OVERHEAD
CONSTRUCTION MANUAL

STRINGING CHARTS
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1. USE OF STRINGING CHART BY CONSTRUCTION STAFF

(a) Identify the M.E.S. from the construction plan for the selection where conductor is being erected.

(b) Select the actual span where the sag is to be checked. Where possible always choose the longest span in the series.

(c) Measure the air temperature with a plated, metal cased Thermometer, unshaded, at an average conductor height.

(d) For new conductor select the temperature reduction required from the stringing chart. This reduction allows for initial stretching.

(e) Locate the intersection of the M.E.S. span and the air temperature line (corrected for new conductor) to determine the stringing tension.

(f) Locate the intersection of the actual span and the stringing tension to obtain the actual sag for stringing.

2. MEASUREMENTS OF SAG

   ALTERNATIVES:

   (a) USE OF SIGHTING BOARDS
       - For large spans a telescope may be required to sight a conductor.
       - This method is the most accurate and can be used for all span lengths.

   (b) USE OF A WAVE SAGGING CHART AND A STOPWATCH
       - This method is only suitable for construction with spans in excess of 150m.
       - For any other construction this method is too inaccurate.
       - The wave sagging should always be carried out on the longest span in the series.
       - This method cannot be used in a span which has a conductor join.

EXAMPLE CONDUCTOR: 3/4/2.5 ACSR/GZ

STRINGING CHART:

(a) M.E.S.
(b) ACTUAL SPAN
(c) AIR TEMPERATURE
(d) CORRECTED TEMPERATURE FOR NEW CONDUCTOR
   (No temperature correction needed for re-used conductor)
(e) STRINGING TENSION
(f) SAG FOR STRINGING

\[
\begin{align*}
\text{STRINGING TENSION} & : 4.78 \text{ kN} \\
\text{SAG FOR STRINGING} & : 5.7 \text{ m}
\end{align*}
\]
Time = Seconds for wave to travel 3 times along span and back (i.e. 6 times span)

Time = \sqrt{\frac{\text{Sag (m)}}{0.0342}}
CABLE: 4x95mm² LVABC
OVERALL DIAMETER: 38.4mm
SECTIONAL AREA: 380mm²
MASS: 1350 kg/km
CALCULATED BREAKING LOAD: 53.2kN
15°C NO WIND: 2.5% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

5°C NO WIND: 2.5% C.B.L.
15°C NO WIND: 2.5% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

SAG CURVES
SAG IN METRES

TEMPERATURE CURVES

TENSION (kN) vs SPAN (m) chart

1.0m 1.2m 1.4m 1.6m 1.8m 2.0m 2.5m 3.0m
10°C 20°C 30°C 40°C 50°C 60°C 70°C 80°C
0.6m 0.8m 1.0m 1.2m 1.4m 1.6m 1.8m 2.0m

10°C 20°C 30°C 40°C 50°C 60°C 70°C 80°C
0.2m 0.4m 0.6m 0.8m 1.0m 1.2m 1.4m 1.6m

1.0 1.5 2.0 2.5
10 20 30 40 50

1.0 1.5 2.0 2.5
10 20 30 40 50

1.0 1.5 2.0 2.5
10 20 30 40 50

1.0 1.5 2.0 2.5
10 20 30 40 50

1.0 1.5 2.0 2.5
10 20 30 40 50

1.0 1.5 2.0 2.5
10 20 30 40 50
NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: 4x95mm² LVABC
OVERALL DIAMETER: 38.4mm
SECTIONAL AREA: 380mm²
MASS: 1350 kg/km
CALCULATED BREAKING LOAD: 53.2kN

15°C NO WIND: 6% C.B.L
25°C 1200 Pa WIND: 40% C.B.L

OVERALL DIAMETER: 15 mm
C NO WIND:

SAG CURVES

TEMPERATURE CURVES

SAG IN METRES

TENSION (kN)

SPAN (m)
NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CABLE: 4x95mm² LVABC
OVERALL DIAMETER: 38.4mm
SECTIONAL AREA: 380mm²
MASS: 1350 kg/km
CALCULATED BREAKING LOAD: 53.2kN
15°C NO WIND: 10% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CABLE: 2x95mm² LVABC
OVERALL DIAMETER: 31.8mm
SECTIONAL AREA: 160mm²
MASS: 680kg/km
CALCULATED BREAKING LOAD: 26.6kN
15°C NO WIND: 2.5% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CABLE:
OVERALL DIAMETER: 2x95mm² LVABC
SECTIONAL AREA: 31.8mm²
MASS: 190mm²
CALCULATED BREAKING LOAD: 26.6kN

15°C NO WIND:
6% C.B.L.
25°C 1200 Pa WIND:
40% C.B.L.

OVERHEAD DISTRIBUTION STRINGING CHARTS
2x95mm² LVABC
6% C.B.L. - 900 AND 1200 Pa WIND

TENSION (kN)
SPAN (m)
CONDUCTOR: 2x95mm² LVABC
OVERALL DIAMETER: 31.8mm
SECTIONAL AREA: 190mm²
MASS: 680kg/km
CALCULATED BREAKING LOAD: 26.6kN
15°C NO WIND: 10% C.B.L.
25°C 900 Pa WIND: 40% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CONDUCTOR: 2x95mm² LVABC
OVERALL DIAMETER: 31.8mm
SECTIONAL AREA: 190mm²
MASS: 680kg/km
CALCULATED BREAKING LOAD: 28.6kN
15°C NO WIND: 10% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

