



**PLANT PURCHASING
SPECIFICATION
HYDERABAD**

HY107 75

REV. NO: 00

PAGE 1 OF 3

BRIGHT DRAWN STAINLESS STEEL WIRES
(GRADE : X10Cr 13KG)

1.0 GENERAL:

This specification governs the requirements of bright drawn stainless steel round and flat wires of grade X10Cr 13KG.

2.0 APPLICATION :

Used as caulking wire for Labyrinth gland seals of Steam turbines.

3.0 CONDITION OF DELIVERY :

Heat treated, cold drawn and finally stress relieved. The wires shall be supplied in the following form.

<u>Wire dia/thickness, mm</u>	<u>Form in which supplied</u>
0 – 3	Coils wound on reels
3 – 8	Open coils
above 8	Straight lengths

The weight per column shall be approximately 5kg. The minimum diameter of the coils shall be maintained at 300 mm. Straight lengths shall be 2.5 to 3 metres.

4.0 COMPLIANCE WITH STANDARDS:

This specification complies generally with

DIN: 17440-1972

Stainless steels, quality specifications.

Gr : X10Cr13KG

5.0 DIMENSIONS AND TOLERANCES:

5.1 Dimensions: As specified in the order.

5.2 Tolerances:

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Round Wires: The tolerances on round wires shall conform to h11 class of tolerance, reproduced below:

From	Diameter, mm		Tolerance, mm
		Upto & including	
1		3	0 -0.060
3		6	0 -0.075
6		10	0 -0.090
10		18	0 -0.110

Flat wires: The tolerances of flat wires shall be as follows. (based on MUN 501.7/1)

Width/thickness, mm	Tolerance
Upto 0.6	0 - 0.05
Over 0.6 up to 3	0 - 0.06
Over 3 upto 6	0 - 0.075

6.0 **MANUFACTURE:**

The steel shall be manufactured by basic electric furnace process, and shall be fully killed.

7.0 **FREEDOM FROM DEFECTS:**

The wires shall be free from cracks, seams, cupping or other harmful defects. The surface shall be metallically clean and free from any scales.

8.0 **CHEMICAL COMPOSITIONS:**

The analysis of the material shall be as follows:

Element	C	Si	Mn	Cr	P	S
%min	0.08	-	-	12.0	-	-
%max	0.12	1.00	1.00	14.0	0.045	0.030

9.0 **TEST SAMPLES:**

9.1 For Chemical Analysis: One test sample shall be taken from each melt for chemical analysis.



**PLANT PURCHASING
SPECIFICATION
HYDERABAD**

HY 107 75

REV. NO: 00

PAGE 3 OF 3

9.2 For Mechanical Tests: One tensile test shall be conducted per melt and heat treatment batch for each 25 Kg of the wire or part there of.

10.0 MECHANICAL PROPERTIES:

The material shall comply with the following mechanical properties when tested in accordance with IS:1608 or any reputed National Standard.

Tensile strength	: 600-750 N/mm ² (61-76 kgf/mm ²)
0.2% proof stress, min	: 450 N/mm ² (46 kgf/mm ²)
Elongation	: 18% min.
$l = 5.65 \sqrt{SO}$	

11.0 INSPECTION AT SUPPLIER'S WORKS:

The representative of BHEL shall have free access to the supplier's works at all times during the execution of the order, to satisfy himself that the material is produced as per the quality requirement of this specification. All reasonable facilities shall be extended to him, free of charge. He may witness the sampling, testing and marking called for in this specification.

12.0 TEST CERTIFICATES:

Five copies of the test certificate shall be furnished with the following details.

- BHEL Order No .
- BHEL Specification No: HY 107 75
- Manufacture's Name
- Melt No & Heat treatment batch No.
- Heat treatment condition and details
- Size and dimensional check
- Results of chemical analysis and mechanical tests.

13.0 PACKING AND MARKING:

13.1 Marking: Each coil shall be provided with metal lable bearing the following punch details.

- Material Specification No:
HY 107 75 (X10Cr13KG)
- Melt No. & Heat treatment batch No.
- Size & Weight
- Manufacturer's Trade Mark

13.2 Packing: The wires shall be suitably packed to protect against damage during handling and transport.

14.0 REJECTION: In the event of any material proving defective during the course of further processing or testing, such materials shall be rejected and the supplier shall make immediate arrangements to replace the same free of cost.



AMENDMENT-NOTIFICATION

HY10775 REV.NO.00

PAGE 1 OF 1

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(GRADE: X10Cr 13KG)

C1.4.0 : Compliance with standards:

DIN:17440/1985 shall replace DIN:17440/1972.

REF:	Amd.No.	APPROVED DGM(P, T&I SERVICES)	ISSUED STDS. ENGG	DATE	CUM.Sr.No
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