

## QUALITY ASSURANCE REQUIREMENTS LIST (QARL)

### MANDATORY REQUIREMENTS (ALL ORDERS)

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- 1) INSPECTION AND TEST NORTH WIND (BUYER) AND ITS CUSTOMER MAY INSPECT AND/OR TEST MATERIALS, WORK IN PROGRESS, AND COMPLETED SUPPLIES AT ALL REASONABLE TIMES AND PLACES DURING PERFORMANCE OF THE WORK AND PRIOR TO SHIPMENT. REJECTED SUPPLIES SHALL BE CORRECTED OR REPLACED. REJECTED SERVICES SHALL BE RE-PERFORMED IN AN ACCEPTABLE MANNER. IF INSPECTION AND TEST ARE MADE ON SELLER'S PREMISES, SELLER SHALL, WITHOUT ADDITIONAL CHARGE, PROVIDE REASONABLE FACILITIES AND ASSISTANCE FOR THE SAFETY AND CONVENIENCE OF THE INSPECTORS PERFORMING THESE DUTIES. INSPECTIONS AND TESTS SHALL BE PERFORMED IN SUCH A MANNER AS NOT TO UNDULY DELAY WORK IN PROGRESS. UNLESS OTHERWISE AGREED IN WRITING, ALL SUPPLIES FURNISHED UNDER THIS PURCHASE ORDER ARE SUBJECT TO BUYER'S INSPECTION AND ACCEPTANCE OR REJECTION AT DESTINATION, NOTWITHSTANDING ANY PREVIOUS BUYER OR ITS CUSTOMER'S SOURCE INSPECTION OR TEST. INSPECTION/TEST AT SOURCE OR AT DESTINATION SHALL NOT RELIEVE SELLER OF ITS RESPONSIBILITY TO FURNISH THE SUPPLIES/SERVICES IN STRICT CONFORMANCE WITH THE PURCHASE ORDER REQUIREMENTS. SELLER SHALL MAINTAIN AN INSPECTION AND QUALITY CONTROL SYSTEM ACCEPTABLE TO BUYER AND ITS CUSTOMER.
- 2) QUALITY ASSURANCE RECORDS AND RETENTION REQUIREMENTS SUPPLIER SHALL MAINTAIN QUALITY ASSURANCE RELATED RECORDS AND RETAIN THEM FOR A PERIOD OF NOT LESS THAN TEN (10) YEARS.
- 3) SUBMIT ALL NON-CONFORMANCES TO NORTH WIND FOR DISPOSITION USING QAF-100 OR EQUIVALENT. EVIDENCE OF CORRECTIVE ACTION SHALL BE PROVIDED. NONCONFORMING PARTS MAY NOT SHIP UNTIL NONCONFORMANCE HAS BEEN RESOLVED BY NORTH WIND ENGINEERING AND QUALITY.
- 4) NOTICE OF ESCAPE IF A NONCONFORMANCE IS DETERMINED TO EXIST OR IS SUSPECTED TO EXIST ON GOODS AND/OR SERVICES PREVIOUSLY PROVIDED TO NORTH WIND UNDER THESE TERMS & CONDITIONS, SELLER SHALL PROVIDE WRITTEN POST DELIVERY NOTIFICATION LETTER OR LETTER OF DISCLOSURE [NOTIFICATION OF ESCAPEMENT (NOE)] TO NORTH WIND'S AUTHORIZED PROCUREMENT REPRESENTATIVE. SELLER SHALL PROVIDE THE LETTER AND ALL REQUIRED NOE INFORMATION (SEE BELOW) WITHIN THREE (3) BUSINESS DAYS OF WHEN NONCONFORMANCE WAS DETERMINED. HOWEVER, IF THE NONCONFORMANCE AFFECTS SAFETY OF FLIGHT OR IS MISSION CRITICAL, SELLER SHALL IMMEDIATELY PROVIDE THE LETTER AND ALL AVAILABLE INFORMATION.  
AT MINIMUM, SELLER SHALL INCLUDE THE FOLLOWING NOE INFORMATION:
  - NORTH WIND'S CONTRACT NUMBER AND LINE-ITEM NUMBER
  - QUANTITY
  - SPECIFIC DESCRIPTION OF NONCONFORMANCE (I.E., "SHOULD BE" AND "IS" CONDITION) WITH REFERENCE TO APPLICABLE ENGINEERING DOCUMENTATION
  - STATEMENT DECLARING WHETHER THE NONCONFORMANCE WAS DETERMINED TO EXIST OR SUSPECTED TO EXIST
  - PRELIMINARY ROOT CAUSE AND ROOT CAUSE CORRECTIVE ACTION
  - NAME OF THE SELLER'S QUALITY PERSONNEL INVOLVED IN THE COLLECTION AND REPORTING OF THE NOE INFORMATION.
- 5) FINAL ACCEPTANCE WILL BE PERFORMED BY NORTH WIND QUALITY ASSURANCE UPON RECEIPT AT OUR FACILITY.
- 6) COUNTERFEIT MATERIAL CONTROL PLAN SUPPLIER MUST SOURCE AUTHENTIC PARTS AND MATERIALS TO PREVENT THE INCLUSION OF INADEQUATE PARTS IN DELIVERABLE PRODUCT. MATERIALS AND PARTS SHALL BE PROCURED FROM ORIGINAL MANUFACTURERS, RECOGNIZED DISTRIBUTORS, OR AUTHORIZED AFTERMARKET MANUFACTURERS. IN THE EVENT THAT SUSPECTED COUNTERFEIT PARTS HAVE MADE THEIR WAY INTO THE PRODUCT, THE SUPPLIER SHALL TAKE ACTION APPROPRIATE TO THE EFFECTS OR POTENTIAL EFFECTS OF THE NONCONFORMITY. THE SUPPLIER SHALL IMMEDIATELY NOTIFY NORTH WIND AND SUSPEND DELIVERY UNTIL THE ISSUE IS RESOLVED AND ACCEPTED BY NORTH WIND ENGINEERING AND QUALITY.
- 7) COMMITMENT TO QUALITY THE SELLER IS SOLELY RESPONSIBLE FOR THE QUALITY OF THEIR PRODUCTS, INCLUDING ANY FEATURES OR PROCESSES CONTRACTED TO A SUB-TIER SUPPLIER. THE SELLER SHALL ENSURE THE SUB-TIER MEETS ALL OF THE REQUIREMENTS, AS DEFINED IN THE PURCHASE ORDER, AND SHALL FLOW DOWN THE REQUIREMENTS OF THE PO AND ANY OTHER APPLICABLE SPECIFICATIONS WHEN SUBCONTRACTING WORK. THE SELLER SHALL ENSURE THAT ALL INDIVIDUALS PARTICIPATING IN PRODUCT REALIZATION UNDERSTAND THEIR IMPORTANCE AND ROLE IN THEIR CONTRIBUTION TO PRODUCT AND SERVICE CONFORMITY, THEIR CONTRIBUTION TO PRODUCT SAFETY, AND THE IMPORTANCE OF ETHICAL BEHAVIOR.
- 8) SUPPLIER PERFORMANCE MONITORING ALL SUPPLIERS ARE SUBJECT TO NORTH WIND'S SUPPLIER EVALUATION PROGRAM. SUPPLIERS ARE MONITORED MONTHLY FOR ON-TIME DELIVERY AND QUALITY PERFORMANCE. FURTHER DETAILS CAN BE REQUESTED FROM THE BUYER.

