



PROCEDURE

Number: QM-251	Purchase Order (QAP) Quality Assurance Provisions		
Department: Quality Assurance	Revision: 11	Publish Date: 2022-10-21	
Prepared by: Art Nickelo	Authorised by: General Manager		

A. All material supplied under this procurement is subject to final acceptance by CW-INDAL Quality Control Inspection.

QAP Clause #	Clause
1	<p><u>QUANTITATIVE TEST REPORTS OF RAW MATERIAL</u></p> <p>A certification with quantitative, test reports showing the degree of compliance with applicable specifications regarding physical property, test results, together with certification of chemical compositions, are required with each batch.</p> <p>The associated certification data shall be traceable from the Supplier to the original mill/manufacturer by heat or lot/batch number.</p> <p>The raw material must be marked or tagged with the heat/lot numbers in such a way, so it is visible as loaded on the truck.</p>
2	<p><u>CERTIFICATE OF COMPLIANCE (C of C)</u></p> <p>The supplier shall provide a Certificate of Compliance (C of C) with each shipment. The C of C shall be legible and traceable to the supplier's organization.</p> <p>The C of C shall include the following information:</p> <ul style="list-style-type: none">A. Supplier's name and addressB. Date of C of CC. CW-INDAL's purchase orderD. Part description and quantityE. CW-INDAL's part number and revision and applicable drawing/s, ECR/ECN, specifications etc. and their revision status (for COTS, Supplier part number is required and CW-INDAL part number & revision is optional if part not designed by CW-INDAL)F. Serial Number(s)/date code/lot number(s), where applicable. Serialized parts must have serial numbers mentioned in C of C.

	<p>G. CW-INDAL approved Subcontractor Deviation Request number, if applicable, should be mentioned on C of C and/or attached with data package.</p> <p>H. Statement that materials and/or services supplied conform to the applicable drawing and/or specifications listed in the Purchase Order. Inspection and test records are available on file and traceable to the item that such data covers.</p> <p>I. Signed by authorised person. Electronic signatures, Printed names, traceable stamps and system generated C of C's are acceptable.</p>
3	<p><u>SPECIAL PROCESSES</u></p> <p>The following special processes must satisfy the requirements of the applicable MIL, AMS, ASTM specifications or as required by purchase order. The Supplier's quality data package must include a Certificate of Compliance supplied by the special process subcontractor. The Type and Class of the process, if stated on the drawing, must be adhered to.</p> <p>A. Chemical Conversion coating</p> <p>B. Anodic coating (anodize)</p> <p>C. Cadmium plating</p> <p>D. Chrome Plating</p> <p>E. Zinc Plating or Hot-Dip Galvanizing</p> <p>F. Shot Peening</p> <p>G. Solid film Lubricant</p> <p>H. Passivation</p> <p>I. Copper Plating</p> <p>J. Black Oxide Coating</p> <p>K. Phosphate Coating</p> <p>L. Nickel plating</p>
4	<p><u>WELDING</u></p> <p>All welding is to be performed in accordance with the Canadian welding standard, CSA W59 for steel, and W59.2 for aluminium. Company and subcontractors performing welding shall be certified in accordance with CSA W47.1 for steel and W47.2 for aluminium. All welding procedures and welder qualification shall be monitored by the Canadian Welding Bureau CWB for compliance with the CSA standards. In addition, any Purchase Order specific certification requirements will be monitored by the CWB or a customer designated regulatory society.</p> <p>Important weld parameters shall be recorded on Weld Parameter Sheet</p>

(Form ITI-675) and filled & signed form to be provided to CW-INDAL along with product. Weld Parameter Sheet (Form ITI-675) can be downloaded from supplier resources page at

<https://www.cw-ems.com/indal/mississauga/default.aspx>

Welding specifications are summarized as follows:

- Carbon and stainless steel welding, and stress relieving are to be in accordance with the CSA W59 and W47.1 latest edition.
- Aluminium welding is to be in accordance with CSA W59.2 and W47.2 latest edition.

Note:

Supplier may use CSA W59 Standard where drawing requires MIL-STD-278

NON-DESTRUCTIVE TESTING

Non-destructive testing specified in the company's drawings, specifications/standards, or purchase orders, shall be performed in accordance with the latest edition of those specifications/standards. Test reports and radiographs (if applicable) shall be provided with technician's approval number.

Test application:

- A. Casting inspection
- B. Liquid Penetrant Examination
- C. Magnetic Particle Inspection
- D. Radiographic Examination
- E. Ultrasonic Examination
- F. Tensile testing
- G. Charpy V-notch test

Note:

Supplier may use CSA W59 Criteria for dynamically loaded structures where drawing requires MIL-STD-278 or NAVSEA S9074-AQ-GIB-010/248

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INSPECTION REPORTS

Note: Inspection reports shall include all dimensions, features and notes on the drawing along with a copy of bubble drawing correlating feature number on the report. Please contact buyer if you need clarification.

