

# Deutsche Akkreditierungsstelle GmbH

## Annex to the Accreditation Certificate D-PL-11020-10-00 according to DIN EN ISO/IEC 17025:2018

**Valid from: 26.08.2019**

Date of issue: 22.04.2020

Holder of certificate:

**SGS Germany GmbH**  
**Rödingsmarkt 16, 20459 Hamburg**

with their testing laboratory

**SGS Gottfeld Industrial Services**

with the locations

**Baukauer Straße 98, 44653 Herne**  
**Julius-Pintsch-Ring 18, 15517 Fürstenwalde**  
**Robert-Bosch-Straße 1a, 50354 Hürth**  
**Sattlerstraße 32, 30916 Isernhagen**  
**Draisstraße 48, 67346 Speyer**

Tests in the fields:

**manual non-destructive tests (radiographic, ultrasonic, penetrant, magnetic particle, eddy current, leakage, visual testing, phased array and TOFD) at components in plant engineering, at plant, including wheelsets and wheelset rail-bound vehicles, as well as mechanized ultrasonic tests in pipeline construction;**  
**mechanized magnetic flux leakage testing for tank bottom examination and mechanical and technological tests (tensile test, hot tensile test, notched bar impact test, bending test, hardness test, expanding test, flattening test, shear test, ring expanding test, ring tensile test, flanging test) as well as metallographic examination, corrosion tests and positive material identification using optical emission spectroscopy as even mechanical and physical inspections of chipboard palette blocks as well as strength of block-board joint of flat wood pallets**

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Abbreviations used: see last page

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.*  
<https://www.dakks.de/en/content/accredited-bodies-dakks>

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**The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates. The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.**

The used test methods are identified with the symbols of the locations stated below:

HE = Herne    HÜ = Hürth    IS = Isernhagen    SP = Speyer    FÜ = Fürstenwalde

**1 Non-destructive testing**

**1.1 Radiographic testing (RT and DR)**

|                               |  |                       |
|-------------------------------|--|-----------------------|
| DIN EN ISO 5579<br>2014-04    | Non-destructive testing - Radiographic testing of metallic materials using film and X- or gamma rays - Basic rules (here: <i>Chapter 6</i> ) | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 17636-1<br>2013-05 | Non-destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film                                      | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 17636-2<br>2013-05 | Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors                         | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 12681-1<br>2018-02     | Founding - Radiographic testing - Part 1: Film techniques  | HE, HÜ,<br>IS, SP, FÜ |
| ASME V<br>Article 2<br>2017   | Non-destructive Examination - Radiographic Examination   | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 94/E 94M<br>2017       | Standard Guide for Radiographic Examination using Industrial Radiographic Film   | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 1030/E 1030M<br>2015   | Standard Practice for Radiographic Examination of Metallic Castings  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 1255<br>2016           | Standard Practice for Radioscopy   | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 1416<br>2016           | Standard Practice for Radioscopic Examination of Weldments   | HE, HÜ,<br>IS, SP, FÜ |

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| ASTM E 1742/E 1742M<br>2018   | Standard Practice for Radiographic Examination  | HE, HÜ,<br>IS, SP, FÜ |
| PA-RT-00-00-02<br>2014-08     | SGS-Test instruction for projection shadow shots  | HE, HÜ,<br>IS, SP, FÜ |
| PA-RT-00-00-13<br>2014-08     | SGS-Test instruction for digital-stream recordings  | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 20769-1<br>2018-12 | Non-destructive testing - Radiographic inspection of corrosion and deposits in pipes by X- and gamma rays - Part 1: Tangential radiographic inspection  | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 20769-2<br>2018-12 | Non-destructive testing - Radiographic inspection of corrosion and deposits in pipes by X- and gamma rays - Part 2: Double wall radiographic inspection | HE, HÜ,<br>IS, SP, FÜ |
| DIN 85004-9<br>2008-12        | Pipelines of copper-nickel-alloys - Part 9: General principles for the radiographic examination   | HE, HÜ,<br>IS, SP, FÜ |