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### MATERIAL REQUIREMENTS [SUPPLIER]

- 1000 MATERIAL TEST REPORTS ARE REQUIRED IN ACCORDANCE WITH THE REFERENCED SPECIFICATIONS. ORIGINAL MILL TEST REPORTS DOCUMENTING ACTUAL CHEMICAL ANALYSIS, MECHANICAL PROPERTIES AND HEAT/LOT NUMBER ARE REQUIRED WITH SHIPMENT. HEAT/LOT NUMBER, MATERIAL TYPE AND TEMPER SHALL BE PHYSICALLY MARKED ON ALL MATERIALS. NO MATERIAL SUBSTITUTIONS ARE PERMITTED WITHOUT THE EXPRESS WRITTEN CONSENT OF THE NORTH WIND BUYER.
- 1001 CERTIFICATE OF CONFORMANCE IS REQUIRED.
- 1002 PROVIDE A TEST COUPON FROM PURCHASED HEAT/LOT FOR MECHANICAL TESTING TO BE PERFORMED BY NORTH WIND. COUPON MINIMUM SIZE IS 1" X 1" X ¼".
- 1003 LIMITED LIFE PRODUCTS SHALL HAVE SHELF LIFE DATA PRINTED ON CONTAINER AND/OR THE CERTIFICATION.
- 1004 NO MIXED HEAT/LOT PER LINE ITEM.
- 1005 RAW MATERIAL PURCHASE ORDERS MUST BE ISSUED TO ISO REGISTERED SUPPLIERS. COPIES OF THE REGISTRATION CERTIFICATES MUST BE SUBMITTED TO NORTH WIND WITH FINAL HARDWARE DELIVERY.

