

## AS/NZS 1802 TYPE 240

GENEL KULLANIM İÇİN KAPALI KÖMÜR MADENİ KABLOSU  
UNDERGROUND COAL MINE CABLE FOR GENERAL USE

1.1-11 kV

### KONSTRÜKSİYON AÇIKLAMASI / CONSTRUCTION DESCRIPTION

Kompozit ekranlı 3 faz damarı ile araların yerleştirilmiş 3 kumanda damarı, yarıiletken taşıyıcı ve koruyucu fitil etrafında bükülür.  
3 phase cores with composite screens and 3 interstitial pilot cores laid up around a semiconductive cradle for support and protection of power cores.

### KABLO YAPISI

- 1- İLETKEN** : Elektrolitik, kalaylı çoklu bükülmüş esnek bakır tel. (Rope lay) AS/NZS 1125-2.10  
**2- AYIRICI** : Yarıiletken tabaka (3.3/3.3 kV ve üstü) (Kumanda damarları hariç)  
**3- İZOLASYON** : R-EP-90 (AS/NZS 3808'e göre)  
**4- AYIRICI** : Yarıiletken tabaka (3.3/3.3 kV ve üstü) (Kumanda damarları hariç)  
**5- EKRAN** : Faz damarlarının üzeri kalaylı bakır tel ve ip ekran ile örgülü.  
**6- BÜKÜM** : Faz damarlar birbirine değmeyecek ancak kumanda damarlarına değecek şekilde yarıiletken fitil etrafına sarılarak bükülür.  
**7- DIŞ KILIF** : Ağır hizmete yönelik elastomer dış kılıf (AS/NZS 3808'e göre).

### CABLE STRUCTURE

- 1- CONDUCTOR** : Electrolytic, multiple-stranded circular flexible tinned copper wire (rope lay) AS/NZS 1125-2.10  
**2- SEPARATOR** : Semiconducting layer (3.3/3.3kV and above) (Except for pilot cores)  
**3- INSULATION** : R-EP-90 (acc.to AS/NZS 3808)  
**4- SEPARATOR** : Semiconducting layer (3.3/3.3kV and above) (Except for pilot cores)  
**5- SCREEN** : Tinned copper / Nylon braided screen over phase cores.  
**6- LAYUP** : Cores are laid up over a semiconducting cradle without contacting each other, but in contact with interstitial pilot cores.  
**7- OUTER SHEATH** : Heavy-duty elastomer outer sheath (acc.to AS/NZS 3808)



### KABLO ÖZELLİKLERİ / CABLE PROPERTIES

İLGİLİ STANDARTLAR / RELATED STANDARDS : AS/NZS 1802  
ANMA GERİLİMİ / RATED VOLTAGE : 1.1/1.1 kV, 3.3/3.3 kV, 6.6/6.6 kV, 11/11 kV  
TEST GERİLİMİ / TEST VOLTAGE : 4.2 kV, 12 kV, 22 kV, 30 kV

### KULLANIM ALANI

Kapalı kömür madenlerinde (nakliye araçları hariç) genel kullanım içindir.

### ORTAM

Patlayıcı gaz ve tozların olduğu kapalı maden ocaklarında kullanılır.

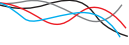
### APPLICATION

General use cable for underground coal mines (except for shuttle cars)

### ENVIRONMENT

Used in mines where explosive gasses and dust can accumulate.

