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**ÜRÜN KATALOĞU**





## **Usta Bakır Ürünler**

Usta Bakır, Dünyaca kabul görmüş önemli kalite belgeleriyle tescillenmiş geniş yelpazesi ile sizlere hizmet vermektedir.

Sürekli güncellenen çeşitleri ve ürün teminindeki hızı ile kaliteli hizmetimize devam ediyoruz. **Müşteri memnuniyeti** prensibimizdir.

**Bakır Lama**

**Tel Levha**

**Bakır Çubuk**

**Örgülü Tel**

**Alüminyum Lama**

**Kurşun**

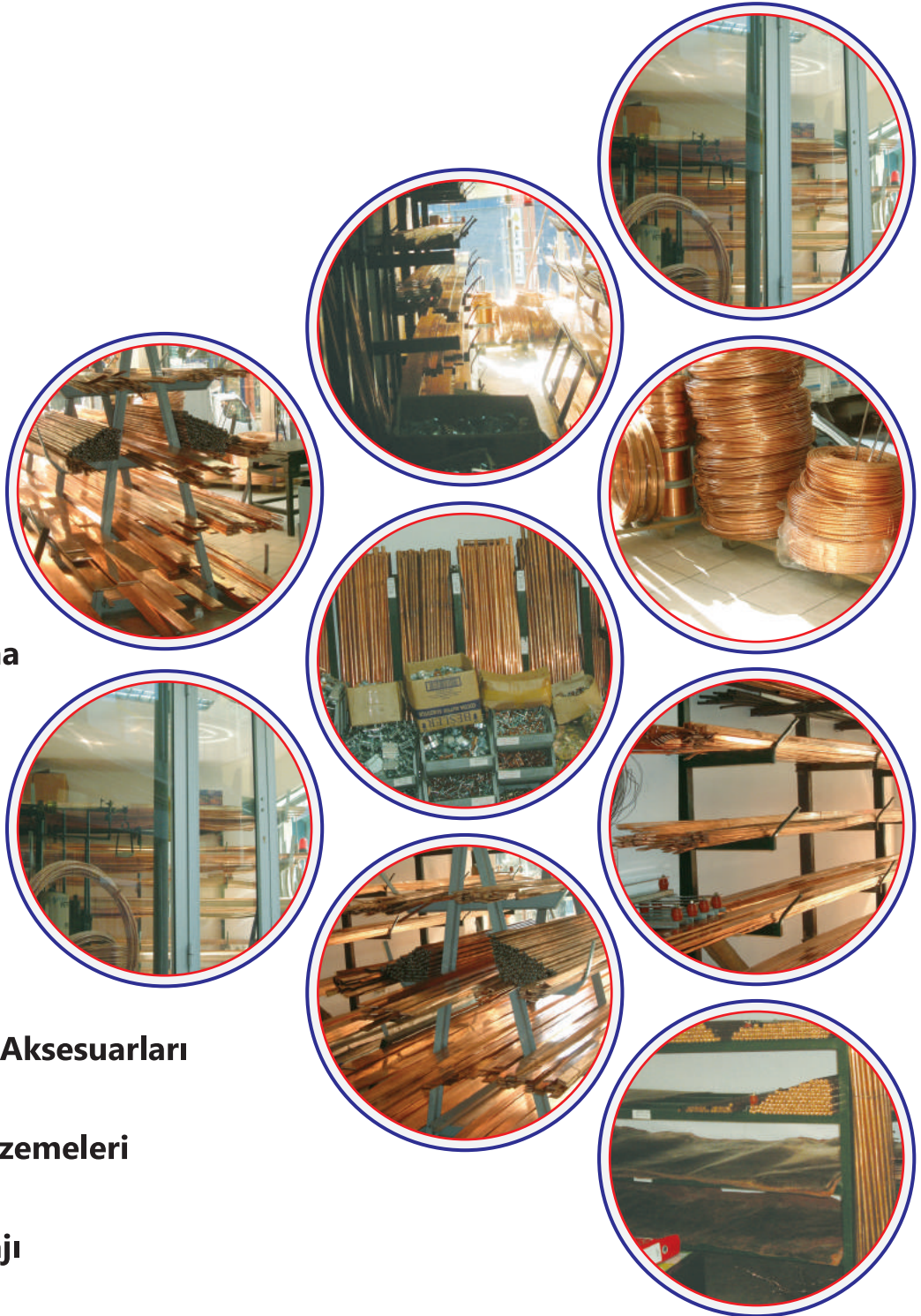
**Çinko**

**Aktif Paratoner**

**Faraday Sistemi Aksesuarları**

**Topraklama Malzemeleri**

**İmalat ve Montajı**







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## BAKIR LAMALAR





## Elektrolitik Bakır Örgülü Teller | Electrolytic Copper Corded Wires

Düzgün Geometrik örme yapabilen modern makinalarda TS 3 ve DIN 48201 standartlarında işlenen mamül örgülü iletken 150 - 200 kg'lık makaralar halinde piyasaya sunulmaktadır.

The products manufactured by the modern machines that can make smooth geometrical cording according to the TS 3 and DIN 482201 standarts are presented to the market in 150 - 200 kgs coils as a corded conductive metarial or in 500 - 1000 kgs bobbins.

| Cins<br>Kind                         | Sert örgülü iletkenler<br>Hard corded conductors                                                                                                                                    | Tavlı örgülü iletkenler<br>Hard corded conductors                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>KESİT<br/>PROFILE</b>             | 10-125 mm <sup>2</sup> arası istenen kesitler<br>Profiles between 10-125 mm <sup>2</sup>                                                                                            | 0.05 - 125 mm <sup>2</sup> arası istenen kesitler<br>Profiles between 10-125 mm <sup>2</sup>                                  |
| <b>KULLANIM YERİ<br/>USAGE PLACE</b> | Havai hat telleri topraklama telleri<br>ve diğer genel amaçlar için<br>Aerial line wires grounding wires and<br>other general purpose                                               | Kablo imalatında ve diğer<br>genel amaçlar için<br>In the cable production and for the<br>other general purposes              |
| <b>STANDART<br/>STANDARTS</b>        | TS 3, ASTM B8 DIN 48201, BS 6485 BS6231,<br>IEC 228 ve benzeri Uluslararası standartlar<br>TS 3, ASTM B8 DIN 48201, BS 6485 BS6231,<br>IEC 228 and similiar international standarts | TS 18/3, ASTM B8 6360 ve benzeri<br>Uluslararası standartlar<br>TS 18/3, ASTM B8 6360 and<br>similiar international standarts |
