

**Changes are shaded****1. DESCRIPTION**

The competitive strategy for Forging Steel Products requires the fulfilment and satisfaction of the expectations of both our clients and the environment, which compels us to improve continuously in the internal area of our management processes but also in the external area of our suppliers.

For this purpose, Forging Steel Products publishes the present QUALITY MANUAL FOR SUPPLIERS, the observance of which is regarded as a basic requirement for carrying out any purchase.

**2. TARGET**

2.1. The present Manual establishes the responsibility of the suppliers of Forging Steel Products. in terms of being in possession of a Quality and Environmental System which guarantees that the material supplied meets all the legal and normative requirements. Likewise, they must meet all quality requirements that are implicit or generally recognized for the product or service requested or that have been established in a contractual manner to provide goods and services that systematically meet the needs and expectations of Forging Steel Products. All of them must work, be effective and safe for their intended use.

2.2. It also describes the system for evaluating the suppliers in order to ensure the fulfilment of the requirements of quality, delivery date, customer interruptions and environmental legislation.

**2.3. Quality Objectives**

This Manual places an emphasis on 'Performance Based Partnership' meaning that suppliers will be empowered to achieve established performance objectives.

In order for Forging Steel Products and its suppliers to meet our mutual and end customer expectations, there are fundamental objectives that we must build into our business system related to:

- Quality  
Zero Quality Incidents  
Zero PPM
- Delivery Performance  
100% On Time

**2.4 Sustainability**

Forging is committed to the values of sustainability. Forging complies and promotes compliance with these principles and expects his suppliers to respect and comply with these principles in all areas of their business activity.



Ethical-social:

- Business based on absolute respect for human rights, free association and strong rejection of forced labor, child labor and discrimination, as described in the principles of the United Nations Code of Conduct
- Acting resolutely against any form of discrimination based on sex, race, age, nationality, disability, ideology, religion or any other personal or social condition that is not related to their conditions of merit and ability.
- Ensure that the company's internal recruitment and promotion policies are based on criteria of professional value, linking the remuneration and promotion of employees to their conditions of merit and ability.
- Provide training and make available to employees the tools necessary for the performance of the job.

Environment:

- Commit to the protection and respect of the environment, including the prevention of pollution, complying with the applicable environmental legislation and regulations and other requirements such as the sustainable use of resources, the adequate management of waste, the control of atmospheric emissions and of the spills ... contributing to the mitigation of climate change and the protection of biodiversity and ecosystems and also to the continuous improvement of the environmental management system to improve environmental performance.

Health and security:

- Ensure safety and hygiene at work and adopt all reasonable measures to maximize the prevention of occupational risks.

Business ethics:

- Publicly declare its commitment to act ethically and transparently before its stakeholders, prohibiting at all times any behavior or practice of bribery, corruption or influence peddling in all its business relationships.
- Protect and prevent disclosure of information under your responsibility. All strategic information about the company, as well as any information about customers, shareholders, employees or suppliers that is accessed for work purposes, must be considered confidential and therefore, treated as such.

With the final purpose of making an assessment of our suppliers in terms of sustainability, Forging will send sustainability questionnaires that must be completed.

## 2.5. Environmental requirements

The Supplier is responsible for ensuring that all materials and processes used in the manufacture of parts or processes that it supplies to Forging Steel, comply with all EEC, state and local requirements regarding the generation, transport and management of waste. Therefore, it undertakes that its materials, products and services comply with the laws, regulations and directives applicable in the country of manufacture, transit and destination of the goods it supplies.

- ✓ Resource efficiency: The supplier must control and implement actions to reduce the consumption of energy, water, chemicals, raw materials and packaging material.
- ✓ Waste management. All waste generated by the supplier must be identified, controlled and stored in suitable containers and in a specific area. All this waste must be transported and managed by authorized companies.
- ✓ Chemicals. The supplier must control all the chemical products used in its production processes, as well as choose those that have the least impact on people and the environment. You must store and identify all chemical products safely and have all the technical and safety sheets of all the products used in your production processes. You must implement methods, procedures and equipment to introduce, handle, label and store chemical products safely. Conduct risk assessments and act to minimize any negative impacts on people and the environment before introducing new chemicals. Workers who work with hazardous chemical products will always have up-to-date and accessible instructions and special training regarding risk management in case of emergency situations.