NOTES:
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CABLE: 4x50mm² LVABC
OVERALL DIAMETER: 28.7mm
SECTIONAL AREA: 200mm²
MASS: 700kg/km
CALCULATED BREAKING LOAD: 28kN
15°C NO WIND: 2.5% C.B.L
25°C 1200 Pa WIND: 40% C.B.L

NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CABLE: 4x50mm² LVABC
OVERALL DIAMETER: 28.7mm
SECTIONAL AREA: 200mm²
MASS: 700kg/km
CALCULATED BREAKING LOAD: 28kN
15°C NO WIND: 8% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
Notes:
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

Overview Diagram:
- Conductor: 4x50mm² LVABC
- Overall Diameter: 28.7mm
- Sectional Area: 200mm²
- Mass: 700kg/km
- Calculated Breaking Load: 28kN

Temperature Curves
- 15°C No Wind
- 25°C 900 Pa Wind

Sag Curves
- Sag in Metres

Stringing Charts
- Semi-Urban 4x50mm² LVABC
- 10% C.B.L - 900 Pa Wind

Calculated Breaking Load:
- 10% C.B.L
- 40% C.B.L

Tension (kN)
- Span (m)

Overhead Distribution
- Ergon Energy Corporation Ltd
- ABN 50 087 646 062
CONDUCTOR: 4x50mm² LV ABC
OVERALL DIAMETER: 28.7mm
SECTIONAL AREA: 200mm²
MASS: 700kg/km
CALCULATED BREAKING LOAD: 28kN
15°C NO WIND: 10% C.B.L
25°C 1200 Pa WIND: 40% C.B.L

NOTES:
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CABLE: 2x50mm² LVABC
OVERALL DIAMETER: 23.8mm
SECTIONAL AREA: 100mm²
MASS: 350kg/km
CALCULATED BREAKING LOAD: 14kN
15°C NO WIND: 2.5% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

OVERHEAD DISTRIBUTION
STRINGING CHARTS
2x50mm² LVABC - SLACK STRINGING
2.5% C.B.L. - 900 AND 1200 Pa WIND

TENSION (kN)  SPAN (m)

SAG IN METRES

SAG CURVES

TEMPERATURE CURVES
CONDUCTOR: 2x50mm² LVABC
OVERALL DIAMETER: 23.8mm
SECTIONAL AREA: 100mm²
MASS: 350kg/km
CALCULATED BREAKING LOAD: 14kN

NOTES:-
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CABLE: 2x50mm² LVABC
OVERALL DIAMETER: 23.8mm
SECTIONAL AREA: 100mm²
MASS: 350kg/km
CALCULATED BREAKING LOAD: 14kN
15°C NO WIND: 6% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

NOTES:-
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

SAG IN METRES
CABLE:
2x50mm² LVABC
OVERALL DIAMETER: 23.8mm
SECTIONAL AREA: 100mm²
MASS: 350kg/km
CALCULATED BREAKING LOAD: 14kN
15°C NO WIND: 6% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

SAG CURVES
TEMPERATURE CURVES

A  ORIGINAL ISSUE
B  8.12.11

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Ergon Energy Corporation Ltd
ABN 50 087 646 062

OVERHEAD DISTRIBUTION
STRINGING CHARTS
URBAN 2x50mm² LVABC
6% C.B.L. - 1200 Pa WIND
NOTES:
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CONDUCTOR: 2x50mm² LVABC
OVERALL DIAMETER: 23.8mm
SECTIONAL AREA: 100mm²
MASS: 350kg/km
CALCULATED BREAKING LOAD: 14kN
15°C NO WIND: 10% C.B.L.
25°C 1200 Pa WIND: 40% C.B.L.

NOTES:
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CONDUCTOR: LIBRA MARS MOON PLUTO
STRANDING: 7/3.00 7/3.75 7/4.75 19/3.75
OVERALL DIAMETER: 9mm 11.3mm 14.3mm 18.8mm
SECTIIONAL AREA: 49.5mm² 77.3mm² 124mm² 210mm²
MASS: (kg/km) 135 212 340 578
CALCULATED BREAKING LOAD: 7.9kN 11.6kN 18.8kN 32.3kN
% C.B.L. 15°C NO WIND: 2.4 2.5 2.5 2.5
25°C 900 & 1200Pa WIND: 72 72 72 72

NOTES:-
1. Refer to interim design manual for 900Pa and 1200Pa wind tension curves.
2. Armour rods are not necessary.
3. No allowances required for inelastic stretch.

SAG IN METRES

SAG CURVES

TEMPERATURE CURVES

SAGS FOR SPANS LESS THAN 20.0m SHALL BE CALCULATED AS: \( \frac{\text{SPAN (m)}}{25} \)
NOTES:-
1. Refer to interim design manual.
   for 900Pa and 1200Pa wind tension curves.
2. Armour rods are not necessary.
3. No allowances required for inelastic stretch.
<table>
<thead>
<tr>
<th>CONDUCTOR:</th>
<th>LIBRA</th>
<th>MARS</th>
<th>MOON</th>
<th>PLUTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRANDING:</td>
<td>7/3.00</td>
<td>7/3.75</td>
<td>7/4.75</td>
<td>19/3.75</td>
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<tr>
<td>OVERALL DIAMETER :</td>
<td>9mm</td>
<td>11.3mm</td>
<td>14.3mm</td>
<td>18.8mm</td>
</tr>
<tr>
<td>SECTIONAL AREA :</td>
<td>49.5mm²</td>
<td>77.3mm²</td>
<td>124mm²</td>
<td>210mm²</td>
</tr>
<tr>
<td>MASS :</td>
<td>135</td>
<td>212</td>
<td>340</td>
<td>578</td>
</tr>
<tr>
<td>CALCULATED BREAKING LOAD :</td>
<td>7.9kN</td>
<td>11.9kN</td>
<td>18.8kN</td>
<td>32.3kN</td>
</tr>
<tr>
<td>% C.B.L. 15° C NO WIND :</td>
<td>9.4</td>
<td>9.8</td>
<td>10.0</td>
<td>9.9</td>
</tr>
<tr>
<td>25° C 900 &amp; 1200Pa WIND :</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
</tbody>
</table>