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### OFF THE SHELF HARDWARE REQUIREMENTS [SUPPLIER]

- 2000 SUPPLIER CERTIFICATE OF COMPLIANCE REQUIRED.
- 2001 MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.
- 2002 LOT TRACEABILITY REQUIRED.
- 2003 MANUFACTURER'S TEST REPORTS REQUIRED.
- 2004 FASTENERS MUST BE OF U.S. MANUFACTURE.

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### SPECIAL PROCESSING [SUBCONTRACTOR]

- 3000 CERTIFICATE OF COMPLIANCE (COC) REQUIRED. COC MUST INDICATE COMPLIANCE FOR EACH INDIVIDUAL REQUIREMENT AND SPECIFICATION AS STATED ON THE DRAWING / PURCHASE ORDER. ALL APPLICABLE DOCUMENTATION MUST BE SUBMITTED WITH DELIVERY
- 3001 HEAT TREAT CERTIFICATE OF COMPLIANCE (COC) REQUIRED. RECORD THE POST HEAT TREAT MATERIAL HARDNESS VALUE ON THE COC.
- 3002 HEAT TREAT CERTIFICATE OF COMPLIANCE (COC) AND FURNACE CHARTS REQUIRED. RECORD THE POST HEAT TREAT MATERIAL HARDNESS VALUE ON THE COC. .
- 3003 HEAT TREAT CERTIFICATE OF COMPLIANCE (COC) REQUIRED. RECORD THE POST HEAT TREAT MATERIAL HARDNESS VALUE ON THE COC. HARDNESS VALUE MUST BE WITHIN THE SPECIFIED RANGE. FURNACE CHARTS THAT IDENTIFY THE HEAT TREATER, TIME OF HEAT TREATMENT, THE HEAT TREAT LOT NUMBER, FURNACE IDENTIFICATION, OPERATION, DATE, QUANTITY, HEAT NUMBERS, AND ITEM DESCRIPTION. IN ADDITION TO THE AUTOGRAPHIC RECORDER RATE (I.E. INCHES/HOUR) SHALL BE ANNOTATED AND THE MATERIAL SHALL BE UNIQUELY RE-IDENTIFIED TO PROVIDE TRACEABILITY TO THE FINAL HEAT TREATMENT AND MECHANICAL PROPERTIES CERTIFIED FOR THE HEAT TREATED MATERIAL.
- 3004 PRIOR TO PERFORMANCE OF WELDING, SUBMIT WELDING PROCEDURE AND WELDER PERFORMANCE QUALIFICATION IN ACCORDANCE WITH REFERENCED SPECIFICATION DOCUMENTS.
- 3005 SUBMIT WELDING PROCEDURE AND WELDER PERFORMANCE QUALIFICATION IN ACCORDANCE WITH REFERENCED SPECIFICATION DOCUMENTS WITH FINAL SHIPMENT.

