1. PURPOSE

The purpose of this quality specification is to communicate 3D System's supplier quality requirements and expectations to suppliers. The intent of 3D Systems (3DS) is to partner with suppliers who are able to provide parts, material, processes and services consistently to specification, at a competitive price, and in accordance with a defined delivery schedule.

2. SCOPE

The contents of this specification apply to 3D Systems suppliers of production items and services currently supplying for equipment such as printers, scanners, etc. and the related materials to support such equipment.

3. REFERENCES & DOCUMENTS

Document Title	Reference
51000-P23	• Supplier Audit Procedure
58000-P07	• Supplier Performance Monitoring & Corrective Action
51000-P27	• Procedure, Design Process Assembly Review
21926-P02-02	• Procedure, Critical Characteristic Inspection
51000-P11	• Procedure, Production Part Approval Process
51000-P17	• PROCEDURE, SUPPLIER CORRECTIVE ACTION REQUEST (SCAR)
58000-P03	• Procedure, Supplier Scorecard

4. DEFINITIONS

Term	Definition
Approved Supplier List	• List of suppliers housed in 3D Systems' ERP & MRP systems, which are approved to provide production parts to 3D Systems for use on finished goods.
DPAR	• Design Process Assembly Review
CCI	• Critical Characteristic Inspection
PPAP	• Production Part Approval Process
RMA	• Return Material Authorization
SCAR	• Supplier Corrective Action Request
FIFO	• First In First Out

5. QUALITY MANAGEMENT SYSTEMS REQUIREMENTS

3D Systems encourage suppliers to develop quality management systems that provide for continuous improvements and emphasize defect prevention while reducing variation and waste. At this time, 3D Systems does not require suppliers to obtain ISO 9001 certification but requires suppliers to maintain an equivalent quality management system. This approach is to assure the quality of the products, materials and service. The supplier's quality management system must be implemented to target zero defect finished items. 3D Systems expects its suppliers to be passionate in striving for zero defect manufacturing and continuous improvement. Defect reduction, whether it is in manufacturing, administrative or development processes, are critical to waste reduction, high performance and responsiveness. To achieve zero defects, suppliers are expected to have metrics or key process indicators that measure the effectiveness of their business systems.

6. APPROVED SUPPLIERS

Production purchased items will only be purchased from suppliers on the 3D Systems Approved Supplier List. 3D Systems evaluates and selects suppliers based on their ability to supply purchased items in accordance with specified requirements, pricing and performance. Approved suppliers will be subject to Supplier Performance Monitoring & Corrective Action (58000-P07) to ensure on-time delivery of product(s).

Suppliers, who are not currently listed as an approved supplier, will not be permitted to supply production items to 3DS to support production schedules. To become an approved supplier the vendor may be vetted through the the 3DS Supplier Audit Procedure (51000-P23) or other means deemed acceptable to 3D Systems.

7. SUPPLIER ASSESSMENTS

Supplier Assessments are integral tool used by 3DS to qualify and maintain suppliers. The goal of supplier assessments are to assure that 3DS selects and uses suppliers that assist 3DS in achieving quality, delivery, responsiveness and cost objectives to allow for a win-win partnership with suppliers.

As necessary, 3D Systems will conduct Quality Management Systems audits at supplier's facilities. The goal of the audits is to understand supplier's capabilities, capacity, production technology, support infrastructure, quality systems and identify continuous improvements opportunities.

Potential suppliers may be audited as part of 3D System's sourcing qualification process. Suppliers may be sent a pre-assessment Survey before the audit date. This pre-assessment should be returned to 3D Systems prior to 3D Systems conducting the audit. Following the audit, 3D Systems will forward findings and requests for corrective action. Results of the audit will be used in the sourcing decision for potential suppliers. Current suppliers may be audited if there are ongoing quality problems. In addition, 3DS requires access to supplier's sub-suppliers as necessary to resolve issues associated with performance.