**1.2 Ultrasonic testing (UT)**

|                             |   |                       |
|-----------------------------|---|-----------------------|
| DIN EN ISO 17405<br>2014-10 | Non-destructive testing - Ultrasonic testing - Technique of testing claddings produced by welding, rolling and explosion                    | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 16823<br>2014-07 | Non-destructive testing - Ultrasonic testing - Transmission technique   | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 16826<br>2014-06 | Non-destructive testing - Ultrasonic testing - Examination for discontinuities perpendicular to the surface                                 | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 16827<br>2014-06 | Non-destructive testing - Ultrasonic testing - Characterization and sizing of discontinuities   | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 10228-3<br>2016-10   | Non-destructive testing of steel forgings - Part 3: Ultrasonic testing of ferritic or martensitic steel forgings                            | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 10228-4<br>2016-10   | Non-destructive testing of steel forgings - Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings       | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 16828<br>2014-06 | Non-destructive testing - Ultrasonic testing - Time-of-flight diffraction technique as a method for detection and sizing of discontinuities | HE, HÜ,<br>IS, SP, FÜ |

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| DIN EN ISO 17640<br>2019-02 | Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment<br>(here: <i>Chapter 7-10 and attachment A</i> ) | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 10863<br>2011-12 | Non-destructive testing of welds - Ultrasonic testing - Use of time-of-flight diffraction technique (TOFD)  | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 10160<br>1999-09     | Ultrasonic testing of steel flat product of thickness equal to or greater than 6 mm (reflection method)   | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 12680-3<br>2012-02   | Founding - Ultrasonic testing - Part 3: Spheroidal graphite cast iron castings  | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 14127<br>2011-04     | Non-destructive testing - Ultrasonic thickness measurement  | HE, HÜ,<br>IS, SP, FÜ |
| SEP 1920<br>1984-12         | Ultrasonic testing of rolled semi-finished products on internal material discontinuities  | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN ISO 13588<br>2019-07 | Non-destructive testing of welds - Ultrasonic testing - Use of automated phased array technology  | HE, HÜ,<br>IS, SP, FÜ |
| SEP 1923<br>2009-02         | Ultrasonic testing of steel forgings to stringent standards, in particular for components in turbine and generator systems                          | HE, HÜ,<br>IS, SP, FÜ |
| ASME V<br>Article 4<br>2017 | Non-destructive Examination - Ultrasonic Examination Methods for Welds  | HE, HÜ,<br>IS, SP, FÜ |
| ASME V<br>Article 5<br>2017 | Non-destructive Examination - Ultrasonic Examination Methods for Materials  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM A 388/A 388M<br>2018   | Standard Practice for Ultrasonic Examination of Steel Forgings  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM A 435/A 435M<br>2017   | Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plates   | HE, HÜ,<br>IS, SP, FÜ |
| ASTM A 577/A 577M<br>2017   | Standard Specification for Ultrasonic Angle-Beam Examination of Steel Plates  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM A 578/A 578M<br>2017   | Standard Specification for Straight-Beam Ultrasonic Examination of Rolled Steel Plates for Special Applications                                     | HE, HÜ,<br>IS, SP, FÜ |

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| ASTM A 609/A 609M<br>2012 | Standard Practice for Castings, Carbon, Low-Alloy, and Martensitic Stainless Steel, Ultrasonic Examination Thereof | HE, HÜ,<br>IS, SP, FÜ |
| ASTM A 745/A 745M<br>2015 | Standard Practice for Ultrasonic Examination of Austenitic Steel Forgings  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM B 548<br>2017        | Standard Test Method for Ultrasonic Inspection of Aluminium-Alloy Plate for Pressure Vessels                       | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 114<br>2015        | Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Contact Testing  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 164<br>2019        | Standard Practice for Contact Ultrasonic Testing of Weldments  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 213<br>2014        | Standard Practice for Ultrasonic Testing of Metal Pipe and Tubing  | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 273<br>2015        | Standard Practice for Ultrasonic Testing of the Weld Zone of Welded Pipe and Tubing                                | HE, HÜ,<br>IS, SP, FÜ |
| ASTM E 797/E 797M<br>2015 | Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method                           | HE, HÜ,<br>IS, SP, FÜ |
| PA-UT-50-00-08<br>2011-04 | SGS-Test instruction for digital-stream recordings   | HE, HÜ,<br>IS, SP, FÜ |

**1.3 Penetrant testing (PT)**

|                              |   |                       |
|------------------------------|---|-----------------------|
| DIN EN ISO 3452-1<br>2014-09 | Non-destructive testing - Penetrant testing - Part 1: General principles                      | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 10228-2<br>2016-10    | Non-destructive testing of steel forgings - Part 2: Penetrant testing                         | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 1371-1<br>2012-02     | Founding - Liquid penetrant testing - Part 1: Sand, gravity die and low pressure die castings | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 1371-2<br>2015-04     | Founding - Liquid penetrant testing - Part 2: Investment castings                             | HE, HÜ,<br>IS, SP, FÜ |
| ASME V<br>Article 6<br>2017  | Non-destructive Examination - Liquid penetrant examination                                    | HE, HÜ,<br>IS, SP, FÜ |