## 3. APPLICATION

3.1. This QUALITY MANUAL FOR SUPPLIERS applies to all suppliers whose products or service has repercussions on the product and in the environmental management.

## 4. OPERATIVE SYSTEM

There are 3 levels of requirements to the suppliers:

**Level 1:** This corresponds to suppliers of raw material for parts of the automotive, railroad sector and for customers who request it explicitly.

**Level 2:** This corresponds to suppliers of raw material for parts of other sectors and to subcontractor of process operations (heat treatments, machining, painting, sales transport, packaging, shot blast and others) directly related to parts of all sectors.

**Level 3:** This corresponds to suppliers of others operations, calibration and test services, environmental services...All of them must have the correspond accreditation.

### **Selection criteria Suppliers**

We establish criteria for the selection of suppliers based on the levels described above, so we distinguish:

**Suppliers of Level 1:** Suppliers with a certified quality system, at least ISO 9001 and preferably with an environmental management system according to ISO 14001.

**Suppliers of Level 2:** Suppliers: Suppliers with a certified quality system according to ISO 9001 and a certified environmental system according to ISO 14001 will have priority over other suppliers that do not have certified systems. In case of selecting a supplier that does not have ISO 14001 certification, they must sign a responsible declaration of compliance with environmental legal requirements and improvement of their environmental performance, according to the format 13.10 Responsible environmental declaration.

**Suppliers of Level 3:** Suppliers with ENAC certification for calibrations, tests, environmental analysis. Authorizations for the management of waste, for the transport of waste, gases, maintenance operations ...

In turn, the supplier selection process, which will be multidisciplinary, will take into account risk assessment in terms of product quality and delivery, quarterly evaluations as specified in our point 4.6 as well as evaluations of their management system through 2nd party audits as detailed in point 4.7 of this manual.

Similarly, when selecting a supplier, its financial stability, product complexity, production capacity, service, resources and technology may be taken into consideration.....

All suppliers are obliged to comply with all applicable legal and regulatory requirements as well as special product and process characteristics. Similarly, suppliers have to disseminate all applicable requirements throughout their supply chain.

With regard to the legal requirements associated with our orders and the legislation applicable to certain materials and substances, you are obliged to comply with the following:

- **REACH** As downstream users you will need to pass on certain information to upstream and downstream actors in the supply chain. They should therefore communicate to their supplier information that may call into question the adequacy of the risk management measures detailed in the safety data sheet provided to them (recommendations only for identified uses).
- **DIRECTIVE 2000/53/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** of 18 September 2000 on end-of-life vehicles. On the prevention of the non-use of certain products/substances and materials in the automotive sector. As well as promoting the recovery of certain components at the end of the vehicle's useful life.
- **REGULATION (EU) 2017/821 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** of 17 May 2017 laying down supply chain due diligence obligations as regards importers into the Union of tin, tantalum and tungsten, their ores and gold originating in

conflict-affected or high-risk areas. Information in this respect will be requested if requested by our customers (principle of not breaking the information chain).

Forging will require its suppliers of automotive products and services to develop, implement and improve their quality management system with the ultimate goal of becoming IATF 16949 certified.

Once the supplier fulfils the requirements and send us the evidences, Forging Steel Products accepts the new supplier, it is include in the List of Approved Suppliers and in the Sap system.

#### **4.1. Order. Purchasing Specification. Drawings.**

All request of a service or product, will be made unique and exclusively by means of a written order, which describes to the product or service. In addition, it can go accompanied of other documents that extend the description, eg: Drawings, Specifications of Purchase, Standards of Customers...

In orders placed with suppliers of subcontracted processes, such as treatment, painting, machining and destructive or non-destructive testing, they must send the documentation of the product or service performed, guaranteeing the traceability indicated by Forging, such as manufacturing order, casting, batch, batch, engraving, drawing, part reference, treatment number for the customer who requires it, as is the case of railway customers .....

The products, processes and purchasing services have to comply with the legal and regulatory requirements of application in the country of reception, in the country of delivery and in the country of destination (if the client indicates it).

With the acceptance of the order, the suppliers also accepts the Confidentiality Agreement by which it is not allowed the distribution of any kind of information, drawings, parts to anyone else.

#### **4.2. Deviation Request**

Any deviation from what it is specified, required a written deviation request. Purchasing Manager is responsible for answer to that deviation request.