| <b>İLETKENLİK<br/>CONDUCTIVITY</b>   | 56 m/ohm mm <sup>2</sup> (min)                                                                                                                                                      | 58 m/ohm mm <sup>2</sup> (min)                                                                                                |

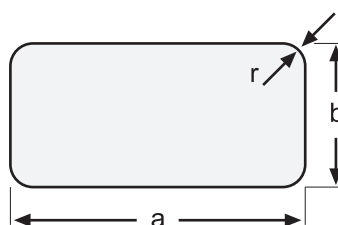
| KESİT<br>Section mm <sup>2</sup> | TEL ADEDİ<br>NUMBER OF<br>WIRE | TEK TEL ÇAPI<br>DIAMETER OF<br>ONE WIRE | ORTALAMA<br>AĞIRLIK<br>Section mm <sup>2</sup><br>WEIGH OF<br>SECTION |
|----------------------------------|--------------------------------|-----------------------------------------|-----------------------------------------------------------------------|
| 10                               | 7                              | 1.32                                    | 87                                                                    |
| 16                               | 7                              | 1.70                                    | 144                                                                   |
| 25                               | 7                              | 2.12                                    | 224                                                                   |
| 35                               | 7                              | 2.50                                    | 311                                                                   |
| 50                               | 7                              | 3.00                                    | 448                                                                   |
| 70                               | 19                             | 2.12                                    | 611                                                                   |
| 95                               | 19                             | 2.50                                    | 849                                                                   |
| 120                              | 19                             | 2.80                                    | 1065                                                                  |
| 150                              | 19                             | 2.80                                    | 1350                                                                  |
| 195                              | 37                             | 2.50                                    | 1740                                                                  |
| 240                              | 37                             | 2.80                                    | 2140                                                                  |



