QUALITY MONITORING INSTRUCTION FOR INSPECTION	Issue No : 01 Rev No :
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C 1026 (HOLDER)	OFT/MI/30mm/ C 1026

Rev.No	Amendment	Date

MATERIAL SPECIFICATION : 30XH2MØA OCT 3-98-80.
INDIGENOUS MATERIAL : BS 970 PT.1 1983 GR.826 M31 'Z' CONDITION (OR)
IS: 5517-1993 DESIGN 31Ni10Cr3Mo6
CONDITION OF SUPPLY : FULL FINISHED THROUGH FORGING ROUTE.
END USE : 30mm CANNON.

INSPECTION CHECK TO BE CARRIED OUT

Table 'A'

SL NO	CHARACTERISTICS	SPECIFICATION / REQUIREMENT	SAMPLE SIZE
1.	Visual	The Component shall be free from defects such as rust, scale, burrs and any other harmful defects.	100%
2.	Dimension	100% Dimension to check as per drawing.	
3.	Chemical Composition (%)	**30XH2MØA OCT 3-98-80** **(Refer GOST 4543-71)** C = 0.27-0.34 V = 0.10-0.18 Si = 0.17-0.37 Mo = 0.20-0.30 Mn = 0.30-0.60 Cu = 0.30 (Max) Cr = 0.60-0.90 S = 0.025 (Max) Ni = 2.00-2.40 P = 0.025 (Max) **BS:970 Pt.1, 1983 GR.826 M31 'Z' CONDITION.** C = 0.27-0.35 Mo = 0.45-0.65 Si = 0.10-0.35 S = 0.025 (Max) Mn = 0.45-0.70 P = 0.025 (Max) Cr = 0.50-0.80 Ni = 2.30-2.80 **IS: 5517-1993, Design 31Ni10Cr3Mo6.** C = 0.27 – 0.35 Mn = 0.40 – 0.70 Si = 0.10 – 0.35 Ni = 2.25 – 2.75 Cr = 0.50 – 0.80 Mo = 0.40 – 0.70 S = 0.035 (Max) P = 0.035(Max) Cu = 0.35(Max) V = 0.05(Max) B = 0.0003(Max) Tin = 0.05(Max) %Cu + 10times (%tin) =0.60 %(Max). (Permissible variations in value as per specification standard)	One Sample Per Heat

<table>
<tr><td>4.</td><td>Mechanical Properties</td><td><u>30XH2MØA OST 3-98-80 (Refer GOST 4543-71)</u>
Tensile Strength 90 Kgf/mm^2 (Min)
Yield Point 80 Kgf/mm^2 (Min)
Elongation 10% (Min)
Reduction of area 40% (Min)
Impact Strength 9 Kgf.m/cm^2 (Min)

(Cross section of blanks to be heat treated -Ø25mm or 25mm SQ)

<u>BS:970 Pt.1, 1983 GR.826 M31 ('Z' Condition)</u>
Tensile Strength 1550 N/mm^2 (Min)
Yield Strength 1235 N/mm^2 (Min)
Elongation 5 % (Min.)
Impact Izod 8 ft.lb (Min).

<u>IS: 5517-1993, Design 31Ni10Cr3Mo6. (LRS 63mm)</u>
Tensile Strength 1550 Mpa (Min)
0.2% Proof Stress 1300 MPa (Min)
% Elongation 8% (Min)
Impact (Izod) 14 Joules (Min)</td><td>One Sample Per Heat</td></tr>
<tr><td>5.</td><td>Hardness</td><td>39.5-46.5 HRC (as per drawing).</td><td>100 %</td></tr>
<tr><td>6</td><td>Other Tests</td><td>i) Macro Etch Test:
Acceptance Standard C-2, R-2,S-2 as per ASTM E-381-82 standard.

(ii) NMIR as per IS: 4163-1982.
With acceptance standard
<table>
<tr><th colspan="2">A</th><th colspan="2">B</th><th colspan="2">C</th><th colspan="2">D</th></tr>
<tr><th>Thin</th><th>Thick</th><th>Thin</th><th>Thick</th><th>Thin</th><th>Thick</th><th>Thin</th><th>Thick</th></tr>
<tr><td>3 (Max)</td><td>1 (Max)</td><td>3 (Max)</td><td>1 (Max)</td><td>3 (Max)</td><td>1 (Max)</td><td>3 (Max)</td><td>1 (Max)</td></tr>
</table></td><td></td></tr>
<tr><td>7</td><td>Protective Finish</td><td>As per drawing</td><td>100%</td></tr>
<tr><td>8</td><td>Packing</td><td>The Packing of the Material shall be done in such a manner to avoid corrosion and damage in handling and transit.</td><td>Each consignment</td></tr>
<tr><td>9</td><td>Marking</td><td>Each Packing shall be legibly marked with manufacturer's identity , Qty, Heat No, OFT Supply order No etc.,</td><td></td></tr>
</table>

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Note:

1. The Raw material / component to be tested by the firm on selection of the sample by the firm itself for chemical composition and mechanical properties in NABL accredited approved Lab as per Table 'A'.

2. The Firm has to check for the dimensions, visual defects, packing and marking as per Table 'A'. After completion of tests as per Note-1 as above, the Firm has to submit the following documents to OFT.

   I. The Raw material certificate from the original manufacturer, Heat number, and quantity purchased and number of bars is to be mentioned in the inspection letter to OFT.
   II. The Chemical and Mechanical test certificates from NABL accredited approved lab as per Table 'A'.
   III. Dimensional reports including visual as per Table 'A'.
   IV. Guarantee / Warrantee certificate of supplier against the supply.

3. All the above Documents mentioned at Note No.2 above are to be forwarded to ED/OFT along with supply.
4. OFT shall verify all the documents as above and accord clearance to the firm for dispatch of the material to OFT if all documents are in order.

5. OFT/Trichy shall verify all the parameters as per Table 'A' and after satisfactory results, the material will be accepted /cleared accordingly.

6. Material has to be replaced 100% by the firm in case of non conformity to specification as per Table-A, during inspection at OFT, Trichy.

VERIFICATION OF INSPECTION DOCUMENTS

SL_NO	INSPECTION DOCUMENTS
1	The Raw material original Manufacturer's certificate, Details of Heat Number, Quantity purchased and number of Bars etc.,
2	The Chemical and Mechanical test certificates from NABL accredited approved Lab.
3	Dimension report including visual.
4	Packing slip details.

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