8. DESIGN PROCESS ASSEMBLY REVIEW

3D Systems uses the Design Process Assembly Review procedure (51000-P27) to proactively identify potential issues and prevent problems. This process was designed to align 3D Systems and suppliers on design documentation and supplied part to eliminate part issues due to no, poor, or miscommunicated part requirements or vendor capabilities. These reviews are expected to be open communication channels that assist both suppliers and 3DS in preparing for development and production launches.

Suppliers are recommended to establish cross-functional teams to support the requirements of Design Process Assembly Reviews. 3D Systems may conduct a Design Process Assembly Review at the supplier's facility (upon agreement with the supplier), 3DS site, or via teleconference calls. This review may include discussions of the supplier's documentation and process associated with the production of parts for 3D Systems. Such items may include but not limited to the following:

- Design Review / Tolerance & Capability Evaluations
- Process Review (intended process, equipment, capacity, risks, etc.)
- Gage Review (measurement equipment or approach to assure compliance to specifications)
- Assembly Review
- Packaging Review
- Miscellaneous Review
- Critical Characteristic Inspection (CCI) Review (21926-P02-02)

3D Systems will review gaging for inspection and qualification of the parts per the drawing as needed.

9. PRODUCTION PART APPROVAL PROCESS

Suppliers may be required to obtain approval for production items prior to full production shipments through the PPAP submission process (51000-P11). The purpose of the PPAP submission process is to evaluate the supplier's capability of producing parts to meet 3D Systems specification and assure that adequate controls and capability are in place to achieve zero defect production.

PPAP submittals shall use equipment, methods, test / inspection equipment, process flow, etc. under normal production conditions to demonstrate the effectiveness and capability of the production system used to manufacture the production items. The supplier will submit sample parts from this PPAP submission process production run for approval by 3D Systems.

PPAP requirements shall be determined by the 3D Systems Quality Assurance team and communicated to the supplier by 3D Systems Purchasing team. The supplier is to assure that PPAP samples are provided to 3DS Quality Assurance prior to normal production deliveries.

Upon approval of the PPAP documentation the executed warrant will be returned to the supplier and serve to allow normal production deliveries to 3D Systems.

10. DEVIATION

Whenever a production item:

1. does not conform to 3D Systems specifications and
2. lead time does not allow permanent corrective action to be implemented by the supplier prior to shipment

the supplier must request a deviation and 3D Systems must communicate back an approved deviation prior to shipping non-conforming material. Deviation request(s) must include the details of the non-conformance and number of parts affected. A supplier request for deviation does not guarantee 3D Systems approval. These steps apply to all production items. When a deviation is approved, the supplier is to provide 3D Systems corrective action within 15 days addressing the issues. If a permanent engineering change order is not issued from 3D Systems; then, the deviation is only valid for the quantity or time defined on the deviation.

If an item is in the PPAP process and a deviation is required, it is acceptable for the supplier to:

1. make the best decision possible, at the supplier's discretion and based on industry standards to keep the project moving forward and
2. record the final measurement as "failed" in the PPAP document and
3. submit parts and PPAP for further review to 3D Systems.

11. ENGINEERING CHANGE ORDER

Whenever a supplier wishes to make a permanent change to a part or drawing, a request for an Engineering Change Order (ECO) must be submitted to 3D Systems and approved prior to any changes. 3D Systems Engineers will review and decide if the ECO is warranted. If acceptable, 3D Systems Engineer will make the necessary changes to the drawing and provide communication concerning changes. A Design Part Assembly Review, PPAP, incoming inspection, or other check may be required to fully qualify the change on production parts.

12. SUPPLIER CORRECTIVE ACTION REQUEST

Upon discovery of a nonconforming production part 3D Systems may issue a Supplier Corrective Action Request per 51000-P17. Nonconforming production parts may be found during incoming inspection, random part audits, assembly, or field complaints. The supplier will be either directly or supporting role responsible to contain the nonconforming material. The supplier's role will be determined on a case by case basis and in communication with the supplier. Final decision for party responsible to containing the nonconfirming material is at the discretion of 3D Systems.

