International Association of Oil & Gas Producers

SPECIFICATION
S-731Q

November
2021

Quality Requirements for Operator and Mounting Kits for Subsea Pipeline and Manifold Valves (API)

JIP33
JOINT INDUSTRY PROGRAMME

Revision history

VERSION	DATE	PURPOSE
1.0	November 2021	Issued for Use

Acknowledgements

This IOGP Specification was prepared by a Joint Industry Programme 33 Standardization of Equipment Specifications for Procurement organized by IOGP with support by the World Economic Forum (WEF).

Foreword

This specification was prepared under Joint Industry Programme 33 (JIP33) "Standardization of Equipment Specifications for Procurement" organized by the International Oil & Gas Producers Association (IOGP) with the support from the World Economic Forum (WEF). Companies from the IOGP membership participated in developing this specification to leverage and improve industry level standardization globally in the oil and gas sector. The work has developed a minimized set of supplementary requirements for procurement, with life cycle cost in mind, resulting in a common and jointly agreed specification, building on recognized industry and international standards.

Recent trends in oil and gas projects have demonstrated substantial budget and schedule overruns. The Oil and Gas Community within the World Economic Forum (WEF) has implemented a Capital Project Complexity (CPC) initiative which seeks to drive a structural reduction in upstream project costs with a focus on industry-wide, non-competitive collaboration and standardization. The CPC vision is to standardize specifications for global procurement for equipment and packages. JIP33 provides the oil and gas sector with the opportunity to move from internally to externally focused standardization initiatives and provide step change benefits in the sector's capital projects performance.

This specification has been developed in consultation with a broad user and supplier base to realize benefits from standardization and achieve significant project and schedule cost reductions.

The JIP33 work groups performed their activities in accordance with IOGP's Competition Law Guidelines (November 2020).

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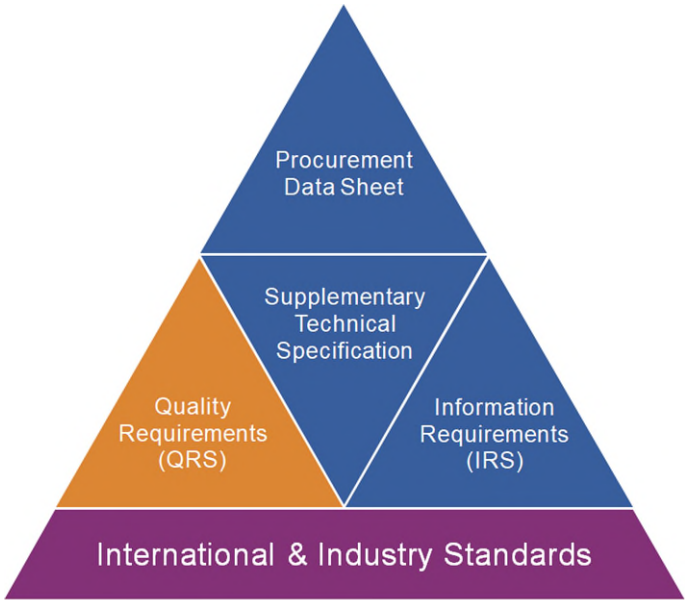
Introduction

The purpose of this quality requirements specification (QRS) is to specify quality management requirements and the proposed extent of purchaser intervention activities for the procurement of operator and mounting kits for subsea pipeline and manifold valves in accordance with IOGP S-731 for application in the petroleum and natural gas industries.

Purchaser intervention activities are identified through the selection of one of four conformity assessment system (CAS) levels based on a risk and criticality assessment. The applicable CAS level is specified by the purchaser in the procurement data sheet or purchase order.

This QRS shall be used in conjunction with the specification (IOGP S-731), the procurement data sheet (IOGP S-731D) and the information requirements specification (IOGP S-731L) which together comprise the full set of specification documents. The introduction section in the specification provides further information on the purpose of each of these documents and the order of precedence for their use.



JIP33 Specification for Procurement Documents
Quality Requirements Specification

1 Scope

To specify quality management requirements for the supply of operator and mounting kits for subsea pipeline and manifold valves to IOGP S-731 including:

a) supplier quality management system requirements;

b) purchaser conformity assessment (surveillance and inspection) activities;

c) traceability requirements.

2 Normative references

For the purpose of this document, the documents referenced in S-731 and those listed below, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Specification Q1, *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*

IOGP S-731, *Supplementary Specification to API Standard 6DSSX Operator and Mounting Kits for Subsea Pipeline Valves and Manifold Valves*

ISO 9001, *Quality management systems — Requirements*

ISO 29001, *Petroleum, petrochemical and natural gas industries — Sector-specific quality management systems — Requirements for product and service supply organizations*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IOGP S-731 and ISO 9000 (normative to ISO 9001) and the following shall apply.