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| ASTM E 165/ E 165 M<br>2018 | Standard Practice for Liquid Penetrant Examination for<br>General Industry | HE, HÜ,<br>IS, SP, FÜ |
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**1.4 Magnetic particle testing (MT)**

|                             |  |                       |
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| DIN EN ISO 17638<br>2017-03 | Non-destructive testing of welds - Magnetic particle testing | HE, HÜ,<br>IS, SP, FÜ |
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| DIN EN 1369<br>2013-01 | Founding - Magnetic particle testing | HE, HÜ,<br>IS, SP, FÜ |
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| DIN EN ISO 9934-1<br>2017-03 | Non-destructive testing - Magnetic particle testing - Part 1:<br>General principles<br>(here: <i>Chapter 7-14</i> ) | HE, HÜ,<br>IS, SP, FÜ |
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|---------------------------|---|-----------------------|
| DIN EN 10228-1<br>2016-10 | Non-destructive testing of steel forgings - Part 1: Magnetic<br>particle inspection | HE, HÜ,<br>IS, SP, FÜ |
|---------------------------|---|-----------------------|

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|------------------------|--|-----------------------|
| DIN 25435-2<br>2014-01 | In-service inspections for primary coolant circuit components<br>of light water reactors - Part 2: Magnetic particle and pene-<br>trant testing<br>(here: <i>Magnetic particle testing</i> ) | HE, HÜ,<br>IS, SP, FÜ |
|------------------------|--|-----------------------|

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|-----------------------------|---|-----------------------|
| ASME V<br>Article 7<br>2017 | Non-destructive Examination - Magnetic Particle Examination | HE, HÜ,<br>IS, SP, FÜ |
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| ASTM E 709<br>2015 | Standard Guide for Magnetic Particle Testing | HE, HÜ,<br>IS, SP, FÜ |
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|-----------------------------|---|-----------------------|
| ASTM E 1444/E 1444M<br>2016 | Standard Practice for Magnetic Particle Testing | HE, HÜ,<br>IS, SP, FÜ |
|-----------------------------|---|-----------------------|

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|---------------------------|--|-----------------------|
| PA-MT-00-00-15<br>2019-04 | SGS-Test instruction Tank bottom examination | HE, HÜ,<br>IS, SP, FÜ |
|---------------------------|--|-----------------------|

**1.5 Eddy current testing (ET)**

|                             |  |            |
|-----------------------------|--|------------|
| DIN EN ISO 15549<br>2011-03 | Non-destructive testing - Eddy current testing - General<br>principles<br>(here: <i>Chapter 12</i> ) | HE, IS, FÜ |
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| DIN EN ISO 17643<br>2015-12 | Non-destructive testing of welds - Eddy current examination<br>of welds by complex plane analysis | HE, IS, FÜ |
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| DIN EN 1971-1<br>2012-02      | Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 1: Test with an encircling test coil on the outer surface | HE, IS, FÜ |
| DIN EN 1971-2<br>2012-02      | Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 2: Test with an internal probe on the inner surface       | HE, IS, FÜ |
| DIN EN ISO 2360<br>2017-12    | Non-conductive coatings on non-magnetic electrically conductive base metals - Measurement of coating thickness - Amplitude-sensitive eddy-current method                            | HE, IS, FÜ |
| DIN EN ISO 10893-2<br>2011-07 | Non-destructive testing of steel tubes - Part 2: Automated eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections | HE, IS, FÜ |
| SEP 1914<br>1983-08           | Non-destructive testing of fusion-welded seams in pipes of stainless steels   | HE, IS, FÜ |
| ASME V<br>Article 8<br>2017   | Non-destructive Examination - Eddy current examination of tubular products  | HE, IS, FÜ |

