

Heat Treatment Services—Batch Type for Equipment Used 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 Heat Treatment Specification Levels (HSLs)	1
2 Normative References	1
3 Terms, Definitions, Acronyms, and Abbreviations	1
3.1 Terms and Definitions	1
3.2 Acronyms and Abbreviations	2
4 Heat Treatment Supplier Qualification	2
4.1 General	2
4.2 Qualification Requirements	3
4.3 Heat Treatment Specification Levels	4
4.4 Processing Class	4
5 Responsibilities and Duties	5
6 Personnel Training Requirements	5
7 Heat Treatment Facility Capability	5
7.1 General	5
7.2 Identification and Traceability	5
8 Heat Treatment Equipment Temperature Uniformity Survey (TUS) and Calibration	6
8.1 Calibration	6
8.2 HSL-1 and HSL-2 Furnace TUS and Instrumentation Calibration	6
8.3 HSL-3 Furnace TUS and Instrumentation Calibration	8
8.4 Records	10
9 Heat Treatment Procedures	10
9.1 Furnace Atmosphere	10
9.2 Process Validation	10
10 Furnace Loading	10
11 Heat Treatment Quench Requirements	11
12 Heat Treatment Equipment Maintenance	12
13 Manufacturing Process Specification	12
13.1 General	12
13.2 Heat Treatment Variables	13
13.3 Quench Variables	13
13.4 Inspection and Test Requirements	13
14 Heat Treatment Records	14
14.1 General	14
14.2 Document Control	14
14.3 Records to be Maintained by Heat Treatment Supplier	14
14.4 Requirements for Heat Treatment Certificates	14
14.5 Record Retention	15
15 Handling, Storage, and Shipping	15

Contents

	Page
16 Minimum Facility Requirements	15
Annex A Sample Heat Treatment Facility Capability Forms	15
Tables	
1 Processing Classes and Material Grades	3
2 Processing Class Qualification Limitations	3
3 Minimum Facility Requirements	15
Figures	
1 Thermocouple locations—Rectangular furnace (working zone)	7
2 Thermocouple locations—Cylindrical furnace (working zone)	7

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Heat Treatment Services—Batch Type for Equipment Used in the Petroleum and Natural Gas Industry

1 Scope

1.1 Purpose

This standard specifies requirements for the qualification of suppliers of heat treatment services used in the manufacture of equipment for the petroleum and natural gas industries.

1.2 Applicability

This standard is applicable to suppliers providing heat treatment services where API product standards require such services or otherwise specified as a requirement for conformance. The requirements of this standard apply to batch heat treatment operations that establish or affect the final mechanical properties and include stress relief operations. This standard applies to carbon steel, low-alloy steel, stainless steel, and nickel-base alloys. Case hardening, induction hardening, and flame hardening are not covered by this standard.

1.3 Heat Treatment Specification Levels (HSLs)

This standard establishes the requirements for three heat treatment specification levels (HSLs). These HSL designations define different levels of heat treatment technical, quality, and qualification requirements.

2 Normative References

The following referenced document is indispensable for the application of this standard. For undated references, the latest edition of the referenced document, including any amendments, apply.

SAE AMS2750¹, *Pyrometry*

3 Terms, Definitions, Acronyms, and Abbreviations

For purposes of this standard, the following terms, definitions, and acronyms apply.

3.1 Terms and Definitions

3.1.1

acceptance criteria

Defined limits placed on characteristics of materials, processes, products, or services.

3.1.2

case hardening

A generic term covering several processes applicable to steel that change the chemical composition of the surface layer by absorption of carbon, nitrogen, or a mixture of the two and, by diffusion, create a concentration gradient. The result is a thin layer on the surface that is harder than the metal beneath it. The processes commonly used are carburizing and quench hardening, cyaniding, nitriding, and carbon nitriding.

3.1.3

final inspection

The final visual examination and documentation release of the heat-treated material.

¹ SAE International, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096-0001, www.sae.org.