## Elektrolitik Bakır Yassı Teller | Electrolytic Copper Flat Wires

**Malzeme:** Elektrolitik bakır (% Cu: 99.90 min) Cu-ETP **Metarial:** Electrolytic (% Cu: 99.90 min) Cu-ETP

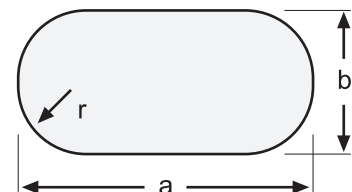
### KÖŞE RADYUSLU YASSI TELLER FLAT WIRES WITH EDGE RADIUS



TS 435, DIN 46433 standartlarında  
 KALINLIK (b) : 1 - 8 mm arasında istenilen her kalınlık  
 GENİŞLİK (a) : 2 - 30 mm arasında istenilen her genişlik  
 RADYUS (r) : 0.4 - 1.6 mm arasında köşe radyusu veya  
 1/2 b (mm) olarak yuvarlak kenarlı

In TS 435, DIN 46433 standard  
 THICKNESS (b) : Every demanded thickness between 1-8 mm  
 WIDENESS (a) : Every demanded wideness between 2-30 mm  
 RADIUS (r) : The edge radius between 0,4-1,6 mm or  
 rounded edge in 1/2 b (mm)

### DOĞAL KENARLI YASSI TELLER FLAT WIRES WITH EDGE NATURAL







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## Elektrolitik Bakır Levhalar | Electrolytic Copper Sheets

TSE 554'e uygun bakır levhalar standart olarak 1 x 2 m. ebatlı çatılık, dekorasyon ve genel amaçlı üretilmektedir. Mamüllerimiz standart ölçüler dışında istenilen kalınlık ve ebatlarda üretilmektedir. Topraklama levhaları tavlı, yarım sert ve sert olarak TSE Standartlarına uygun olarak üretilir. Ayrıca özel sipariş topraklama levha köşeli ve disk imalatı da yapılmaktadır.

The copper sheets confirming to TSE 554 are manufactured as standard and in 1x2 m. size for the roof work, decoration and general purposes. Our products are manufactured in the demanded thickness and size other than their confirming to the TSE standards as heat - treated, semi - hard and hard. Besides the manufacturing of grounding plate corner and disc are performed upon a special order.

| TEKNİK ÖZELLİKLERİ<br>TECHNICAL SPECIFICATIONS |                     |                       |                     |
|------------------------------------------------|---------------------|-----------------------|---------------------|
| KALINLIK<br>Thickness                          | Kg / m <sup>2</sup> | KALINLIK<br>Thickness | Kg / m <sup>2</sup> |
| 0.20                                           | 1.780               | 1.70                  | 15.164              |
| 0.30                                           | 2.676               | 1.80                  | 16.000              |
| 0.40                                           | 3.556               | 2.00                  | 17.780              |
| 0.50                                           | 4.445               | 2.20                  | 19.624              |
| 0.60                                           | 5.334               | 2.50                  | 22.200              |
| 0.70                                           | 6.220               | 2.70                  | 24.084              |
| 0.80                                           | 7.112               | 3.00                  | 26.670              |
| 0.90                                           | 8.000               | 3.20                  | 28.544              |
| 1.00                                           | 8.890               | 3.50                  | 31.110              |
| 1.20                                           | 10.670              | 4.00                  | 35.560              |
| 1.30                                           | 11.596              | 4.50                  | 40.140              |
| 1.40                                           | 13.330              | 5.00                  | 44.450              |

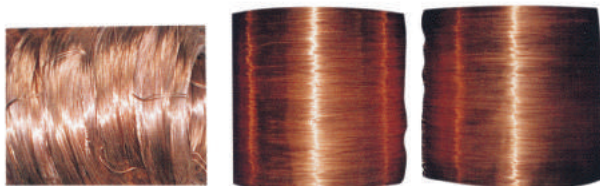


| STANDART TOPRAKLAMA LEVHALARI<br>STANDARD GROUNDING PLATES |                                        |                       |
|------------------------------------------------------------|----------------------------------------|-----------------------|
| Standart<br>Standard                                       | Kalınlık ve Ebat<br>Thickness and size | Ağırlık<br>Weight/kg. |
| TSE 554 ve<br>DIN 1751<br>NORMLARI                         | 700x700x1                              | 4.3708                |
|                                                            | 700x700x1.5                            | 6.556                 |
|                                                            | 700x700x2                              | 8.742                 |
|                                                            | 700x700x3                              | 13.112                |
| TSE 554 and<br>DIN 1751<br>NORMS                           | 1000x1000x1                            | 8.920                 |
|                                                            | 1000x1000x2                            | 17.480                |
|                                                            | 1000x1000x3                            | 26.760                |
|                                                            | 1000x1000x5                            | 44.600                |