NOTES:-
1. Refer to interim design manual for 900Pa and 1200Pa wind tension curves.
2. Armour rods are not necessary.
3. String new conductor at ambient temperature minus 5° C to cater for inelastic strength.
NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: AAC 7 / 2.5 Leo
EQUIVALENT OVERALL DIAMETER: 7.5mm
SECTIONAL AREA: 34.4mm²
MASS: 94kg/km
CALCULATED BREAKING LOAD:
15°C NO WIND: 5.75kN
25°C 900 Pa WIND: 2.5% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

EQUIVALENT OVERALL DIAMETER:
72% C.B.L.

STRINGING CHARTS

OVERHEAD DISTRIBUTION
STRINGING CHARTS
'LEO' AAC 7/2.5 CONDUCTOR 2.5% C.B.L. - 900 Pa &
1200 Pa WIND - FOR 7/0.064" COPPER REPLACEMENT

ERGON ENERGY CORPORATION LTD
ABN 50 087 646 062

DATE 26/7/16
PASSED L. Avenell
DRAWN L. Burton
FILE: 5/13/20141
Dwg 2014 Sh
NOTES:
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: AAC 7 / 2.5 Leo
EQUIVALENT OVERALL DIAMETER: 7.5mm
SECTIONAL AREA: 34.4mm²
MASS: 94kg/km
CALCULATED BREAKING LOAD: 5.75kN
15° C NO WIND: 6% C.B.L.
25° C 900 Pa WIND: 72% C.B.L.
25° C 1200 Pa WIND: 72% C.B.L.

SAG IN METRES

SAG CURVES

TEMPERATURE CURVES

TENSION (kN)

SPAN (m)

0°C
10°C
15°C
20°C
30°C
40°C
50°C
60°C
70°C
80°C
90°C
100°C
110°C
120°C

0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9

0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8

0.2m
0.4m
0.6m
0.8m
1.0m
1.2m
1.4m
1.6m
1.8m
2.0m
2.5m
3.0m
3.5m
4.0m
4.5m
5.0m
5.5m

0°C
10°C
15°C
20°C
30°C
40°C
50°C
60°C
70°C
80°C
90°C
100°C
110°C
120°C
CONDUCTOR: AAC 7 / 2.5 Leo
EQUIVALENT OVERALL DIAMETER: 7.5mm
SECTIONAL AREA: 34.4mm²
MASS: 94kg/km
CALCULATED BREAKING LOAD: 5.75kN
15°C NO WIND: 10% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
CONDUCTOR: LIBRA
STRANDING: 7/3.00
OVERALL DIAMETER: 9mm
SECTIONAL AREA: 49.5mm²
MASS: 135 kg/km
CALCULATED BREAKING LOAD: 7.9kN
15°C NO WIND: 20% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
CONDUCTOR: MARS
STRANDING: 7/3.75
OVERALL DIAMETER: 113 mm
SECTIONAL AREA: 77.3 mm²
MASS: 212 kg/km
CALCULATED BREAKING LOAD: 11.6 kN
18°C NO WIND: 20% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.

OVERHEAD DISTRIBUTION STRINGING CHARTS
RURAL 'MARS' 7/3.75 AAC
20% C.B.L. - 900 Pa WIND

TENSION (kN) vs. SPAN (m) chart with sag curves for different temperatures.
NOTES:-
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.

CONDUCTOR: MARS
STRANDING: 7/3.75
OVERALL DIAMETER: 11.3mm
SECTIONAL AREA: 77.3mm²
MASS: 212 kg/km
CALCULATED BREAKING LOAD: 11.9kN
15°C NO WIND: 20% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
CONDUCTOR: AAAC 7 / 2.5 Chlorine
EQUIVALENT OVERALL DIAMETER: 7.5mm
SECTIONAL AREA: 34.4mm²
MASS: 94.3kg/km
CALCULATED BREAKING LOAD: 8.2kN
15° C NO WIND: 6.5% C.B.L.
25° C 900 Pa WIND: 72% C.B.L.
25° C 1200 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

OVERHEAD DISTRIBUTION STRINGING CHARTS
'CHLORINE' AAAC 1120 7/2.5 CONDUCTOR 6.5% C.B.L. - 900 & 1200 Pa WIND - FOR 7/0.064" COPPER REPLACEMENT
CONDUCTOR: MOON
STRANDING: 7/4.75
OVERALL DIAMETER: 14.3mm
SECTIONAL AREA: 124.0mm²
MASS: 340kg/km
CALCULATED BREAKING LOAD: 18.8kN
15°C NO WIND: 20% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.

OVERHEAD DISTRIBUTION STRINGING CHARTS
RURAL 'MOON' 7/4.75 AAC
20% C.B.L. - 900 Pa WIND

Tension (kN) vs. Sag in Metres for various temperatures and spans.
CONDUCTOR:  
MOON 7/4.75

STRANDING:  
1200 Pa WIND:
20% C.B.L.
72% C.B.L.

OVERALL DIAMETER:  
14.3mm

SECTIONAL AREA:  
124.0mm²

MASS:  
340kg/km

CALCULATED BREAKING LOAD:  
18.8kN

for 1200 Pa wind tension curves.

