

Title

REQUIREMENTS FOR RADIOGRAPHY CASTINGS

Clause

ELECTRIC BOAT STANDARD CLAUSE 76-24 REQUIREMENTS FOR RADIOGRAPHY OF CASTINGS

1. ALL RADIOGRAPHY OF CASTINGS, WHEN INVOKED BY THIS PURCHASE ORDER OR ANY SUB-TIER DOCUMENTS MUST BE PERFORMED IN ACCORDANCE WITH AN APPROVED RSSS.
 2. RADIOGRAPHY OF MORE THAN ONE CASTING PER FILM IS PROHIBITED.
 3. THE SELLER OR THE PERFORMING ACTIVITY SHALL CONTACT THE BUYER PRIOR TO PERFORMING RADIOGRAPHY OF ANY CASTING(S) TO DETERMINE IF A PREVIOUSLY APPROVED RSSS IS AVAILABLE. ELECTRIC BOAT HAS AN RSSS DATABASE WITH APPROVED TECHNIQUES.
 4. IF A PREVIOUSLY APPROVED RSSS IS NOT AVAILABLE, THE SELLER OR ACTIVITY PERFORMING THE RADIOGRAPHY SHALL PREPARE AN RSSS IN ACCORDANCE WITH NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271, PARAGRAPH 3.3.1.1 THAT ASSURES ADEQUATE RADIOGRAPHIC COVERAGE, AS SPECIFIED BY THE ENGINEERING DRAWING, AND TO AID IN THE PROPER INTERPRETATION OF THE RADIOGRAPHS. THE FOLLOWING SHALL BE INCLUDED;
 - * A DRAWING WHICH SHOWS LOCATION MARKERS AND THEIR ORIENTATION
 - * FILM PLACEMENTS
 - * RADIATION DIRECTION(S) IN RELATION TO THE PART
 - * PENETRAMETER PLACEMENT ON THE PART
 - * THE DRAWING VIEW THAT PROVIDES THE DESIGN DIMENSIONS USEDTO DETERMINE MATERIAL THICKNESSES FOR PENETRAMETER SELECTION.
- THE SELLER SHALL FORWARD THE RSSS TO THE BUYER VIA SPARS (EVPAR), AS WELL AS ALL QUALIFYING RADIOGRAPHS. THE RADIOGRAPHS SHALL BE SUBMITTED FOLLOWING THE GUIDELINES OF STANDARD CLAUSE 76-25. THE RSSS MUST BE APPROVED PRIOR TO SHIPMENT OF THE HARDWARE.

NOTE: SUBMITTED RADIOGRAPHS SHALL SHOW OVERLAPPING COVERAGE WITH UNIQUE IDENTIFIERS (E.G., LEAD STATION MARKERS (NUMBERS AND/OR LETTERS), UNIQUE PART FEATURES, ETC.) TO VALIDATE REQUIRED COVERAGE, PER INVOKED SPECIFICATION, IS ACHIEVED. ALSO, LEAD STATION MARKERS

SHALL BE MAINTAINED ON THE CASTING DURING RADIOGRAPHY TO VERIFY OVERLAPPING COVERAGE.

5. IF A PREVIOUSLY APPROVED RSSS IS AVAILABLE, THE SELLER OR ACTIVITY SHALL PERFORM THE RADIOGRAPHY IN ACCORDANCE WITH THE APPROVED RSSS. ADMINISTRATIVE CHANGES TO REFLECT THE USE OF LATEST REVISION OF THE PERFORMANCE OR FABRICATION SPECIFICATION DO NOT REQUIRE REAPPROVAL. HOWEVER, DEVIATIONS (EXCEPT AS NOTED BELOW) FROM AN APPROVED RSSS SHALL BE SUBMITTED TO THE BUYER FOR RE-APPROVAL USING A VPAR HIGHLIGHTING THE CHANGES AND PROVIDING TECHNICAL JUSTIFICATION FOR ELECTRIC BOAT APPROVAL. ACCEPTABLE VARIATIONS OR SUBSTITUTIONS NOT REQUIRING RE-APPROVAL ARE AS FOLLOWS:

* SOURCE TYPE: ANY SOURCE MAY BE SUBSTITUTED FOR THAT SHOWN

ON THE RSSS PROVIDED THE MATERIAL THICKNESS VERSUS ENERGY

RANGES USED ARE CONSISTENT WITH THOSE RECOMMENDED BY NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271, FIGURES 1, 2

AND 3. HOWEVER, IF THE APPROVED RSSS ALLOWS 2-4T SENSITIVITY,

THIS QUALITY LEVEL DOES NOT APPLY TO THE SOURCE SUBSTITUTED

IF 2-2T IS REQUIRED.

* SOURCE SIZE.

* SOURCE STRENGTH (CURIES OR KV).

* SOURCE-TO-FILM DISTANCE.