# AS/NZS 1802 TYPE 240



| Nominal Kesit<br>Cross-section<br>mm <sup>2</sup> | Güç damarları<br>Power Cores |                                                     |                                                         |                                                        | Ekran<br>Core screen                 |                                                          | Kumanda damarları<br>Pilot cores |                                                         | Kılıf<br>Sheath             |                                           | Ağırlıklar<br>Mass                                             |                                          |
|---------------------------------------------------|------------------------------|-----------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------|--------------------------------------|----------------------------------------------------------|----------------------------------|---------------------------------------------------------|-----------------------------|-------------------------------------------|----------------------------------------------------------------|------------------------------------------|
|                                                   | Büküm<br>Strand<br>no/mm     | İletken<br>Çapı<br>Conductor<br>Diameter<br>Nom. mm | İzolasyon<br>kalınlığı<br>Insulation<br>thickness<br>mm | İzolasyon<br>çapı<br>Insulation<br>diameter<br>Nom. mm | Örgü telleri<br>Braid wires<br>no/mm | Nominal<br>Kesit<br>Cross-<br>section<br>mm <sup>2</sup> | Büküm<br>Strand<br>Min.no/mm     | İzolasyon<br>kalınlığı<br>Insulation<br>thickness<br>mm | Kalınlık<br>Thickness<br>mm | Kablo çapı<br>Overall diameter<br>Nom. Mm | Yaklaşık<br>kablo ağırlığı<br>Approx.<br>cable weight<br>kg/km | Bakır ağırlığı<br>Copper weight<br>kg/km |
| Type                                              | 240.1                        | 1.1/1.1kV                                           |                                                         |                                                        |                                      |                                                          |                                  |                                                         |                             |                                           |                                                                |                                          |
| 6                                                 | 840.30                       | 3.4                                                 | 1.5                                                     | 6.5                                                    | 7/0.25                               | 7.2                                                      | 15/0.30                          | 1                                                       | 3.8                         | 30                                        | 1,350                                                          | 418                                      |
| 10                                                | 770.40                       | 4.6                                                 | 1.5                                                     | 7.7                                                    | 7/0.25                               | 8.6                                                      | 24/0.30                          | 1                                                       | 3.8                         | 32.6                                      | 1,650                                                          | 594                                      |
| 16                                                | 1260.40                      | 5.7                                                 | 1.6                                                     | 9                                                      | 7/0.25                               | 9.6                                                      | 39/0.30                          | 1                                                       | 4                           | 35.8                                      | 2,050                                                          | 824                                      |
| 25                                                | 2090.40                      | 7.2                                                 | 1.6                                                     | 10.5                                                   | 7/0.25                               | 11.3                                                     | 63/0.30                          | 1.2                                                     | 4.3                         | 39.7                                      | 2,700                                                          | 1,181                                    |
| 35                                                | 2850.40                      | 8.5                                                 | 1.6                                                     | 11.8                                                   | 7/0.25                               | 12.4                                                     | 87/0.30                          | 1.2                                                     | 4.6                         | 43.1                                      | 3,250                                                          | 1,550                                    |
| 50                                                | 3800.40                      | 10                                                  | 1.7                                                     | 13.5                                                   | 7/0.25                               | 14.1                                                     | 114/0.30                         | 1.2                                                     | 5                           | 47.7                                      | 4,050                                                          | 2,091                                    |
| 70                                                | 2030.67                      | 12                                                  | 1.8                                                     | 16                                                     | 7/0.25                               | 16.5                                                     | 36/0.67                          | 1.2                                                     | 5.4                         | 53.9                                      | 5,400                                                          | 2,889                                    |
| 95                                                | 2590.67                      | 13.2                                                | 2                                                       | 17.6                                                   | 7/0.25                               | 18.2                                                     | 36/0.67                          | 1.2                                                     | 6                           | 58.6                                      | 6,450                                                          | 3,658                                    |
| 120                                               | 3360.67                      | 15.3                                                | 2.1                                                     | 20                                                     | 7/0.25                               | 20.3                                                     | 39/0.67                          | 1.4                                                     | 6.4                         | 64.4                                      | 7,800                                                          | 4,470                                    |
| 150                                               | 4270.67                      | 17.1                                                | 2.3                                                     | 22.2                                                   | 7/0.25                               | 22.3                                                     | 48/0.67                          | 1.4                                                     | 6.9                         | 70.2                                      | 9,500                                                          | 5,513                                    |
| 185                                               | 5180.67                      | 19.2                                                | 2.5                                                     | 24.7                                                   | 7/0.30                               | 30.2                                                     | 63/0.67                          | 1.4                                                     | 7.4                         | 77.4                                      | 11,500                                                         | 6,840                                    |
| 240                                               | 6720.67                      | 21.8                                                | 2.8                                                     | 27.9                                                   | 7/0.30                               | 33.6                                                     | 77/0.67                          | 1.6                                                     | 8.2                         | 86                                        | 14,400                                                         | 8,664                                    |
| 300                                               | 8540.67                      | 24.4                                                | 3                                                       | 30.9                                                   | 7/0.40                               | 50.1                                                     | 98/0.67                          | 1.6                                                     | 8.8                         | 95.1                                      | 18,100                                                         | 11,080                                   |
