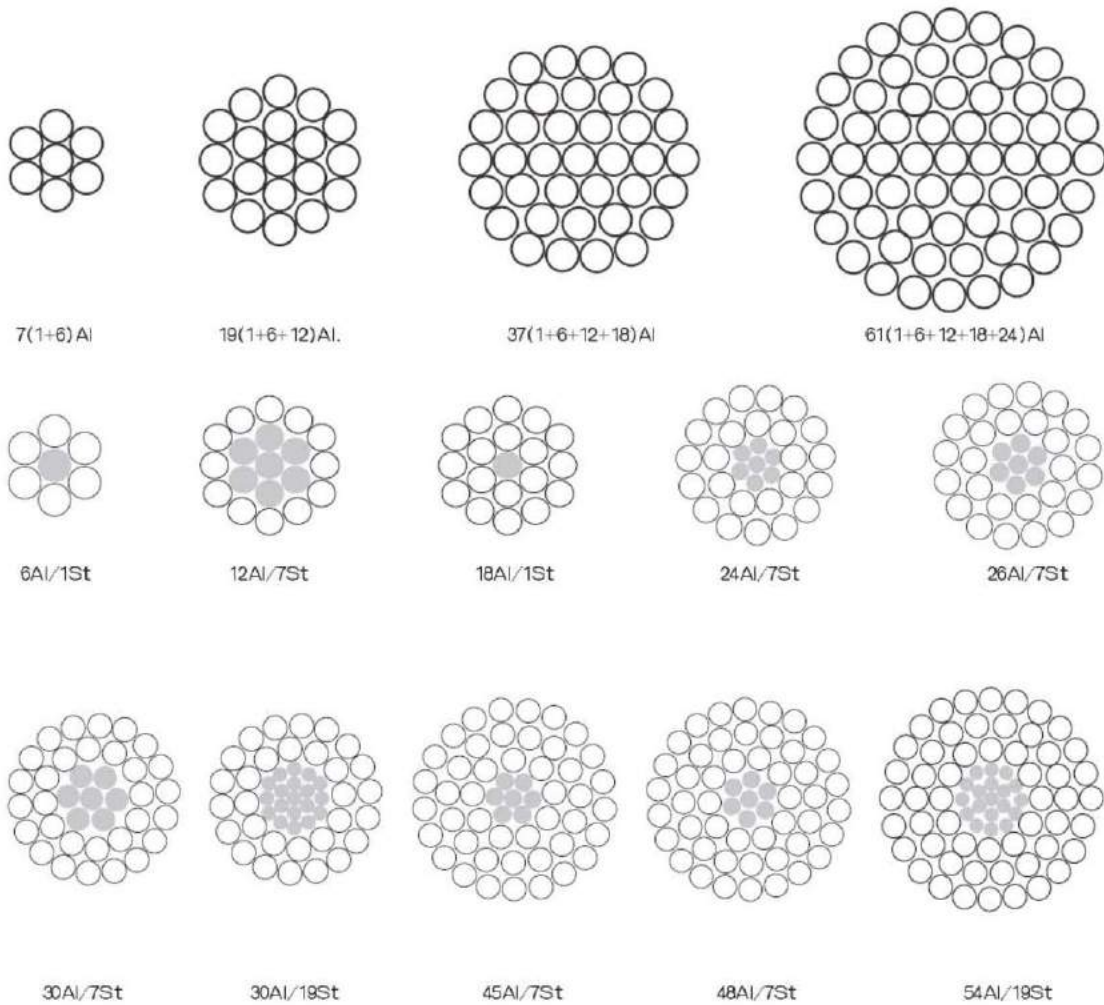


## BEAR STANDARD CONDUCTOR

Aluminum Stranded Conductor and Aluminum Stranded Conductors Steel-reinforced



**Aluminum Stranded Conductor and**

**Aluminum Stranded Conductors Steel-reinforced**

The product is used in the field of aerial power line.

## Manufacturing Standards

The standard is IEC207-1966, GB1179-83 which is similar to IEC209-1966.