NOTES:-

1. Refer to distribution design manual
2. Armour rods are necessary.
3. Vibration damping must be considered
4. String new conductor at ambient
   temperature minus 10°C to cater
   for inelastic stretch.

Stringing Charts
Rural "MOON" 7/4.75 AAC
20% C.B.L. - 1200 Pa WIND
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.

NOTES:

- **CONDUCTOR**: PLUTO
- **STRANDING**: 19/3.75
- **OVERALL DIAMETER**: 18.8mm
- **SECTIONAL AREA**: 210mm²
- **MASS**: 578kg/km
- **CALCULATED BREAKING LOAD**: 32.3kN

**Temperature Curves**

- 15°C N.O. WIND: 20% C.B.L.
- 25°C 1200 Pa WIND: 72% C.B.L.
CONDUCTOR: CHLORINE
STRANDING: 7/2.5
OVERALL DIAMETER: 7.5mm
SECTIONAL AREA: 34.4mm²
MASS: 84.3 kg/km
CALCULATED BREAKING LOAD: 8.2kN
15°C NO WIND: 20% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 800 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.

CONDUCTOR: CHLORINE
STRANDING: 7/2.5
OVERALL DIAMETER: 7.5mm
SECTIONAL AREA: 34.4mm²
MASS: 94.3 kg/km
CALCULATED BREAKING LOAD: 8.2kN
15°C NO WIND: 20% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
CONDUCTOR: FLUORINE
STRANDING: 7/3.0
OVERALL DIAMETER: 9.0mm
SECTIONAL AREA: 49.5mm²
MASS: 135kg/km
CALCULATED BREAKING LOAD: 11.8kN
15°C NO WIND: 20% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.

NOTES:-
1. Armour rods are necessary.
2. Vibration damping must be considered when using this conductor.
3. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.
CONDUCTOR: FLUORINE
STRANDING: 7/3.0
OVERALL DIAMETER: 9.0mm
SECTIONAL AREA: 49.5mm²
MASS: 135kg/km
CALCULATED BREAKING LOAD: 11.8kN
15°C NO WIND: 20% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

NOTES:-
1. Armour rods are necessary.
2. Vibration damping must be considered when using this conductor.
3. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.
CONDUCTOR: HELIUM
STRANDING: 7/3.75
OVERALL DIAMETER: 11.3mm
SECTIONAL AREA: 77.3mm²
MASS: 212kg/km
CALCULATED BREAKING LOAD: 17.6kN
15°C NO WIND: 20% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.
**NOTES:-**

1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.

**CONDUCTOR:**

- HELIUM

**STRANDING:**

- 7/3.75

**OVERALL DIAMETER:**

- 77.3mm

**SECTIONAL AREA:**

- 11.3mm²

**MASS:**

- 212kg/km

**CALCULATED BREAKING LOAD:**

- 17.6kN

**15°C NO WIND:**

- 22% C.B.L.

**25°C 1200 Pa WIND:**

- 72% C.B.L.
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.
NOTES:
1. Armour rods are necessary.
2. Vibration damping must be considered when using this conductor.
3. String new conductor at ambient temperature minus 15°C to cater for inelastic stretch.

CONDUCTOR: IODINE
STRANDING: 7/4.75
OVERALL DIAMETER: 14.3mm
SECTIONAL AREA: 124.0mm²
MASS: 340kg/km
CALCULATED BREAKING LOAD: 27.1kN
15°C NO WIND: 20% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

OVERHEAD DISTRIBUTION STRINGING CHARTS
RURAL 'IODINE' 7/4.75 AAAC
20% C.B.L. - 1200 Pa WIND
NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10 °C to cater for inelastic stretch.

CONDUCTOR: APPLE
STRANDING: 6/1/3.00
OVERALL DIAMETER: 9.0mm
SECTIONAL AREA: 49.5mm²
MASS: 171kg/km
CALCULATED BREAKING LOAD: 14.9kN
15 °C NO WIND: 22% C.B.L.
25 °C 900 Pa WIND: 72% C.B.L.

NOTES:
1. Armour rods are necessary.
2. Vibration damping must be considered when using this conductor.
3. String new conductor at ambient temperature minus 10 °C to cater for inelastic stretch.
<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Sag in Metres</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2.0m</td>
</tr>
<tr>
<td>10</td>
<td>3.5m</td>
</tr>
<tr>
<td>15</td>
<td>3.0m</td>
</tr>
<tr>
<td>20</td>
<td>2.5m</td>
</tr>
<tr>
<td>25</td>
<td>2.0m</td>
</tr>
<tr>
<td>30</td>
<td>1.5m</td>
</tr>
<tr>
<td>35</td>
<td>1.0m</td>
</tr>
<tr>
<td>40</td>
<td>0.5m</td>
</tr>
<tr>
<td>45</td>
<td>0.0m</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.

CONDUCTOR: SULTANA
STRANDING: 4/3/3.0
OVERALL DIAMETER: 9mm
SECTIONAL AREA: 49.5mm²
MASS: 242kg/km
CALCULATED BREAKING LOAD: 28.3kN
15°C NO WIND: 22% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
SAG CURVES

CONDUCTOR: 50/18.3
STRANDING: 6/1/3.75
OVERALL DIAMETER: 15.3mm
SECTIONAL AREA: 45.8mm²
CALCULATED BREAKING LOAD:
15°C NO WIND: 22.8kN
25°C 1200 Pa WIND:
BANANA 6/1/3.75
11.3mm
77.3mm²
268kg/km
22% C.B.L.
72% C.B.L.