## Elektrolitik Bakır Teller Electrolytic Copper Wires

Bakır som teller çıplak, kaplamalı ve izoleli olarak iletken ve kablo üretiminde ayrıca elektrik ve elektronik sektöründe her türlü iletim malzemesi olarak ve diğer genel amaçlar için kullanılmaktadır. Firmamız siparişe göre bakır filmaşın kullanarak tel çekme makinalarında TS 18 Standardına 1 -10 mm arasında 50 -100 kg kangallar halinde veya 630 mm. (750 - 850 kg) demir makaralar tavlı ve sert olarak bakır som tel üretimi yapmaktadır.

The copper solid wires are manufactured as bared, covered and isolated and used as a conductive material and for general purposes in electric and electronic sector and cable production. Our company manufactures copper solid wires under order between 1 -10 mm and in 50 -100 kgs coils confirming to the TS 18 standards through wire drawing machines or in 630 mm size (750 - 850 kgs) on the iron bobbins as hard and by heat treatments.



| Standart<br>çap<br>mm. | Standart<br>kesit(20°)<br>mm. | Ağırlık<br>kg/100m<br>(yoğunluk)<br>8.9 kg/dm <sup>3</sup> | 20°C de<br>Doğru akım<br>direnca nominal<br>değerler Ω.m |
|------------------------|-------------------------------|------------------------------------------------------------|----------------------------------------------------------|
| 1.05                   | 0.8659                        | 8.71                                                       | 0.02026                                                  |
| 1.1                    | 0.9503                        | 8.46                                                       | 0.01846                                                  |
| 0.15                   | 1.039                         | 9.24                                                       | 0.01689                                                  |
| 1.2                    | 1.131                         | 10.1                                                       | 0.01551                                                  |
| 1.25                   | 1.227                         | 10.9                                                       | 0.014330                                                 |
| 1.3                    | 1.327                         | 11.8                                                       | 0.01322                                                  |
| 1.35                   | 1.431                         | 12.7                                                       | 0.01226                                                  |
| 1.4                    | 1.539                         | 13.7                                                       | 0.01140                                                  |
| 1.45                   | 1.651                         | 14.7                                                       | 0.01062                                                  |
| 1.5                    | 1.767                         | 15.7                                                       | 0.00993                                                  |
| 1.55                   | 1.887                         | 16.8                                                       | 0.00930                                                  |
| 1.6                    | 2.011                         | 17.9                                                       | 0.00873                                                  |
| 1.65                   | 2.138                         | 19.0                                                       | 0.00821                                                  |
| 1.7                    | 2.270                         | 20.2                                                       | 0.00773                                                  |
| 1.75                   | 2.405                         | 21.4                                                       | 0.00729                                                  |
| 1.8                    | 2.545                         | 22.6                                                       | 0.00689                                                  |
| 1.9                    | 2.835                         | 25.2                                                       | 0.00619                                                  |
| 2                      | 3.142                         | 28.0                                                       | 0.00558                                                  |
| 2.1                    | 3.464                         | 30.8                                                       | 0.00507                                                  |
| 2.2                    | 3.801                         | 33.8                                                       | 0.004615                                                 |
| 2.3                    | 4.155                         | 37.0                                                       | 0.004223                                                 |
| 2.4                    | 4.524                         | 40.3                                                       | 0.003878                                                 |
| 2.5                    | 4.909                         | 43.7                                                       | 0.003574                                                 |
| 2.6                    | 5.309                         | 47.3                                                       | 0.003304                                                 |
| 2.7                    | 5.726                         | 51.0                                                       | 0.003064                                                 |
| 2.8                    | 6.158                         | 54.8                                                       | 0.002849                                                 |
| 2.9                    | 6.605                         | 58.8                                                       | 0.002656                                                 |
| 3                      | 7.069                         | 62.9                                                       | 0.002482                                                 |