#### **4.3. Reception requirements**

Each product must arrive at Forging correctly identified and with all the documentation required.

#### **4.4. Non Conformities**

The detection of a product or service out of specification, involves the issuance of a report of non-conformity and corrective actions 09 / 03.01 and the taking of one of the following decisions:

- Return for recovery or scrapping to the supplier who assumes all the costs entailed.
- 100% inspection, which will be carried out by the supplier or by Forging Products Trading



<b>PROCEDURE</b>		<b>Code: 13/01</b>
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- and charged to the supplier.
- Other action.

**4.5. Initial Sample**

If it is necessary, an Initial Sample will be requested, except for the event of Subcontracted Suppliers whose pieces are for Automation, in which case one such sample will be compulsory.

**4.6. SUPPLIERS EVALUATION**

To carry out the evaluation of our suppliers, the following aspects will be taken into account: Quality, delivery date, customer interruptions and environmental management.

The evaluation of suppliers is every 3 months and it will be carried out to those suppliers considered critical for our company, such as raw material suppliers and subcontracted operations: heat treatment, machining and painting.

**Quality:** for suppliers of raw material, heat treatment, machining, painting and sandblast.

Non conformity punctuation	Documentation	Product quality
1	OK	OK
25	No OK	OK
50	OK	No OK
75	No OK	No OK
100	Customer claim	

**Delivery date:** for above mentioned suppliers.

Non conformity punctuation	Delivery on time
1	OK
25	Delay
100	Customer claim

**Customer interruptions:** for above mentioned suppliers.

Non conformity punctuation	Customer interruptions
1	OK (without customer interruptions)
25	No OK (customer interruptions without claim)
100	Customer claim

Adding the punctuation of each batch / delivery / interruptions and dividing this by the total number of deliveries, we obtain a rate that, once subtracted from 101, gives us the quality level.

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of the supplied product , delivery and special transports.

**Example:** In the annual evaluation of a product, we find 6 batches received with next comments:

1 batch accepted .....	1 x 1 = 1
2 batches received without documentation and OK quality.....	2 x 25 = 50
1 batch received with documentation but with quality problems .....	1 x 50 = 50
1 batch rejected .....	1 x 100 = 100
1 batch received without customer interruptions.....	1 x 1 = 1
Total 202, divided by 6 = 33.66 →	
Quality level of supplies: 101 – 37.66 = <b>67.33.</b>	

**Environmental management**

For critical suppliers and process outsourcing and those that have a direct relationship with environmental management, an environmental assessment will also be carried out. The evaluation criteria for critical suppliers and process outsourcing will consist of the provision of ISO 14001 certification, in which case the score will be 100. Otherwise, they must sign the declaration responsible for environmental compliance (doc. 13.10), In this case, the score will be 95. If you do not have this completed statement, your score will be 0. For those suppliers related to environmental management and who carry out their activity in the FORGING STEEL facilities, the criterion is based on whether they have had environmental non-conformities due to their management at the plant. If they have not had any non-conformity, the score will be 100. And if they have had any non-conformity, the score is 0.

Then, total punctuation is the media of the 3 concepts.

- Level A ≥ 95 points.**
- Level B ≥ 85 but < 95 points.**
- Level C < 85 points.**

To calculate the annual accumulated, if all the quarterly scores are from Group A, the total is Group A, if you have obtained any Group B score, the total is Group AB, always reflecting the lower scores.

Every 3 months, in case of incidents in the continuous monitoring or that the qualification B or C is obtained, Forging Products Trading will contact the suppliers to communicate the result of the evaluation. If you do not receive a communication, you should consider that you have passed the quarterly evaluation, obtaining an A score and remain as a provider approved by our organization.

Suppliers who have obtained a B score will receive the notice as a warning so that they take the necessary actions in order to improve. Those suppliers whose score is C, will be requested the corrective actions that allow to correct the problems and deficiencies detected.

If a supplier for 3 consecutive evaluations obtains C level, will be eliminate of the Suppliers Approved List and Sap system.



The evaluation will have an annual periodicity. Any supplier considered critical to our organization (supplier of raw material and subcontracted work: heat treatment, machining and painting) will receive the annual result during the month of January of each year.

#### **4.7. AUDITS TO SUPPLIERS**

Supplier audits will be carried out at planned intervals to evaluate the performance of the selected supplier or subcontractor.

