



Industrie Service

# ZERTIFIKAT

Die Notifizierte Stelle - Kennnummer 0036 -  
der TÜV SÜD Industrie Service GmbH

bescheinigt, dass die Firma

**F.Y.S.A., S.L.,**  
**Fundiciones y Sistemas Avanzados, S.L.**  
**C/ Roble, 101 - Pol. Ind. Nicomedes García**  
**E-40140 Valverde del Majano, SEGOVIA**

als Werkstoffhersteller für

Stahlguss aus austenitischen und ferritischen Stählen

über ein zertifiziertes Qualitätsmanagementsystem  
entsprechend Anhang I, Absatz 4.3 der Druckgeräterichtlinie 2014/68/EU,  
AD 2000-Merkblatt W 0 sowie EN 764-5, Absatz 4.2

verfügt und dieses anwendet.

Der Geltungsbereich ist aus der Anlage ersichtlich.  
Weitere Einzelheiten sind im Bericht Nr. 20455997 genannt.

Das Unternehmen ist daher berechtigt, in Übereinstimmung mit der Druckgeräterichtlinie 2014/68/EU Bescheinigungen über spezifische Prüfungen an den Werkstoffen im o.g. Geltungsbereich auszustellen. Eventuell weitergehende Anforderungen aus den angewandten technischen Spezifikationen zur Erfüllung des Anhanges I bleiben unberührt.

Das Zertifikat ist gültig bis zum November 2022.

Zur Aufrechterhaltung der Gültigkeit ist ein jährliches Überwachungsaudit erforderlich.

Zertifikat-Nr.: DGR-0036-QS-W 402/2009/MUC-001  
München, 22.11.2019

Notified Body, Nr. 0036



(A. Stäblein)

Zertifizierungsstelle  
Werkstoff- und Schweißtechnik





Industrie Service

# CERTIFICATE

The Notified Body - 0036 -  
of TÜV SÜD Industrie Service GmbH

certifies that

**F.Y.S.A., S.L.,  
Fundiciones y Sistemas Avanzados, S.L.  
C/ Roble, 101 - Pol. Ind. Nicomedes García  
E-40140 Valverde del Majano, SEGOVIA**

has implemented, operates and maintains a

**Quality Assurance System in accordance with the  
Pressure Equipment Directive 2014/68/EU, Annex I, Section 4.3,  
AD 2000-Merkblatt W 0 as well as EN 764-5, Para. 4.2**

as a material manufacturer for the scope of

castings in stainless and ferritic steels.

The scope of the approval is described in the annex to this certificate.  
Further details are mentioned in report no.: 2707785-16.

The manufacturer is therefore authorized to issue certificates of specific product control within the scope of the assessed quality system and in accordance with the Pressure Equipment Directive 2014/68/EU Possible additional requirements - specific to applied technical specifications to meet PED Annex I - are not affected.

This certificate is valid through November 2022.

In order to adhere the validity an annual surveillance audit is required.

Certificate No.: DGR-0036-QS-W 402/2009/MUC-001  
Munich, November 22<sup>nd</sup>, 2019

Notified Body, No. 0036



(A. Stäblein)

Certification Body  
Material and Welding Technology



EQ2707785

TÜV SÜD Industrie Service GmbH, Westendstr. 199, 80686 Munich, Germany



Industrie Service

Add value.  
Inspire trust.

## REPORT

Order-No.: 20455997  
EQ: 2707785-19

Inspector: M. Strobel

Contractor: F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L.  
C/ Roble, 101 - Pol. Ind. Nicomedes García

E-40140 Valverde del Majano, SEGOVIA

Date: 2019-11-22

Our reference:  
IS-AN2-MUC/str

Document:  
Report\_FYSA

Date of Order: 07/11/2019

This Document consists of  
8 Pages  
Page 1 of 8

P/O: No. Compra 22540/19

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advertising purposes with the  
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TÜV SÜD Industrie Service GmbH.