NOTES:-
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
CONDUCTOR: CHERRY
STRANDING: 6 / 4.75 + 7 / 1.60
OVERALL DIAMETER: 14.3 mm
SECTIONAL AREA: 120.4 mm²
MASS: 404 kg/km
CALCULATED BREAKING LOAD:
15°C NO WIND: 33.2 kN
15°C 900Pa WIND: 22% C.B.L
15°C 1200Pa WIND: 70% C.B.L

NOTES:–
1. Refer to distribution design manual for 900Pa & 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. String new conductor at ambient temperature minus 10°C to cater for inelastic stretch.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.

CONDUCTOR: SC/AC
STRANDING: 3/2.75
OVERALL DIAMETER: 5.93mm
SECTIONAL AREA: 9.93mm²
MASS: 118kg/km
CALCULATED BREAKING LOAD:
15° C NO WIND: 22.7kN
25° C 900 Pa WIND: 25% C.B.L.
25° C 900 Pa WIND: 72% C.B.L.

NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. No allowance required for inelastic stretch.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.

NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. Armour rods are necessary.
3. Vibration damping must be considered when using this conductor.
4. No allowance required for inelastic stretch.

CONDUCTOR: 5C/GZ
STRANDING: 3/2.75
OVERALL DIAMETER: 5.93mm
SECIONAL AREA: 17.82mm²
MASS: 139kg/km
CALCULATED BREAKING LOAD: 22.2kN
15°C NO WIND: 25% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
CONDUCTOR: ADSS 96 Fibre Cable - Short Span
EQUIVALENT OVERALL DIAMETER: 15mm²
SECTIONAL AREA: 138.2mm²
MASS: 165kg/km
CALCULATED BREAKING LOAD: 38.3kN
15°C NO WIND: 5% C.B.L.
25°C 900 Pa WIND: 26% C.B.L.
25°C 1200 Pa WIND: 26% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
**CONDUCTOR TYPE:** 36-48 FIBRE ADSS CABLE - SHORT SPAN  
**SECTIONAL AREA:** 124.3 mm²  
**OVERALL DIAMETER:** 14.5 mm  
**DISTRIBUTED MASS:** 160 kg/km  
**FINAL MODULUS OF ELASTICITY:** 11.1 GPa  
**COEFFICIENT OF EXPANSION /°C:** 12.4 x 10^-6  
**CALCULATED BREAKING LOAD:** 18 kN  
**15°C NO WIND:** 10% C.B.L  
**25°C 900Pa WIND:** 34.4% C.B.L
CONDUCTOR TYPE: 36-48 FIBRE ADSS CABLE - SHORT SPAN
SECTIONAL AREA: 124.3 mm²
OVERALL DIAMETER: 14.5 mm
DISTRIBUTED MASS: 160 kg/km
FINAL MODULUS OF ELASTICITY: 11.1 GPa
COEFFICIENT OF EXPANSION /°C: 12.4 x 10^-6
CALCULATED BREAKING LOAD: 18 kN
15°C NO WIND: 10% C.B.L
25°C 1200Pa WIND: 34.4% C.B.L

OVERHEAD DISTRIBUTION STRINGING CHART
36-48 FIBRE ADSS CABLE - SHORT SPAN
10% C.B.L - 1200Pa WIND
Use this stringing chart when stringing below LVABC strung at 6% C.B.L.

NOTES:
1. Refer dwg no. 3466 in the Stringing Charts folder of the Distribution Design Manual for limit state design wind tension curves.

CONDUCTOR TYPE: NBN 48-72 FIBRE ADSS DRY CORE
SECTIONAL AREA: 119.6 mm²
OVERALL DIAMETER: 21 mm
DISTRIBUTED MASS: 160 kg/km
FINAL MODULUS OF ELASTICITY: 9.9 GPa
COEFFICIENT OF EXPANSION °C: 18.6 x 10^-6
CALCULATED BREAKING LOAD: 16 kN

OVERHEAD DISTRIBUTION STRINGING CHARTS
NBN 48-72 FIBRE ADSS DRY CORE FIGURE 8 TYPE 1
1.7% C.B.L - 900 & 1200 Pa WIND

DATE: 30.7.10
PASSED: C. Avenell
DRAWN: L. Burton
CONDUCTOR TYPE: NBN 48-72 FIBRE ADSS DRY CORE
SECTIONAL AREA: 119.6 mm²
OVERALL DIAMETER: 21 mm
DISTRIBUTED MASS: 160 kg/km
FINAL MODULUS OF ELASTICITY: 9.9 GPa

COEFFICIENT OF EXPANSION °C: 18.6 \times 10^{-6}
CALCULATED BREAKING LOAD: 16 kN

15°C NO WIND: 2.1% C.B.L
25°C 900Pa WIND: 34% C.B.L
25°C 1200Pa WIND: 34% C.B.L

NOTES:
1. Use this stringing chart when stringing below bare AAC strung at 6% C.B.L
2. Refer dwg no. 3466 in the Stringing Charts folder of the Distribution Design Manual for limit state design wind tension curves.

FIGURE 8 TYPE 1

OVERHEAD DISTRIBUTION
STRINGING CHARTS
NBN 48-72 FIBRE ADSS DRY CORE FIGURE 8 TYPE 1
2.1% C.B.L - 900 & 1200 Pa WIND
NOTES:
1. Use this stringing chart when stringing below LVABC strung at 6% C.B.L.
2. Refer dwg no. 3467 in the Stringing Charts folder of the Distribution Design Manual for limit state design wind tension curves.
CONDUCTOR TYPE: NBN 144 FIBRE ADSS DRY CORE FIGURE 8 TYPE 1
SECTIONAL AREA: 192.6 mm²
OVERALL DIAMETER: 26 mm
DISTRIBUTED MASS: 265 kg/km

TEMPERATURE CURVES

SAG IN METERS

SAG CURVES

FINAL MODULUS OF ELASTICITY: 7.9 GPa
COEFFICIENT OF EXPANSION °C:
15°C NO WIND: 22.6 x 10⁻⁶
15°C 900 Pa WIND: 34% C.B.L
15°C 1200 Pa WIND: 34% C.B.L

NOTES:
1. Use this stringing chart when stringing below bare AAC strung at 6% C.B.L.
2. Refer dwg no. 3467 in the Stringing Charts folder of the Distribution Design Manual for limit state design wind tension curves.

