
MT Ferrule First Article Approval Purchase Plan

1. SCOPE

1.1 Content

In addition to Quality Specification 102-34, the Datacomm Business Unit will also follow this specification, which details the First Article Approval procedure for MT ferrules.

1.2 Application

This specification applies to the Datacomm Business Unit, however does not conflict or supersede the corporate supplier specifications.

1.3 Purpose

This specification is intended to provide a detailed plan for approving MT ferrules within the Datacomm business unit.

2. APPLICABLE DOCUMENTS

The following documents constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

2.1 Documents

- A. 102-34: Procedure for First Article Inspection and Qualification of Parts
- B. 102-28: Checking Customer Control Drawings and Specifications
- C. TEC-138-702: Supplier Requirements for Product Environmental Compliance

2.2 Industry Standards

- A. IEC 61754-5 Fibre optic connector interfaces – Part 5: Type MT connector family
- B. Telcordia GR-1435 Generic Requirements for Multi-Fiber Optical Connectors
- C. UL 94 Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances Testing
- D. ASTM G21-09 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

3. RESPONSIBILITY

The Purchasing representative shall be responsible for obtaining necessary documentation and samples. The Product Engineer shall be responsible for reviewing the documentation and testing the samples.

4. PROCEDURES

4.1 Purchasing to request electronic files from supplier.

- A. Request production drawings
- B. Request product specifications
 - 1. Quality Control Plan including incoming inspection plan of raw material
 - 2. Process Flow Charts including procedures performed on material
 - Pre-processing of raw material (cleaning, sintering, use of regrind, etc)
 - Any additional chemicals or substances added to the material during the molding process (mold release, additives, fillers, mold coatings, etc)
 - Post-processing of molded part (flash removal, cleaning, etc)
 - 3. Request Inspection Plan of finished part
- C. Request Material Requirements
 - 1. Raw material data sheet
 - 2. Filler material information
 - Filler material type
 - Filler material percent of total weight
 - Maximum particle size
- D. Request test reports
 - 1. Compliance to IEC 61754-5
 - 2. Compliance to GR-1435 controlled and/or uncontrolled environment
 - 3. Engineering evaluation or unofficial product validation testing
 - 4. Reliability testing
 - 5. Compliance to RoHS
 - 6. Compliance to UL 94 – rating of V0
 - 7. Compliance to ASTM G21-09
- E. Request supplier's list of customers currently purchasing ferrules
- F. Request recommended processing procedures
 - 1. Recommended termination procedure
 - 2. Recommended polishing procedure
 - 3. Recommended tooling, material, consumables, etc
- G. Request specific dimensions and histograms for at least 100 pieces
 - 1. Request following data for products produced within the past 1 month
 - Inspection data for guide pin hole diameter
 - Inspection data for fiber hole diameter
 - Inspection data for shoulder to endface length, see Figure 1 below
 - Inspection data for straightness of fiber holes
 - Inspection data for true position of fiber holes to guide pin holes
 - Inspection data for fiber endface surface roughness

NOTE

Product Engineering to submit repeat request for data 6 months after initial request

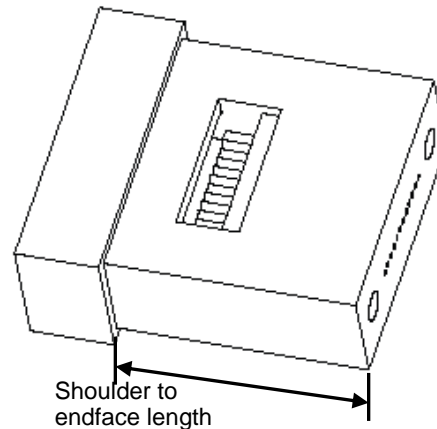


Figure 1. MT Ferrule

- H. Request first article inspection data and/or capability study data
 - I. Request cross referenced part numbers between TE Connectivity and proposed supplier
 - J. Request 100 piece sample for Design Verification Testing by Product Engineering
- 4.2 Purchasing to request production location audit
- 4.3 Purchasing to review supplier's list of customers currently purchasing ferrules
- 4.4 Product Engineering to review documentation and test samples
- A. Organize all documents received into an electronic directory. Notify supplier of missing information.
 - B. Review production drawings
 - C. Complete Drawing Compliance Report for Supplier's Drawings and Specifications in accordance with Quality Specification 102-28. Notify supplier of non-conformances and request corrections prior to approval.
 - D. Review product specifications from suppliers
 - E. Review material data sheets
 - F. Review test reports
 - G. Review recommended processing procedures
 - H. Review all inspection data
 - I. Visually and dimensionally inspect samples per TE Connectivity drawings
 - J. Review RoHS report for compliance to Product Environmental Compliance specification TEC-138-702
 - K. Submit an Engineering Sample Request for connector subassemblies and cable assemblies to production
 - L. Conduct insertion loss and return loss testing for compliance to product requirements
 - M. If all samples meet TE Connectivity drawings, have no issues during the assembly process, meet insertion loss and return loss requirements, and test report results are acceptable, proceed with First Article Inspection and Qualification in accordance with 102-34. If not, sample is rejected.