Purpose: Review of plant facility approval  
in accordance with AD 2000-Merkblatt W 0,  
Pressure Equipment Directive 2014/68/EU, Annex I,  
Section 4.3 combined with EN 764-5 for the delivery of  
stainless steel castings

The test results refer exclusively  
to the units under test



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TUV®

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Abteilung Anlagensicherheit  
Werkstoff- und Schweißtechnik  
Westendstr. 199  
80686 Munich  
Germany

## 1. General

An audit of the manufacturing facility was conducted on November 11<sup>th</sup>, 2019 by our expert Mr. M. Strobel to verify the compliance with AD 2000-Merkblatt W 0 and Pressure Equipment Directive 2014/68/EU, Annex I, Para. 4.3.

The company F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L., E-40140 Valverde del Majano (Segovia) was approved several years ago. Renewals were done several times in the meantime.

F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L. has about 55 employees and had no orders in accordance with AD 2000-Merkblatt W 5 during the last years.

Company F.Y.S.A. melts the castings. Freeze Cast Europe sells the products.

The foundry is specialized in the production of impellers and diffusers with a maximum weight of 500 kg and the ceramic moulding instead of sand and has got the certification also for Norsok M 650 Rev. 4 for the materials ASTM A 995 grades 4A, 5A and 6A.

## 2. Changes

As compared to the last audit there have been only a few changes:

- Organisation chart (Rev. 25.01.2018)
- The company is certified according to ISO 9001:2015 by AENOR valid until 2022-04-30
- 5 furnaces are available at the foundry with capacity of 300-1500kg

## 3. Surveillance Audit

### 3.1 Audit and Plant Inspection Tour

Meetings were held with Mr. López (Commercial director), Mr. Fabián (Technical Director) and other personnel being responsible for the manufacture and quality management.

The TÜV inspector took a look at the manufacturing processes and sequences in detail, quality assurance, quality control and marking system as applied in the manufacture of castings. The TÜV inspector saw for himself that the entries made by the manufacturer in forms 1 to 4 and in the quality assurance manual are correct in substance.

### 3.1 Review documentation

- Production papers including Hoya de colada
- Norma de fabricación and inspección (here the manufacturing data for a "prototype are fixed.
- 3.1 certificate

### 3.2 Plant tour

In particular the following items were discussed and inspected or respectively checked at the occasion of a plant inspection tour:

- Ceramic moulding
- Production program
- Castings are marked by heat number
- Charge list for the furnace
- Melting area (5 furnaces are available, the capacities up to 1500 kg)
- Chemical test lab
- Heat treatment furnace with instructions for holding time and temperature (one furnace has got the Norsok certification
- Cutting of raiser
- Removal of ceramic mould by water cutting
- Final inspection area

### Manufacturing Equipment and Manufacturing Method

All pertinent manufacturing equipment was inspected. Attention was additionally focused on data specified for forming, melting, casting, heat treatment and inspection.

The inspector convinced himself that the manufacturing stages of significance to quality and the relevant facilities are state of the art.

For the manufacturer of steel castings melts the material in house.



The inspector found that the heat treatment was done properly and that the electric furnaces were calibrated and in good working order. Furnace atmosphere, temperature, heat input and control, thermocouples and recorders are subject to tight control, frequent calibrations and close examinations.

F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L. guarantees compliance to jurisdictional and customer specifications, the product is subject to direct measurement, visual inspection and other methods of non-destructive testing.

The shop/work instructions, inspection and job documents were examined at random and proved satisfactory.

It is ensured that products failing to meet purchase and /or manufacturing requirements are sorted out, provided with a special marking or labelling and stored separately until a decision on corrective action has been established.

The inspector was satisfied that the results obtained from specified tests and inspections were properly recorded, documented and are available at any time for examination and/or statistical sampling.

- Control and Calibration Program

All measuring, control and testing tools and appliances used during production are in compliance with the latest standards. They are well maintained, checked and calibration according to a written calibration program which is a part of the QS.