## Type & Specification

a.Refer to table 1 about the type of cable

table 1

| Type | Name  |
|------|---|
| LJ   | Aluminum Stranded Conductor                                   |
| LGJ  | Aluminum Stranded Conductors Steel-reinforced                 |
| LGJF | Corrosion-proof Aluminum Stranded Conductors Steel-reinforced |

Aluminum Stranded Conductor and Aluminum Stranded Conductors Steel-reinforced

b.Specification of cable is stipulated in table 2 and table 3.

### Aluminum stranded conductor

Table 2

| Nominal Cross-sectional Area<br>mm <sup>2</sup> | Construction(N O./Dia)<br>mm | Outer Dia.<br>mm | D.C .Resis tance at 20℃<br>(no more than)<br>Ω /km | Calculated Breaking Load<br>N | Calculated Weight<br>kg/km | Delivery Length<br>(no less than)<br>m | Continuous Carrying Capacity<br>A |
|---|------------------------------|------------------|--|-------------------------------|----------------------------|--|-----------------------------------|
| 16  | 7/1.70                       | 5.10             | 1.802  | 2840                          | 44                         | 4000                                   | 111                               |
| 25  | 7/2.15                       | 6.45             | 1.127  | 4355                          | 70                         | 3000                                   | 147                               |
| 35  | 7/2.50                       | 7.50             | 0.8332   | 5760                          | 94                         | 2000                                   | 180                               |
| 50  | 7/3.00                       | 9.00             | 0.5786   | 7930                          | 136                        | 1500                                   | 227                               |
| 70  | 7/3.60                       | 10.80            | 0.4018   | 10950                         | 195                        | 1250                                   | 284                               |
| 95  | 7/4.16                       | 12.48            | 0.3009   | 14450                         | 261                        | 1000                                   | 338                               |
| 120   | 19/2.85                      | 14.25            | 2.373  | 19420                         | 334                        | 1500                                   | 390                               |
| 150   | 19/3.15                      | 15.75            | 0.1943   | 23310                         | 407                        | 1250                                   | 454                               |
| 185   | 19/3.50                      | 17.50            | 0.1574   | 28440                         | 503                        | 1000                                   | 518                               |
| 210   | 19/3.75                      | 18.75            | 0.1371   | 32260                         | 577                        | 1000                                   | 575                               |
| 240   | 19/4.00                      | 20.00            | 0.1205   | 36260                         | 657                        | 1000                                   | 610                               |
| 300   | 37/3.20                      | 22.40            | 0.09689  | 46850                         | 820                        | 1000                                   | 707                               |
| 400   | 37/3.70                      | 25.90            | 0.07247  | 61150                         | 1097                       | 1000                                   | 851                               |
| 500   | 37/4.16                      | 29.12            | 0.06733  | 76370                         | 1387                       | 1000                                   | 982                               |
| 630   | 61/3.63                      | 32.67            | 0.04577  | 91940                         | 1744                       | 800                                    | 1140                              |
| 800   | 61/4.10                      | 36.90            | 0.03588  | 115900                        | 2225                       | 800                                    | 1340                              |