Return Material Authorization should be provided for nonconfirming material. It is expected the supplier use these parts to support root cause analysis when completing SCAR documentation. Upon inspection of returned parts, it is the sole responsibility of the supplier to provide inspection report(s) to 3D Systems Quality Assurance as evidence parts were in conformance to 3D Systems specifications. 3D Systems Quality Assurance will review the inspection report(s) and contact the supplier to discuss any discrepancies between 3D Systems and supplier inspection data. The supplier may not automatically send parts back to 3D Systems without authorization from 3D Systems.

3D Systems reserves the right to sort and rework nonconforming parts at the supplier's expense to avoid production line shutdown.

13. SUPPLIER DEVELOPMENT

3D Systems may provide assistance to suppliers having trouble meeting performance levels and specification. Assistance may be provided for:

- Resolution of critical issues
- Improvement activities
- Improve capability of potential supplier to gain approved supplier status
- Audit facility to evaluate any process weakness

Whenever 3D Systems applies resources to support the above activities, suppliers are expected to provide resources and support to achieve mutually agreeable improvement goals.

14. SUPPLIER MEETINGS

Poor performing suppliers will be required to actively participate in mandatory meetings or conference calls when their performance drops below acceptable levels or production item quality / delivery issues occur. Suppliers scorecards are distributed from 3D Systems to each supplier as formal communication of the rating and governed by 58000-P03 (Procedure, Supplier Scorecard).

15. BUSINESS HOLD

Suppliers may be placed on business hold due to financially unstable, severe quality, or delivery problems that are unresolved. The supplier will be notified upon being placed on business hold. When place on business hold, the supplier will not be permitted to quote new business.

16. COST RECOVERY

Suppliers, who provide nonconforming parts, may be charged any of the following costs.

- Sorting material
- Rework
- Customer charges
- Premium freight
- Production downtime
- Scrap
- Overtime
- Laboratory testing
- Travel
- Warranty cost due to a supplier issue

All costs will be recovered from the supplier and determined in advance by 3D Systems Purchasing. Upon notification of the intent to debit, suppliers will have 10 days to appeal the charges. If there is no response from the supplier, 3D Systems will considered this lack of response as acceptance of the charges.

17. DELIVERY REQUIREMENTS

Suppliers are required to a achieve 95% on-time delivery rate and subject to 58000-P07 (Supplier Performance Monitoring & Corrective Action) when on-time delivery falls below 95%. On time delivery is defined as 5 days early and 3 days late to mutually agreed promise date with 3D Systems Purchasing. If a supplier is unable to deliver product by the required due (promise) date, the supplier owns the responsibility to notify 3D Systems immediately of the commitment miss, the reason for the miss, and associated recovery plan. Suppliers must maintain a FIFO system to ensure the most current production material is being delivered to 3D Systems.

18. PRODUCT IDENTIFICATION

Each product package shipped to 3D Systems shall have adhered to the exterior of the box a white label with black text set to barcode format code 39 (with equivalent human readable text underneath) set at 12 point minimum font size containing the following information:

- Supplier Name and Address
- Part Number
- Part Revision
- Part Description
- Quantity
- Purchase Order Number
- Lot Number
- Manufacture Data

19. INCOMING INSPECTION & RANDOM AUDITS

3DS reserves the right to inspect, test, etc. production items. Zero defects are expected to be delivered to 3D Systems from the supplier regardless of whether incoming inspection is performed at a 3DS site or not. Production items are expected to be ready to use without 3DS incurring the additional cost of incoming inspection or random audit.

20. DOCUMENT HISTORY

Version	Version Date	Definition
B	7/20/2026	Revised to match current processes.