## QUALITY ASSURANCE REQUIREMENTS LIST (QARL)

- 3006** TYPICAL CHEMICAL CERTIFICATION IS REQUIRED FOR ALL WELD FILLER MATERIAL. SUBMIT DOCUMENTATION WITH FINAL SHIPMENT.
- 3007** ACTUAL CHEMICAL AND PHYSICAL CERTIFICATION IS REQUIRED FOR ALL WELD FILLER MATERIAL. SUBMIT DOCUMENTATION WITH FINAL SHIPMENT.
- 3008** PRIOR TO PERFORMANCE OF SPECIAL PROCESS, SUBMIT SPECIAL PROCESS PROCEDURE TO NORTH WIND. PROCEDURE MUST BE IN ACCORDANCE WITH REFERENCED DRAWING/PO SPECIFICATION.
- 3009** SPECIAL PROCESS PROCEDURE MUST BE IN ACCORDANCE WITH REFERENCED DRAWING/PO SPECIFICATION. SUBMIT TEST INSPECTION REPORTS WITH FINAL SHIPMENT.
- 3010** PERFORM NON DESTRUCTIVE TESTING USING QUALIFIED PERSONNEL PER REFERENCED SPECIFICATIONS, TEST REPORT(S) INCLUDING MAPPING OF ALL RELEVANT INDICATIONS IS REQUIRED WITH SHIPMENT.
- 3011** NDE PERSONNEL QUALIFICATION DOCUMENTS REQUIRED WITH SHIPMENT.
- 3012** OVEN BRAZE CERTIFICATE OF COMPLIANCE (COC) AND FURNACE CHARTS REQUIRED. RECORD THE POST OVEN BRAZE MATERIAL HARDNESS VALUE ON THE COC. . TYPICAL CHEMICAL CERTIFICATION IS REQUIRED FOR ALL BRAZE FILLER MATERIAL. SUBMIT DOCUMENTATION WITH FINAL SHIPMENT.
- 3013** SHOULD THE SELLER USE SUBCONTRACTORS TO EXECUTE THE TERMS OF THE PURCHASE ORDER, THOSE SUBCONTRACTORS MUST BE APPROVED BY THE BUYER.

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### INSPECTION REQUIREMENTS [SUBCONTRACTOR]

- 4000** PRIOR TO SHIPMENT, FINAL ACCEPTANCE WILL BE PERFORMED BY NORTH WIND QUALITY ASSURANCE AND / OR THE END CUSTOMER AT THE SUPPLIER'S FACILITY.
- 4001** 100% INSPECTION AND DOCUMENTATION REPORT IS REQUIRED TO BE SUBMITTED BY THE SUPPLIER. THE REPORT MUST SHOW THE PART / MATERIAL IS CONFORMING TO THE PO REQUIREMENTS AND MUST CONTAIN ACTUAL MEASUREMENTS VERIFYING ALL DRAWING, SOW, SPECIFICATION REQUIREMENTS HAVE BEEN MET. DOCUMENTATION OF NON-CONFORMANCES IS REQUIRED ON INSPECTION REPORTS. INSPECTION REPORTS ARE REQUIRED UPON DELIVERY. INSPECTION TOOLING USED MUST BE IDENTIFIED ON THE INSPECTION REPORT AND CALIBRATION RECORDS MUST BE TRACEABLE TO THE NIST (NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY) STANDARD AND ISO17025.
- 4002** DIMENSIONAL INSPECTION IS REQUIRED TO BE PERFORMED BY THE SUPPLIER. DOCUMENTATION OF CRITICAL DIMENSIONS, KEY CHARACTERISTICS, CRITICAL ITEMS, AND/OR NON-CONFORMANCES ARE REQUIRED ON INSPECTION REPORTS. INSPECTION REPORTS ARE REQUIRED TO ACCOMPANY THE PART UPON DELIVERY. INSPECTION TOOLING USED MUST BE IDENTIFIED ON THE INSPECTION REPORT AND CALIBRATION RECORDS MUST BE TRACEABLE TO THE NIST (NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY) STANDARD AND ISO17025.
- 4003** FIRST ARTICLE INSPECTION IN COMPLIANCE WITH AS9102 IS REQUIRED TO BE PERFORMED BY THE SUPPLIER. INSPECTION REPORTS ARE REQUIRED UPON DELIVERY. INSPECTION REPORTS ARE REQUIRED UPON DELIVERY. INSPECTION TOOLING USED MUST BE IDENTIFIED ON THE INSPECTION REPORT AND CALIBRATION RECORDS MUST BE TRACEABLE TO THE NIST (NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY) STANDARD AND ISO17025.
- 4004** GOVERNMENT SOURCE INSPECTION IS REQUIRED. ALL WORK ON THIS ORDER IS SUBJECT TO INSPECTION AND TEST BY THE GOVERNMENT AT ANY TIME AND PLACE. THE SUPPLIER WILL NOTIFY NORTH WIND FORTY-EIGHT (48) HOURS IN ADVANCE OF THE TIME ARTICLES OR MATERIALS ARE READY FOR INSPECTION OR TEST.
- 4005** CERTIFICATE OF CONFORMANCE (COC) IS REQUIRED. COC MUST INCLUDE A STATEMENT INDICATING THAT ALL MATERIAL CERTIFICATIONS, SPECIAL PROCESS CERTIFICATIONS, AND INSPECTION DOCUMENTATION AS REQUIRED BY THE DRAWINGS, SPECIFICATIONS, AND/OR THE STATEMENT OF WORK WILL BE KEPT ON FILE AND AVAILABLE FOR REVIEW. ANY DEVIATION FROM THE P.O. TECHNICAL REQUIREMENTS MUST BE NOTED ON THE COC.