| Type                                              | 240.3                        | 3.3/3.3kV                                           |                                                         |                                                        |                                      |                                                          |                                  |                                                         |                             |                                           |                                                                |                                          |
| 16                                                | 1260.40                      | 5.7                                                 | 3                                                       | 12.5                                                   | 7/0.25                               | 13.1                                                     | 39/0.30                          | 1.4                                                     | 5.3                         | 46.2                                      | 3,050                                                          | 925                                      |
| 25                                                | 2090.40                      | 7.2                                                 | 3                                                       | 14                                                     | 7/0.25                               | 14.8                                                     | 63/0.30                          | 1.4                                                     | 5.6                         | 50.1                                      | 3,800                                                          | 1,282                                    |
| 35                                                | 2850.40                      | 8.5                                                 | 3                                                       | 15.3                                                   | 7/0.25                               | 15.8                                                     | 87/0.30                          | 1.4                                                     | 5.9                         | 53.5                                      | 4,450                                                          | 1,648                                    |
| 50                                                | 3800.40                      | 10                                                  | 3                                                       | 16.8                                                   | 7/0.25                               | 17.2                                                     | 114/0.30                         | 1.4                                                     | 6.3                         | 57.6                                      | 5,250                                                          | 2,181                                    |
| 70                                                | 2030.67                      | 12                                                  | 3                                                       | 18.8                                                   | 7/0.25                               | 18.6                                                     | 36/0.67                          | 1.4                                                     | 6.6                         | 62.5                                      | 6,600                                                          | 2,950                                    |
| 95                                                | 2590.67                      | 13.2                                                | 3                                                       | 20                                                     | 7/0.25                               | 20.3                                                     | 36/0.67                          | 1.4                                                     | 7.1                         | 66.2                                      | 7,550                                                          | 3,719                                    |
| 120                                               | 3360.67                      | 15.3                                                | 3                                                       | 22.1                                                   | 7/0.30                               | 27.2                                                     | 39/0.67                          | 1.6                                                     | 7.4                         | 72                                        | 9,150                                                          | 4,669                                    |
| 150                                               | 4270.67                      | 17.1                                                | 3                                                       | 23.9                                                   | 7/0.40                               | 39.6                                                     | 48/0.67                          | 1.6                                                     | 7.8                         | 78                                        | 11,200                                                         | 6,011                                    |
| 185                                               | 5180.67                      | 19.2                                                | 3                                                       | 26                                                     | 7/0.40                               | 42.2                                                     | 63/0.67                          | 1.8                                                     | 8.2                         | 83.4                                      | 12,900                                                         | 7,186                                    |
| 240                                               | 6720.67                      | 21.8                                                | 3                                                       | 28.6                                                   | 7/0.40                               | 46.6                                                     | 77/0.67                          | 1.8                                                     | 8.8                         | 90.3                                      | 15,600                                                         | 9,038                                    |
| 300                                               | 8540.67                      | 24.4                                                | 3                                                       | 31.2                                                   | 7/0.50                               | 63.2                                                     | 98/0.67                          | 1.8                                                     | 9.4                         | 98.4                                      | 19,200                                                         | 11,457                                   |
| Type                                              | 240.6                        | 6.6/6.6kV                                           |                                                         |                                                        |                                      |                                                          |                                  |                                                         |                             |                                           |                                                                |                                          |
| 16                                                | 1260.40                      | 5.7                                                 | 5                                                       | 16.5                                                   | 7/0.25                               | 17.2                                                     | 39/0.30                          | 1.4                                                     | 6.4                         | 57.3                                      | 4,450                                                          | 1,043                                    |
| 25                                                | 2090.40                      | 7.2                                                 | 5                                                       | 18                                                     | 7/0.25                               | 18.6                                                     | 63/0.30                          | 1.4                                                     | 6.7                         | 61.2                                      | 5,250                                                          | 1,392                                    |
| 35                                                | 2850.40                      | 8.5                                                 | 5                                                       | 19.3                                                   | 7/0.25                               | 18.6                                                     | 87/0.30                          | 1.6                                                     | 7                           | 64.6                                      | 6,000                                                          | 1,728                                    |
