

DEP SPECIFICATION

AGE-HARDENED NICKEL-BASED ALLOYS FOR OIL AND GAS DRILLING AND PRODUCTION EQUIPMENT (AMENDMENTS/SUPPLEMENTS TO API STD 6ACRA)

DEP 39.01.10.32-Gen.

February 2017

ECCN EAR99

DESIGN AND ENGINEERING PRACTICE

DEM1



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PART I INTRODUCTION

1.1 SCOPE

This DEP specifies requirements and provides recommendations for the manufacture and supply of age-hardened nickel-based alloys for use in load bearing components for critical wellhead and downhole applications that may be exposed to high temperature, high pressure, and/or corrosive environments. Components typically include casing hangers, tubing hangers, and completion accessories with threaded connections.

This DEP is based on API STD 6ACRA First Edition. Part III of this DEP amends, supplements and deletes various clauses of API Standard 6ACRA First Edition. Part III follows the clause numbering of API STD 6ACRA for easy reference.

All clauses of API STD 6ACRA not modified by this DEP remain valid as written.

API STD 6A718 has been withdrawn and replaced by API STD 6ACRA.

API STD 6A718 included alloy 718 (UNS N07718) and one minimum yield strength material designation, whereas API STD 6ACRA includes six alloys and multiple minimum yield strength material designations. The following is a summary of UNS numbers and generic alloy names included in API STD 6ACRA:

UNS Number	Generic Alloy Name
N07716	625 Plus
N07718	718
N07725	725
N09925	925
N09935	935
N09945	945 or 945X

DEP 39.01.10.30-Gen. has been withdrawn and replaced by DEP 39.01.10.32-Gen., as the UNS N07716 and N07725 alloys addressed in DEP 39.01.10.30-Gen. are included in API STD 6ACRA.

This DEP contains mandatory requirements to mitigate process safety risks in accordance with Design Engineering Manual (DEM) 1 – Application of Technical Standards.

This is a revision of the DEP of the same number dated February 2011; 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. Any authorised access to DEPs does not for that reason constitute an authorisation to any documents, data or information to which the DEPs may refer.

This DEP is intended for use in facilities related to oil and gas production facilities. This DEP may also be applied in other similar facilities.

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 could 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 regards 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.

In API STD 6ACRA, the term **End User** is used and is equivalent to the term **Principal** that is used in this DEP.

The word **shall** indicates a requirement.

The capitalised term **SHALL [PS]** indicates a process safety requirement.

The word **should** indicates a recommendation.

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

1.3.2 Specific definitions

Term	Definition
PTE	Principal Technical Expert
SME	Subject Matter Expert

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 (Part IV).

1.5 SUMMARY OF MAIN CHANGES

This DEP is a full revision of the DEP of the same number dated February 2011. The following are the main, non-editorial changes.

Section/Clause	Change
All	This DEP has been rewritten and is now an amendment/supplement of API STD 6ACRA, due to the withdrawal of API STD 6A718.