| Standart<br>çap<br>mm. | Standart<br>kesit(20°)<br>mm. | Ağırlık<br>kg/100m<br>(yoğunluk)<br>8.9 kg/dm <sup>3</sup> | 20°C de<br>Doğru akım<br>direnca nominal<br>değerler Ω.m |
|------------------------|-------------------------------|------------------------------------------------------------|----------------------------------------------------------|
| 3.2                    | 8.043                         | 71.6                                                       | 0.002181                                                 |
| 3.3                    | 8.533                         | 76.1                                                       | 0.002051                                                 |
| 3.4                    | 9.079                         | 80.8                                                       | 0.001932                                                 |
| 3.5                    | 9.621                         | 85.6                                                       | 0.001823                                                 |
| 3.6                    | 10.18                         | 90.6                                                       | 0.001724                                                 |
| 3.8                    | 11.34                         | 101                                                        | 0.001547                                                 |
| 4                      | 12.57                         | 112                                                        | 0.001396                                                 |
| 4.2                    | 13.85                         | 123                                                        | 0.001266                                                 |
| 4.5                    | 15.90                         | 142                                                        | 0.001103                                                 |
| 4.8                    | 18.10                         | 161                                                        | 0.000970                                                 |
| 5                      | 19.64                         | 175                                                        | 0.000894                                                 |
| 5.2                    | 21.24                         | 189                                                        | 0.000826                                                 |
| 5.5                    | 23.76                         | 211                                                        | 0.000738                                                 |
| 5.8                    | 26.42                         | 235                                                        | 0.000664                                                 |
| 6                      | 28.27                         | 252                                                        | 0.000621                                                 |
| 6.5                    | 33.18                         | 295                                                        | 0.000529                                                 |
| 7                      | 38.48                         | 342                                                        | 0.000456                                                 |
| 7.5                    | 44.18                         | 393                                                        | 0.000397                                                 |
| 8                      | 50.27                         | 447                                                        | 0.000348                                                 |
| 8.5                    | 56.75                         | 505                                                        | 0.000309                                                 |
| 9                      | 63.62                         | 566                                                        | 0.000276                                                 |
| 9.5                    | 70.88                         | 630                                                        | 0.000248                                                 |
| 10                     | 78.85                         | 701                                                        | 0.000222                                                 |
| 11                     | 95.03                         | 845                                                        | 0.000184                                                 |
| 12                     | 113.10                        | 1009                                                       | 0.000155                                                 |
| 13                     | 132.66                        | 1183                                                       | 0.000130                                                 |
| 14                     | 153.86                        | 1372                                                       | 0.000115                                                 |
| 15                     | 176.62                        | 1575                                                       | 0.000098                                                 |