Ergon Energy Corporation Ltd
ABN 50 087 845 062

OVERHEAD DISTRIBUTION STRINGING CHARTS
NBN 144 FIBRE ADSS DRY CORE FIGURE 8 TYPE 1
3.5% C.B.L - 900 & 1200 Pa WIND
**NOTES:**

1. Use this stringing chart when stringing below bare AAC strung at 6% C.B.L.
2. Refer dwg no. 3469 in the Stringing Charts folder of the Distribution Design Manual for limit state design wind tension curves.

**CONDUCTOR TYPE:** NBN 72 FIBRE RIBBON TYPE 2

**SECTIONAL AREA:** 114.9 mm²

**OVERALL DIAMETER:** 15.2 mm

**DISTRIBUTED MASS:** 85 kg/km

**FINAL MODULUS OF ELASTICITY:** 3.8 GPa

**COEFFICIENT OF EXPANSION /°C:** 6.2 x 10^-6

**CALCULATED BREAKING LOAD:** 9 kN

15°C NO WIND:

- 3.5% C.B.L: 9 kN
- 34% C.B.L: 34 kN

25°C 900 Pa WIND:

- 34% C.B.L: 34 kN

25°C 1200 Pa WIND:

- 34% C.B.L: 34 kN
Design Manual for limit state design wind tension curves.

Refer dwg no. 3470 in the Stringing Charts folder of the Distribution at 6% C.B.L.

Use this stringing chart when stringing below bare AAC strung at 6% C.B.L.

Refer dwg no. 3470 in the Stringing Charts folder of the Distribution Design Manual for limit state design wind tension curves.

**NOTES:**

1. Use this stringing chart when stringing below bare AAC strung at 6% C.B.L.
2. Refer dwg no. 3470 in the Stringing Charts folder of the Distribution Design Manual for limit state design wind tension curves.
SAG IN METERS

SAG CURVES

TEMPERATURE CURVES

TENSION (KN)

SPAN (m)

CONDUCTOR TYPE: 7/2.75 SC/GZ
SECTIONAL AREA: 41.6 mm²
OVERALL DIAMETER: 8.3 mm
DISTRIBUTED MASS: 326 kg/km
FINAL MODULUS OF ELASTICITY: 190 GPa
COEFFICIENT OF EXPANSION °C: 12 x 10^-6
CALCULATED BREAKING LOAD: 51.8 kN
15°C NO WIND: 10% C.B.L
15°C 900Pa WIND: 70% C.B.L
15°C 1200Pa WIND: 70% C.B.L

OVERHEAD DISTRIBUTION
STRINGING CHARTS
7/2.75 SC/GZ
10% C.B.L - 900 & 1200 Pa WIND

ERGON ENERGY CORPORATION LTD
ABN 50 087 646 062

DRAWN: L. Burton
APPROVED: C. Noel
DATE: 10/12/10
PASSED: C. Avenell

FILE: 5 131753
Dwg 1753 Sh
SAG IN METRES

0°C 0.2m 0.4m 0.6m 0.8m 1.0m 1.2m 1.4m 1.6m 1.8m 2.0m 2.5m 3.0m 3.5m 4.0m 4.5m
10°C
15°C
20°C
30°C
40°C

TENSION (kN)

SPAN (m)

50 100 150 200 250 300 350

NOTES:
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. Armour rods are not necessary for OHEW.
3. Vibration damping must be considered when using this conductor.
4. No allowance required for inelastic stretch.

CONDUCTOR: ACSR/GZ Sultana
STRANDING: 4/3/3.0
OVERALL DIAMETER: 9mm
SECTIONAL AREA: 49.5mm²
MASS: 242kg/km
CALCULATED BREAKING LOAD: 28.3kN
15°C NO WIND: 25% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
**NOTES:**
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. Armour rods are not necessary for OHEW.
3. Vibration damping must be considered when using this conductor.
4. No allowance required for inelastic stretch.

**CONDUCTOR:** SC/AC

**STRANDING:** 7 / 3.75

**OVERALL DIAMETER:** 9.8mm

**SECTIONAL AREA:** 58.1mm²

**MASS:** 387kg/km

**CALCULATED BREAKING LOAD:** 69.8kN

**15°C NO WIND:** 25% C.B.L.

**25°C 900 Pa WIND:** 72% C.B.L.

**25°C 1200 Pa WIND:** 72% C.B.L.
**CONDUCTOR:** SC/GZ  
**STRANING:** 7 / 2.75  
**OVERALL DIAMETER:** 8.3mm  
**SECTIONAL AREA:** 41.6mm²  
**MASS:** 326kg/km  
**CALCULATED BREAKING LOAD:** 51.8kN  
**15°C NO WIND:** 25% C.B.L.  
**25°C 900 Pa WIND:** 72% C.B.L.  
**25°C 1200 Pa WIND:** 72% C.B.L.