## **QUALITY ASSURANCE REQUIREMENTS LIST (QARL)**

- 4006** PRIOR TO PERFORMANCE OF WORK, THE SUPPLIER MUST SUBMIT A QUALITY ASSURANCE PLAN TO NORTH WIND FOR APPROVAL.
- 4007** SELLER SHALL CREATE A STATISTICAL PROCESS CONTROL PLAN, STATING THE DETAILS OF THE TECHNIQUES TO BE USED ON BOTH DIMENSIONS AND PROCESSES FOR THE HARDWARE DELIVERED UNDER THIS PO. THE PLAN MUST BE SUBMITTED TO THE BUYER FOR APPROVAL.
- 4008** BUYER SHALL PROVIDE A STATISTICAL PROCESS CONTROL PLAN, STATING THE DETAILS OF THE TECHNIQUES TO BE USED ON BOTH DIMENSIONS AND PROCESSES FOR THE HARDWARE DELIVERED UNDER THIS PO.
- 4009** ALL TRACEABILITY MARKINGS ARE REQUIRED TO BE MAINTAINED THROUGHOUT THE MANUFACTURING / FABRICATION PROCESS.
- 4010** SELLER SHALL FURNISH BUYER THE RECORDS OF INSPECTION/TEST FOR SUPPLIES AND SERVICES FURNISHED HEREUNDER AT ANY TIME DURING THE WARRANTY PERIOD UPON BUYER'S REQUEST.
- 4011** UPON COMPLETION OF PURCHASE ORDER REQUIREMENTS, SUBCONTRACTORS SHALL TRANSMIT ALL REQUIRED DOCUMENTATION TO [INSPECTION@NORTH-WIND.COM](mailto:INSPECTION@NORTH-WIND.COM) FOR REVIEW. A NORTH WIND REPRESENTATIVE WILL CONDUCT A THOROUGH REVIEW OF ALL DOCUMENTATION AND ALERT THE SUPPLIER IF THERE ARE ANY MISSING PIECES OF INFORMATION. ONCE IT HAS BEEN DETERMINED THAT THE CONTRACTUAL REQUIREMENTS HAVE BEEN MET, NORTH WIND WILL GRANT THE SUPPLIER WITH AN AUTHORIZATION TO SHIP NOTIFICATION, WHICH WILL THEN ALLOW THE PRODUCT TO BE SHIPPED IN ACCORDANCE WITH THE PURCHASE ORDER.

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### **GENERAL**

- 7000** THIS ORDER CONTAINS CRITICAL SPACE FLIGHT HARDWARE! HANDLE WITH EXTREME CARE!
- 7001** SUPPLIER MUST HAVE A DOCUMENTED PROCESS WHICH ENSURES THAT THEY CAN TRANSLATE, RECEIVE, AND VALIDATE ALL AUTHORITY DATASETS WITHOUT CHANGE TO DATA INTEGRITY. ALL DERIVATIVE DATASETS MUST BE TRACEABLE TO THE AUTHORITY DATASET.
- 7002** ALL DESIGNS, TESTS, INSPECTION PLANS AND/OR VERIFICATIONS FOR FINAL ACCEPTANCE – INCLUDING CRITICAL DIMENSIONS AND/OR CHARACTERISTICS – MUST BE SUBMITTED FOR APPROVAL PRIOR TO USE
- 7003** NORTH WIND REQUIRES SUPPLIER TO MAINTAIN A FOD (FOREIGN OBJECT DAMAGE) PREVENTION PROCEDURE AND RESERVES THE RIGHT TO REVIEW AND ENFORCE IT AT ANY TIME.