

Supplier Manual

ThyssenKrupp Crankshaft Company



ThyssenKrupp



FOREWORD

As the global competition for leadership and new markets becomes increasingly tough, companies are forced to turn swiftly to a new businesses paradigm consisting in **offering “world-class” products, prices, delivery terms, services, and technology.**

The companies of the **ThyssenKrupp Crankshaft Company**, since they operate in such a context, **require their suppliers to comply with Continuous Improvement Practices** as a way of ensuring participation in the industry and also the development of new business in the whole production chain.

These new performance standards demanded by today's industry imply in as much the development as the improvement of a **Quality System** which will help our suppliers to attain their goals.

Therefore, we are addressing this Manual as a basic guide line that will orientate the future relationship between our organizations. Following these instructions, your company will be ranked as one of the preferential suppliers for future business with ThyssenKrupp.

Should any question arise from the content of this Manual please do not hesitate to contact us.

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1. Purpose

The purpose of this Manual is to establish a system for assessing, selecting, and developing suppliers.

The system must ensure both the quality and the regularity of suppliers with respect to meeting our technical and commercial requirements.

2. Application

The system described in this Manual applies to all companies supplying goods and services to ThyssenKrupp Crankshaft Company including, but not limited to, the following areas which are called out for their critical importance with regards to quality:

Direct Material

- Steel for forging
- Suppliers of forgings
- Suppliers of components

Indirect Material

- Suppliers of Die Blocks
- Suppliers of Cutting Tools
- Suppliers of Abrasives
- Suppliers of Cutting Fluids, Oils and Lubricants

3. Supplier requirements

3.1. Safety

Suppliers are recommended to establish a safety program that demonstrates continuous and efficient efforts towards the reduction of accident rates. Suppliers should have a system that complies with OSHA standards.

When our requirements call for suppliers to perform work on our property, there are special needs to ensure our employees as well as yours work in a safe environment and that we maintain the safety and legal requirements in order to protect both companies.

- All contractors must review the “Health, Safety and Environmental Requirements for Contractors” Policy, *sign and return the acknowledgement form included*. Failure to do so will result in removal from the Approved Supplier list.
- Insurance certificates are needed to verify compliance with ThyssenKrupp requirements as follows;



Limits by type of work:

<u>Type Of Work</u>	<u>Minimum Limits For Comprehensive Liability Including Contractual Liability Coverage (\$000)</u>		
	<u>Involvement</u>	<u>Injury</u>	<u>Property Damage</u>
<u>Service:</u>			
Any on-site service work involving one or more individuals	Each Person Each Accident Aggregate	500 500	250 500
<u>Hazardous Waste Disposal:</u>			
Any waste disposal by a contractor who is classified by the Environmental Protection Agency as a transporter or operator of a storage or disposal facility for hazardous waste material.	Each Occurrence Aggregate	3,000 6,000	3,000 6,000
<u>Construction:</u>			
Any on-site work involving cost less than \$100,000.	Each Person Each Accident Aggregate	1,000 1,000 1,000	1,000 1,000
<u>Construction Projects:</u>			
Any on-site work involving Construction Contracts costs in excess of \$100,000	Public Liability for Bodily Injury Contractor's Protective Liability Completed Operations Coverage Contractor Liability Coverage \$3,000,000 per Occurrence/ \$5,000,000 Aggregate or \$5,000,000 Combined Single Limit		
<u>Rigging Operations</u>			
	For Machinery Moving Contracts Riggers must provide Inland Marine coverage for rigging contracts in an amount equal to or in excess of the value of the ThyssenKrupp property being transported.		

Workers Compensation and Employers Liability Insurance

All contractors will provide evidence of this protection as follows:

Limits: Workers Compensation – Statutory
 Employers Liability - \$100,000 each accident

All certificates must name ThyssenKrupp Crankshaft Company as additionally insured and include a ten-day cancellation notice in favor of ThyssenKrupp Crankshaft Company.

Please forward applicable certificates to us.