**1.6 Leakage testing (LT)**

|   |  |                   |
|---|--|-------------------|
| DIN EN 1593<br>1999-11                            | Non-destructive testing - Leak testing - Bubble emission techniques                                  | HE, HÜ,<br>SP, FÜ |
| DIN EN 1779<br>1999-10 +<br>Corrigenda<br>2005-02 | Non-destructive testing - Leak testing - Criteria for the method and technique selection             | HE, HÜ,<br>SP, FÜ |
| DIN EN ISO 20485<br>2018-05                       | Non-destructive testing - Leak testing - Tracer gas method   | HE, FÜ            |
| DIN EN 13184<br>2001-07                           | Non-destructive testing - Leak test - Pressure change method   | HE, HÜ,<br>SP, FÜ |
| ASTM E 493/E 493M<br>2011                         | Standard Practice for Leaks Using the Mass Spectrometer Leak Detector in the Inside-Out Testing Mode | HE, FÜ            |

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|   |  |                       |
|---|--|-----------------------|
| ASTM E 515<br>2011                              | Standard Practice for Leaks Using Bubble Emission Techniques   | HE, HÜ,<br>SP, FÜ     |
| ASME V<br>Article 10<br>2017                    | Non-destructive Examination - Leak testing   | HE, HÜ,<br>SP, FÜ     |
| <b>1.7 Visual testing (VT)</b>                  |  |                       |
| DIN EN ISO 17637<br>2017-04                     | Non-destructive testing of welds - Visual testing of fusion-welded joints  | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 13018<br>2016-06                         | Non-destructive testing - Visual testing - General principles<br>(here: <i>Chapter 5 and 6</i> )                                 | HE, HÜ,<br>IS, SP, FÜ |
| ASME V<br>Article 9<br>2017                     | Non-destructive Examination - Visual Examination   | HE, HÜ,<br>IS, SP, FÜ |
| <b>1.8 Cross standards for NDT</b>              |  |                       |
| DIN EN ISO 17635<br>2017-04                     | Non-destructive testing of welds - Visual testing of fusion-welded joints<br>(here: <i>Chapter 9 and attachment A</i> )          | HE, HÜ,<br>IS, SP, FÜ |
| DIN EN 10049<br>2014-03                         | Measurement of roughness average Ra and peak count R <sub>pc</sub> on metallic flat products                                     | HE                    |
| SEP 1916<br>1989-12                             | Non-destructive testing of fusion welded ferritic steel tubes  | HE, HÜ,<br>IS, SP, FÜ |
| SEP 1917<br>1994-09                             | Non-destructive testing of resistance welded pipes of ferritic steels  | HE, HÜ,<br>IS, SP, FÜ |
| AD 2000-Merkblatt HP 5/3<br>Anlage 1<br>2015-04 | Non-destructive testing of welded joints - Minimum requirements for non-destructive testing methods<br>(here: <i>Chapter 3</i> ) | HE, HÜ,<br>IS, SP, FÜ |
| ASME V<br>Article 1<br>2017                     | Non-destructive Examination - General requirements   | HE, HÜ,<br>IS, SP, FÜ |

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**1.9 Railway vehicles**

|                        |   |        |
|------------------------|---|--------|
| DIN 27201-7<br>2014-05 | State of railway vehicles - Basic principles and production technology - Part 7: Non-destructive testing<br>(here: <i>Chapter A</i> ) | IS, FÜ |
|------------------------|---|--------|

**2 Mechanic-technological test**

**2.1 Bend test**

|                            |   |    |
|----------------------------|---|----|
| DIN EN ISO 5173<br>2012-02 | Destructive tests on welds in metallic materials - Bend tests | HE |
|----------------------------|---|----|

|                            |                                |    |
|----------------------------|--------------------------------|----|
| DIN EN ISO 7438<br>2016-07 | Metallic materials - Bend test | HE |
|----------------------------|--------------------------------|----|

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|----------------------------|---|----|
| DIN EN ISO 7799<br>2000-07 | Metallic materials - Sheet and strip 3 mm thick or less - Reverse bend test | HE |
|----------------------------|---|----|

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|--------------------|--|----|
| ASTM E 190<br>2014 | Standard Test Method for Guided Bend Test for Ductility of Welds | HE |
|--------------------|--|----|

|                    |  |    |
|--------------------|--|----|
| ASTM E 290<br>2014 | Standard Test Methods for Bend Testing of Material for Ductility | HE |
|--------------------|--|----|