### Aluminum stranded conductor steel-reinforced

Table 3

| Nominal Cross-sectional Area<br>mm <sup>2</sup> | Construction No./Dia mm |        | Outer Dia. mm | D.C. Resistance at 20°C (no more than) Ω/km | Calculated Breaking Load N | Calculated Weight kg/km | Delivery Length (no less than) m | Continuous Carrying Capacity A |
|---|-------------------------|--------|---------------|---|----------------------------|-------------------------|----------------------------------|--------------------------------|
|   | Al.                     | St.    |               |   |                            |                         |                                  |                                |
| 10/2  | 6/1.50                  | 1/1.50 | 4.50          | 2.706                                       | 4120                       | 13                      | 3000                             | 87                             |
| 16/3  | 6/1.85                  | 1/1.85 | 5.55          | 1.779                                       | 6130                       | 65                      | 3000                             | 110                            |
| 25/4  | 6/2.32                  | 1/2.32 | 6.96          | 1.131                                       | 9290                       | 103                     | 3000                             | 125                            |
| 35/6  | 6/2.72                  | 1/2.72 | 8.16          | 0.8230                                      | 12630                      | 141                     | 3000                             | 145                            |
| 50/8  | 6/3.20                  | 1/3.20 | 9.60          | 0.5946                                      | 16870                      | 195                     | 2000                             | 212                            |
| 50/30   | 12/2.32                 | 7/2.32 | 11.60         | 0.5692                                      | 42620                      | 372                     | 3000                             | 250                            |
| 70/10   | 6/3.80                  | 1/3.80 | 11.40         | 0.4217                                      | 23390                      | 275                     | 2000                             | 255                            |
| 70/40   | 12/2.72                 | 7/2.72 | 13.60         | 0.4141                                      | 58300                      | 511                     | 2000                             | 340                            |
| 95/15   | 26/2.15                 | 7/1.67 | 13.61         | 0.3058                                      | 35000                      | 381                     | 2000                             | 350                            |
| 95/20   | 7/4.16                  | 7/1.85 | 13.87         | 0.3019                                      | 37200                      | 409                     | 2000                             | 360                            |
| 95/55   | 12/3.20                 | 7/3.20 | 16.00         | 0.2990                                      | 78110                      | 708                     | 2000                             | 420                            |
| 120/7   | 18/2.90                 | 1/2.90 | 14.50         | 0.2422                                      | 27570                      | 379                     | 2000                             | 380                            |
| 120/20  | 26/2.38                 | 7/1.85 | 15.07         | 0.2496                                      | 41000                      | 467                     | 2000                             | 390                            |
| 120/25  | 7/4.72                  | 7/2.10 | 15.74         | 0.2345                                      | 47880                      | 527                     | 2000                             | 400                            |
| 120/70  | 12/3.60                 | 7/3.60 | 18.00         | 0.2364                                      | 98370                      | 896                     | 2000                             | 505                            |
| 150/8   | 18/3.20                 | 1/3.20 | 16.00         | 0.1989                                      | 32860                      | 461                     | 2000                             | 442                            |
| 150/20  | 24/2.78                 | 7/1.85 | 16.67         | 0.1980                                      | 46630                      | 549                     | 2000                             | 450                            |
| 150/25  | 26/2.70                 | 7/2.10 | 17.10         | 0.1939                                      | 54110                      | 601                     | 2000                             | 470                            |
| 150/35  | 30/2.5                  | 7/2.50 | 17.50         | 0.1962                                      | 65020                      | 676                     | 2000                             | 500                            |
| 185/10  | 18/3.60                 | 1/3.60 | 18.00         | 0.1572                                      | 40880                      | 584                     | 2000                             | 497                            |
| 185/25  | 24/3.15                 | 7/2.10 | 16.67         | 0.1542                                      | 59420                      | 706                     | 2000                             | 525                            |
| 185/30  | 26/2.98                 | 7/2.32 | 18.88         | 0.1592                                      | 64320                      | 733                     | 2000                             | 525                            |
| 185/45  | 30/2.80                 | 7/2.80 | 19.60         | 0.1564                                      | 80190                      | 848                     | 2000                             | 522                            |
| 210/10  | 18/3.80                 | 1/3.80 | 19.00         | 0.1411                                      | 45140                      | 651                     | 2000                             | 523                            |
| 210/25  | 24/3.33                 | 7/2.22 | 19.98         | 0.1380                                      | 65990                      | 789                     | 2000                             | 560                            |
| 210/35  | 26/3.22                 | 7/2.50 | 20.38         | 0.1363                                      | 74250                      | 854                     | 2000                             | 590                            |
| 210/50  | 30/2.98                 | 7/2.98 | 20.86         | 0.1381                                      | 90830                      | 961                     | 2000                             | 600                            |
| 240/30  | 24/3.60                 | 7/2.40 | 21.60         | 0.1181                                      | 75620                      | 922.2                   | 2000                             | 610                            |
| 240/40  | 22/3.42                 | 7/2.66 | 21.66         | 0.1209                                      | 83370                      | 964.3                   | 2000                             | 610                            |
| 240/55  | 30/3.20                 | 7/3.20 | 22.40         | 0.1198                                      | 102100                     | 1108                    | 2000                             | 640                            |
| 300/15  | 42/3.00                 | 7/1.67 | 23.01         | 0.09724                                     | 68060                      | 940                     | 2000                             | 650                            |
| 300/20  | 45/2.93                 | 7/1.95 | 23.43         | 0.09520                                     | 75680                      | 1002                    | 2000                             | 655                            |
| 300/25  | 48/2.85                 | 7/2.22 | 23.76         | 0.09433                                     | 83410                      | 1058                    | 2000                             | 690                            |
| 300/40  | 24/3.99                 | 7/2.66 | 23.94         | 0.09614                                     | 92220                      | 1133                    | 2000                             | 705                            |
| 300/50  | 26/3.83                 | 7/2.98 | 24.26         | 0.09636                                     | 103400                     | 1210                    | 2000                             | 725                            |
| 300/70  | 30/3.60                 | 7/3.60 | 25.20         | 0.09463                                     | 128000                     | 1402                    | 2000                             | 740                            |
| 400/20  | 42/3.51                 | 7/1.95 | 26.91         | 0.07104                                     | 88850                      | 1286                    | 1500                             | 800                            |
| 400/25  | 45/3.33                 | 7/2.22 | 26.64         | 0.07370                                     | 95940                      | 1295                    | 1500                             | 800                            |