| 50                                                | 3800.40                      | 10                                                  | 5                                                       | 20.8                                                   | 7/0.25                               | 21.3                                                     | 114/0.30                         | 1.6                                                     | 7.3                         | 68.5                                      | 6,900                                                          | 2,299                                    |
| 70                                                | 2030.67                      | 12                                                  | 5                                                       | 22.8                                                   | 7/0.25                               | 23.4                                                     | 36/0.67                          | 1.6                                                     | 7.7                         | 73.7                                      | 8,350                                                          | 3,088                                    |
| 95                                                | 2590.67                      | 13.2                                                | 5                                                       | 24                                                     | 7/0.30                               | 29.2                                                     | 36/0.67                          | 1.6                                                     | 8.1                         | 77.8                                      | 9,650                                                          | 3,975                                    |
| 120                                               | 3360.67                      | 15.3                                                | 5                                                       | 26.1                                                   | 7/0.30                               | 31.7                                                     | 39/0.67                          | 1.8                                                     | 8.5                         | 83.1                                      | 11,200                                                         | 4,799                                    |
| 150                                               | 4270.67                      | 17.1                                                | 5                                                       | 27.9                                                   | 7/0.40                               | 45.7                                                     | 48/0.67                          | 1.8                                                     | 8.9                         | 89.1                                      | 13,500                                                         | 6,187                                    |
| 185                                               | 5180.67                      | 19.2                                                | 5                                                       | 30                                                     | 7/0.40                               | 48.4                                                     | 63/0.67                          | 1.8                                                     | 9.3                         | 94.5                                      | 15,300                                                         | 7,365                                    |
| 240                                               | 6720.67                      | 21.8                                                | 5                                                       | 32.6                                                   | 7/0.40                               | 52.8                                                     | 77/0.67                          | 1.8                                                     | 9.9                         | 101.4                                     | 18,100                                                         | 9,216                                    |
| 300                                               | 8540.67                      | 24.4                                                | 5                                                       | 35.2                                                   | 7/0.50                               | 71.5                                                     | 98/0.67                          | 1.8                                                     | 10.4                        | 109.3                                     | 21,900                                                         | 11,696                                   |
| Type                                              | 240.11                       | 11/11kV                                             |                                                         |                                                        |                                      |                                                          |                                  |                                                         |                             |                                           |                                                                |                                          |
| 25                                                | 2090.40                      | 7.2                                                 | 7.6                                                     | 23.4                                                   | 7/0.25                               | 23.7                                                     | 63/0.30                          | 2                                                       | 8.1                         | 75.6                                      | 7,600                                                          | 1,538                                    |
| 35                                                | 2850.40                      | 8.5                                                 | 7.6                                                     | 24.7                                                   | 7/0.30                               | 30.2                                                     | 87/0.30                          | 2                                                       | 8.4                         | 79.7                                      | 8,700                                                          | 2,063                                    |
| 50                                                | 3800.40                      | 10                                                  | 7.6                                                     | 26.2                                                   | 7/0.30                               | 31.7                                                     | 114/0.30                         | 2                                                       | 8.7                         | 83.6                                      | 9,750                                                          | 2,598                                    |
| 70                                                | 2030.67                      | 12                                                  | 7.6                                                     | 28.2                                                   | 7/0.30                               | 34.1                                                     | 36/0.67                          | 2                                                       | 9.1                         | 88.8                                      | 11,400                                                         | 3,396                                    |
| 95                                                | 2590.67                      | 13.2                                                | 7.6                                                     | 29.4                                                   | 7/0.40                               | 47.5                                                     | 36/0.67                          | 2                                                       | 9.6                         | 93.7                                      | 13,200                                                         | 4,502                                    |
| 120                                               | 3360.67                      | 15.3                                                | 7.6                                                     | 31.5                                                   | 7/0.40                               | 51                                                       | 39/0.67                          | 2.2                                                     | 9.9                         | 98.8                                      | 14,900                                                         | 5,354                                    |
| 150                                               | 4270.67                      | 17.1                                                | 7.6                                                     | 33.3                                                   | 7/0.40                               | 53.7                                                     | 48/0.67                          | 2.2                                                     | 10.3                        | 103.5                                     | 16,800                                                         | 6,417                                    |
| 185                                               | 5180.67                      | 19.2                                                | 7.6                                                     | 35.4                                                   | 7/0.40                               | 57.2                                                     | 63/0.67                          | 2.2                                                     | 10.7                        | 108.8                                     | 18,800                                                         | 7,618                                    |