**Bakır Boru TSE 380 | Copper Pipe**
**BAKIRDAN MAMÜL TESİSAT BORULARININ Kg/m AĞIRLIKLARI TSE 380 - DIN 1786**

| Çap & Kalınlık<br>mm<br>m / Kg                                | Çap & Kalınlık<br>mm<br>m / Kg                                | Çap & Kalınlık<br>mm<br>m / Kg                   | Çap & Kalınlık<br>mm<br>m / Kg                   |
|---------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| <b>6 x 1.0 0.140</b>                                          | <b>16 x 1.0 0.419</b>                                         | <b>26 x 1.0 0.698</b>                            | <b>55 x 1.0 1.509</b>                            |
| 1.5 0.188<br>2.0 0.223                                        | 1.5 0.607<br>2.0 0.782<br>2.5 0.942<br>3.0 1.089              | 1.5 1.026<br>2.0 1.340<br>2.5 1.641<br>3.0 1.927 | 1.5 2.241<br>2.0 2.960<br>2.5 3.665<br>3.0 4.357 |
| <b>7 x 1.0 0.168</b>                                          | <b>18 x 0.8 0.384</b>                                         | <b>28 x 1.0 0.753</b>                            | <b>60 x 1.0 1.647</b>                            |
| 1.5 0.230<br>2.0 0.279                                        | 1.0 0.475<br>1.5 0.692<br>2.0 0.892<br>2.5 1.081<br>3.0 1.257 | 1.5 1.111<br>2.0 1.452<br>2.5 1.780<br>3.0 1.095 | 1.5 2.450<br>2.0 3.239<br>2.5 4.015<br>3.0 4.776 |
| <b>8 x 1.0 0.195</b>                                          | <b>19 x 1.0 0.504</b>                                         | <b>30 x 1.0 0.890</b>                            | <b>65 x 1.0 1.788</b>                            |
| 1.5 0.272<br>2.0 0.335<br>2.5 0.384                           | 1.5 0.732<br>2.0 0.949<br>2.5 1.152<br>3.0 1.257              | 1.5 1.192<br>2.0 1.564<br>2.5 1.920<br>3.0 2.262 | 1.5 2.660<br>2.0 3.519<br>2.5 4.364<br>3.0 5.195 |
| <b>9 x 1.0 0.223</b>                                          | <b>20 x 1.0 0.531</b>                                         | <b>35 x 1.0 0.950</b>                            | <b>70 x 1.0 1.926</b>                            |
| 1.5 0.314<br>2.0 0.391<br>2.5 0.454                           | 1.5 0.776<br>2.0 1.005<br>2.5 1.222<br>3.0 1.424              | 1.5 1.403<br>2.0 1.843<br>2.5 2.268<br>3.0 3.100 | 1.5 2.870<br>2.0 3.798<br>2.5 4.712<br>3.0 3.613 |
| <b>10 x 1.0 0.251</b>                                         | <b>22 x 0.8 0.474</b>                                         | <b>40 x 1.0 1.089</b>                            | <b>80 x 1.0 2.206</b>                            |
| 1.5 0.356<br>2.0 0.447<br>2.5 0.524<br>3.0 0.586              | 0.1 0.587<br>1.5 0.860<br>2.0 1.117<br>2.5 1.360<br>3.0 1.591 | 1.5 1.613<br>2.0 2.122<br>2.5 2.618<br>3.0 3.100 | 1.5 3.288<br>2.0 4.357<br>2.5 5.411<br>3.0 6.451 |
| <b>12 x 1.0 0.308</b>                                         | <b>24 x 1.0 0.642</b>                                         | <b>45 x 1.0 1.228</b>                            | <b>90 x 1.0 3.707</b>                            |
| 1.5 0.440<br>2.0 0.558<br>2.5 0.663<br>3.0 0.754              | 1.5 0.943<br>2.0 1.229<br>2.5 1.501<br>3.0 1.760              | 1.5 1.822<br>2.0 2.402<br>2.5 2.967<br>3.0 3.519 | 2.0 4.915<br>2.5 6.109<br>3.0 7.290              |
| <b>14 x 1.0 0.363</b>                                         | <b>25 x 1.0 0.670</b>                                         | <b>50 x 1.0 1.369</b>                            | <b>100 x 1.5 4.126</b>                           |
| 1.5 0.524<br>2.0 0.670<br>2.5 0.804<br>3.0 0.921              | 1.5 0.984<br>2.0 1.285<br>2.5 1.571<br>3.0 1.843              | 1.5 2.032<br>2.0 2.681<br>2.5 3.317<br>3.0 3.939 | 2.0 5.473<br>2.5 6.807<br>3.0 8.127              |
| <b>15 x 0.80 0.317</b>                                        |                                                               |                                                  |                                                  |
| 1.0 0.391<br>1.5 0.565<br>2.0 0.726<br>2.5 0.873<br>3.0 1.004 |                                                               |                                                  |                                                  |

**Düz boru boyları 2 ila 6 m arası veya istenilen ölçülerde, TSE ve DIN normlarına göre sert ve yumuşak olarak imal edilir.**


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## Elektrolitik Bakır Lamalar | Electrolytic Copper Flat Bars

Elektrolitik bakır lamalar TS 435, DIN 1759, DIN 46433 standartlarına uygun olarak üretilir. Lamalar kenarları keskin, tam ve yarım radyus olarak 2-6 m. boylarında üretilmekte olup, elektrik iletkenliğine hassas alanlara son derece uygundur.