|         |         |         |       |         |        |      |      |      |
|---------|---------|---------|-------|---------|--------|------|------|------|
| 400/30  | 48/3.22 | 7/2.50  | 26.82 | 0.07389 | 103900 | 1349 | 1500 | 810  |
| 400/50  | 54/3.07 | 7/3.07  | 27.63 | 0.07232 | 123400 | 1511 | 1500 | 815  |
| 400/65  | 26/4.42 | 7/3.44  | 28.00 | 0.07236 | 135200 | 1611 | 1500 | 850  |
| 400/95  | 30/4.16 | 19/2.50 | 29.14 | 0.07087 | 171300 | 1860 | 1500 | 873  |
| 500/35  | 45/3.75 | 7/2.50  | 30.00 | 0.05712 | 119500 | 1642 | 1500 | 920  |
| 500/45  | 38/3.60 | 7/2.80  | 30.00 | 0.05912 | 128100 | 1688 | 1500 | 920  |
| 500/65  | 54/3.44 | 7/3.44  | 30.96 | 0.05760 | 154000 | 1897 | 1500 | 935  |
| 630/45  | 45/4.20 | 7/2.80  | 33.60 | 0.04633 | 148700 | 2060 | 1500 | 1025 |
| 630/55  | 48/4.12 | 7/3.20  | 34.32 | 0.04514 | 164400 | 2209 | 1500 | 1060 |
| 630/80  | 54/3.87 | 19/2.32 | 34.32 | 0.04551 | 192900 | 2388 | 1500 | 1120 |
| 800/55  | 45/4.80 | 7/3.20  | 38.40 | 0.03547 | 191500 | 2690 | 1200 | 1220 |
| 800/70  | 48/4.63 | 7/3.60  | 38.58 | 0.03574 | 207000 | 2791 | 1200 | 1223 |
| 800/100 | 54/4.33 | 19/2.60 | 38.98 | 0.03635 | 241100 | 2991 | 1200 | 1240 |

### Main Mechanical Performance of Cable

- a. Refer to table 4 about the mechanical performance of round aluminum wire  
b. The mechanical property of galvanized steel wire and the technical requirement of zinc coating. (see Table 5)

Table 4

| Nominal Diameter<br>mm | Min. Tensile Strength |                     |                   |                     | Max. Resistivity<br>at<br>20°C<br>Ωmm <sup>2</sup> /m | Wrapping<br>Test  |
|------------------------|-----------------------|---------------------|-------------------|---------------------|---|---|
|                        | Before Stranding      |                     | After Stranding   |                     |   |   |
|                        | N/mm <sup>2</sup>     | kgf/mm <sup>2</sup> | N/mm <sup>2</sup> | kgf/mm <sup>2</sup> |   |   |
| 1.25                   | 200                   | 20.4                | 190               | 19.4                | 0.028264  | Wind test sample at round rod whose diameter is equal to that of sample eight turns, then unwind six turns, then wind sample at the rod tightly again. There should be no |
| 1.26~1.50              | 193                   | 19.7                | 183               | 18.7                |   |   |
| 1.51~1.75              | 188                   | 19.2                | 178               | 18.2                |   |   |
| 1.76~2.00              | 184                   | 18.8                | 176               | 17.9                |   |   |
| 2.01~2.25              | 180                   | 18.4                | 172               | 17.5                |   |   |
| 2.26~2.50              | 176                   | 18.0                | 168               | 17.1                |   |   |
| 2.51~2.75              | 173                   | 17.6                | 164               | 16.7                |   |   |
| 2.76~3.00              | 169                   | 17.2                | 160               | 16.3                |   |   |
| 3.01~3.25              | 166                   | 16.9                | 157               | 16.0                |   |   |
| 3.26~3.50              | 164                   | 16.7                | 154               | 15.9                |   |   |