**2.2 Tensile test**

|                            |  |    |
|----------------------------|--|----|
| DIN EN ISO 4136<br>2013-02 | Destructive tests on welds in metallic materials - Transverse tensile test | HE |
|----------------------------|--|----|

|                              |   |    |
|------------------------------|---|----|
| DIN EN ISO 6892-1<br>2017-02 | Metallic materials - Tensile testing - Part 1: Method of test at room temperature<br>(here: <i>Method B</i> ) | HE |
|------------------------------|---|----|

|                              |   |    |
|------------------------------|---|----|
| DIN EN ISO 6892-2<br>2018-09 | Metallic materials - Tensile testing - Part 2: Method of test at elevated temperature<br>(here: <i>Method B</i> ) | HE |
|------------------------------|---|----|

|                        |  |    |
|------------------------|--|----|
| DIN EN 1561<br>2012-01 | Founding - Grey cast irons<br>(here: <i>Chapter 9 and 10</i> ) | HE |
|------------------------|--|----|

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|------------------------|---|----|
| ASTM E 8/E 8Ma<br>2016 | Standard Test Methods for Tension Testing of Metallic Materials | HE |
|------------------------|---|----|

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**2.3 Notched bar impact test**

|                             |   |    |
|-----------------------------|---|----|
| DIN EN ISO 148-1<br>2017-05 | Metallic materials - Charpy pendulum impact test - Part 1:<br>Test method     | HE |
| ASTM E 23<br>2018           | Standard Test Methods for Notched Bar Impact Testing of<br>Metallic Materials | HE |

**2.4 Expanding test**

|                            |  |    |
|----------------------------|--|----|
| DIN EN ISO 8493<br>2004-10 | Metallic materials - Tube - Drift-expanding test | HE |
|----------------------------|--|----|

**2.5 Flattening test**

|                            |  |    |
|----------------------------|--|----|
| DIN EN ISO 8492<br>2014-03 | Metallic materials - Tube - Drift-expanding test | HE |
|----------------------------|--|----|

**2.6 Sheartest**

|                            |   |    |
|----------------------------|---|----|
| ASTM A 450/A 450Ma<br>2018 | Standard Specification for General Requirements for Carbon<br>and Low Alloy Steel Tubes | HE |
|----------------------------|---|----|

**2.7 Ring expanding test**

|                            |   |    |
|----------------------------|---|----|
| DIN EN ISO 8495<br>2014-03 | Metallic materials - Tube - Ring-expanding test | HE |
|----------------------------|---|----|

**2.8 Ring tensile test**

|                            |   |    |
|----------------------------|---|----|
| DIN EN ISO 8496<br>2014-03 | Metallic materials - Tube - Ring tensile test | HE |
|----------------------------|---|----|

**2.9 Flanging test**

|                            |   |    |
|----------------------------|---|----|
| DIN EN ISO 8494<br>2014-03 | Metallic materials - Tube - Flanging test | HE |
|----------------------------|---|----|

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**2.10 Hardness test**

|                              |  |                |
|------------------------------|--|----------------|
| DIN EN ISO 9015-1<br>2011-05 | Destructive tests on welds in metallic materials - Hardness testing - Part 1: Hardness test on arc welded joints     | HE             |
| DIN EN ISO 9015-2<br>2016-10 | Destructive tests on welds in metallic materials - Hardness testing - Part 2: Microhardness testing of welded joints | HE             |
| DIN EN ISO 6507-1<br>2018-07 | Metallic materials - Vickers hardness test - Part 1: Test method   | HE             |
| DIN EN ISO 6508-1<br>2016-12 | Metallic materials - Rockwell hardness test - Part 1: Test method<br>(here: <i>Scale C</i> )                         | HE             |
| DIN EN ISO 6506-1<br>2015-02 | Metallic materials - Brinell hardness test - Part 1: Test method   | HE             |
| DIN 50159-1<br>2015-01       | Metallic materials - Hardness testing with the UCI method - Part 1: Test method                                      | HE, SP, IS, FÜ |
| ASTM E 10<br>2018            | Standard Test Method for Brinell Hardness of Metallic Materials  | HE             |
| ASTM E 18<br>2019            | Standard Test Methods for Rockwell Hardness of Metallic Materials  | HE             |
| ASTM E 384<br>2017           | Standard Test Method for Microindentation Hardness of Materials  | HE             |

**2.11 Metallography**

|                             |   |    |
|-----------------------------|---|----|
| DIN EN ISO 643<br>2013-05   | Steels - Micrographic determination of the apparent grain size                                      | HE |
| DIN EN ISO 17639<br>2013-12 | Destructive tests on welds in metallic materials - Macroscopic and microscopic examination of welds | HE |
| ISO 14250<br>2000-11        | Steel - Metallographic characterization of duplex grain size and distributions                      | HE |
| ASTM E 112<br>2013          | Standard Test Methods for Determining Average Grain Size  | HE |

