**Annexure – ‘A’**

1. **1. Technical Specification of ACSR Dog Conductor**. ***As per IS:398 (Part-II)/1976***

(i) Description of strands ---- 7 (Seven) Nos.

Aluminium ---- 6 Nos. each of dia of 4.72 mm

Steel ---- 7 Nos. each dia of 1.57 mm

(ii) Nominal Aluminium area in sq. mm ---- 100.00

1. Sectional area of aluminium sq. mm ---- 105.00

(iv) Calculated resistance at 200C

in ohms/km (Maximum) ---- 0.281

(v) Approximate calculated breaking

load in KN ---- 32.41

(vi) Approximate Average weight of

conductor in Kg/Km without

negative tolerance ---- 394

(vii) Normal wire length of conductor is 1.25 Km, longer length will be acceptable (short length not less than 1 KM shall be acceptable to the maximum extent of 10% of the quantity ordered.)

(viii) No. of length in each drum ---- 1 to 4

The wire shall be smooth and free from all imperfections as well as spills and splits.

(ix) No two joints shall occur in aluminium wires closer than 15 meters in the complete stranded conductors. Such joints shall be made by resistance or cold pressure butt-welding. Joints made by resistance butt-welding shall be annealed over a distance of at least 200 mm on each side of the joint.

(x) joints in steel wire ---- As per IS

(xi) Lay ratio (a) Aluminium wire ---- Maximum 14, Minimum 10

(b) Steel Wire ---- Maximum 28, Minimum 13

**B. The sizes and properties of single strands aluminium and steel wire are as below: -**

**Aluminium wire:**

(i) Diameter Nominal in mm ---- 4.72

Maximum in mm ---- 4.77

Minimum ---- 4.67

1. Standard sectional area of

nominal dia wire in sq.mm ---- 17.50

(iii) Weight in Kg/Km ---- 47.30

(iv) Resistance at 200C when

corrected to standard weight

in ohm/Km (Maximum) ---- 1.661

(v) Minimum breaking load in

KN-Before stranding ---- 2.78

After stranding ---- 2.64

(vi) Approx weight in kg/km for 6 strands-- 288

## STEEL WIRES. of 7 Strands

(i) Diameter-Standard in mm ---- 1.57

Maximum in mm ---- 1.60

Minimum in mm ---- 1.54

(ii) Cross sectional area of

Nominal diameter wire mm2---- 1.936

1. Approximate weight in

Kg/Km ---- 15.10

(iv) Minimum breaking load in KN

a) Before Stranding ---- 2.70

b) After Stranding ---- 2.57

(v) Approx weight in kg/km for 7 strands-- 106

**C. PACKING AND MARKING.**

The conductors shall be wound in non-returnable reels of drums confirming to ISS : 1778 / 1961 Specification for reels/drums for Bare wire and shall be marked with the following.

* 1. Manufacturer’s name
  2. Trade mark, if any
  3. Drum or identification no.
  4. Size of conductor
  5. No. of length of conductor
  6. Gross weight
  7. Tare weight
  8. ISI mark

D. The sample of the individual wire for the test shall normally be taken before stranding. The manufacturer shall carry out to sample taken out at least from 10% of the Aluminium wire and steel wire each. However when desired by the purchaser, the sample may be taken from the stranded wire.

The wire shall comply with the following test as per ISS: 398/1976 (Part-II)

* 1. Breaking load test
  2. Wrapping test
  3. Galvanising test
  4. Torsion test
  5. Resistance test
  6. Elongation test

**Technical Specification of ACSR Rabbit Conductor**. ***As per IS:398 (Part-II)/1976***

(i) Description of strands ---- 7 (Seven) Nos.

Aluminium ---- 6 Nos. each of dia of 3.35 mm

Steel ---- 1 No. of dia of 3.35 mm

(ii) Nominal Aluminium area in sq.mm ---- 50

1. Calculated sectional area of

aluminium sq.mm ---- 52.88

1. Calculated resistance at 200C

in ohms/km (Maximum) ---- 0.556

1. Approximate calculated breaking

load in KN ---- 18.25

1. Approximate Average weight of

conductor in Kg/Km without

negative tolerance ---- 214

1. Normal wire length of conductor is 1.25 Km. Longer length will be acceptable (short length not less than 1 KM shall be acceptable to the maximum extent of 10% of the quantity ordered.)

(viii) No. of length in each drum ---- 2 to 4

The wire shall be smooth and free from all imperfections as well as spills and splits.

(ix) No two joints shall occur in aluminium wires closer than 15 meters in the complete stranded conductors. Such joints shall be made by resistance or cold pressure butt-welding. Joints made by resistance butt-welding shall be annealed over a distance of at least 200 mm on each side of the joint.

(x) Steel wire ---- No joints permitted

(xi) Lay ratio ---- Maximum 14

of Aluminium ---- Minimum 10

1. The sizes and properties of single strands aluminium and steel wire are as below: -

Aluminium wire:

(i) Diameter standard in mm ---- 3.35

Maximum in mm ---- 3.38

Minimum ---- 3.32

1. Standard sectional area of

nominal dia wire in sq.mm ---- 8.814

(iii) Weight in Kg/Km ---- 23.32

(iv) Resistance at 200C when

corrected to standard weight

in ohm/Km (Maximum) ---- 3.286

(v) Minimum breaking load in

KN-Before stranding ---- 1.43

After stranding ---- 1.36

(vi) Approx wt. in kg/km for 06

Strands ---- 145

**STEEL WIRES.**

(i) Diameter-Standard in mm ---- 3.35

Maximum in mm ---- 3.42

Minimum in mm ---- 3.28

1. Cross sectional area of

Nominal diameter wire mm2 ---- 8.814

1. Approximate weight in

Kg/Km ---- 69.00

1. Minimum breaking load in KN

a) Before Stranding ---- 11.58

b) After Stranding ---- 11.00

1. No joints permitted in

galvanised steel wire

1. **PACKING AND MARKING.**

The conductors shall be would in non-returnable reels of drums confirming to ISS: 1778 / 1961 Specification for reels/drums for Bare wire and shall be marked with the following.

* 1. Manufacturer’s name
  2. Trade mark, if any
  3. Drum or identification no.
  4. Size of conductor
  5. No. of length of conductor
  6. Gross weight
  7. Tare weight
  8. ISI mark, if any

1. The sample of the individual wire for the test shall normally be taken before stranding. The manufacturer shall carry out to on sample taken out at least from 10% of the Aluminium wire and steel wire each. However when desired by the purchaser, the sample may be taken from the stranded wire.

The wire shall comply with the following test as per ISS : 398/1976 (Part-II)

* 1. Breaking load test
  2. Wrapping test
  3. Galvanising test
  4. Torsion test
  5. Resistance test
  6. Elongation test