The date and time of the audit shall be communicated or specified prior notice to the provider via e-mail / telephone, at least ten days prior to the execution of the activity.

The auditor appointed by the organization will carry out the second part audits according to the planning established for the suppliers that our organization considers critical and which are the following: suppliers of raw material and subcontracted work for heat treatment, machining and painting.

The criteria that we will use when planning the second part audits will be the following:

1. Your consideration as critical or not for the organization.
2. Result and performance obtained in the evaluation of suppliers.
3. Level of certification of the quality management system and environment.
4. Billing / business level.

The thermal treatment providers will also carry out annual evaluations according to the established audit planning of the automotive industry's production processes of compliance with the CQI-9, a documentary tool that defines the evaluation procedure and the requirements for a thermal treatment system and is part of the specific requirements of the IATF 16949.

The audits of railway parts suppliers whose final customer is the Deutsche Bahn will be audited at least every 3 years according to the planning of supplier audits.

When supplier audits are planned, evidence of legal compliance and improvement of their environmental performance may be requested in accordance with the commitments made in the Environmental Responsible Declaration (doc. 13.10) signed for those suppliers that do not have ISO 14001 certification or equivalent.

In case of not complying with the requested evidences, the evaluation of the environmental management obtained by the supplier in said exercise will be 0 points.

#### **4.8 RECEPTIONS QUALITY CONTROLS**

Quality Resp. documentarily reviews the 100% of the receptions of the suppliers of raw material and subcontractors of operations of process (machining, heat treatment, painting...).

With regularity based on the quality level demonstrated by the supplier, we do cross checks to determined characteristics. Quality controls in reception are made in one part of each reference for every batch and batch for each subcontracted operation and 1 test per charge, with the



frequency established in the following table:

Result of the supplier evaluation	With Quality IATF 16949 or ISO 9001 certificate	Without Quality IATF 16949 or ISO 9001 certificate
A	50 deliveries	25 deliveries
B	25 deliveries	10 deliveries
C	50% deliveries	100% deliveries

In the case of initial samples, this quality control is compulsory for the raw material as for the subcontracted operation. For this ones, 100% of the characteristics.

#### **4.9 MACHINING**

The supplier of machining will send with the parts the following documentation, 100% dimensional certificate with initial samples and dimensional according to control plan in serial production.

Based on the result of the last evaluation of the supplier, we will perform the control according to the number of deliveries established. For this, a piece is taken and the corresponding measurements are made according to the measurements made for our machining supplier. We measure dimensions that we consider important.

#### **4.10 HEAT TREATMENTS**

The suppliers of heat treatments make sure not mixing the parts, especially in the change of boxes.

All the sent parts of the same batch, are dealt in a furnace with no interruptions according to the defined parameters. Although the pieces go in different shipments with provisional documentation, until they are not all the pieces with the official order, will not be made the treatment.

Suppliers will send a certificate with the records of the required characteristics over a number of parts according to purchase order, minimum 3 parts.

Based on the result of the last evaluation of the supplier, we will perform the control according to the number of deliveries established. In order to do this, the hardness will be taken according to the 04/17 procedure: hardness test.

#### **4.11. PAINTING**

The supplier of painting will send with the parts the quality certificate of the goods.

Based on the result of the last evaluation of the supplier, we will perform the control according to the number of deliveries established.

We will work under agreed quality with the suppliers of surface coatings.



#### **4.12. SUPPLY CONDITIONS OF RAW MATERIAL**

All the raw material orders must mention the international standard or purchase specification which applies and its revision status.

The supplier must certify the requirements requested, whether it be in the purchase specification or in the order itself, indicating the results recorded.

##### **Metallurgical properties**

The material to be supplied must be free from internal defects that may affect the forging process. This circumstance must be controlled by the method the supplier has established. For example, ultrasounds testing, in case Technical Delivery Condition does not indicate another thing, it must be applied EN 10.308 or in its defect EN 10.228-3. Acceptance minimum criteria is Quality Class 3.

Also, a maximum degree of microinclusions must make sure according to norm UN NF A 04-106 (for steels with  $S < 0,02\%$ ):

Type	A	B	C	D
Máximo finas	3	2,5	2,5	2,5
Máximo gruesas	2	1,5	1,5	1,5

\* In case of steels with  $0,02 \leq S < 0,04$  we admit sulphides till 3/2,5 and it is no necessary to assess if  $S \geq 0,04$ .

