



**TANO**

C A B L E

**河南泰诺电缆有限公司**

HENAN TANO CABLE CO.,LTD.



# ACSR to BS 215-2 STANDARD



**TARI**



Henan Tano Cable Co., Ltd.( Tano Cable for short), is a leading and professional manufacturer of cable and wire with more than 20 years' history and manufacturing experience, located in Zhengzhou city which is the capital of Henan province, China.

Tano Cable aims at providing integral power solution for international customers. We are working together as one company to provide products and technologies for building, maintaining and advancing the power and information infrastructures that connect the world. We mainly have the following products with strong competitiveness: All Aluminum Conductors (AAC), All Aluminum Alloy Conductors (AAAC), Aluminum Conductors Steel Reinforcement (ACSR) , Aerial Bundled Cables (ABC), building wire, welding cable, control cable, instrument cable, rubber cable, PVC insulated power cable, XLPE insulated power cable up to 500KV, customer-tailored cable and cable accessories, conforming to many different Country or international standard, such as IEC, HAR, BS, DIN, ICEA, ASTM, SABS, AS/NZS, JIS and so on.

Tano Cable pays great importance on the quality. We have strong teams and equipments for both production and inspection. Moreover, we have been awarded many certificates of ISO, CE, SONCAP, others from China and abroad. We keep improving our quality management system to meet the client's final satisfaction.

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Tano Cable has provided services to the global clients who working in all areas of the energy, construction, industrial, specialty and communications market, and obtained the client's trust and compliment.

Welcome your any inquiry! Welcome your any visit! Welcome your any contact! We will take our biggest sincerity to be your long-term friend and partner.







# Aluminum Conductor Steel reinforced (ACSR) Cables to BS 215-2 Standard

## APPLICATION

ACSR conductors are widely used for electrical power transmission over long distances, since they are ideal for long overhead lines spans. They are also used as a messenger for supporting overhead electrical cables.

## STANDARD

Basic design to BS 215-2 standard.

## CONSTRUCTION

ACSR conductors are formed by several wires of aluminium and galvanized steel, stranded in concentric layers. The wire or wires which form the core, are made of galvanized steel and the external layer or layers, are of aluminium. Galvanized steel core consist normally of 1, 7 or 19 wires. The diameters of steel and aluminium wires can be the same, or different. By varying the relative proportions of aluminium and steel, the required characteristics for any particular application can be reached. A higher U. T. S. Can be obtained, by increasing steel content, and a higher current carrying capacity by increasing aluminium content.

## ELECTRICAL PROPERTIES

|                              |                                      |
|------------------------------|--------------------------------------|
| Density@20°C                 | Aluminum: 2.703 kg/dm                |
|                              | Galvanized Steel: 7.80 kg/dm         |
| Temperature Coefficient@20°C | Aluminum: 0.00403 (°C)               |
| Resistivity@20°C             | Aluminum: Should not exceed 0.028264 |
| Linear Expansivity           | Aluminum: 23 x10 (°C)                |
|                              | Galvanized Steel: 11.5 x10 (1/°C)    |



## SERVICE CONDITIONS

|                      |                           |
|----------------------|---------------------------|
| Ambient Temperature  | -5°C - 50°C               |
| Wind Pressure        | 90 - 130kg/m <sup>2</sup> |
| Seismic Acceleration | 0.12 - 0.05g              |
| Isokeraunic Level    | 10 - 18                   |
| Relative Humidity    | 5 - 100%                  |