3.2. Environment

Suppliers are recommended to continuously and efficiently improve their environmental condition based on international standards for environmental management, such as ISO 14001 standard.

3.3. Compliance with legislated requirements

Suppliers must ensure compliance with all legislated requirements applicable to their respective countries as well as the specific requirements set forth by both the U.S.A laws and ThyssenKrupp internal rules concerning the safety of products, environmental protection, wage rates, working periods, ban of child labor, and occupational health and safety.

3.4. Quality system

ThyssenKrupp Group expects all suppliers to implement and apply a quality management system according to the requirements of International standards.

The efficiency of the quality management system will be evident from the following:

- Continuous and proven improvement of processes, systems, and products;
- Supply quality;
- Supply fidelity;
- Efficacy and readiness in taking corrective actions;
- Communication in all levels;
- Proper execution of new and changed projects, regarding the project content and deadlines.

Through the quality management system, actions must be oriented to the common objective of zero defects.

ThyssenKrupp reserves the right to either audit the supplier’s quality management system, system/processes and products by itself or make arrangements for such audits to be carried out by third parties upon prior notice to the supplier.

The minimum Quality System requirements for the supply of products and services are as follows:

Supply Area	Requirements
- Raw material for forging and steel for tooling - Components - Product service suppliers	ISO 9001:2000 and/or ISO TS 16949:2002
- Calibration service suppliers	ISO IEC 17025
- Mold service suppliers	ISO 9001:2000 or approval after assessment
- Suppliers of services of part selection, rework, and inspection	Self-assessment or assessment by TKCUS



The supplier is responsible for complying with and providing a certification that their Quality Systems meet all the foregoing requirements. The certification of the quality management systems must be approved by an accredited certification entity.

3.5. Quality goals

As for the measurement and assessment of the obtained quality, the supplier must define both internal and external objectives related to quality.

In this context, the following minimum requirements apply:

- Establishment of internal and external rates of nonconformance expressed in PPM
- ThyssenKrupp and the supplier will agree upon quality objectives for the products supplied. The aim will be to achieve zero defects in the whole production chain.

The objectives include logistic, commercial, and quality requirements. If the established objectives are not met then a corrective action must be taken by the supplier.

4. Communication procedures / approval of new suppliers

4.1. Consultation/ quotation

The ThyssenKrupp Purchasing department is responsible for contacting/requesting price quotations along with relevant documents and information from the supplier.

4.2. Requirements and clarifications of documents from TKCUS

Certified Suppliers of raw materials or components as per paragraph 3.4 will receive relevant data and information (drawings, chemical compounds of materials, annual volume, etc.) in order to prepare the offers. If any data and/or information need clarifications or adjustments, the supplier will be responsible for promptly requesting clarifications and/or adjustments from ThyssenKrupp.

All documents and information provided by ThyssenKrupp is and will continue to be ThyssenKrupp proprietary and must be treated by suppliers as confidential documents. Suppliers are not authorized to release such documents to third parties without previous written authorization by ThyssenKrupp.

4.3. Ensuring viability before the quotation preparation

Suppliers are responsible for ensuring the viability of supplying the product offered, including the technical viability (if the product is possible to be produced in serial conditions, according to specifications/standards to the process capability required) as well as the aspects involving packaging, logistics, quality, terms, costs, etc.

4.4. Issuing quotations

Once a quotation is received by ThyssenKrupp and after its submission for analysis against the quotations from other companies as for the best offer to be determined, ThyssenKrupp, at its



discretion, may schedule a visit to the prospective supplier's plant to see its production process. The assessment is performed by the ThyssenKrupp Quality and Purchasing areas.

5. Approval of new suppliers

5.1. Suppliers pre-defined by customers

Suppliers defined by ThyssenKrupp customers must meet all the requirements set forth by those customers and are exempted from previous assessment since they have already been approved by a ThyssenKrupp customer. However, these suppliers must always comply with all requirements established in this Manual.

5.2. Approval of new suppliers

Suppliers evaluated favorably by the ThyssenKrupp Quality and Purchasing departments are requested to provide product samples so that ThyssenKrupp may submit the final product for approval to the customer. Such request is submitted by the ThyssenKrupp Sales and Quality departments.