- A. The Supplier shall submit one inspection report with each shipment. The inspection report shall account for 100% of the drawing dimensions and notes. The inspection frequency shall be completed in accordance with ANSI/ASQC Z1.4 Normal at an AQL of 1% to account for all applicable drawing and purchase order requirements.
- A* The Supplier shall submit individual serialized inspection reports for each piece in the lot/shipment. The inspection report shall account for 100% of the drawing dimensions which may include GD&T features and other notes.
The inspection frequency shall be 100% of the lot and account for all applicable drawing and purchase order requirements.
- B. The Supplier shall submit all test results according to drawing and specification requirements. Testing shall be witnessed by Quality Assurance personnel and all test results are to be signed by them.
- C. For castings and forgings, the Supplier shall submit a first article inspection report in accordance with SAE AS9102 or equivalent to Indal Technologies Inc. for approval. The Supplier shall include in the first article data package authenticated, quantitative test reports showing the degree of compliance with the applicable material specifications (e.g. chemical composition, hardness) after forging or casting. Radiographic films, certification of penetrate and/or magnetic particle inspection shall also be included. Any radiographic inspection shall be performed by a laboratory certified to ASTM E1742. The Supplier shall include a copy of the laboratory certification with the quality data package. No production lots shall be shipped until the first article approval is received from the Indal Technologies Inc. Quality Assurance Department.
- D. The Supplier shall submit on CW-INDAL form ITI-319, or equivalent, a First Article Inspection (FAI) report in accordance with SAE AS9102, to Indal Technologies Inc. for approval. The FAI shall be performed for a new part representative of the first production run. This includes all details and sub-assemblies which constitute the end item ordered. The FAI record shall not be considered complete until all non-conformities are resolved, prototype parts, or parts built using methods different from that intended for the normal production process, shall not be considered as part of the first production run. No production lots shall be shipped until the first item approval is received from the CW-Indal Quality Assurance Department.

	<p>Partial or complete re-accomplishment of the FAI for affected characteristics is required for the following events:</p> <ol style="list-style-type: none"> 1. A change in the design affecting the form, fit or function of the part. 2. A change in manufacturing source(s), processes, Inspection method(s), location, tooling or materials with the potential of affecting fit, form or function. 3. When required as part of corrective action for a part number with repetitive rejection history (typically, a part with three repeated rejections or as required by customer). 4. A change in numerical control program or translation to another media. 5. A natural or man-made occurrence which may adversely affect the manufacturing process. 6. A lapse in production for two years, or as specified by customer. <p>The FAI requirements may be satisfied by addressing differences between current configuration and prior approval configurations.</p>
7	<p><u>SOURCE INSPECTION / TEST</u></p> <p>CW-INDAL reserves the right to source inspection and / test prior to shipment from the plant of the Subcontractor. The CW-INDAL Quality Assurance Department shall be notified three (3) working days in advance of the date that each item and / or assembly is ready for inspection and testing.</p>
8	<p>Deleted</p>
9	<p><u>SPECIAL PROCESS FOR HEAT TREATMENT</u></p> <p>The Subcontractor must submit certificate of compliance stating temperature, time, and hardness results obtained, if required.</p>
10	<p><u>MANUFACTURING, INSPECTION AND TEST PLAN</u></p> <p>Written Inspection and Test Plan shall be submitted to CW-INDAL Quality Assurance Department for approval prior to commencement of any work.</p>
11	<p><u>RAW MATERIAL CERTIFICATE OF CONFORMANCE</u></p> <p>The material certification shall include the source of origin, type, class and heat/lot number, if applicable, of the raw material.</p> <p>Where not possible to mark the raw material it will be tagged for identification.</p>
12	<p><u>STRESS RELIEVING OF WELDED ASSEMBLIES AND SPECIAL DRAWING NOTES</u></p> <p>A certificate specifying time and temperature per drawing and</p>

