



GUJARAT ENERGY TRANSMISSION
CORPORATION LTD.
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TECHNICAL SPECIFICATION
OF
FIRED WEDGE CONNECTORS

GETCO/E/TS – FIRED WEDGE CONNECTOR/R2 March 2023

SPECIFICATIONS FOR FIRED WEDGE CONNECTORS

- (1) Wedge connector should be FIRED - ON or powder actuated only.
- (2) The power booster should be colour coded for proper installation of the wedge connectors.
- (3) Wedge connector members - tapered 'C' shaped spring member and wedge should be made from special aluminium alloy of high ductility and electrical conductivity. When installed, it will provide a tenable electrical and mechanical connection for solid or stranded conductor combination including ACSR / AL59 conductor.
- (4) The dimensions for the wedge shall be manufactured to close tolerances to ensure repeatability and reliability of the connection.
- (5) All sharp edges and burrs shall be removed.
- (6) The wedges shall be burnished to achieve optimum surface roughness for electrical contact.
- (7) The wedge terminal shall have back up conductor cleaning capability during application. The Wedge Terminals should ensure stable & low contact resistance under varying load conditions & the thermal cycling effects.
- (8) An oxide inhibiting compound placed in the wedge & "C" member groove of Wedge Terminals.
- (9) The following Type Tests shall be submitted for registered works with GETCO, performed for Wedge connector suitable for every ACSR / AL59 conductor combination of run & tap conductor offered (e.g. separate type test required for ACSR Dog to ACSR Dog connector & ACSR Dog to ACSR Panther connector likewise for every combination), as per IS:5561 2018 (latest revision).
 - a) Dimensional verification
 - b) Pull out strength test
 - c) resistance test
 - d) temperature rise test
 - e) Short circuit current test
 - f) Visual corona & RIV test (for 400 kV & above)
- (10) The following Type Tests shall be submitted for registered works with GETCO, performed for Wedge connector suitable for every ACSR / AL59 conductor combination of same run & tap conductor incl. offered sizes (e.g. ACSR Panther to ACSR Panther connector & ACSR Zebra to ACSR Zebra connector Type Test required for offered ACSR Panther to ACSR

Zebra connector likewise for every combination), with latest revision of standard mentioned.

a) The wedge connector shall meet the current cycle test requirements as per ANSI, C 119.4-2016 Class AA. When connected as specified, samples shall indicate electrical stability for terminated connectors. The resistance of connection, when measured as specified shall be stable throughout test. The samples shall be tested to 500 on/off current cycles with the control conductor temperature raised between 175 C to 180 C above ambient.

b) The wedge connector shall meet the mechanical requirements as per ANSI C 119.4-2016 Class 3, minimum tension. When tested as specified or 5% of the rated cable strength of the weaker conductor.

c) The wedge connector shall meet the following thermal shock & salt spray test. Connectors shall be installed with designed run & tap conductors of suitable length. Free ends of both conductors shall be suitably connected / welded to Aluminium pads for ease of current supply & resistance measurements. Initial resistance shall be measured & resistance shall be measured after each cycle as below. Results shall be tabulated.

- 2 ½ Hours at 150 °C.
- 15 minutes at 0 °C water, immediately from the oven.
- 30 minutes at 150 °C.
- 20 ¾ Hours at room temperature.

No physical damage to samples is acceptable.

d) For Salt spray corrosion, samples of (c) above which is successfully passed, subsequently shall be subjected to a 30-day salt spray corrosion test. Initial resistance shall be measured & resistance shall be measured after every 5 cycles. Results shall be tabulated. Each daily exposure shall consist of:

- 15 hours in 5% salt spray atmosphere
- 1 hour in drying oven at 100 C.
- 8 hours at room temperature.

No physical damage to samples is acceptable.

(11) During installation, the wedge of wedge tap shall be driven inside the "C" member at high velocity between the run & tap conductor so as to spread the "C" member to ensure high retentive force on the conductors. A locking tab, formed balance on the tool should prevent the wedge from loosening once it has been driven into position.

(12) Successful bidder have to offer inspection for finished product minimum 15 days in advance with routine test reports applicable as per IS:5561. All acceptance tests as per IS 5561 2018 (latest revision) shall be carried out during inspection by GETCO inspector as per the sampling criteria

- specified in IS. Additionally, one sample of each offered item shall be subjected to Chemical Composition test from offered lot for inspection. For retest, guideline specified in IS:5561 2018 (latest revision) shall be followed. No material shall be dispatched without inspection or dispatch instruction issued by GETCO.
- (13) Type tests shall be considered valid for the period of Ten (10) years & shall be valid as on last date of submission of bid.
- (14) Bidder shall submit valid type test reports from NABL accredited/Government Laboratory. The bidder has to submit all type test reports as stated for the offered item along with the technical bid.
In case of non-submission / partial submission or type test reports of which validity is over, the bidder shall submit pending type test report/s from NABL accredited/Government Laboratory, in the event of an order, before commencement of supply without affecting delivery schedule, free of cost to GETCO. Confirmation for above shall be invariably submitted along with technical bid. Furthermore, purchaser reserve right to select the sample from Manuf. Works & recommend the NABL lab to carry out type tests in case of non-submission/ partial submission or type test reports of which validity is over.
- (15) Bidder have to submit detailed drawing including all important dimensions, material grade, ratings etc. & detailed QAP including raw material stage to finished product inspection stage wise check points with technical bid.