|           |     |      |     |      |  |
|-----------|-----|------|-----|------|--|
| 3.51~3.75 | 162 | 16.5 | 152 | 15.7 | breaking on aluminum stranded conductors when checked by visual examination. |
| 3.76~4.20 | 160 | 16.3 | 153 | 15.5 |  |
| 4.26~5.00 | 159 | 16.2 | 151 | 15.4 |  |

Table 5

| Nominal Diameter mm | Min. Stress at 1% N/mm <sup>2</sup> | Min. Tensile Strength N/mm <sup>2</sup> |                 | Min. Weight of Zinc Coating g/mm <sup>2</sup> | No. of Immersion In 1 minute (No less than) | Adhesion of Coating |   |
|---------------------|-------------------------------------|---|-----------------|---|---|---------------------|---|
|                     |                                     | Before Stranding                        | After Stranding |   |   | Dia. Of Test Rod mm | Wrapping  |
| 1.25~1.50           | 1172                                | 1310                                    | 1244            | 183   | 2   | 4d                  | (1) Wind 8 turns tightly.<br>(2) Winding result: No crack on coating dropped off when rubbed by finger. |
| 1.51~1.75           | 1172                                | 1310                                    | 1244            | 198   | 2   |                     |   |
| 1.76~2.25           | 1172                                | 1310                                    | 1244            | 214   | 2.5   |                     |   |
| 2.26~2.75           | 1138                                | 1310                                    | 1244            | 229   | 3   |                     |   |
| 2.76~3.00           | 1138                                | 1310                                    | 1244            | 244   | 3.5   |                     |   |
| 3.01~3.50           | 1103                                | 1310                                    | 1244            | 244   | 3.5   | 5d                  |   |
| 3.51~3.80           | 1103                                | 1310                                    | 1244            | 259   | 4   |                     |   |

Thermal Resistant Aluminum Alloy Stranded Conductor and Thermal Resistant Aluminum Alloy Stranded Conductor Steel-reinforced

## Manufacturing Standards

Q/09TDL030-1999

## Uses and Characteristics

The product is used in aerial transmission line. Max. Continuous operating temperature can be 150 . The transmission capacity of this product increases 60%.

## Properties

- a.Relative conductance: 58%IACS Max. resistivity at 20℃:0.029726 Ω.mm<sup>2</sup>/m
- b.After heating to 230 ℃ for 1h, and cooling to room temperature, the tensile strength remained should not less than 90%.
- c.Linear expansion coefficient is 0.000023 1/℃
- d.Temperature coefficient of resistance is 0.0039 1/℃