3.1
conformity assessment
demonstration that specified requirements are fulfilled

Note 1 to entry: Conformity assessment (or assessment) includes but is not limited to review, inspection, verification and validation activities.

Note 2 to entry: Assessment activities may be undertaken at a supplier/sub-supplier's premises, virtually by video link, desktop sharing, etc. or by review of information.

3.2
conformity assessment system
CAS
system that provides different levels of purchaser interventions to assess and verify supplier conformance to specified requirements

Note 1 to entry: CAS A applies to the highest risk and associated extent of verification. CAS D is the lowest.

3.3
hold point
H
<conformity assessment> point in the chain of activities beyond which an activity shall not proceed without the approval of the purchaser or purchaser's representative

3.4
witness point
W
<conformity assessment> point in the chain of activities that the manufacturer shall notify the purchaser or purchaser's representative before proceeding

Note 1 to entry: The operation or process may proceed without witness if the purchaser does not attend after the agreed notice period.

3.5
surveillance
S
<conformity assessment> observation, monitoring or review by the purchaser or purchaser's representative of an activity, operation, process, product or associated information

Note 1 to entry: Surveillance is typically an on-site activity, purchaser may observe the activity or review records associated with the activity to verify conformance

3.6
review
R
<conformity assessment> review of the manufacturer's information to verify conformance to requirements

Note 1 to entry: Physical activity will not be observed by purchaser. Records associated with the activity are to be delivered in accordance with the information requirements specification (IRS).

4 Symbols and abbreviations

For purposes of this document, the following symbols and abbreviations apply.

CAS	conformity assessment system
IRS	information requirements specification
QMS	quality management system
QRS	quality requirements specification (this document)

5 Quality requirements

5.1 Quality management system

The supplier shall operate and maintain a quality management system (QMS) that conforms with ISO 9001, ISO 29001, API Specification Q1 or an equivalent quality management system standard.

5.2 Conformity assessment system (CAS)

5.2.1

The conformity assessment system (CAS) provides different levels of assessment of the supplier control activities. The CAS level is defined by the purchaser, using a risk-based approach, and included in the purchase order/contract. The defined CAS level may be adjusted by the purchaser during manufacture based on supplier performance and re-assessment of risk.

NOTE For industrial proven solutions, CAS level D is specified unless risk assessment indicates that a more stringent CAS level is required.

5.2.2

Quality plans and inspection and test plans shall include provision for purchaser intervention activities based on the CAS level selected in the procurement data sheet or purchase order. See Annex A.

5.2.3

Supplier performance in meeting the requirements may be routinely assessed during execution of the scope and where appropriate, corrective action requested and conformity assessment activities increased or decreased consistent with criticality and risk.

6 Certification and traceability

Where material certification and traceability requirements are not specified in the parent standard or supplementary specification, material certification and traceability shall be maintained in accordance with Annex B.

7 Evidence — conformance records

Documents and information shall be provided for in accordance with the associated IRS.

Annex A
(normative)
Purchaser conformity assessment requirements

This annex defines four conformity assessment systems (CAS) or levels of purchaser assessment.