- Marking and Material Traceability

No loopholes were apparent in regard to product marking and material traceability. (Proc. 8-1 was reviewed)

A random check furnished evidence to the effect that both marking and traceability are satisfactory prior to, during and after fabrication. Reference to respective purchase order information is maintained throughout the manufacturing process.

The system reflects the diligence commonly exercised and the handling and production of castings in ferritic and stainless steel material. Job documents reveal the personnel involved in manufacturing, inspection and testing.

Random checks were made to find out whether the manufacturing documents and work instruction forms are duly issued.

Stock keeping is adequate. Products in stock are properly marked according to respective job orders and with traceable identification. Easy and unmistakable allocation according to the job documents is ensured.

### 3.3 *Chemical analyses*

The chemical analyses can be made in house. Calibration reports are available. Changes in measuring methods, if any, must be verified for effectiveness by TÜV SÜD Industrie Service GmbH.

Other tests are performed at an external test laboratory. (Mechanical tests are performed at test lab Atzerlan)

### 3.4 *Documentation of Production Papers*

Order documentation for inspection certificate 3.1 was checked for order no. P.O. 4502032267 for SPX Flow Technology as well as for 3.2 inspection P.O. 155060 for company Flowserve were checked. (order, internal papers, production papers, registration of test results, certificates)

- Internal production order
- Norma de Fabricacion (with all general instructions for the manufacturing)
- Plan de Mecanizado
- Norma de inspeccion
- Heat treatment chart
- Inspection Certificate 3.1/3.2

The result is in full compliance with all customer-related requirements and the applicable technical standards.

### 3.5 *Supervision of 3.1. Certificates with requirements AD 2000-Merkblatt W5*

No 3.1 Certificates has been issued within the German Technical Requirements during the last years.

All 3.1 Inspection Certificates issued by F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L. for product shipments complying with the mentioned Technical Code (AD 2000-Merkblatt, etc.), must carry the following remark:

"Issued in agreement with TÜV SÜD Industrie Service GmbH"

The above statement must be removed for deliveries of products not subject to this Technical Code.

Furthermore, in this instance, it is not permitted to reference the German Pressure Vessel and Steam Boiler Codes and Regulations (AD 2000-Merkblatt W 0) in the technical requirements section of the - 3.1 Inspection Certificate, only internal, customer and / or non-German Code Requirements / domestic requirements may be referenced.

### 3.6 Advertising

If F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L. intends to use the qualification as manufacturer in accordance with AD 2000-Merkblatt W 0 for advertising, the kind of qualification has to be mentioned.

The flyers and papers used for advertising have to be sending to TÜV SÜD Industrie Service GmbH for approval.

## 4. Comments

The company performs only minor repair welding on their products. Some welding procedures are qualified in accordance to ASME code section IX by Lloyds Register.

If orders with the requirements AD 2000 Merkblatt W 5 and a repair welding would be necessary on the pieces the welding procedures and the welders have to be qualified in accordance to AD 2000 Merkblatt W 5 respectively EN ISO 11970. Missing qualifications, if any, pertaining to welding procedures must be performed and documented prior to start of manufacturing.



#### **4.1 Non-destructive testing**

This report does not cover the approval of non-destructive test equipment. If the technical standards and regulations require non-destructive testing, the relevant facilities and the relevant personnel must be certified.

Personnel that carry out non-destructive testing under the scope of AD 2000-Merkblatt W 0 or PED 2014/68/EU must be qualified in accordance with the EN ISO 9712 standards. VT, PT, MT testing personal Level II is available. RT testing is performed external.

#### **4.2 Notes**

Customer specifications have to be counterchecked in regard to the requirements of AD 2000 – W0 standard. If there are any deviations the customer has to be contacted for clarification.

It is not allowed to state other material standards (e.g. ASME) beneath the European codes for orders acc. to AD 2000 standard. The issuing of a separate inspection certificate for AD 2000 code is recommended.