## *Aluminum Stranded Conductor and Aluminum Stranded Conductors*

### *Steel-reinforced*

## Specification

a.thermal resistant aluminum alloy stranded conductor

Table 6

| Nominal Cross-section<br>mm <sup>2</sup> | Construction(No./<br>Dia.)<br>mm | Calculated Cross-section<br>mm <sup>2</sup> | Overall Diameter<br>mm | Max. D.C. Resistance at<br>20℃<br>Ω/k° | Calculated Breaking Load<br>N | Calculated Weight<br>kg/km | Min. Delivery Length<br>m |
|--|----------------------------------|---|------------------------|--|-------------------------------|----------------------------|---------------------------|
| 35                                       | 7/2.50                           | 34.36                                       | 7.50                   | 0.8763                                 | 5125                          | 94.2                       | 2000                      |
| 50                                       | 7/3.00                           | 49.48                                       | 9.00                   | 0.6085                                 | 7380                          | 135.7                      | 1500                      |
| 70                                       | 7/3.60                           | 71.25                                       | 10.80                  | 0.4226                                 | 10289                         | 195.4                      | 1250                      |
| 95                                       | 7/4.16                           | 95.14                                       | 12.48                  | 0.3165                                 | 13287                         | 260.9                      | 1000                      |
| 120                                      | 19/2.85                          | 121.21                                      | 14.25                  | 0.2496                                 | 18079                         | 334.0                      | 1500                      |
| 150                                      | 19/3.15                          | 148.07                                      | 15.75                  | 0.2043                                 | 21381                         | 408.0                      | 1250                      |
| 185                                      | 19/3.50                          | 182.80                                      | 17.50                  | 0.1655                                 | 26396                         | 503.7                      | 1000                      |
| 210                                      | 19/3.75                          | 209.85                                      | 18.75                  | 0.1442                                 | 30302                         | 578.2                      | 1000                      |
| 240                                      | 19/4.00                          | 238.76                                      | 20.00                  | 0.1267                                 | 33343                         | 657.9                      | 1000                      |
| 300                                      | 37/3.20                          | 297.57                                      | 22.40                  | 0.1019                                 | 42969                         | 821.6                      | 1000                      |
| 400                                      | 37/3.70                          | 397.83                                      | 25.90                  | 0.07622                                | 57447                         | 1098.5                     | 1000                      |
| 500                                      | 37/4.16                          | 502.90                                      | 25.12                  | 0.06030                                | 70230                         | 1388.6                     | 1000                      |
| 630                                      | 41/3.63                          | 631.30                                      | 32.67                  | 0.04803                                | 86362                         | 1746.8                     | 800                       |
| 800                                      | 61/4.10                          | 805.36                                      | 36.90                  | 0.03765                                | 106549                        | 2228.4                     | 800                       |

