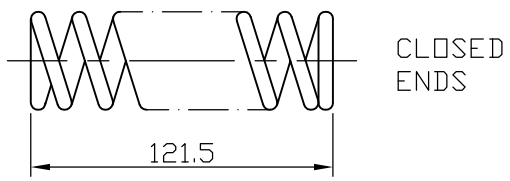
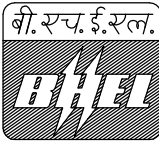
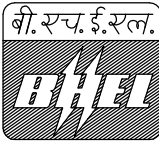
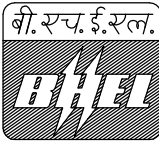


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06	04.11.14	CHECKED	वि.जॉन	वि.जॉन	07	05.07.16	CHECKED	एम. मोदी	एम. मोदी	AC DC EMU																																																					
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<p><b>NOTE :-</b></p> <ol style="list-style-type: none"> <li>ENDS TO BE GROUND FLAT AND SQUARE TO THE AXIS.</li> <li>THE NO. OF TURNS AND LENGTH ARE APPROX. AND MAY BE VARIED PROVIDED LOAD AND COMPRESSION LIMITS ARE MAINTAINED.</li> <li>SHARP CORNERS AT THE ENDS OF SPRING TO BE REMOVED.</li> <li>SPRINGS TO BE HEAT TREATED TO MAINTAIN HARDNESS AS:           <ul style="list-style-type: none"> <li>(a) HARDNESS 420-480 HV FOR CHROME VANADIUM MATERIAL BHEL SPEC BP 10571.</li> <li>(b) HARDNESS 490-590 HV FOR TDSiCr MATERIAL IS 4454 PART 2:2001. THIS TEST IS FOR INDICATIVE PURPOSE.</li> </ul> </li> <li>SPRING MUST BE CAPABLE OF BEING COMPRESSED TO 51 LONG, TO ENSURE THAT IT IS NOT SOLID AT WORKING LENGTH.</li> <li>TOL. ON SQUARENESS 4, TOL. ON PARALLELISM 1.</li> <li>ALTERNATIVELY SPRING TO EITHER OF FOLLOWING MATERIAL IS ALSO ACCEPTABLE :-           <ul style="list-style-type: none"> <li>(i) EUROPEAN STANDARD EN 10270-2:2001 GRADE PD GR. V.</li> <li>(ii) TDSiCr TO IS 4454 PART 2:2001.</li> </ul> </li> <li>TENSILE STRENGTH FOR TDSiCr MATERIAL SHALL MEET CLAUSE 10.1 OF IS 4454 PART 2:2001. TENSILE STRENGTH : 1810-1960 N/sq mm. REDUCTION AREA % : 45 MIN.</li> <li>500mm WIRE USED FOR MANUFACTURING SPRING SHALL BE SUPPLIED WITH EACH LOT.</li> </ol>																																																															
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## PLANT PURCHASING SPECIFICATION BHOPAL

BP 10571

Rev No. 06

PAGE 1 OF 3

**SUPERSEDES**  
BP 10571 Rev.05

### CHROMIUM VANADIUM SPRING STEEL WIRE BAR ANNEALED

**1. GENERAL :**

This specification governs the quality of alloy steel spring wires & bars above 2.5 and upto 25 mm diameter.

Reference BP 10570 for strips.

**2. APPLICATION:**

For the manufacture of cold form helical springs, volute springs etc. working under moderately elevated temperature, for statically stressed springs.

**3. CONDITION OF DELIVERY:**

The material shall be supplied in the annealed, un ground and shall be in the oiled conditions in coils.

**4. COMPLIANCE WITH NATIONAL STANDARDS:**

There is no Indian standards covering this type of material.

Material offered to IS:4454 part – II (reaffirmed 2015) Gr. VD Cr V-A in annealed condition is also acceptable.

**5. DIMENSION AND TOLERANCE:**

5.1 Sizes: : The nominal diameter of the material shall be a stated on the order. Material upto 25 mm diameter shall be ordered against this specification.

5.2 Tolerance: The tolerance on the nominal diameter shall be as per table 4 of IS : 4454 Part – II

**6. MANUFACTURE:**

Steel for wire/bars shall be manufactured by open – hearth, electric or basic oxygen process.

**7. FREEDOM FRM DEFECTS:**

The surface of the wire / bars for the manufacture of springs shall be smooth and free from defects such as, pits, die- marks and other harmful imperfections.

Revision : IS – Reaffirmed 2015

Issued by :

*[Signature]*  
**STANDARDS AND MATERIALS GROUP  
TECHNICAL SERVICES DEPARTMENT**

Rev.06

Date: 31/08/2019

Date of first Issue: OCT-1960



## 8. CHEMICAL COMPOSITION:

The melt analysis of steel and the permissible variation in the composition of the finished products from the melt analysis shall be as follows:

Element	Melt Analysis		Permissible variation over & under the specified Limit % Max
	% Min.	% Max	
Carbon	0.47	0.55	0.03
Silicon	0.10	0.40	0.03
Manganese	0.60	1.20	0.04
Chromium	0.80	1.10	0.05
Vanadium	0.10	0.25	0.02
Sulphur	-	0.25	0.005
Phosphorus	-	0.25	0.005
Copper	-	0.12	0.02

## 9. SELECTION OF TEST SAMPLES:

Test samples shall be cut from coils selected at random. One sample per heat per size per consignment shall be taken for test.