	specification shall be supplied.
13	<p><u>AGE SENSITIVE MATERIAL</u></p> <p>Age sensitive material shall be supplied with manufacture code and/or batch/lot number. The manufacturing date/cure date and expiry date is also required. At the time of receipt the material shall have at least 75% of the shelf life remaining, unless otherwise specified on the purchase order</p>
14	<p><u>PROCUREMENT OF STORES ON A QUALIFIED PRODUCT DATABASE (QPD) / QUALIFICATION DATASET (QDS), QUALIFIED PRODUCTS LIST (QPL) OR QUALIFIED MANUFACTURER'S LIST (QML)</u></p> <p>The product should be authorized by the qualifying activity for listing on the current, applicable QDS/QPL or QML and be identified with the Manufacturer's name (and/or cage code). The Supplier must maintain traceability back to manufacturer & be able to provide a C of C from the manufacturer upon request. Product from a manufacturer, which was authorized by the qualifying activity for listing on obsolete versions of the QPL or QML, is acceptable if it is identified with a date code & the supplier provides objective evidence that the manufacturer was indeed listed at the time the product was manufactured.</p>
15	<p><u>CORROSION PROTECTIVE TREATMENTS TO INDAL SPECIFICATIONS</u></p> <p>State the type and class on the Certificate of Compliance. A report with the process flow and coating thickness is required. The use of any special process other than that which is stated on the Purchase Order shall be vetted to CW-INDAL QA prior to the start of work</p>
16	<p><u>SPECIAL PROCESS PROVIDERS</u></p> <p>NADCAP certified suppliers shall be used for the following special processes:</p> <ul style="list-style-type: none"> A. Chemical Conversion coating B. Anodic coating (anodize) C. Cadmium plating D. Chrome Plating E. Zinc Plating or Hot-Dip Galvanizing F. Shot Peening G. Solid film Lubricant H. Passivation I. Copper Plating

	<p>J. Black Oxide Coating</p> <p>K. Phosphate Coating</p> <p>L. Nickel plating</p> <p>M. Heat Treatment</p> <p>N. Stress Relief</p>
17	<p><u>ELECTRO STATIC DISCHARGE SENSITIVE MATERIAL</u></p> <p>Electro Static Discharge Sensitive (ESDS) component and / or sub-assembly to be properly packed and marked as per the specification requirements.</p>
18	<p><u>PAINT, PETROLEUM PRODUCTS, CHEMICALS (except thinners), ELECTRICAL POTTING AND ENCAPSULATING COMPOUNDS</u></p> <p>They shall be accompanied with a Certificate of Compliance stating the Manufacturing Code Number and / or Batch Number and Manufacturing date. Shelf life for this material shall not exceed one third (1/3) of manufacturer's recommended shelf life at the time of delivery to CW-Indal.</p>
19	<p><u>ISO 9001:2015 OR EQUIVALENT</u></p> <p>The subcontractor will comply with the provisions of ISO 9001:2015. This requirement must be flowed down to any sub-tier suppliers used by the subcontractor.</p>
20	Cancelled – superseded by Clause 19
21	Cancelled – superseded by Clause 19
22	<p><u>GOVERNMENT QUALITY ASSURANCE REQUIREMENT</u></p> <p>Government Quality Assurance is a requirement of this order. Arrangements must be made promptly with the Quality Assurance Representative (QAR) who normally services your area or facility so that appropriate Government Quality Assurance can be accomplished prior to release authorization.</p>
23	<p><u>FULL TRACEABILITY TO THE SOURCE OF ORIGIN IS REQUIRED</u></p> <p>The Supplier must ensure that all items on this procurement are traceable to the source of origin by lot/batch number or date code. Source of origin traceability must be reflected on the release documentation. Records substantiating this traceability must be submitted to CW-INDAL or be retained on file and available for review by CW-INDAL.</p>

24	<p><u>ESD CONTROL PROGRAM REQUIRED</u></p> <p>The Supplier shall have an electrostatic discharge control program, in accordance with MIL-STD-1686, ANSI/ESD S20.20-1999 and handbook MIL-HDBK-263, or equivalent, for any activity that designs, tests, inspects, services, manufactures, processes, assembles, installs, packages labels or otherwise handles electronic parts susceptible to damage caused by static electricity.</p>
25	<p><u>CALIBRATION</u></p> <p>The Supplier's calibration system shall meet the requirements of ISO17025 or equivalent.</p> <p>The Supplier shall forward a calibration certificate with the shipment. The calibration certificate and test report, if applicable, shall meet the requirements of ISO17025 & be signed by the Supplier's authorized inspector.</p>
26	<p><u>COUNTERFEIT DETECTION & AVOIDANCE</u></p> <p>(a) The Supplier warrants that the goods delivered pursuant to this Purchase Order shall: (i) be and only contain new materials obtained directly from the Original Component Manufacturer (OCM) or the Original Equipment Manufacturer (OEM), (collectively, the Original Manufacturer (OM)) or an authorized OM reseller or distributor; (ii) not be or contain Counterfeit Items, as defined below; and (c) contain only authentic, unaltered OM labels and other markings.</p> <p>(b) Counterfeit Items include, but are not limited to, goods or separately-identifiable items or components of goods that: (i) are an illegal or unauthorized copy or substitute of an OM item; (ii) are not traceable to an OM sufficient to ensure authenticity in OM design and manufacture; (iii) do not contain proper external or internal materials or components required by the OM or are not constructed in accordance with OM design; (iv) have been re-worked, re-marked, re-labelled, repaired, refurbished, or otherwise modified from OM design but not disclosed as such or are represented as OM authentic or new; (v) have not passed successfully all OM required testing, verification, screening, and quality control processes; or (vi) an item with altered or disguised documentation, package labelling, or item marking intended to mislead a person into believing a non-OM item is genuine, or that an item is of better or different performance when it is not.</p> <p>(c) In the event Supplier becomes aware or suspects that it has furnished Counterfeit Parts, it shall immediately notify Buyer. When requested by Buyer, Supplier shall provide (if available) Authorized Supplier documentation that authenticates traceability of the parts to the applicable Authorized Supplier.</p>