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**2.12 Corrosion tests**

|                              |   |    |
|------------------------------|---|----|
| DIN EN ISO 3651-1<br>1998-08 | Determination of resistance to intergranular corrosion of stainless steels - Part 1: Austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in nitric acid medium by measurement of loss in mass (Huey test) | HE |
| DIN EN ISO 3651-2<br>1998-08 | Determination of resistance to intergranular corrosion of stainless steels - Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in media containing sulfuric acid                      | HE |
| ASTM A 262<br>2015           | Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels<br>(hier: <i>Methods A, B, C, E and F</i> )  | HE |
| ASTM A 923<br>2014           | Standard Test Methods for Detecting Detrimental Inter-metallic Phase in Duplex Austenitic/Ferritic Stainless Steels   | HE |
| ASTM G 28<br>2015            | Standard Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys  | HE |
| ASTM G 48<br>2015            | Standard Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution  | HE |

**2.13 Optical emission spectrometry**

|                            |   |    |
|----------------------------|---|----|
| PA-PMI-60-00-21<br>2014-08 | Determination of resistance to intergranular corrosion of stainless steels - Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in media containing sulfuric acid :<br>Matrix Fe: C, Si, Mn, P, S, Cr, Mo, Ni, Al, Cu, V, Ti, Sn<br>Matrix Ni: Si, Mn, Cr, Mo, Fe, Cu, Al, Co, Nb, Ti, Ta, Ni, C, P, S | HE |
| PA-PMI-60-00-22<br>2019-05 | SGS-test instruction - Analytical control (positive material identification PMI) of welds and components using Spektrolab 12<br>Matrix Fe: C, Si, Mn, P, S, Cr, Mo, Ni, Al, Cu, V, Ti, Sn, N, O<br>Matrix Ni: Si, Mn, Cr, Mo, Fe, Cu, Al, Co, Nb, Ti, Ta, Ni, C, P, S   | HE |

**-Translation-**

**Annex to the accreditation certificate D-PL-11020-10-00**

**2.14 Mechanical and physical inspections of chipboard palette blocks as well as strength of block-board joint of flat wood pallets**

|   |  |    |
|---|--|----|
| DIN EN 317<br>1993-08                       | Particleboards and fibreboards - Determination of swelling in thickness after immersion in water   | HE |
| DIN EN 323<br>1993-08                       | Wood-based panels - Determination of density   | HE |
| DIN EN 325<br>2012-06                       | Wood-based panels - Determination of dimensions of test pieces   | HE |
| DIN EN 1087-1<br>1995-04                    | Particleboards - Determination of moisture resistance - Part 1: Boil test  | HE |
| DIN EN ISO 12777-1<br>2009-03               | Methods of test for pallet joints - Part 1: Determination of bending resistance of pallet nails, other dowel-type fasteners and staples<br>1 Scope of application<br>2 Definitions<br>3 Symbols<br>4 Bending test with static load (main method)   | HE |
| UIC-Code 435-2<br>Edition no. 11<br>2014-03 | Standard of quality for EUR flat pallets made of wood measuring 800 mm x 1200 mm (EUR-1)<br><br>Annex C: Permitted blocks made of chipboard (Mold clamping block)<br>Chapters:<br>C.1 - General<br>C.2 - Initial approval<br>C.2.1 - Boiling test<br>C.2.2 - Density test<br>C.2.3 - Swelling test<br>C.2.4 - Transverse tensile strength test (EN 1087-1)<br>C.2.5 - Nail removal test<br>C.2.8 - Granting approval<br>Appendix E: Permissible fasteners<br>Appendix G: Test set-up for determining the extraction forces<br>Appendix H: Test specimens for determining the extraction forces | HE |

**-Translation-**

**abbreviation used:**

|       |  |
|-------|--|
| AD HP | Working group Pressure Vessel - Production and testing of Pressure Vessels   |
| ASME  | American Society of Mechanical Engineers                                     |
| ASTM  | American Society for Testing Materials                                       |
| DGZfP | German Society for Non-Destructive Testing r. a.                             |
| DIN   | German Institute for Standardization r. a.                                   |
| EN    | European standard  |
| ISO   | International Organization for Standardization                               |
| PA    | Test instruction of the SGS Germany GmbH, SGS Gottfeld Industrial Services   |
| SEP   | Steel-iron test sheets from the Association of German Ironworkers            |
| UIC   | Union Internationale des Chemins de Fer (International Railways Association) |

**-Translation-**