Purchase orders along with the relevant schedules (Delivery Schedule) are only issued after the supplier has been validated by ThyssenKrupp's customer. If the customer refuses to accept or validate a new source, the development will be immediately canceled.

5.2.1. Suppliers of raw materials and components

New suppliers must complete the "Supplier Assessment" in order to obtain an authorization to start up supply activities. In this case, either a new on-site assessment is carried out by ThyssenKrupp or the supplier is requested to complete a self-assessment questionnaire, depending on the complexity of the product to be developed.

The new supplier will be considered apt to start up the development of the process or product only after having received a favorable answer to its self-assessment questionnaire from the ThyssenKrupp Quality, Purchasing and Logistics areas.

The supplier must comply with all requirements of the quality system as per paragraph 3.4. Suppliers that fail to comply with the quality system requirements will be immediately audited by TKCC. The Audit results and any subsequent corrective action responses will be reviewed for approval by TKCC and shared with TKCC's customer when the supplier is a "directed buy" from TKCC's customer.

6. Requirements for logistics and packaging

6.1. Supplier logistic concept

ThyssenKrupp intends to develop partnership relationships with suppliers and does believe that the key for success of such relationship is based on open communications, continuous improvement, and teamwork. To achieve such a goal, we leave to our suppliers the task of creating and maintaining mutual benefits and a supportive environment where both the supplier and the customer are able to succeed.



6.2. Prompt response to problems

ThyssenKrupp requires from its partners-suppliers a list of contacts including at least the name and phone number of the employee(s) with the experience and with the authority to deal with matters relative to the ThyssenKrupp supply chain and that may be located at any time.

6.3. Material delivery schedules

6.3.1. Electronic Data Interchange - EDI

ThyssenKrupp follows the recommended business practices for the electronic data interchange (EDI), and has a goal that the suppliers receive the material delivery schedules using this system. Therefore, ThyssenKrupp recommends that suppliers construct their systems to achieve this common objective.

6.3.2. Planning/Purchasing rules and procedures

- ThyssenKrupp will make its material delivery schedules available on a weekly or bi-weekly basis (established with each supplier), and provide a planning horizon of 90 days in advance. All schedules, adjustments and forecasts will be sent according to the material agreement. Suppliers are responsible for notifying the ThyssenKrupp material planner of any problem including the failure to receive the material delivery schedule on the dates agreed.
- Increase or decrease of the quantities of deliverable items as per the schedules/orders must first be mutually agreed upon by ThyssenKrupp and the supplier.
- Lot/batch size/minimum delivery quantity: as established in the material agreement.
- Minimum Stock Level: Suppliers are recommended to maintain a minimum stock level; inventory levels must be mutually agreed by the parties in the material agreement. Suppliers are expected to maintain a minimum stock level available in their plants to meet any demand variations from ThyssenKrupp customers. Stock levels must be reviewed every 6 months and adjusted accordingly.
- Fluctuations: Demands from ThyssenKrupp customers may vary in short periods. Whenever the minimum stock level is improperly low to meet a sudden increase in the planned quantities, the suppliers must promptly contact the ThyssenKrupp material planner so that the proper action plan may be prepared.
- The Suppliers agree to deliver the orders with the right quantity at the scheduled dates. If the supplier needs any changes, it's mandatory to receive authorization from ThyssenKrupp material planning area prior to the scheduled due date. Any orders that don't match the planning requirements will not be received and the total involved costs will be supplier responsibility.
- Shipment against a scheduling agreement or purchase order constitutes acceptance of ThyssenKrupp Terms and Conditions as well as any pricing, terms and conditions listed on the scheduling agreement or purchase order.
- Order confirmation within 1 business day is required of all scheduling agreements and purchase orders.
- Goods or services provided without a scheduling agreement or purchase order will not be paid for.
- ThyssenKrupp payment terms are net 90 days.