(d) In the event that Goods delivered under this Order are, or include, Counterfeit Parts, the Supplier shall promptly investigate, analyze and report in writing to Buyer whether such Counterfeit Parts should be replaced with genuine parts conforming to the requirements of this Order, or whether an alternative solution is recommended to meet the Order requirements at Supplier's sole expense. The parties shall then agree upon the appropriate course of action. To the extent that the delivery of Counterfeit Parts shall be deemed to have resulted from Supplier's acts or omissions, the Supplier shall also be liable for any and all costs associated with, related to, and/or arising out of the impoundment and removal of such Counterfeit Parts.

(e) Supplier shall include this clause or reasonably equivalent provisions in all subcontracts for the delivery of Goods that will be furnished to or included in Goods furnished to Buyer.

f) In the event parts under this order are to be supplied by an Independent distributor then the Independent Distributor's procedures shall meet the requirements of SAE AS5553 and have a Quality Management System certified to ISO 9001/AS9100/AS9120. The original manufacturers Certificate of Conformance (C of C) and all traceability documentation shall be included with each shipment of parts. It shall include the manufacturer's name, part number, date codes, lot codes, serializations, and/or any other batch identifications. Seller is to contact Buyer if the original OEM/OCM C of C and traceability documentation is not available. All inspecting and testing shall be performed to the original manufacturer's specifications and parameters. In addition, testing per Table 1 of AS6081 shall be required. Recorded evidence of all testing performed shall be included with each shipment. All occurrences of Suspect Counterfeit and/or Counterfeit parts will be immediately reported to ERAI and GIDEP.

CW-Indal may flow down additional inspection/testing requirements via the PO as appropriate.

REVISION LOG

Rev.	Remarks (Brief description of changes)	Initiated By	Date: yyyy/mm/dd
0	Initial release	Mihaela Sullivan	
1	Revised Throughout	Mihaela Sullivan	
2	QAP clause 14 revised and QAP clause 13 modified	Mihaela Sullivan	

3	Updated header information	M Sullivan	
4	Updated CW logo, changed ITI to INDAL	A. Nickelo	
5	Added clause 6A* to include 100% inspection of USN CSI parts	A. Nickelo	2015/10/08
6	Added clause 26 to address counterfeit parts detection & avoidance Removed the preamble on page 1. This info already in T&Cs	A. Nickelo	2018/03/28
7	Updated QAP19	A. Tariq	2019/03/04
8	Updated QAP19, typing error.	A. Tariq	2019/11/26
9	Removed specifications from QAP 5 (NDT), added QAP 16 (NADCAP)	A. Nickelo	2020/10/19
10	Revised clause 2, 4 (for weld parameter sheet), 5 and added 26(f) Added Appendices for sample forms, available at web resources.	Sarb Pannu	2021/06/18
11	Added note to clause 4, 5 and 6	Sarb Pannu	2022/10/21

2. Weld Parameter Sheet (Form ITI-675)



WELD PARAMETER SHEET (Per QAP Clause 4 of QM-251)

PO / WORK ORDER#		CUSTOMER:	
PART#		REVISION:	

PLEASE FILL IN CHART BELOW, ALL THAT IS APPLICABLE TO WELDING JOB																					
DATE	OPN#	DRAW-ING ZONE	WELDER NAME	WELD PROCEDURE #	MACHINE #	POLARITY	LAYER / PASS#	FILLER WIRE DIA	WIRE LOT#	WIRE HEAT LOT	SHIELD GAS	GAS FLOW RATE	WIRE FEED SPEED (IPM)	TRAVEL SPEED (IPM)	VOLTS (V)	AMP (A)	PRE HEAT TEMP (C)	INTER PASS TEMP (C)	VERIFY QC / SUP		

CERTIFY THAT WELDING HAS BEEN DONE AS PER ABOVE WELD PARAMETERS AND IN COMPLIANCE WITH FOLLOWING STANDARDS (SELECT APPLICABLE):

	CSA W59 AND W47.1 FOR CARBON AND STAINLESS STEEL PARTS
	CSA W59.2 AND W47.2 FOR ALUMINUM WELDING
	ANY OTHER STANDARD (PLEASE MENTION)