## CONSTRUCTION PARAMETERS

| Code     | Nominal Area               |                               |                          |                          | Stranding      |                   | Overall Diameter |             | Weight(CU)  |                |                | Rated Strength<br>KN |
|----------|----------------------------|-------------------------------|--------------------------|--------------------------|----------------|-------------------|------------------|-------------|-------------|----------------|----------------|----------------------|
|          | AL                         |                               | Steel<br>mm <sup>2</sup> | Total<br>mm <sup>2</sup> | AL<br>No. x mm | Steel<br>No. x mm | Core<br>mm       | Total<br>mm | AL<br>Kg/Km | Steel<br>Kg/Km | Total<br>Kg/Km |                      |
|          | Nominal<br>mm <sup>2</sup> | Calculated<br>mm <sup>2</sup> |                          |                          |                |                   |                  |             |             |                |                |                      |
| Mole     | 10                         | 10.62                         | 1.77                     | 12.39                    | 6/1.50         | 1/1.50            | 1.5              | 4.5         | 29          | 14             | 43             | 4.14                 |
| Squirrel | 20                         | 20.94                         | 3.49                     | 24.43                    | 6/2.11         | 1/2.11            | 2.11             | 6.33        | 57          | 28             | 85             | 7.88                 |
| Gopher   | 25                         | 26.24                         | 4.38                     | 30.62                    | 6/2.36         | 1/2.36            | 2.36             | 7.08        | 71          | 35             | 106            | 9.61                 |
| Weasel   | 30                         | 31.61                         | 5.27                     | 36.88                    | 6/2.59         | 1/2.59            | 2.59             | 7.77        | 87          | 41             | 128            | 11.45                |
| Fox      | 35                         | 36.66                         | 6.11                     | 42.77                    | 6/2.79         | 1/2.79            | 2.79             | 8.37        | 101         | 48             | 149            | 13.2                 |
| Ferret   | 40                         | 42.41                         | 7.07                     | 49.48                    | 6/3.00         | 1/3.00            | 3                | 9           | 117         | 55             | 172            | 15.2                 |
| Rabbit   | 50                         | 52.88                         | 8.82                     | 61.7                     | 6/3.35         | 1/3.35            | 3.35             | 10.05       | 145         | 69             | 214            | 18.35                |
| Mink     | 60                         | 63.18                         | 10.53                    | 73.71                    | 6/3.66         | 1/3.66            | 3.66             | 10.98       | 171         | 84             | 255            | 2.18                 |
| Shunk    | 60                         | 63.27                         | 37.03                    | 100.3                    | 12/2.59        | 7/2.59            | 7.77             | 12.95       | 178         | 287            | 465            | 5.3                  |
| Beaver   | 70                         | 74.82                         | 12.47                    | 87.29                    | 6/3.99         | 1/3.99            | 3.99             | 11.97       | 203         | 99             | 302            | 2.57                 |
| Horse    | 70                         | 73.37                         | 42.63                    | 116.2                    | 12/2.79        | 7/2.79            | 8.37             | 13.95       | 203         | 335            | 538            | 61.2                 |
| Raccoon  | 75                         | 79.2                          | 13.2                     | 92.4                     | 6/4.1          | 1/4.1             | 4.1              | 12.3        | 216         | 104            | 320            | 27.2                 |
| Otter    | 80                         | 83.88                         | 13.98                    | 97.86                    | 6/4.22         | 1/4.22            | 4.22             | 13.98       | 226         | 113            | 339            | 28.8                 |
| Cat      | 90                         | 96.44                         | 15.86                    | 111.3                    | 6/4.5          | 1/4.5             | 4.5              | 15.9        | 258         | 128            | 386            | 32.7                 |
| Hare     | 100                        | 105                           | 17.5                     | 122.5                    | 6/4.72         | 1/4.72            | 4.72             | 17.5        | 284         | 141            | 425            | 36                   |
| Dog      | 100                        | 105                           | 13.5                     | 118.5                    | 6/4.72         | 7/1.57            | 4.71             | 14.15       | 288         | 106            | 394            | 32.7                 |
| Hyena    | 100                        | 105.8                         | 20.4                     | 126.2                    | 7/4.39         | 7/1.93            | 5.79             | 14.57       | 250         | 200            | 450            | 40.9                 |
| Leopard  | 125                        | 131.3                         | 16.8                     | 148.1                    | 8/5.28         | 7/1.75            | 5.25             | 15.81       | 310         | 182            | 492            | 40.7                 |
| Coyotte  | 125                        | 132.1                         | 20.1                     | 152.2                    | 26/2.54        | 7/1.91            | 5.73             | 15.89       | 410         | 112            | 522            | 46.4                 |
| Congar   | 125                        | 130.3                         | 7.2                      | 137.5                    | 18/3.05        | 1/3.05            | 3.05             | 15.25       | 361         | 58             | 419            | 29.8                 |
| Tiger    | 125                        | 131.1                         | 30.6                     | 161.7                    | 30/2.36        | 7/2.36            | 7.08             | 16.52       | 365         | 237            | 602            | 58                   |
| Wolf     | 150                        | 158.1                         | 36.8                     | 194.9                    | 30/2.59        | 7/2.59            | 7.77             | 18.13       | 441         | 285            | 726            | 69.2                 |
| Dingo    | 150                        | 158.7                         | 8.8                      | 167.5                    | 18/3.35        | 1/3.35            | 3.35             | 16.75       | 437         | 69             | 506            | 35.7                 |
| Lynx     | 175                        | 183.4                         | 42.8                     | 226.2                    | 30/2.79        | 7/2.79            | 8.37             | 19.53       | 507         | 335            | 842            | 79.8                 |
| Caracal  | 175                        | 184.3                         | 10.2                     | 194.5                    | 18/3.61        | 1/3.61            | 3.61             | 18.05       | 507         | 80             | 587            | 41.1                 |
| Panther  | 200                        | 212.1                         | 49.4                     | 261.5                    | 30/3.00        | 7/3.00            | 9                | 21          | 586         | 388            | 974            | 92.25                |
| Jaguar   | 200                        | 210.6                         | 11.7                     | 222.3                    | 18/3.86        | 1/3.86            | 3.86             | 19.3        | 580         | 91             | 671            | 46.55                |
| Lion     | 225                        | 238.5                         | 55.7                     | 294.2                    | 30/3.18        | 7/3.18            | 9.54             | 22.26       | 657         | 438            | 1095           | 100.6                |
| Bear     | 250                        | 264                           | 61.6                     | 325.6                    | 30/3.35        | 7/3.35            | 10.05            | 23.45       | 728         | 485            | 1213           | 111.1                |