6.3.3. Penalties

ThyssenKrupp will not be responsible for covering any additional costs associated with any suppliers' operational failures to supply according to the established schedules. ThyssenKrupp reserves the right to debit from the account of the relevant supplier any costs connected with such failure to supply as agreed.

6.3.4. Production capacity increase

As the business volume of ThyssenKrupp grows, reviews of the production capacity of suppliers will be required.

6.3.5. Advanced Shipping Notice - ASN

ThyssenKrupp follows the recommended business practices for the electronic data interchange (ASN EDIFACT/RND Standard), and has a goal that the suppliers send the electronic notification using this system. Therefore ThyssenKrupp recommends that suppliers update their systems to achieve this common objective.

The failure to send ASN or to send it incorrectly will have a negative impact on the supplier's performance indicators.

6.4. Packaging

6.4.1. General requirements

Products must be packed in such a way as to provide appropriate product protection against subsequent degradation while the product is still under the supplier's responsibility or is either being transported to ThyssenKrupp or already stored in the ThyssenKrupp premises.

The completion of the form "Package Data Sheet" is mandatory for the approval process and the completed form must be submitted before its implementation. Any change required after the approval will cause the form to be reviewed and a new approval must be awarded.

6.4.2. Package identification labels

Packages must be identified with labels so as to provide full traceability of ThyssenKrupp products from the time the product leaves the supplier's plant up to the delivery for manufacturing.

6.4.2.1. Specifications for labels

Documents containing the rules for the development, approval, and implementation of labels with Bar Code from ThyssenKrupp can be provided on request.

Note: It is the intention of ThyssenKrupp that all its suppliers operate with labels according to the applicable specifications.



6.5. Logistic system assessment

ThyssenKrupp recommends that all suppliers of raw material and components make sure that their new logistic system complies with the MMOG-LE (Master Global Material Management Operations Guidelines/Logistics Evaluation) system and establish action plans for items having direct impact on the operation and the ThyssenKrupp specific requirements.

ThyssenKrupp reserves the right to audit the supplier's logistic processes.

7. Development of products and processes (raw material and components)

Development of products must follow the requirements defined by AIAG in its manuals, updated versions:

- Advanced Product Quality Planning (APQP);
- Product Production Approval Process (PPAP);
- Failure Mode and Effect Analysis (FMEA) and all other AIAG manuals must be used as reference.

As for steel suppliers, the submission of PPAP is limited to the manufacturing process, material and plant, irrespective of the material grade involved.

As for new or modified items, the supplier must show the APQP schedule contemplating the actions needed for complying with the deadlines, supplying samples, and starting up the production. Supplier must submit new samples and relevant PPAP documents for the approval of both the involved product and the manufacturing process.

Suppliers are required to submit a PPAP level 3, except if otherwise required by the ThyssenKrupp Suppliers Quality Engineering area.

Documents such as the Production Part Submission Report, the Dimensional Report and the Material Test Report must be completed and sent to ThyssenKrupp whenever PPAP is requested. Other documents must follow the AIAG standards.

7.1. Supplier development in conjunction with the final customer

Any raw material or component developed in conjunction with the final customer of the product application must be shared with ThyssenKrupp no later than the prototype preparation phase. This directive aims at avoiding any project failures and quality problems. Above all, ThyssenKrupp reserves the right to express its opinion on the items that will carry the ThyssenKrupp image to the customer.

7.2. Capability requirements for special characteristics

Special characteristics are informed to suppliers by means of drawings and/or standards. Some special characteristics may be identified by the supplier himself during the development of the product.

These characteristics must be incorporated by the supplier in his control plans so that they may be assessed by statistical methods according to the requirements defined by AIAG.



Critical characteristics must obtain ppk values above 2.0 at the time of product approval and a cpk value at least above 1.67 during continued processes.

Major or significant characteristics must have ppk values above 1.67 at the time of product approval and the continuous capability of normal production process must be higher than 1.33.

If the measurement of these characteristics is impossible (e.g., destruction tests) the process parameters influencing the generation of the characteristic must be statistically determined. Such characteristics must be documented and controlled to stay within the established control limits. The capability of attributed characteristics may be demonstrated by the control of the process parameters.