- Maximum macrofigure (degree of macroinclusions) of 3, with no abnormal segregations of phosphorus or sulphur.
- The grain size must be controlled according to the ASTM E-112 method and in any case one must ensure that the austenitic is 5 or smaller.
- Maximum acceptable decarburisation 1%.

##### **Surface quality**

- The depth of any defect in as rolled condition must be  $\leq 0,3$  mm (for equivalent diameter  $< 65$ ) and  $\leq 0,4$  (for  $\geq 65$ ), and in any case the defect length  $\leq 37$  mm.
- The length of the sum of defects on a bar must be  $\leq 100$  mm.
- Surface discontinuities due to defect repairing must be avoided as much as possible.
- Surface defects are not accepted in turning state.
- Deburs on bar ends must be  $\leq 0,50$  mm (for equivalent diameter  $< 65$ ) and  $\leq 1$  (for  $\geq 65$ )

##### **Dimensional quality**

- When length is specified it must be assured that only multiples (of the cut) + 100 mm are



delivered.

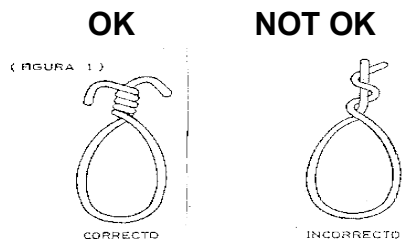
- It is not acceptable to be > 10% of bars **shorter than nominal length**, and their length must not be below 2/3 of this. In any case, these bars must be separated into tied bundles according to **length families**.
- The **tolerance on side** (billets or flats) or diameter (rounds) is +2 % of the nominal limit, except for forged bars (+10). **In straightness** (deflection)  $= < 4 \text{ mm / m}$ , and always  $= < 10 \text{ mm}$  from one bar end to the other. **In twist**:  $= < 4^\circ / \text{m}$ , without exceeding  $15^\circ$  from one end to the other of the bar. **In perpendicular** (ovality):  $= < 4 \%$  more than the largest diagonal or the diameter.

### Supply condition

- ⇒ Unless otherwise specified in the order, the raw material supply status is rolled or forged to a minimum reduction ratio of 3:1.
- ⇒ Each tied bundle must be identified with its heat number, dimensions and material type, in an indelible way over the material itself or an attached label. Different casts must never be sent in a same parcel or tied bundle.
- ⇒ The supplier must follow a tying procedure that assures a hazard-free handling of the goods for the workers: the bars must be strapped at 2 points with wires, slings, cinches (at 4 points in the event of turned bars) in such a way that they can be handled with a travelling crane bridge.

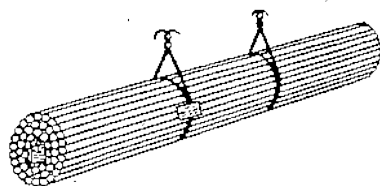
### **Security.**

#### **Tying of the wires**

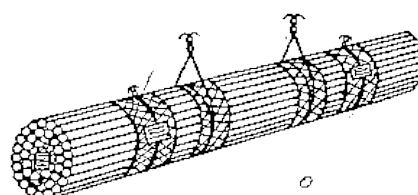


#### **Tying of the parcels**

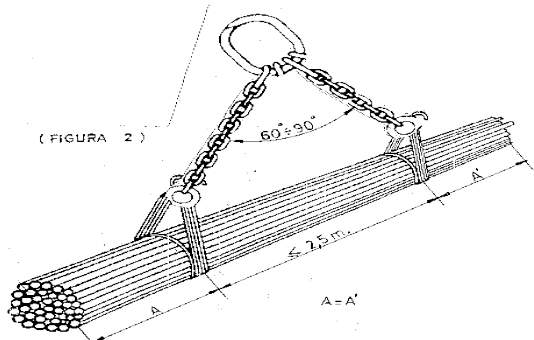
##### **NON-TURNED MATERIAL**



##### **TURNED MATERIAL**



### Tying and angle distances according to the length of the chains



Besides, the bars may come with slings/ cinches in order to make them easier to handle with a travelling crane bridge. If the slings/ cinches are not reusable, the supplier will make sure that these slings/ cinches are only used once for loading these bars onto the truck and for the unloading in our storerooms and that they can guarantee the maximum load weight. The single-use sling is understood as being part of the packaging. It is thus included when making the package and disregarded once the package reaches its destination.