* PENETRAMETER OR BLOCK MATERIAL GROUP: ONLY LOWER GROUP THAN REQUIRED (E.G. CASTING IS GROUP IV, THE PREVIOUSLY

APPROVED RSSS USED GROUP I PENETRAMETERS/BLOCKS, A NEW RSSS USING GROUP II OR GROUP III DOES NOT REQUIRE RE-APPROVAL)

* PENETRAMETER SIZE: ONLY SMALLER THAN APPROVED.

* BLOCK SIZE: ONLY THICKER THAN APPROVED.

* PENETRAMETER PLACEMENT: RELOCATING PENETRAMETERS FROM THE PART TO A REPRESENTATIVE BLOCK OF EQUAL OR GREATER THICKNESS, OR FROM A BLOCK TO THE PART.

* FILM SIZE, TYPE, AND QUANTITY.

* EXPOSURE TIME

NOTE: WHEN PRODUCTION RADIOGRAPHS ARE SUBMITTED FOR APPROVAL WITH AN ACCEPTABLE VARIATION FROM THE APPROVED SHOOTING SKETCH, AS DEFINED ABOVE, THE DEVIATION(S) FROM THE APPROVED SKETCH AND A JUSTIFICATION FOR THE DEVIATION(S) SHALL BE SUBMITTED WITH THE PRODUCTION

RADIOGRAPHS. THIS REQUIREMENT DOES NOT APPLY TO DEVIATIONS FROM THE APPROVED SHOOTING SKETCH DUE TO CHANGES IN SOURCE STRENGTH IN CURIES.

6. A SYSTEM OF POSITIVE IDENTIFICATION OF THE FILM SHALL BE USED AND EACH FILM SHALL HAVE A UNIQUE IDENTIFICATION RELATING IT TO THE ITEM BEING INSPECTED. AS A MINIMUM, THE FOLLOWING ADDITIONAL INFORMATION SHALL APPEAR ON EACH RADIOGRAPH OR IN THE RECORDS ACCOMPANYING EACH RADIOGRAPH:

- * IDENTIFICATION OF THE ORGANIZATION MAKING THE RADIOGRAPH.
- * DATE OF EXPOSURE.
- * UNIQUE IDENTIFICATION OF THE PART.
- * WHETHER THE RADIOGRAPH IS OF THE ORIGINAL AREA OR A REPAIR AREA.

7. RADIOGRAPHY OF A REPAIRED AREA SHALL BE IN ACCORDANCE WITH THE SAME TECHNIQUE AS THAT USED FOR ORIGINAL RADIOGRAPHY. RADIOGRAPHS SHALL BE IDENTIFIED WITH THE SAME SERIAL NUMBER USED FOR ORIGINAL RADIOGRAPHS FOLLOWED BY THE LETTER R AND A NUMBER (1, 2, ETC.) TO INDICATE THE TIMES THAT THE AREA INVOLVED HAS BEEN REPAIRED. (NOTE: ONLY ONE RT NUMBER PER CASTING IS PERMITTED).

8. ELECTRONIC VPAR SUBMITTALS OF A NEW SHOOTING SKETCH SHALL CONTAIN THE FOLLOWING INFORMATION IN THE DESCRIPTION OF DOCUMENT BLOCK FOR RECORDS PURPOSES.

1. A STATEMENT DESCRIBING THE PURPOSE OF THE SUBMITTAL, (E.G. NEW SHOOTING SKETCH SUBMITTAL).
2. PART NAME _____
3. PART NUMBER _____
4. DRAWING NUMBER _____
5. BASE MATERIAL TYPE _____
6. RT PROCEDURE IDENTIFIED BY PERFORMING ACTIVITY, NUMBER _____, REVISION, DATE (AND ANY ADDENDA), AND VPAR APPROVAL NUMBER
7. RT PERFORMANCE SPECIFICATION
8. FABRICATION SPECIFICATION
9. ACCEPTANCE CRITERIA
10. TYPE OF CASTING (STRUCTURAL OR OTHER)
11. CASTING PROCESS UTILIZED FOR MANUFACTURING AS DEFINED WITHIN APPLICABLE FABRICATION SPECIFICATION (E.G. INVESTMENT, CENTRIFUGAL, SAND, ETC.)

ADDITIONALLY, RSSS SUBMITTAL CHECKLISTS HAVE BEEN CREATED AND ADDED FOR THE SUPPLIERS TO AID THEM IN THEIR RSSS SUBMITTALS. THESE CHECKLISTS ON LOCATED ON THE GENERAL DYNAMICS ELECTRIC BOAT SUPPLIERS WEB PAGE (WWW.GDEB.COM/SUPPLIERS), UNDER THE WELDING AND NDT TAB. AT THE BOTTOM OF THE PAGE YOU WILL FIND A TAB FOR NDT BULLETINS, ON THE NEXT PAGE LOCATE BULLETIN NUMBER SNB-0002. BULLETIN SNB-0002 CONTAINS THE AFOREMENTIONED CHECKLISTS AND SELLERS ARE RECOMMENDED TO SUBMIT THE "SC 76-24 NEW RSSS SUBMITTAL" FORM AND THE "TP-271 FILM REVIEW CHECKLIST" TOGETHER WITH THE FILM SUBMITTAL AND DOCUMENTATION PACKAGE(S).