In such cases, the attributive criteria of 0 ppm may also be applied. As for samples, 300/0 (to test 300 with 0 rejection) method or other rate as agreed with ThyssenKrupp is to be used.

As for processes with instable or non-capable conditions, a plan ensuring the compliance with the applicable specifications must be in place (e.g., 100% inspection).

7.3. Requirements for traceability and document control

Supplier must have in place a traceability and recording system that includes subcontractors and meets the needs of ThyssenKrupp. In case of damages while using final products, the supplier must be able to demonstrate by means of records that he has met all the predetermined specifications.

7.4. Data entering in the IMDS - International Data System

ThyssenKrupp, within its own production chain, requires that suppliers track the chemicals and quantitative data in an "mdsystem", including the suppliers of raw materials and components used in the manufacture of final products.

Data must be submitted for approval by ThyssenKrupp, irrespective of the plant that is using the product, along with the documentation of the product approval (PPAP).

Data may not be entered in public websites since it refers to confidential information.

7.5. Submission of samples

7.5.1. Prototypes

Prototypes must be duly identified with the "Sample Submission Label" along with the relevant dimensional and material reports at the time they are delivered.

7.5.2. Production Approval Procedure – PPAP samples

Samples submitted for PPAP approval must be forwarded with all relevant documents, reports and statistical analysis as defined in the AIAG manuals for the Automotive Industry.

ThyssenKrupp reserves the right to follow up and approve all standard 300-part lots in the supplier's plant. The quantity set for a certain lot/batch may be adjusted to the convenience of



the parties provided that such adjustment is settled by mutual agreement and upon written communication.

At the start-up of the production of a new component a differentiated control plan may be required for the three (3) first months of supply. If no problem occurs during this trial period, the control plan will return to normal standards.

All requirements of item 7, "Development of Product and Process", and 7.2, "Requirements of capability for special characteristics", must be met.

Samples must be forwarded, duly documented and identified with the "Sample Submission Label". The samples that fail to attain all stages of this procedure are rejected.

7.5.3. Readiness audit

After initial approval of PPAP samples and based on the complexity of the product and the process, as well as the risks involved, ThyssenKrupp reserves the right to carry out audits to verify the actual installed capacity for the first lots/batches of the serial production of an item.

Readiness Audit evaluates whether the outcomes of the manufacture process have met the quality requirements as established by the PPAP documentation approval and production capacity.

When such audits are not carried out by ThyssenKrupp itself, the responsibility to audit will be of the supplier. Evidences of such audits will be requested for any future audits.

7.5.4. Assessment of capability – Run at Rate

Assessments of the supplier's supply capacity (volume) may take place in the supplier's plant in way to identify bottlenecks of each manufacture process operations. ThyssenKrupp may require an action plan to be in place to ensure that the volumes agreed will be manufactured as agreed.

Assessments are performed according to the methodology as defined in the "Readiness Audit" file, it will be recommended by the results of problems or surveys of the process needs in the monthly meetings. The supplier is full responsible for performing the process run-at-rate analysis.

7.6. Audit of products and processes

The supplier must establish a regular system of audits of the product and process that include manufacturing, inspections and tests, identification, preservation, cleanliness, packaging, and shipping documents.

The results of such measurements must be documented and the effectiveness of the measurements must be demonstrated.



7.7. Inspection of lay-outs and functional tests

Suppliers of components must carry out lay-out inspections on an annual basis, which include inspections of the specifications set in the product drawings, either dimensional or metallurgical, or those referring to applicable tests. Records of these inspections must be made available to ThyssenKrupp whenever requested.

8. Process and product changes

Every process modification must be communicated to ThyssenKrupp to consider whether new samples must be submitted. The applicable requirements in item 7 must be met in case of process changes. The Supplier Quality area is responsible for informing of items that are applicable to each case.

Whenever products are changed the supplier must submit new samples and PPAP documents for approval of both the product and the manufacture process.