Electronic copper bars are manufactured confirming to the TS 435, DIN 1759 and DIN 46433 standarts. Bars are manufactured as sharp edged and complete and semi radius in 2-6 ms. lenght, and they are very suitable for the areas that are sensitive to the electric conductivity.

| FİZİKSEL ÖZELLİKLER<br>PHYSICAL PECULATROTIES |                                              |
|-----------------------------------------------|----------------------------------------------|
| % BAKIR % COPPER                              | 99.90 (mm)                                   |
| YOĞUNLUK DENSITY                              | 8.9 kg/dm <sup>3</sup>                       |
| ELEKTRİK İLETKENLİĞİ<br>ELECTRIC CONDUCTIVITY | 20°C de 56-58<br>m/ohm mm <sup>2</sup> (min) |
| ISI İLETKENLİĞİ<br>HEAT CONDUCTIVITY          | 20° de 0.934<br>cal/cm sn°C                  |

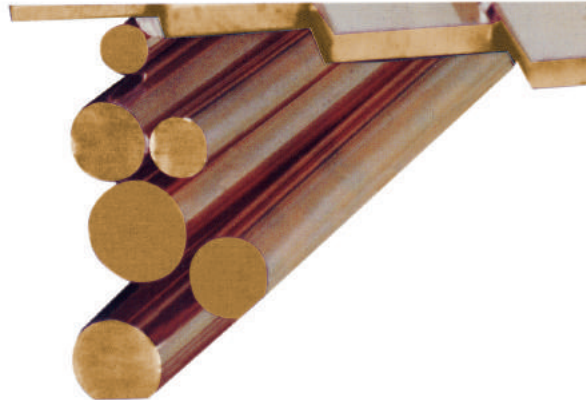
| STANDART EBATLAR<br>STANDARD SIZES |            |
|------------------------------------|------------|
| KALINLIK x EN<br>Thickness x Width | Size<br>mm |
| 3x20                               | 0.533      |
| 3x25                               | 0.666      |
| 3x30                               | 0.800      |
| 3x40                               | 1.066      |
| 5x20                               | 0.889      |
| 5x25                               | 1.111      |
| 5x30                               | 1.333      |
| 5x40                               | 1.788      |
| 5x50                               | 2.222      |
| 10x40                              | 3.556      |
| 10x50                              | 4.440      |
| 10x60                              | 5.330      |
| 10x80                              | 7.112      |
| 10x100                             | 8.890      |
| 10x120                             | 10.668     |



## Elektrolitik Bakır Çubuklar | Electrolytic Copper Rods

Elektrolitik bakır çubuklar 1-6 m. boylarında TSE 435 ve DIN 1756 standardına uygun olarak üretilmektedir. Ayrıca kare kesiti ve altıköşe çubuklar DIN 1761 -1763 standardına 10 - 40 mm arası siparişe göre üretilir.

Electrolytic copper rods are manufactured in 1-6 lenght confirming to the TSE 435 and DIN 1756 standarts. Besides the square profiled and hexagon rods are manufactured conforming to the DIN 1761-1763 standarts.



| STANDART EBATLAR<br>STANDARD SIZES |           |
|------------------------------------|-----------|
| KUTUR x ÇAP<br>Diameter x Dia      | Dia<br>mm |
| 8                                  | 0.448     |
| 9                                  | 0.567     |
| 10                                 | 0.700     |
| 12                                 | 1.008     |
| 15                                 | 1.575     |
| 18                                 | 2.268     |
| 20                                 | 2.800     |
| 22                                 | 3.388     |
| 25                                 | 4.275     |
| 28                                 | 5.488     |
| 30                                 | 6.300     |
| 32                                 | 7.168     |
| 35                                 | 8.575     |
| 40                                 | 11.200    |
| 42                                 | 12.348    |
| 45                                 | 14.175    |
| 48                                 | 16.128    |
| 50                                 | 17.500    |
| 55                                 | 21.128    |
| 60                                 | 25.132    |



