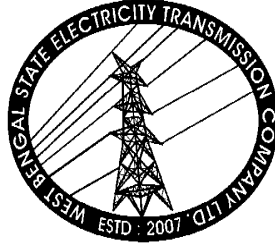


BUNDLE SPACER



March 2015

Engineering Department

WEST BENGAL STATE ELECTRICITY TRANSMISSION COMPANY LIMITED

পশ্চিমবঙ্গ রাজ্য বিদ্যুৎ সংবহন কোম্পানি লিমিটেড
(পশ্চিমবঙ্গ সরকারের একটি উদ্যোগ)

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CIN: U40101WB2007SGC113474; Website: www.wbsetcl.in

TECHNICAL SPECIFICATION FOR BUNDLE SPACER

1. **SCOPE :**

This specification covers design, manufacture, testing at manufacturer's works, supply, delivery, of Bundle Spacer at site at new as well as existing Sub-Station for 'Quadruple' Moose & twin 'Moose' ACSR conductor.

2. **GENERAL REQUIREMENT :**

- 2.1. In order to maintain inter group spacing between the sub-conductors of a bundle under all working condition spacers shall be fitted in a bundle. The spacer shall be connected at the interval of suitable longitudinal distance in each phase of line and contractor shall specify the number of spacers to be required per span of 400KV, 220 KV and 132 KV and 33 KV switchyard to avoid rubbing between sub-conductors. The jumper at tension points shall also be fitted with spacers.
- 2.2. The spacer shall have enough strength so as to restore normal spacing between the sub-conductors after displacement by wind, short circuits etc. without damage or permanent deformation. They shall have long life without fatigue or wear and shall have gentle but firm grip on conductors. They shall be able to withstand all the electromagnetic and electrostatic forces under different operating conditions including dead short-circuit.
- 2.3. They shall preferably be of one-piece construction. All bolts shall be captive and nuts shall only be needed slackening not removal in order to fit the spacers to the sub-conductors. The spacer should not slip under any condition and joint with sub-conductors incorporating a flexible medium is acceptable provided such medium cannot slip under any condition.
- 2.4. The spacer shall not damage or chafe the conductor in any way. All nuts used for spacers shall be locked in a manner against vibration loosening.
- 2.5. The spacer shall be flexible enough to avoid distortion or damage of the sub-conductor. The electrical resistance between conductor and spacer shall be reasonable for satisfactory operation. The material of the spacer shall be of aluminum alloy of an approved type.
- 2.6. The spacing shall be so arranged that group spacing between sub-conductors is kept at 300 mm for 220 KV, 132 KV and 33 KV bus & jumper and 450mm. for 400KV Bus and Jumper for new S/stn. However inter conductor spacing is to be matched for existing 400KV, 220KV & 132KV S/stn.
- 2.7. The spacer shall not have any projection, cuts, abrasions etc. or chattering parts, which might cause corona & radio interference. They shall also have strength to resist deformations, which might cause the R.I. performance of the spacers.
- 2.8. The spacers shall conform to IS:10162. Only Type tested spacers shall be offered.

3. I) DEVIATION :

Normally the offer should be as per Technical Specification without any deviation.

II) MODIFICATION :

If any modification felt necessary to improve performance, efficiency and utility of equipment, the same must be mentioned in the 'Modification schedule' with reasons duly supported by documentary evidences and advantages. Such modifications suggested may or may not be accepted, but the same must be submitted along with Pre-Bid Queries. The modifications not mentioned in Schedule will not be considered.

4. GUARANTEE :

Electrical characteristics shall be guaranteed by the bidder. In case of failure of materials to meet the guarantee, WBSETCL shall have right to reject the material. Guaranteed Technical Particulars are to be submitted by successful bidder during detailed engineering alongwith submitted drawings/documents. However format for submission of GTP shall be handed over to intending bidders at the time of sale of tender documents.

5. CONTRACT DRAWINGS & MANUALS :

- 5.1. In the event of placement of Letter of Award (LOA) the contractor has to submit six (6) copies of the above drawings to the Chief Engineer, Engg. Deptt., VidyutBhawan (9th floor), Salt Lake, Kolkata - 700 091 for approval.
- 5.2. Ten (10) sets of approved drawings for each sub-station shall be submitted for our record and distribution to site.

6. TEST AT MANUFACTURER'S WORKS AND TEST CERTIFICATES :

- 6.1. All Routine test at manufacturer's works shall be carried out on each Bundle spacer as per stipulation of relevant Indian Standard and Test reports are to be submitted to the Chief Engineer, Engg. Deptt., VidyutBhawan (9th floor), Salt Lake, Kolkata - 700 091.
- 6.2. The following acceptance tests are to be carried out in presence of representative of WBSETCL on spacers at manufacturer's works and Three (3) copies of approved test certificate shall be submitted to the Chief Engineer, Engg. Deptt., for approval. The contractor shall give at least 15 (fifteen) days advance notice intimating actual date of inspection and details of all tests that are to be carried out.
 - i) Visual Examination.
 - ii) Dimensional Verification.
 - iii) Movement Test.
 - iv) Clamp Slip Test.
 - v) Clamp Bolt Torque Test (if applicable).
 - vi) Assembly Torque Test.
 - vii) Compression Test.
 - viii) Tensile Load Test.
 - ix) Galvanising Test.
 - x) Hardness Test for Neoprene.
 - xi) UTS of Retaining Rod.

- 6.3. The entire cost of acceptance and routine tests that are to be carried out shall be treated as included in the quoted price of Bundle Spacers.
- 6.4. Six (6) copies of test reports shall be submitted to the Chief Engineer, Engg. Deptt., Vidyut Bhawan (9th floor), Salt Lake, Kolkata - 700 091 for approval and distribution at site.

7. TEST REPORTS :

Only type tested Bundle Spacer are to be offered conforming to our technical specification, and relevant IS and IEC. Bundle Spacer offered should be similar with ones on which type testing has been carried out as per relevant IS and IEC. Three sets of complete type test reports carried out in Govt. recognized Test House or Laboratory /NABL accredited laboratory shall have to be submitted by successful bidder positively alongwith submission of drawings during detailed Engineering. The submitted type test report shall prove that the type test have been carried out within five years from the date of submission of bid. Successful bidder may require to produce original copies of type test reports at the time of detail Engineering if asked by WBSETCL.

Each type test report shall comply the following information with test result.

- i) Complete identification, date and serial no.
- ii) Method of application, Where applied, duration and interpretation of each test.
- iii) Relevant drawings as documented with test report.