ThyssenKrupp requests that the communication of these processes be done as soon as possible since the changes may imply the submission of new samples to the final customer.

9. Approving deviations / rework

The supply of products with deviations from the specifications will only be accepted upon formal application sent to ThyssenKrupp using the "Deviation Approval Request" form. The document must be prepared and forwarded in advance to the Supplier Quality area and must show the following information: the quantity involved or the period of supply, the causes of the problem and actions to be taken to avoid recurrences.

The same procedure applies whenever reworks not mentioned in the approved process are to be performed, which may cause damage to the use of the product or may cause any lose to the manufacture process within ThyssenKrupp.

10. Assessment system for forgings, components and raw materials suppliers

This assessment aims at continuously improving ThyssenKrupp suppliers as it allows the generation of information that show the actual performance of suppliers in a way that orient improvement actions as much as recognize suppliers with better Technical/Business potential, thus helping the development of new businesses.

Suppliers are evaluated on the basis of Logistics and Quality requirements by the following rates:

Quality Performance

This rate expresses the Quality of the product supplied on the basis of the record of quality related to the products delivered and during the use thereof in the manufacturing process. This measure is strictly a measure of PPM from the Supplier.

Delivery Performance

This rate expresses the level of the supplier's compliance with delivery terms. ON TIME Deliveries should be the norm!



10.1. Supplier assessment system goals

The goals set by ThyssenKrupp are described as follows:

Assessment Rates	Targets
QP - Quality Performance	<200 PPM
DP - Delivery Performance	>99%

10.1.1. Quality Performance (QP)

This rate expresses the quality rate calculated on the basis of the records of product delivery dates. The quality of the lots/batches supplied may be assessed either at the time of the delivery inspection or during the use of the product in the manufacture process.

Suppliers with supply problems directly affecting the ThyssenKrupp production lines must provide an action plan to correct nonconformities immediately after formal communication of the problem.

Suppliers are rated on the basis of the QP result as per the following table:

Quality Performance	Classification
0 PPM	Preferred
1 to 200 PPM	Acceptable
201 to 499 PPM	Development
➤ 500 PPM	Inadequate

PPM = A score based on the number of parts with problems identified at the delivery inspection or during the manufacture process, with the amount expressed in ppm (part per million), which are attributed as a demerit to the supplier for the month.

Criteria for raw material:

Forging PPM	Machining PPM	Classification
100	0	Preferred
200	100	Acceptable
400	200	Development
>800	>400	Inadequate

Note: Maximum values per range. PPM calculated using a supply parts bases. The lower score between machining and forging will be given.



10.1.2. Delivery Performance (DP)

The measurement of the supplier's level of compliance with the delivery terms expresses his commitment to the terms agreed. ThyssenKrupp requires from suppliers an on-time delivery performance of 100%.

DP = Percentage of on time deliveries in a month (line items)

Suppliers with delivery problems directly affecting the ThyssenKrupp production must provide an action plan immediately after the formal communication of the non-conformities.

Once a month ThyssenKrupp reviews the on-time delivery indicators and requests corrective actions from suppliers, as needed.

Suppliers are ranked according to the table below:

Delivery Performance (DP)	Classification
99 to 100	Preferred
95 to 98.9	Acceptable
90 to 94.9	Development
below 90	Inadequate

10.2. Assessment of Supplier Performance

Every 3 months, direct material suppliers are informed of their respective performance by the "Supplier Performance Evaluation", which is forwarded by the ThyssenKrupp Supply area.

ThyssenKrupp reviews on a monthly basis each supplier's Quality and Delivery scores in the supplier performance evaluation meetings. Suppliers with the scores below "Development" can be asked to show ThyssenKrupp, the performance improvement actions to be used to cope with the problem(s). This assessment is based solely on the supplier Quality and Delivery performance.

When the supplier's score is below "Development" and a decreasing trend can be noted within a period of or above three (3) consecutive months, an audit will be carried out by the Quality area of TKCC or one of its sister companies. The supplier must show an official action plan for correcting any and all nonconformities.