## 10. HARDNESS (Vickers): As received condition

When tested in accordance with IS : 1501, the test pieces shall show a Vickers hardness of 240 HV Maximum

## 11. RESPONSE TO HEAT TREATMENT :

Test pieces selected as per clause 9 shall be hardened in oil at a temperature between 850 – 880.C, followed by tempering at 420 – 440.C, air cooled, shall have a hardness of 420 – 475 HV.

## 12. TEST CERTIFICATE:

Three copies of test certificate shall be supplied unless otherwise stated on the order.

In addition, the supplier shall ensure to close one copy of the test certificate along with their dispatch documents to facilitate the quick clearance of the material.

The test certificate shall bear the following information:

BHEL reference.

BHEL Order No.

BP 10571 Chrome – Vanadium spring steel wire bar – annealed.Rev.05





## PLANT PURCHASING SPECIFICATION BHOPAL

BP 10571

Rev. No. 06

PAGE 3 OF 3

Supplier's Reference:

Supplier's Name

Process of Manufacture

Heat treatment details

Melt / Heat / Batch No.

Identification No.

Result of test:

Result of chemical analysis and hardness before & after heat treatment (CL.10&11).

### 13. PACKING AND MARKING:

The material shall be coiled flat such that coils remain flat when the ties are cut.

The material shall be packed suitably to prevent damage during transit.

Each bundle / coil shall be marked with the following information.

BP 10571: Chrome –Vanadium spring steel wire bar – Annealed.

BHEL order no.

No. of coils.

Size & length.

Weight.

Identification No.

Consignment No.

**Pre-Qualification requirements**  
**for Cylinder Spring**

<b>S. No</b>	<b>Description of requirement</b>	<b>Document to be attached</b>
1	Quoted Items SL NO.	Mention SI No.
2	Bidder should submit a self-declaration stating that, "Offered item is same as per enquiry Specification and there is no deviation".	Self-declaration on letterhead of firm
3	In case Bidder is not be OEM but its Reseller then bidder to submit valid authorisation certificate from OEM with the bid.	Valid authorisation letter from OEM.
4	Contract shall be awarded to such vendors who have supplied same or similar item of minimum 20 Nos in last 15 years to BHEL or any Central / State Govt. Organization / PSU /Private company/ Public Listed Company.	Purchase order copy /Invoice copy. (PO no for BHEL Bhopal PO)

**Terms Other than PQR to be compiled during Bidding:**

<b>Terms</b>	<b>Complied/Not Complied</b>
Tender Quoted item SL Nos.	
OEM Declaration/Authorization Certificate to be submitted by vendor	
Delivery accepted as per Tender	
Mobile no of concerned Person	
Email ID	

Note: Bidders providing above documents and not meeting above criteria essential for Offer Consideration

**NO DEVIATION CERTIFICATE**

**Reference:** Bid No. \_\_\_\_\_ Dated: \_\_\_\_\_

**Subject:** Self-Declaration for No Deviation

This is to certify that the items/services offered by us against the above-referred enquiry are **fully compliant** with the specifications, terms, and conditions mentioned in the bid document.

We hereby confirm that **there are no deviations** from the stipulated specifications, commercial terms, conditions, and other requirements of the enquiry.

For \_\_\_\_\_  
(Authorized Signatory)

Date: \_\_\_\_\_

Seal:

**OEM SELF-DECLARATION (FOR OEM)**

Date: \_\_\_\_\_

Subject: **OEM Self-Declaration**

Ref: Bid No. \_\_\_\_\_

We certify that:

1. The bidder **M/s** \_\_\_\_\_ is the OEM\*\* itself.
2. The product(s) offered are **new, genuine, and comply** with all specifications mentioned in the tender.
3. We shall provide full **warranty support, technical assistance, and spare parts** availability as required.

For **(Name of OEM)**

\_\_\_\_\_

**Authorized Signatory**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Seal:

OEM address:

**\*\* OEM refers to (Original Equipment Manufacturer)**

**B. OEM AUTHORIZATION CERTIFICATE (FOR BIDDER AS DEALER)**

Date: \_\_\_\_\_

Subject: **OEM Authorization Certificate**

Ref: Bid No. \_\_\_\_\_

We, **(Name of Original Equipment Manufacturer – OEM)**, hereby authorize:

**M/s** \_\_\_\_\_

(Address: \_\_\_\_\_)

We confirm that:

1. Bidder is **authorized partner / dealer / distributor / bidder** for participating in the above-mentioned tender
2. The bidder is authorized to **quote, supply, install (if any), and support** our products.
3. The products offered will be **genuine, brand-new, and manufactured by us (OEM)**.
4. We will provide full **warranty support, technical support, and spare parts (wherever applicable)** for the supplied equipment throughout the warranty/AMC period.

For **(Name of OEM)**

---

**Authorized Signatory**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Seal:

**\*\* OEM refers to (Original Equipment Manufacturer)**