b.thermal resistant aluminum alloy stranded conductor steel-reinforced

Table 7

| Nominal Cross-Section mm <sup>2</sup> | Construction (No./Dia.) mm |         | Calculated Cross-section mm <sup>2</sup> |        |         | Overall Diameter mm | Max. D.C. Resistance at 20°C Ω/km | Calculated Breaking Load N | Calculated Weight kg/km | Min. Delivery Length m |
|---------------------------------------|----------------------------|---------|--|--------|---------|---------------------|-----------------------------------|----------------------------|-------------------------|------------------------|
|                                       | Al.                        | St.     | Al.                                      | St.    | Total   |                     |                                   |                            |                         |                        |
| 240/30                                | 24/3.60                    | 7/2.40  | 244.29                                   | 31.67  | 257.06  | 21.60               | 0.1242                            | 73170                      | 923                     | 2000                   |
| 240/40                                | 26/3.42                    | 7/2.66  | 238.85                                   | 38.90  | 277.75  | 21.66               | 0.1271                            | 80570                      | 965                     | 2000                   |
| 240/50                                | 30/3.20                    | 7/3.20  | 241.27                                   | 56.30  | 297.57  | 22.40               | 0.1260                            | 98770                      | 1109                    | 2000                   |
| 300/15                                | 42/3.00                    | 7/1.67  | 296.88                                   | 15.33  | 312.21  | 23.01               | 0.1032                            | 64580                      | 941                     | 2000                   |
| 300/20                                | 45/2.93                    | 7/1.95  | 303.42                                   | 20.91  | 324.33  | 23.43               | 0.1001                            | 72140                      | 1003                    | 2000                   |
| 300/25                                | 45/2.85                    | 7/2.22  | 306.21                                   | 27.10  | 333.31  | 23.76               | 0.0992                            | 79840                      | 1060                    | 2000                   |
| 300/40                                | 24/3.99                    | 7/2.65  | 300.09                                   | 38.90  | 338.99  | 23.94               | 0.1011                            | 89880                      | 1134                    | 2000                   |
| 300/50                                | 26/3.83                    | 7/2.98  | 299.54                                   | 48.82  | 348.36  | 24.26               | 0.1013                            | 101100                     | 1211                    | 2000                   |
| 300/70                                | 30/3.60                    | 7/3.60  | 305.36                                   | 71.25  | 376.61  | 25.20               | 0.09953                           | 125000                     | 1403                    | 2000                   |
| 400/20                                | 42/3.51                    | 7/1.95  | 406.40                                   | 20.91  | 427.31  | 26.91               | 0.07471                           | 86280                      | 1287                    | 1500                   |
| 400/25                                | 45/3.33                    | 7/2.22  | 391.91                                   | 27.10  | 419.01  | 26.64               | 0.07751                           | 91330                      | 1297                    | 1500                   |
| 400/35                                | 48/3.22                    | 7/2.50  | 390.88                                   | 34.36  | 425.24  | 26.82               | 0.07772                           | 98520                      | 1351                    | 1500                   |
| 400/50                                | 24/3.07                    | 7/3.07  | 399.73                                   | 51.82  | 451.55  | 26.73               | 0.07606                           | 117920                     | 1513                    | 1500                   |
| 400/65                                | 26/4.42                    | 7/3.44  | 398.94                                   | 65.06  | 464.00  | 28.00               | 0.07610                           | 130400                     | 1612                    | 1500                   |
| 400/95                                | 30/4.16                    | 19/2.50 | 407.75                                   | 93.27  | 501.02  | 29.14               | 0.07454                           | 166100                     | 1961                    | 1500                   |
| 500/35                                | 45/3.75                    | 7/2.50  | 497.01                                   | 34.36  | 531.37  | 30.00               | 0.06112                           | 114700                     | 1644                    | 1500                   |
| 500/45                                | 48/3.60                    | 7/2.80  | 488.58                                   | 41.10  | 531.68  | 30.00               | 0.06218                           | 123300                     | 1690                    | 1500                   |
| 500/65                                | 54/3.44                    | 7/3.44  | 501.88                                   | 65.06  | 566.94  | 30.96               | 0.0606                            | 148000                     | 1899                    | 1500                   |
| 630/45                                | 45/4.20                    | 7/2.80  | 623.45                                   | 41.10  | 666.55  | 33.60               | 0.04873                           | 140700                     | 2601                    | 1500                   |
| 630/55                                | 48/4.12                    | 7/3.44  | 639.92                                   | 56.30  | 696.22  | 34.32               | 0.04747                           | 156200                     | 2210                    | 1200                   |
| 630/80                                | 54/3.87                    | 7/2.80  | 635.19                                   | 80.32  | 715.51  | 34.82               | 0.0479                            | 187800                     | 2190                    | 1200                   |
| 800/55                                | 45/4.80                    | 7/3.20  | 639.92                                   | 56.30  | 870.60  | 38.40               | 0.03731                           | 181800                     | 2691                    | 1200                   |
| 800/70                                | 48/4.63                    | 7/3.60  | 808.15                                   | 71.25  | 379.40  | 33.53               | 0.03759                           | 197400                     | 2793                    | 1000                   |
| 800/100                               | 54/4.33                    | 19/2.60 | 795.17                                   | 100.88 | 896.05  | 38.98               | 0.0383                            | 231600                     | 2995                    | 1000                   |
| 1440/120                              | 84/4.67                    | 19/2.80 | 1438.81                                  | 116.99 | 1555.80 | 51.36               | 0.0213                            | 344500                     | 4928                    | 700                    |

**Material**

a. Thermal resistant aluminum alloy round wire should be in accordance with the

standard Q/09TDL029-1999 Thermal Resistant Aluminum Alloy Round Wire of Relative Conductance 58% IACS.

b. Galvanized steel wire should be in accordance with the standard GB3428-82 Galvanized Steel Wire which is used in Aluminum Stranded Conductors Steel-reinforced.

## Hard Copper Stranded Conductor

### Manufacturing Standards

Q/09TDL016

### Uses and Characteristics

The product is used in aerial power line and power system of electrical railway.

## Aluminum Stranded Conductor and Aluminum Stranded Conductors

### Steel-reinforced

### Name and Manufacturing Range

Name: Hard Copper Stranded Conductor

Type: TJ

Manufacturing Range: 10-500mm<sup>2</sup>

### Properties

Main Properties of Round Copper Single Wire (see Table 8)