|          |         |        |       |       |         |        |       |       |       |     |      |       |
|----------|---------|--------|-------|-------|---------|--------|-------|-------|-------|-----|------|-------|
| Goat     | 300     | 324.3  | 75.7  | 400   | 30/3.71 | 7/3.71 | 11.13 | 25.79 | 894   | 595 | 1489 | 135.7 |
| Sheep    | 350     | 374.1  | 87.3  | 461.4 | 30/3.99 | 7/3.99 | 11.97 | 27.93 | 1031  | 687 | 1718 | 155.9 |
| Antelope | 350     | 373.1  | 48.4  | 421.5 | 54/2.97 | 7/2.97 | 8.91  | 26.73 | 1040  | 371 | 1411 | 118.2 |
| Bizon    | 350     | 381.8  | 49.5  | 431.3 | 54/3.00 | 7/3.00 | 9     | 27    | 1064  | 380 | 1444 | 120.9 |
| Zebra    | 400     | 428.9  | 55.6  | 484.5 | 54/3.18 | 7/3.18 | 9.54  | 28.62 | 1185  | 436 | 1621 | 131.9 |
| Mole     | 6/1.50  | 1/1.50 | 10.6  | 1.77  | 12.4    | 4.5    | 42.8  | 4.14  | 2.703 | 66  | *    | *     |
| Squirrel | 6/2.11  | 1/2.11 | 21    | 3.5   | 24.5    | 6.33   | 84.7  | 7.87  | 1.366 | 101 | *    | *     |
| Fox      | 6/2.79  | 1/2.79 | 36.7  | 6.11  | 42.8    | 8.37   | 148.1 | 13.21 | 0.781 | 142 | *    | *     |
| Mink     | 6/3.66  | 1/3.66 | 63.1  | 10.5  | 73.6    | 10.98  | 254.9 | 21.67 | 0.454 | 199 | *    | *     |
| Skunk    | 12/2.59 | 7/2.59 | 63.2  | 36.9  | 100.1   | 12.95  | 463   | 52.79 | 0.457 | 206 | *    | *     |
| Beaver   | 6/3.99  | 1/3.99 | 75    | 12.5  | 87.5    | 11.97  | 302.9 | 25.76 | 0.382 | 221 | *    | *     |
| Raccoon  | 6/4.09  | 1/4.09 | 78.8  | 13.1  | 91.9    | 12.27  | 318.3 | 27.06 | 0.364 | 228 | *    | *     |
| Otter    | 6/4.22  | 1/4.22 | 83.9  | 14    | 97.9    | 12.66  | 338.8 | 28.81 | 0.342 | 237 | *    | *     |
| Cat      | 6/4.50  | 1/4.50 | 95.4  | 15.9  | 111.3   | 13.5   | 385.3 | 32.76 | 0.3   | 256 | *    | *     |
| Hare     | 6/4.72  | 1/4.72 | 105   | 17.5  | 122.5   | 14.16  | 423.8 | 36.04 | 0.273 | 271 | *    | *     |
| Coyote   | 26/2.54 | 7/1.91 | 131.7 | 20.1  | 151.8   | 15.89  | 520.7 | 45.86 | 0.219 | 311 | *    | *     |
| Cougar   | 18/3.05 | 1/3.05 | 131.5 | 7.31  | 138.8   | 15.25  | 418.8 | 29.74 | 0.219 | 308 | *    | *     |
| Tiger    | 30/2.36 | 7/2.36 | 131.2 | 30.6  | 161.8   | 16.52  | 602.2 | 57.87 | 0.22  | 313 | *    | *     |
| Lion     | 30/3.18 | 7/3.18 | 238.3 | 55.6  | 293.9   | 22.26  | 1093  | 100.5 | 0.121 | 450 | *    | *     |
| Bear     | 30/3.35 | 7/3.35 | 264.4 | 61.7  | 326.1   | 23.45  | 1213  | 111.5 | 0.109 | 480 | *    | *     |
| Goat     | 30/3.71 | 7/3.71 | 324.3 | 75.7  | 400     | 25.97  | 1488  | 135.1 | 0.089 | 543 | *    | *     |
| Sheep    | 30/3.99 | 7/3.99 | 375.1 | 87.5  | 462.6   | 27.93  | 1721  | 156.3 | 0.077 | 592 | *    | *     |
| Antelope | 54/2.97 | 7/2.97 | 374.1 | 48.5  | 422.6   | 26.73  | 1414  | 118.9 | 0.077 | 586 | *    | *     |
| Bison    | 54/3.00 | 7/3.00 | 381.7 | 49.5  | 431.2   | 27     | 1443  | 121.3 | 0.076 | 593 | *    | *     |
| Deer     | 30/4.27 | 7/4.27 | 429.6 | 100.2 | 529.8   | 29.89  | 1971  | 179   | 0.067 | 643 | *    | *     |
| Elk      | 30/4.50 | 7/4.50 | 477.1 | 111.3 | 588.4   | 31.5   | 2190  | 198.8 | 0.061 | 684 | *    | *     |
| Camel    | 54/3.35 | 7/3.35 | 476   | 61.7  | 537.7   | 30.15  | 1799  | 146.4 | 0.061 | 677 | *    | *     |
| Moose    | 54/3.53 | 7/3.53 | 528.5 | 68.5  | 597     | 31.77  | 1997  | 159.9 | 0.055 | 720 | *    | *     |

