFC	Approved For Construction
API	American Petroleum Institute
EH	Electrically Heated
HSSE	Health, Safety, Security and Environment
ITP	Inspection Test Plan
NDE	Non Destructive Examination
PIP	Pipe-In-Pipe
PLET	Pipeline End Termination
SCR	Steel Catenary Riser
UT	Ultrasonic Inspection Testing
VIV	Vortex Induced Vibration

1.4 CROSS-REFERENCES

Where cross-references to other parts of this DEP are made, the referenced section or clause number is shown in brackets (). Other documents referenced by this DEP are listed in (7).

1.5 SUMMARY OF MAIN CHANGES

This DEP is a full revision of the DEP of the same number dated February 2015. The following are the main, non-editorial changes.

Section/Clause	Change
All	Restructured and clarified requirements, enforced use of shall/should/may for normative statements.

1.6 COMMENTS ON THIS DEP

Comments on this DEP may be submitted to the Administrator using one of the following options:

Shell DEPs Online (Users with access to Shell DEPs Online)	Enter the Shell DEPs Online system at https://www.shelldeps.com Select a DEP and then go to the details screen for that DEP. Click on the "Give feedback" link, fill in the online form and submit.
DEP Feedback System (Users with access to Shell Wide Web)	Enter comments directly in the DEP Feedback System which is accessible from the Technical Standards Portal http://swwww.shell.com/standards . Select "Submit DEP Feedback", fill in the online form and submit.
DEP Standard Form (other users)	Use DEP Standard Form 00.00.05.80-Gen. to record feedback and email the form to the Administrator at standards@shell.com .

Feedback that has been registered in the DEP Feedback System by using one of the above options will be reviewed by the DEP Custodian for potential improvements to the DEP.

1.7 DUAL UNITS

This DEP contains both the International System (SI) units, as well as the corresponding US Customary (USC) units, which are given following the SI units in brackets. When agreed by the Principal, the indicated USC values/units may be used.

1.8 NON NORMATIVE TEXT (COMMENTARY)

Text shown in italic style in this DEP indicates text that is non-normative and is provided as explanation or background information only.

Non-normative text is normally indented slightly to the right of the relevant DEP clause.

2. PROJECT MANAGEMENT

2.1 DOCUMENT SUBMITTALS

1. Prior to starting any pipe fabrication or coating, the Contractor shall, at a minimum, submit the following documents to the Principal for approval:
 - a. fabrication Plan and/or Fabrication Procedure(s);
 - b. fabrication Schedule;
 - c. organization Chart;
 - d. materials Receipt, Handling, Sorting, and Storage Plans;
 - e. quality assurance/quality control (QA/QC) Plan, including Inspection Test Plan(s) (ITP) and Change Control Procedures;
 - f. Health, Safety, Security and Environment (HSSE) Management Plan, if required by the Contract;
 - g. weld Procedure Specifications, Weld Procedure Qualifications, and Welder Qualifications;
 - h. field Joint Coating Procedures and FJC Procedure Qualifications;
 - i. NDE Procedures and NDE Procedure and System Qualifications;
 - j. load-out Plan.

2.2 PRINCIPAL ACCESS AND AUTHORITY

1. The Principal, including independent inspectors or consultants which may be contracted by the Principal, shall be permitted free and unhindered access to the fabrication site, inclusive of any specific area on the site where Principal's work is ongoing or will occur, at any time.

3. MATERIALS

3.1 RESPONSIBILITY

1. The Contractor shall be responsible for receipt, handling, sorting, and storage of all Contractor and Principal-supplied line pipe and materials from the time that custody of such items is transferred to the Contractor until final load-out and/or handover at the Contract designated interface point.
 - a. Responsibilities for transport, load out and sea-fastening will be defined in the Contract Scope of Work.