**NOTES:-**  
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.  
2. Armour rods are not necessary for OHEW.  
3. Vibration damping must be considered when using this conductor.  
4. No allowance required for inelastic stretch.
CONDUCTOR: SC/GZ
STRANDING: 7 / 3.25
OVERALL DIAMETER: 9.8mm
SECTIONAL AREA: 58.1mm²
MASS: 460kg/km
CALCULATED BREAKING LOAD: 72.3kN
15°C NO WIND: 25% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

NOTES:-
1. Refer to distribution design manual for 900 and 1200 Pa wind tension curves.
2. Armour rods are not necessary for OHEW.
3. Vibration damping must be considered when using this conductor.
4. No allowance required for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

Catenary Type: 19/2.75 SC/GZ
Overall Diameter: 13.8mm
Sectional Area: 112.9mm²
Mass: 888kg/km

Calculated Breaking Load: 133kN

15°C No Wind: 25% C.B.L.
25°C 900 Pa Wind: 72% C.B.L.
25°C 1200 Pa Wind: 72% C.B.L.

Temperature Curves
Sag Curves

Tension (kN)
Span (m)
NOTES:–

1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CATEGORICAL TYPE: 7 No. 6 AW
OVERALL DIAMETER: 12.4mm
SECTONAL AREA: 93.1mm²

MASS: 619.5kg/km
CALCULATED BREAKING LOAD: 101.14kN
15°C NO WIND: 25% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

OVERHEAD DISTRIBUTION STRINGING CHARTS
HENDRIX 7 No. 6 AW CATEGORICAL
CONDUCTOR 25% C.B.L. - 900 Pa & 1200 Pa WIND
CONDUCTOR: Hendrix 11kV 50mm²
CATENARY TYPE: 19/2.00 SC/GZ
EQUIVALENT OVERALL DIAMETER: 65.8mm
SECTIONAL AREA: 59.7mm²
MASS: 1607kg/km
CALCULATED BREAKING LOAD: 70.5kN
15°C NO WIND: 25% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: Hendrix 11kV 50mm²
CATENARY TYPE: 19/2.00 SC/GZ
EQUIVALENT OVERALL DIAMETER: 65.8mm
SECTIONAL AREA: 59.7mm²
MASS: 1607kg/km
CALculated BREAKING LOAD: 70.5kN
15°C NO WIND: 25% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

SPAN (m) 0 50 100 150 200 250
TENSION (kN) 12 13 14 15 16 17 18 19 20

0°C 0.2m 0.4m 0.6m 0.8m 1.0m 1.2m 1.4m 1.6m 1.8m 2.0m 2.5m 3.0m 3.5m 4.0m 4.5m 5.0m 5.5m 6.0m 6.5m 7.0m 7.5m 8.0m 8.5m 9.0m 9.5m 10.0m

0°C 10°C 15°C 20°C 25°C 30°C 35°C 40°C 45°C

SAG CURVES
TEMPERATURE CURVES

SAG IN METRES

0°C 10°C 15°C 20°C 25°C 30°C 35°C 40°C 45°C

0°C 10°C 20°C 30°C 40°C 50°C
NOTES:-
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CONDUCTOR: Hendrix 22kV 50mm²
CATENARY TYPE: 19/2.00 SC/GZ
EQUIVALENT OVERALL DIAMETER: 81.0mm
SECTIONAL AREA: 59.7mm²
MASS: 2081kg/km
CALCULATED BREAKING LOAD: 70.5kN
15°C NO WIND: 72% C.B.L.
25°C 900 Pa WIND: 25% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.

SAG CURVES
TEMPERATURE CURVES

SAG IN METRES

TENSION (kN)

SPAN (m)

0°C
10°C
15°C
20°C
30°C
40°C
50°C

0
50
100
150
200
250

0°C
10°C
15°C
20°C
30°C
40°C

0
50
100
150
200
250

NOTES:
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.
CONDUCTOR: Hendrix 22kV 50mm²
CATENARY TYPE: 19/2.00 SC/GZ
EQUIVALENT OVERALL DIAMETER: 81mm
SECTIONAL AREA: 59.7mm²
MASS: 2081kg/km
CALCULATED BREAKING LOAD:
15°C NO WIND: 70.5kN
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 25% C.B.L.

CONDUCTOR 25% C.B.L. - 1200 Pa WIND

NOTES:
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
### Stringing Charts - Final

**Conductor:** Hendrix 22kV 150mm²

**Catenary Type:** 19/2.00 SC/GZ

**Equivalent Overall Diameter:** 98.1mm

**Sectional Area:** 59.7mm²

**Mass:** 3213kg/km

**Calculated Breaking Load:**
- 15°C No Wind: 70.5kN
- 25°C 900 Pa Wind: 72% C.B.L.
- 25°C 1200 Pa Wind: 72% C.B.L.

**Notes:**
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.

---

**Temperature Curves**

**Sag Curves**

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Sag (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°C</td>
<td>0.2m</td>
</tr>
<tr>
<td>10°C</td>
<td>0.4m</td>
</tr>
<tr>
<td>15°C</td>
<td>0.6m</td>
</tr>
<tr>
<td>20°C</td>
<td>1.0m</td>
</tr>
<tr>
<td>30°C</td>
<td>1.4m</td>
</tr>
<tr>
<td>40°C</td>
<td>1.7m</td>
</tr>
<tr>
<td>50°C</td>
<td>1.9m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Span (m)</th>
<th>Tension (kN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>12</td>
</tr>
<tr>
<td>150</td>
<td>13</td>
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<tr>
<td>200</td>
<td>14</td>
</tr>
<tr>
<td>250</td>
<td>15</td>
</tr>
</tbody>
</table>
NOTES:-

