SPECIFICATION FOR PIANO WIRE ROD

OCF Ref No. PW/00300/C - 0.90 – 0.95

1. **NOMENCLATURE** :-

Piano Wire Rod of Grade SWRS 92A as per specification "JIS G3502"

Size: 6.3 mm Dia to 7.00 mm Dia ± 0.30 mm

Max. Ovality : ± 0.30 mm

2. **END USE** :-

The Piano wire rod in coil form is used for further cold drawing for manufacturing of spring steel wires to different sizes (usually from 3mm to 0.27mm) and different grades to IS and BS Standards as mentioned below.

Sl.No.	Specification/Standard	Grade
(a)	BS 5216 – 1991	M4 & M5
(b)	IS 4454 – 1981 Part –I	3 & 4
(c)	IS 4454 – 2001 Part –I	DM, DH, SM, SH & SL

3. **PHYSICAL CONDITION** :-

(a). Coil size & dimensions:-

Coils should have the following given approximate dimensions & weight

Inside dia	Out side dia	Weight of each coil
800 mm	1200 mm	1000 -3000 Kg

(b). The steel shall be supplied in fully killed condition.

(c). The steel shall be of highest quality, homogeneous chemical composition and free from harmful defects of any kind like cracks, seams, laps, fold and pits. The ingot shall be cast wide end up -bond with refractory load and held in a vertical position until completely solidified.

4. **CHEMICAL COMPOSITION** :-

The chemical composition should be as follows:-

CHEMICAL COMPOSITION		ACCEPTABLE RANGE(%age)	PREFERRED VALUE(%age)
Carbon	C	0.90 to 0.95	0.92 to 0.94
Manganese	Mn	0.30 to 0.60	0.40 to 0.50
Silicon	Si	0.12 to 0.30	0.15 to 0.25
Phosphorus	P	0.015 Max	0.012 Max
Sulphur	S	0.020 Max	0.010 Max
Copper	Cu	0.010 Max	0.010 Max
Nickle	Ni	0.015 Max	0.010 Max
Chromium	Cr	0.200 Max	0.200 Max
Nitrogen	N	0.008 Max	0.005 Max
Nickel Chromium Copper	Ni+Cr+Cu	Total = 0.25 Max	0.25 Max
Nibomium Vanadium Titanium	Nb+V+Ti	Total = 0.20 Max	0.20 Max

Note:-

1. The material will be accepted on basis of acceptable composition range.
2. Kindly note Silicon should be in form of free Silicon, not in silicate form.
3. The Material should pass Hot Acid test/Deep etch test for uniformity of material.
4. Carbon percentage shall not be less than 0.90 % in any case.

5. **SPECIAL PROVISIONS** :-

i) Non-metallic inclusions will not be more than 0.010 % at the rate of area. For this inspection, one specimen shall be taken per one charge.

ii) Austenite grain size should be more than 5.0 when tested by of ASTM E 112-61. Detailed test report of grain size of each coil is to be furnished. So that the coils can be identified at the time of further processing & each coil will also have to be tagged suitably indicating grain size checked and found by the quality control department of the supplier /manufacturer's.

6. **MARKING** :-

Two tags should be attached to each coil, which will mention supply order no/date, size, weight, grade, coil no., cast no./heat no and mills name.

7. **INSPECTION** :-

a) **Inspection Authority:** The General Manager,
Ordnance Cable Factory,
Chandigarh.

b) **Inspecting Officer: Officer nominated by GM/OCFC**

The material along with packages will be subject to inspection by the inspection authority at OCF, Chandigarh, if any sample not found confirming to the specification the entire consignment may be rejected.

c) **Warranty:**

The stores supplied against the order shall be deemed to have been warranted against defective workmanship and material by the firm for a period of 12 months from the date of receipt at consignee end and if during this period any of the stores is found defective/not in accordance with the specification, the same shall be replaced with good material immediately, free of charge at the consignee's depot, inclusive of all freight handling and other relevant charges.

d) **Pre – Inspection:**

The firm should satisfy themselves that the stores are in accordance with the terms of the contract and confirm to the required specification by carrying out a thorough pre-inspection of each lot before tendering the same for inspection to the inspecting officer nominated under the terms of the contract. The pre-inspection report should be submitted to OCFC.

e) **Test Certificate:**

Manufacturer's test certificate will accompany the shipping /dispatch documents without any extra charges. The Material Test Certificate along with test report of grain size of each coil when tested by of ASTM E 112-61 should be from a NABL/ANY Govt Approved lab.

Jt.GM/HKJ AW M/P&QC 18/1/17 JWM/ISO 12/1/17 JWM/WD