Table 8

| Dia. Of Single Wire<br>mm |           | Cross-section of<br>Conductor<br>mm <sup>2</sup> | Tensile Strength<br>N/mm <sup>2</sup> |                                  | Conductor<br>Resistivity<br>at 20°C<br>Ω·mm <sup>2</sup> /m | Weight<br>kg/km |
|---------------------------|-----------|--|---------------------------------------|----------------------------------|---|-----------------|
| Normal Value              | Tolerance |  | Min. Value<br>before<br>Stranding     | Min. Value<br>after<br>Stranding |   |                 |
| 1.35                      | ±0.03     | 1.43   | 422                                   | 392                              | 0.01796   | 12.7            |
| 1.50                      |           | 1.77   |                                       |                                  |   | 15.3            |
| 1.75                      |           | 2.41   |                                       |                                  |   | 21.5            |
| 2.00                      |           | 3.14   |                                       |                                  |   | 28.0            |
| 2.25                      |           | 3.98   |                                       |                                  |   | 35.4            |
|                           |           |  |                                       |                                  | 0.01777   |                 |



|      |       |      |  |  |      |
|------|-------|------|--|--|------|
| 2.50 |       | 4.41 |  |  | 43.7 |
| 2.70 |       | 5.94 |  |  | 52.9 |
| 3.00 |       | 7.07 |  |  | 62.9 |
| 3.25 | ±0.04 | 8.30 |  |  | 73.8 |

*Note: 1. The diameter is allowed to have a middle value. Its deviation is allowed one of the next bigger diameter.*

*Resistivity of the conductor at 20° shall be selected 0.01796 $\pi$ mm<sup>2</sup>/m, if the normal diameter is less than 2.00mm.*

## The Construction

Specification, Construction and Technical Data. (see Table 9) Table 9

| Nominal Cross-section mm <sup>2</sup> | Single Wire |         | Overall Diameter of the Strand mm | Calculated Breaking Load KN | Conductor D.C. Resistance at 20°C $\Omega$ /km | Continuous Carrying Capacity A | Calculated Weight kg/km |
|---------------------------------------|-------------|---------|-----------------------------------|-----------------------------|--|--------------------------------|-------------------------|
|                                       | No.         | Dia. mm |                                   |                             |  |                                |                         |
| 50                                    | 19          | 1.80    | 9.0                               | 19.38                       | 0.3781   | 250                            | 437                     |
| 70                                    | 19          | 2.10    | 10.5                              | 26.38                       | 0.2747   | 310                            | 596                     |
| 95                                    | 19          | 2.50    | 12.5                              | 37.79                       | 0.1939   | 380                            | 845                     |
| 120                                   | 19          | 2.80    | 14.0                              | 46.90                       | 0.1546   | 440                            | 1060                    |
| 127                                   | 19          | 2.92    | 14.6                              | 51.00                       | 0.1422   | 470                            | 1163                    |
| 150                                   | 37          | 2.25    | 15.8                              | 58.98                       | 0.1232   | 510                            | 1337                    |
| 185                                   | 37          | 2.50    | 17.5                              | 72.81                       | 0.09981  | 585                            | 1649                    |
| 240                                   | 61          | 2.25    | 20.3                              | 97.23                       | 0.07490  | 700                            | 2209                    |
| 300                                   | 61          | 2.50    | 22.5                              | 120.04                      | 0.06067  | 800                            | 2725                    |
| 400                                   | 61          | 2.89    | 26.0                              | 160.42                      | 0.04540  | 960                            | 3640                    |
| 500                                   | 61          | 3.23    | 29.1                              | 200.38                      | 0.03635  | 1110                           | 4545                    |

*Note: 1. The weight of stranded conductor is calculated with the density 8.9kg/dm<sup>3</sup> and average lay ratio.*

*2. Refer to the line, the wind speed is 0.6m/s, the ambient temperature is 35 , max. temperature of aerial transmission strand is 70 , 60Hz and below. In the special laying situation of static air, the capacity shall reduce about 30% in average.*

## Delivery Length

a.the delivery length of stranded conductors shall be as stipulated in the tables. The allowed tolerance for delivery length of any strands is within 5% of the total length signed in the contract, the length for each short strand shall be not less than 1/3 of the] standard delivery one. The delivery length can be decided through negotiation by both parties.

b.The strands shall be delivered in drum and packed carefully. The short strands shall

be delivered in coiling and tied up at least three points and packed carefully.

**Ordering Method**

Please indicate the type, size, number and product standard when ordering. For example, if ordering 20T steel-reinforced aluminum stranded conductor with a cross-sectional area of 50/8mm<sup>2</sup> can be indicated as: LGJ-50/8mm<sup>2</sup> 20T GB1179-83.