Every Casting acc. to AD2000 W5 shall be subjected to non-destructive testing acc. to table 1 in the AD 2000 W5. The extent of testing is defined in table 2 of the AD 2000 W5.

The AD 2000-Merkblatt W 5 requires Third Party Inspection on castings in stainless steel materials, if the weight of a single casting exceeds 200 kg (see para. 7.3 of AD 2000 Merkblatt W 5)

#### **5. Preservation of Production Documents**

All documents relating to production and testing of the products according to German Technical Rules must be preserved at least until the next repeat audit and, on request, must be presented to the inspector.

#### **6. Obligations**

F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L. is obligated to inform the TÜV inspector of changes which infringe on the scope of this approval, specifically those concerning changes in the scope of approval, in supervisory personnel and works inspectors, and in modifications of manufacturing processes.

The TÜV inspector is entitled to check the continued adherence to AD 2000-Standards at any time during production of products for the European Community.

## 7. Summary and Evaluation

The repeat audit has shown that the company F.Y.S.A., S.L., Fundiciones y Sistemas Avanzados, S.L. continues to meet the requirements according to AD 2000-Merkblatt W0 and Pressure Equipment Directive 2014/68/EU, Annex I, Para. 4.3.

This certificate is valid to November 2022.

**Certificates with a three-year term of validity require annual surveillance audits. The surveillance can be combined with regular 3.2 inspections.**

**The certificate can be renewed if required and on request.**



M. Strobel

Department  
Material and Welding Technology



Industrie Service

Geltungsbereich der Überprüfung als Hersteller von Werkstoffen nach AD 2000-Merkblatt W 0  
 Scope of the approval - Manufacturer of material in accordance with AD 2000-Merkblatt W 0

Anlage zum Zertifikat Nr. / Annex to certificate no.  
 DGR-0036-QS-W 402/2009/MUC-001 von / dated 2019-11-22

Hersteller / Manufacturer:	Name: Strabe/Street: Ort/City:	F Y S A , S L , Fundiciones Y Sistemas Avanzados, S.L. C/ Roble, 101 - Pol. Ind. Nicomedes Garcia E-40140 Valverde del Majano, SEGOVIA	Nationalität / Country:	E	Datum / Date:	2019-11-22	Blatt-Nr. / Page No.:	1 v. / of 2	Zertifizierungsstelle für Druckgeräte / Certification Body for pressure equipment	Notifizierte Stelle, Nr. / Notified Body, No. 0036
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Id. / Nr. / No.	Werkstoffbezeichnung Werkstoff-Nr. / Material Designation Material Grade	Werkstoff- Spezifikation / Material Specification	Liefer- zustand / Delivery Condition	Prüfgegenstand Erzeugnisform / Description Product	Abmessungen / Dimensions		Gewicht / Weight	Prüfgrundlagen Technische Regeln / Requirements Technical Rules	Bemerkungen / Remarks					
					Dicke / Thickness [mm] von / from bis / to	Durchm. / Diameter [mm] von / from bis / to								
1	2	3a	3b	4	5	6a	6b	7a	7b	8a	8b	9a	9b	10
01	1.4408	EN DIN	10213 17445	A A	Gußstück / steel casting					2	500	AD 2000 AD 2000	W5, W10	Inspection certificate 3.2 II weight of casting exceeds 200 kg

Bericht Nr. / report no. 20455397  
 vom / dated 2019-11-22

**Erläuterung / Explanation:** A = Lösungsgelüht und abgeschreckt / solution annealed and quenched L = Lösungsgelüht / solution annealed N = normalgelüht / normalized S = spannungsentlastet / stress relieved TM = thermomech. behandelt / thermo-mech. treated  
 U = ungeglüht / not annealed V = vergütet und angelassen / quenched and tempered CR = temperungeregelte warmumgeformt / controlled rolled G = weichegelüht / annealed  
 a = Werkstoffbezeichnung in Spalte 10 / material designation in column 10 b = Lieferzustand in Spalte 10 / delivery condition in column 10 c = Prüfgegenstand in Spalte 10 / object in column 10 d = Abmessung gem. techn. Regeln / dimensions acc. to technical rules  
 e = Gewicht gem. techn. Regeln / weight acc. to technical rules f = Nr. der techn. Regeln in Spalte 10 / technical rules in column 10



