

Open Die Shaped Forgings for Use in the Petroleum and Natural Gas Industry

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Contents

	Page
1 Scope	1
1.1 Purpose	1
1.2 Applicability	1
1.3 Forging Specification Levels (FSL)	1
2 Normative References	1
3 Terms and Definitions	2
3.1 Terms and Definitions	2
3.2 Acronyms and Abbreviations	4
4 Qualification	4
4.1 General	4
4.2 Qualification Forging	5
4.3 Qualification Forging Evaluation	5
4.4 Limits of Forging Qualifications	9
4.5 Records of Qualification	10
5 Production Forgings	11
5.1 Qualification of Procurement Sources for Starting Material	11
5.2 Material Specifications	12
5.3 Manufacturing Procedure Specification (MPS)	12
5.4 Process Control Variables	12
5.5 Forging Production	13
5.6 Inspection, Quality Control, Marking, and Documentation	13
5.7 Repair Welding	14
5.8 Traceability	14
5.9 Record Retention	14
5.10 Marking	15
5.11 Handling, Storage, and Shipping	15
Annex A (informative) API Monogram Program	16
Bibliography	20
Tables	
1 As-forged Weight Forging Classes	5
2 Material Groups	6
3 ASTM E45 Method A Inclusion Rating Limits	8
4 Variables of Forging Qualification	9

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Open Die Shaped Forgings for Use in the Petroleum and Natural Gas Industry

1 Scope

1.1 Purpose

This API standard specifies requirements for the qualification and production of open die shaped forgings for use in API service components in the petroleum and natural gas industries when referenced by an applicable equipment standard or otherwise specified as a requirement for compliance.

1.2 Applicability

This API standard is applicable to equipment used in the oil and natural gas industries where service conditions warrant the use of individually shaped open die forgings, including rolled rings. Examples include pressure containing or load bearing components. Forged bar, rolled bar, and forgings from which multiple parts are removed are beyond the scope of this specification.

1.3 Forging Specification Levels (FSL)

This API standard establishes requirements for four forging specification levels (FSL). These four FSL designations define different levels of forged product technical, quality and qualification requirements.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Specification 6A, Twentieth Edition, *Specification for Wellhead and Christmas Tree Equipment*

ASTM A370¹, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM A388/A388M, *Standard Practice for Ultrasonic Examination of Steel Forgings*

ASTM A604, *Standard Practice for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets*

ASTM E10, *Standard Test Method for Brinell Hardness Test of Metallic Materials*

ASTM E18, *Standard Test Method for Rockwell Hardness Test of Metallic Materials*

ASTM E45, *Standard Test Method for Determining the Inclusion Content of Steel*

ASTM E110, *Standard Test Method for Indentation Hardness of Metallic Materials by Portable Hardness Testers*

ASTM E112, *Standard Test Method for Determining Average Grain Size*

ASTM E165, *Standard Practice for Liquid Penetrant Examination for General Industry*

ASTM E381, *Standard Method of Macroetch Testing Steel Bars, Billets, Blooms and Forgings*

¹ ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, www.astm.org.