	PURCHASER ASSESSMENT ACTIVITIES	CAS			
		A	B	C	D
1	**Operational planning and control activities**				
1.1	Quality planning (IOGP S-731, 8.3)	H	H	-	-
1.2	Inspection and test planning (IOGP S-731, 8.3)	H	H	W	W
1.3	Pre-inspection / pre-production planning meeting. As a minimum, review all documentation listed in the contract management information deliverables and review against purchase order. (IOGP S-731, 8.3)	H	W	W	-
2	**Design and development activities**				
2.1	Verification of existing validations including scaling (if applicable) (IOGP S-731, 5.25, 10.2, Annex D, E.8, Annex F)	H	H	H	H
2.2	Test setup to the test procedure verification (IOGP S-731, 5.3, 5.7, 5.25, 10.2, Annex D, Annex E, Annex F)	H	W	S	S
2.3	Test execution (IOGP S-731, 5.3, 5.7, 5.25, 5.29, 10.1, Annex D, Annex E, Annex F)	H	W	W	W
2.4	Post-test examination (IOGP S-731, 5.3, 5.7, 5.25, Annex D, Annex E, Annex F)	H	W	W	W
3	**Control of external supply**				
3.1	Manufacture of forged material (forging, heat treatment, sampling and mechanical testing) (IOGP S-731, 6, 8.9, Annex J)	H	W	S	-
3.2	Manufacture of castings (casting, heat treatment, sampling and mechanical testing) (IOGP S-731, 6, 8.9)	H	W	S	-
3.3	Weld repair on castings (IOGP S-731, 7.1, 7.5, 8.7, 8.8)	H	H	W	S
4	**Production and service provision**				
4.1	Manufacturing and inspection of components				
4.1.1	Readiness for start of production (approval of required documentation as per IOGP S-731L). NOTE: Documents required to be accepted and approved by the purchaser for the start of production to be identified in the Supplier Master Information Schedule.	H	W	R	-
4.1.2	Material identification, traceability and certification (IOGP S-731, Annex J)	S	S	-	-
4.1.3	Visual dimensional materials check (IOGP S-731, Annex G, Annex J)	W	S	-	-
4.1.4	NDE on rough machined pre-overlay surfaces (IOGP S-731, Annex G, Annex J)	W	S	S	-
4.1.5	Welding and overlays (IOGP S-731, 7.1, 7.2, 7.5, 7.8.1)	W	W	S	-
4.1.6	Hardfacing/PWHT/NDE (IOGP S-731, 7.1, 7.2, 7.5, 8.4, 8.6, 8.8, Annex G, Annex J)	W	S	S	-

	PURCHASER ASSESSMENT ACTIVITIES *(continued)*	CAS			
		A	B	C	D
4.1.7	Finished machine / dimensional / NDE operations (IOGP S-731, 8.4, 8.8, Annex G, Annex J)	W	S	S	-
4.2	Assembly inspection, testing and painting				
4.2.1	Material traceability / PMI (IOGP S-731, 8.11, 14.1)	W	S	-	-
4.2.2	Assembly inspection (IOGP S-731, 5.35)	W	W	S	-
4.2.3	Painting/coating application (IOGP S-731, 11)	W	W	S	-
4.3	Factory acceptance test				
4.3.1	Test setup to the test procedure (IOGP S-731, 8.5, 10.2, 10.3, Annex D, Annex E, Annex F)	W	S	-	-
4.3.2	Test execution (IOGP S-731, 5.15, 8.5, 10.2, 10.3, Annex D, Annex E, Annex F)	H	W	W	R
5	**Release of product or service**				
5.1	Final inspection, including visual, weight, removal of temporary lifting points, legible markings, dimensional, painting, preservation, packing, nameplates and labelling (IOGP S-731, 8.10)	H	W	W	W
5.2	Final review of documentation at facility as per IOGP S-731L (applicable if hardcopy is required as part of kit) (IOGP S-731, 8.5.3.4, 14)	H	W	W	W
5.3	Equipment release note (IOGP S-731, 13)	H	W	W	W

Key

H: Hold point
W: Witness point
R: Review
S: Surveillance

Annex B
(normative)
Certification traceability and requirements

Item		Certificate type	Traceability level	Additional requirements
Operators	Metallic pressure containing parts	3.1	Level I	
	Metallic pressure controlling parts	3.1	Level I	
	Metallic non-pressure containing and non-pressure controlling parts	3.1	Level II	
	Non-metallic parts (pressure containing and controlling)	2.2	Level II	
	Other non-metallic parts	2.2	Level III	
Welding	Welding consumables	3.1	Level II	

NOTE 1 Certificates
Inspection certificates shall be provided in accordance with ISO 10474 or EN 10204.

NOTE 2 Traceability
A. Level I —Full traceability — Material is uniquely identified and its history tracked from manufacture through stockists (where applicable) to the supplier and to actual position on the equipment with specific location defined on a material placement record (the traceability to a specific location only applies to skids / packaged equipment, not to bulks).
B. Level II — Type traceability — The supplier maintains a system to identify material throughout manufacture, with traceability to a material certificate.
C. Level III — Compliance traceability — The supplier maintains a system of traceability that enables a declaration of compliance to be issued by the supplier.

Registered Office
City Tower
Level 14
40 Basinghall Street
London EC2V 5DE
United Kingdom

T +44 (0)20 3763 9700
reception@iogp.org

Brussels Office
Avenue de Tervuren 188A
B-1150 Brussels
Belgium

T +32 (0)2 790 7762
reception-europe@iogp.org

Houston Office
15377 Memorial Drive
Suite 250
Houston, TX 77079
USA

T +1 (713) 261 0411
reception-americas@iogp.org

www.iogp.org