Industrie Service

**Geltungsbereich der Überprüfung als Hersteller von Werkstoffen nach DGR 2014/68/EU, Anhang I, Abschnitt 4.3**  
**Scope of the approval – Manufacturer of material in accordance with PED 2014/68/EU, Annex I, Section 4.3**

Anlage zum Zertifikat Nr. / Annex to certificate no.  
 DGR-0036-QS-W 402/2009/MUC-001 von / dated 2019-11-22

Hersteller / Manufacturer:	Name: Straße/Street: Ort/City:	F Y S.A., S.L. Fundiciones y Sistemas Avanzados, S.L. C/ Roble, 101 - Pol. Ind. Nicomedes Garcia E-40140 Valverde del Majano, SEGOVIA	Nationalität/ Country:	E	Datum / Date:	2019-11-22	Blatt-Nr. / Page No.:	2 v. / of 2	Zertifizierungsstelle für Druckgeräte / Certification Body for pressure equipment	Notifizierte Stelle, Nr. / Notified Body, No. 0036
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Id. Nr. / No.	Werkstoffbezeichnung Werkstoff-Nr. / Material Designation Material Grade	Werkstoff- Spezifikation / Material Specification	Liefer- zustand / Delivery Condition	Prüfgegenstand Erzeugnisform / Description Product	Abmessungen / Dimensions		Gewicht / Weight	Prüfgrundlagen Technische Regeln / Requirements Technical Rules	Bemerkungen / Remarks				
					Art / Spec. 3a	Nr. / No. 3b				Dicke / Thickness [mm] von / from bis / to	Durchm. / Diameter [mm] von / from bis / to		
01	1.4408	EN	A	Gußstück / steel casting	6a	6b	7a	7b	8a	8b	9a	9b	10
02	1.4008	EN	V	Gußstück / steel casting									
03	WCB	ASTM ASME	N	Gußstück / steel casting									
04	CF3M	ASTM ASME	A	Gußstück / steel casting									
05	CAGNM	ASTM ASME	A	Gußstück / steel casting									
06	4A, 5A, 6A	ASTM ASME	A	Gußstück / steel casting									

Bei Verwendung der Werkstoffe in Spalte 2 bis 4 sind die Festlegungen und Grenzen des jeweiligen Regelwerkes zu beachten. Für die spezifischen Einsatzbedingungen der Werkstoffe ist die Zustimmung des Druckgerätheherstellers bzw. der zuständigen Notifizierten Stelle erforderlich. / For the use of materials acc. to column 2 till 4 the regulations and limits of the respective standards have to be observed. The specific material operating conditions have to be approved by the pressure equipment manufacturer or respectively by the Notified Body in charge.

Bericht Nr. / report no. 20455997  
 vom / dated 2019-11-22

**Erklärung / Explanation:** A = lösungsgeglüht und abgeschreckt / solution annealed and quenched L = lösungsgeglüht / solution annealed N = normalgeglüht / normalized S = spannungsentlastgeglüht / stress relieved TM = thermomech. behandelt / thermo-mech. treated  
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 a = Werkstoffbezeichnung in Spalte 10 / material designation in column 10 b = Lieferzustand in Spalte 10 / delivery condition in column 10 c = Prüfgegenstand in Spalte 10 / object in column 10 d = Abmessung gem. techn. Regeln / dimensions acc. to technical rules  
 e = Gewicht gem. techn. Regeln / weight acc. to technical rules f = Nr. der techn. Regeln in Spalte 10 / technical rules in column 10