The nominal bar length and the maximum weight of the tied bundle will be indicated on the purchase order if different to those of this table.

Max. length (m)	7
Max weight (Kg)	3.000

### Documentation

All consignment must be delivered along with the following documents:

- ⇒ Delivery note, with the order no., weight in Kg, no. of tied bundles or parcels per cast, material, identification of cast, profile and dimension (billet, round or flat).
- ⇒ Complete EN 10.204 3.1. certificate including, apart from the type of material as well as the international standard or specification required by the order, its revision status and chemical composition, the results that must comply with the applicable certification requirements.

#### 4.12.1. Particular requirements to be certified

**a.- Mechanical properties**, according to the international standard that defines the material. For quenched and tempered steels, the cooling of the specimens should be done in oil (never in water, otherwise specified in Purchasing Specification).



**b.- Jominy hardenability, same.**

**c.- Rate of microinclusions, according to NF A 04-106.**

**d.- Rate of macroinclusions, according to ASTM E-45**

**e.- Ultrasounds testing** following EN 10.308 or in its defect EN 10.228-3. Acceptance minimum criteria is Quality Class 3.

**f.- Austenitic grain size, according to EN ISO 643, last edition.**  
Whenever a number is indicated, for example 6, this means that it must be 6 or smaller.

**g.- Corrosion testing, following the ASTM A-262 practice mentioned:**  
For example E, that means practice E.

**h.- Macro attack** on a section according to ASTM E-381.

**i.- Equivalent carbon long formula:**  
 $C_{eq} = \%C + \%Mn/6 + \%(Cr+Mo+V)/5 + \%(Ni+Cu)/15$

**j.- Equivalent carbon short formula:  $C_{eq}$**   
 $= \%C + \%Mn/6$

**5. REVISION RECORD TABLE**

<b>Nº</b>	<b>DATE</b>	<b>MODIFICATIONS</b>	<b>CARRIED OUT</b>	<b>OK</b>
A1	17.11.2010	Heat treatment and audits are included	Amador Alvarez	E.Izquierdo
A2	26.07.2012	Raw material supply conditions	Amador Alvarez	E.Izquierdo
A3	28.08.2013	Delivery time punctuations in section 4.6 and Audits to suppliers for rail customers which DB as final customer in section 4.7	E.Izquierdo	E.Izquierdo
A4	30.09.2013	Ultrasonic testing of steel bars according EN 10308 or in its defect according EN 10.228-3 in section 4.10 and 4.10.1	J.del Río	E.Izquierdo
A5	13.01.2014	In Section 4.10.1 a) Mechanical properties. In the case of quenched and tempered steels the cooling of specimens will be done in oil not in water.	J.del Río	E.Izquierdo

A6	17.10.2014	In Section 4 it is added the following requirements: Compliance with applicable legislation and acceptance of the confidentiality agreement.	E.Izquierdo	E.Izquierdo
A7	10.02.2015	Documentary requirements are added to machining suppliers, in chapter 4.9 and heat treatment, in chapter 4.10	J.del Río	E.Izquierdo
A8	20.01.2017	Quality objectives for suppliers are included, frequency incoming inspections for subcontracted op. and min. parts quantity certified by heat treatment supplier	J.A.Marzana	E.Izquierdo
A9	06.06.2018	How to perform quality control of receptions and against controls of outsourced processes	J.A Marzana	B.Esteban
A10	07.06.2018	The number of special transports is included to perform suppliers evaluation	A. Álvarez	B.Esteban
A11	09.07.2018	the criteria of evaluation and communication of supplier evaluation	A. Álvarez	B.Esteban
A12	11.07.2018	Supplier audits are included	J.A.Marzana	B.Esteban
A13	11.02.2019	Sustainability requirements are included	A.Álvarez	B.Esteban
A14	30/10/2020	Environmental requirements are included	A.Álvarez	B.Esteban
A15	16/11/2020	Special transport have been eliminated in supplier evaluations	A.Álvarez	B.Esteban
A16	15/04/2021	Responsible declaration of compliance with environmental requirements is added	I.Reguero	B.Esteban
A17	05/05/2022	Reception/counter control in subcontracted painting works is modified	A.Álvarez	B.Esteban
A18	21/11/2022	It includes traceability requirements to be ensured by suppliers of subcontracted work.	A.Álvarez	B.Esteban