## TECHNICAL DATA

| Numbers of Wires |       | Final Modules of Elasticity |                       | Coefficient of Linear Expansion |                        |
|------------------|-------|-----------------------------|-----------------------|---------------------------------|------------------------|
| Al               | Steel | Kg/mm <sup>2</sup>          | lb/in <sup>2</sup>    | 1/C°                            | 1/F°                   |
| 6                | 1     | 81                          | 11.5 x10 <sup>8</sup> | 19.1 x10 <sup>-6</sup>          | 10.6 x10 <sup>-6</sup> |
| 6                | 7     | 77                          | 11.0 x10 <sup>8</sup> | 19.8 x10 <sup>-6</sup>          | 11.0 x10 <sup>-6</sup> |
| 12               | 7     | 107                         | 15.2 x10 <sup>8</sup> | 15.3 x10 <sup>-6</sup>          | 8.5 x10 <sup>-6</sup>  |
| 18               | 1     | 67                          | 9.5 x10 <sup>8</sup>  | 21.2 x10 <sup>-6</sup>          | 11.8 x10 <sup>-6</sup> |
| 24               | 7     | 74                          | 10.5 x10 <sup>8</sup> | 19.6 x10 <sup>-6</sup>          | 10.9 x10 <sup>-6</sup> |
| 26               | 7     | 77                          | 10.9 x10 <sup>8</sup> | 18.9 x10 <sup>-6</sup>          | 10.5 x10 <sup>-6</sup> |
| 28               | 7     | 79                          | 11.2 x10 <sup>8</sup> | 18.4 x10 <sup>-6</sup>          | 10.2 x10 <sup>-6</sup> |
| 30               | 7     | 82                          | 11.6 x10 <sup>8</sup> | 17.8 x10 <sup>-6</sup>          | 9.9 x10 <sup>-6</sup>  |
| 30               | 19    | 80                          | 11.4 x10 <sup>8</sup> | 18.0 x10 <sup>-6</sup>          | 10.0 x10 <sup>-6</sup> |
| 32               | 19    | 82                          | 11.7 x10 <sup>8</sup> | 17.5 x10 <sup>-6</sup>          | 9.7 x10 <sup>-6</sup>  |
| 54               | 7     | 70                          | 9.9 x10 <sup>8</sup>  | 19.3 x10 <sup>-6</sup>          | 10.7 x10 <sup>-6</sup> |
| 54               | 19    | 68                          | 9.7 x10 <sup>8</sup>  | 19.4 x10 <sup>-6</sup>          | 10.8 x10 <sup>-6</sup> |



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