1. Refer to distribution design manual for 1200 Pa wind tension curves.

2. No allowance required for inelastic stretch.

CONDUCTOR: Hendrix 22kV 150mm²
CATENARY TYPE: 19/2.00 SC/GZ
EQUIVALENT OVERALL DIAMETER: 98.1mm
SECTIONAL AREA: 59.7mm²
MASS: 3213kg/km
CALCULATED BREAKING LOAD: 70.5kN

15°C NO WIND: 25% C.B.L.
25°C WIND: 72% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

SAG CURVES
TEMPERATURE CURVES

TENSION (kN) vs SPAN (m)

- 0°C
- 10°C
- 15°C
- 20°C
- 30°C
- 40°C
- 50°C

- 0°C
- 10°C
- 15°C
- 20°C
- 30°C
- 40°C
- 50°C

SAG IN METRES

0.2m 0.4m 0.6m 0.8m 1.0m 1.2m 1.4m 1.6m 1.8m 2.0m 2.5m 3.0m 3.5m 4.0m 4.5m 5.0m 5.5m 6.0m 6.5m 7.0m 7.5m 8.0m 8.5m 9.0m 9.5m 10.0m 11.0m 12.0m 13.0m 14.0m 15.0m 16.0m 16.6m

NOTES:

- for inelastic stretch.

No allowance required
NOTES:-

1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: Hendrix 11kV 50mm²
Catenary Type: 19/2.75 SC/GZ
Equivalent Overall Diameter: 69.6mm
Sectional Area: 112.9mm²
Mass: 2012kg/km
Calculated Breaking Load: 133kN
15°C C No Wind: 25% C.B.L.
25°C C 900 Pa Wind: 72% C.B.L.
25°C C 1200 Pa Wind: 72% C.B.L.
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.

2. No allowance required for inelastic stretch.

**NOTES:**

1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.

2. No allowance required for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

**NOTES:**

**CONDUCTOR:** Hendrix 22kV 150mm²

**CATENARY TYPE:** 19/2.75 SC/GZ

**EQUIVALENT OVERALL DIAMETER:** 101.9mm

**SECTIONAL AREA:** 112.9mm²

**MASS:** 3618kg/km

**CALCULATED BREAKING LOAD:**
- 15°C NO WIND: 133kN
- 25°C 900 Pa WIND: 72% C.B.L.
- 25°C 1200 Pa WIND: 72% C.B.L.
NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: Hendrix 11kV 50mm²
CATENARY TYPE: 7 No.6 AW
EQUIVALENT OVERALL DIAMETER: 68.1mm
SECTIONAL AREA: 93.1mm²
MASS: 1743kg/km
CALCULATED BREAKING LOAD: 101kN
15°C NO WIND: 25% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
NOTES:

1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.

2. No allowance required for inelastic stretch.

OVERHEAD DISTRIBUTION STRINGING CHARTS - FINAL

HENDRIX 7 No. 6 AW CATENARY 11kV 150mm²

CONDUCTOR 25% C.B.L. - 900 Pa & 1200 Pa WIND

MASS: 2774kg/km
CALCULATED BREAKING LOAD: 101kN
15°C NO WIND: 25% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
NOTES:-
1. Refer to distribution design manual for
   900 Pa and 1200 Pa wind tension curves.
2. No allowance required
   for inelastic stretch.

CONDUCTOR:
Hendrix 22kV 150mm

CATERGORY TYPE:
7/No.6 AW

OVERALL DIAMETER:
100.4mm

SECTIONAL AREA:
93.1mm²

MASS:
3349kg/km

CALCULATED BREAKING LOAD:
101kN

15°C C NO WIND:
25% C.B.L.

25°C 900 Pa WIND:
72% C.B.L.

25°C 1200 Pa WIND:
72% C.B.L.
NOTES:-
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: CCT 120mm²
STRANDING: 7/4.75mm
OVERALL DIAMETER: 21.9mm
SECTIONAL AREA: 124mm²
MASS: 580kg/km
CALCULATED BREAKING LOAD: 27.1kN
15°C NO WIND: 10% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.

TENSION (kN)
SPAN (m)

SAG CURVES
TEMPERATURE CURVES

OVERHEAD DISTRIBUTION STRINGING CHARTS
CCT 11kV 120mm² 7/4.75mm AAAC
10% C.B.L. - 900 Pa & 1200 Pa WIND
Notes:
1. Refer to distribution design manual for 900 Pa and 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.
NOTES:
1. Refer to distribution design manual for 900 Pa & 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: CCT 22kV 120mm² 7/4.75
EQUIVALENT OVERALL DIAMETER: 72% C.B.L.
SECTIONAL AREA: 10% C.B.L.
MASS: 25°C 900 Pa W
CALCULATED BREAKING LOAD:
15°C NO WIND: 1200 Pa W
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
NOTES:-
1. Refer to distribution design manual for 900 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR: CCT 22kV 120mm² 7/4.75
EQUIVALENT OVERALL DIAMETER: 26.1mm
SECTIONAL AREA: 124mm²
MASS: 720kg/km
CALCULATED BREAKING LOAD: 27.1kN
15°C NO WIND: 20% C.B.L.
25°C 900 Pa WIND: 72% C.B.L.
25°C 1200 Pa WIND: 72% C.B.L.
NOTES:-
1. Refer to distribution design manual for 1200 Pa wind tension curves.
2. No allowance required for inelastic stretch.

CONDUCTOR:
CCT 22kV 120mm² 7/4.75

EQUIVALENT OVERALL DIAMETER:
26.1mm

SECTIONAL AREA:
124mm²

MASS:
720kg/km

CALCULATED BREAKING LOAD:
27.1kN

15°C NO WIND:
20% C.B.L.

25°C 900 Pa WIND:
72% C.B.L.

25°C 1200 Pa WIND:
72% C.B.L.