In cases where supplier has been selected by a ThyssenKrupp customer, the customer will be notified of the inappropriately low performance of the supplier and the need for the development of a new source.

Audits for additional processes may be defined in the monthly supplier performance meetings as a result of the quality problems found.



11. Assessment system for suppliers

11.1. Quality Supply Documents

Suppliers must send a completed "Inspection Report" along with the product supplied. The report must show the specifications and the values found in all measured characteristics of the items. This report will be kept for retrieval at any time and as an instrument for comparing the measures found by the supplier and those found by ThyssenKrupp. If the report is not sent to ThyssenKrupp, this will be counted as a demerit to the supplier. All suppliers are required to keep "inspection reports" and all relevant quality data for 7 years.

12. Supply problems

Actions will be required to be taken by the supplier whenever products fail to comply with the ThyssenKrupp specifications.

When a "Supplier Corrective Action Request" is opened, the supplier will be responsible for identifying the cause(s) of the nonconformity and officially communicate the corrective action to be taken to eliminate any possibility of recurrences.

Suppliers must provide a reply within twenty-four (24) hours whereby the analysis and containment actions used to limit the problem within the ThyssenKrupp site, the parts in transit, and the parts stored in the supplier's premises must be described.

Suppliers will have a period of five (5) working days to communicate to ThyssenKrupp, the corrective actions to be taken in order to avoid recurrences and the terms and responsible individuals for each action. The reply must be forwarded in the same format as the "Supplier Corrective Action Request" document so as to allow the reply content to be entered into the ThyssenKrupp SAP system.

After implementing the actions as defined in the "Supplier Corrective Action Request", suppliers must document material evidences (pictures, worksheets, meeting minutes, etc.) that show that the problem has been contained so that the action taken may be verified and the report closing analysis may be finished.

ThyssenKrupp reserves the right to carry out inspections on the supplier's site if judged necessary.

12.1. Containment plan

Should any problem occur ThyssenKrupp reserves the right to apply the Level 1 Controlled Shipment procedures (CS1: Pro-active Containment) to be performed by the supplier; Level 2 (CS2: Reactive Containment) to be performed within ThyssenKrupp premises by outsourced specialized companies, and any release of products will be ThyssenKrupp responsibility.

Any costs inherent to containment operations will be at the expense of the supplier so as to ensure the conformity of the delivered components.

Suppliers are officially informed on the criteria for the application of the procedures as well as the duration of them.



If the CS1 and CS2 containment actions reveal an inability to ensure conformity of the delivered products with ThyssenKrupp specifications, the supplier will not be considered for new business with ThyssenKrupp until an effective action plan is developed and put in place and the non conformities are definitively resolved.

Exhausting all possibilities, if the supplier demonstrates no ability to effectively resolve the reported non conformity, it will be disqualified for supplying the product or service.

Containment actions within the customer's site or warehouse may be conducted by third parties without previous evaluation when the third party has been indicated by the customer or its qualifications can be demonstrated by the results of similar services. In these cases a ThyssenKrupp representative will be designated to coordinate the involved work.

12.2. Cost recovery

The costs involved in any rework, selections and all other costs associated with noncompliant materials will be fully charged to the supplier by ThyssenKrupp. The costs will include full compensation for materials as well as any internal costs associated.

13. Support documents

Suppliers are required to use the documents listed below as a reference to implement the Quality System:

- Quality System Requirements as per ISO TS 16949: 2002 and/or ISO 9001: 2000
- ISO IEC for Suppliers of Measurement Equipment Gauging Services
- Control Plan and Advanced Product Quality Planning Manual (APQP/ AIAG)
- Production Part Approval Process (PPAP/AIAG)
- Measurement System Analysis Manual (MSA/AIAG)
- Statistical Process Control Manual (SPC/AIAG)
- Failure Mode and Effect Analysis Manual (FMEA/AIAG)
- CQI-9 - Heat Treat System Assessment
- CQI-12 - Coating System Assessment
- MMOG/LE - Master Global Materials Management Operations Guidelines/Logistics Evaluation