## E.S.E Aktif Paratonerler | E.S.E. Active Lightning Conductors

### Franklin France E.S.E. 2D Elektrostatik + Güneş Enerjili + Rüzgar Enerjili Aktif Paratoner Franklin France E.S.E. 2D Electrostatic + Solar + Wind Power Lightning Conductor

| REF NO   | MODELİ<br>MODEL | MAX KORUMA ÇAPI<br>PROTECTED DIAMETER | ▲ L  | ÖLÇÜLER<br>MEASURES | AĞIRLIK<br>WEIGHT |
|----------|-----------------|---------------------------------------|------|---------------------|-------------------|
|          |                 | (h=6M)                                |      |                     | kg                |
| UB 41150 | SE 2D 30        | 144 m                                 | 30 m | 1,98 m              | 8,6               |
| UB 41151 | SE 2D 60        | 214 m                                 | 60 m | 1,98 m              | 8,6               |

### Forend E.S.E. Aktif Paratoner | Forend E.S.E. 2D Active Lightning Conductors

| REF NO   | MODELİ<br>MODEL | MAX KORUMA ÇAPI<br>PROTECTED DIAMETER | ▲ L  | BOYUTLAR<br>DIMENSIONS | AĞIRLIK<br>WEIGHT |
|----------|-----------------|---------------------------------------|------|------------------------|-------------------|
|          |                 | (h=6M)                                |      |                        | kg                |
| UB 41152 | FOREND PETEX    | 214 m                                 | 60 m | 0,5 m                  | 3                 |
| UB 41153 | FOREND S        | 214 m                                 | 60 m | 0,58 m                 | 4,5               |
| UB 41154 | FOREND EU       | 214 m                                 | 60 m | 0,58 m                 | 5,5               |



FOREND PETEX



FOREND EU



FOREND S



ONAY

| h(m) | (Rp) KORUMA YARI ÇAPI (m) ( ▲ L = 60 m)<br>(Rp) Protection Radius (m) |     |     |
|------|-----------------------------------------------------------------------|-----|-----|
|      | YILDIRIMDAN KORUNMA SEVİYESİ<br>LIGHTNING PROTECTION LEVEL            |     |     |
|      | I                                                                     | II  | III |
| 6    | 79                                                                    | 97  | 107 |
| 10   | 79                                                                    | 99  | 109 |
| 20   | 80                                                                    | 102 | 113 |
| 30   | 80                                                                    | 104 | 116 |
| 60   | 80                                                                    | 105 | 120 |

ISO 9001:2000 belgeli  
 NF C 17-102'ye uygunluk test belgeli  
 20/25 yıl garantili (EU-25, PETEX-20)  
 BET Laboratuvar test belgeli (EU)

Certificated ISO 9001:2000  
 Test Certificated of conformity in NF C 17-102 (ICMET Laborotory)  
 20-25 years of guarantee  
 Test certificated by BET laboratory



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## Tesla-s Teknik Özellikleri | Tesla-s Technical Specifications



Induktans: 20 H civarında  
Kapasite: 200 p F  
L/C Sabiti: 8 -10 msn  
Başlangıç ark aralığı: 0,1 mm.  
Yıld. akım ark aralığı: (dahil) 2 mm.  
Yıld. akım ark aralığı: (harici) 40 mm.  
Reaksiyon süresi: 10/20 usn.

### İyon Jenaratörü Çalıştırıcı:

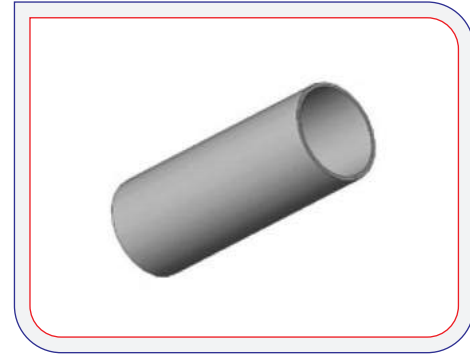
Atmosferik şiddeti: 5-200 kv/ m (ani)  
Başlık ağırlığı: 8,9 Kg.  
Boyutlar: Ø 40 cm. L: 85 cm  
Paratoner başlık bağlantısı: İç yuva dişi 1 1/4"  
Uluslararası sınıflandırma no: H 026 -13/00

| Rp (m)    | SE 6 ΔL = 15m |    |     | SE 9 ΔL = 30m |    |     | SE 12 ΔL = 45m |    |     | SE 15 ΔL = 60m |     |     |
|-----------|---------------|----|-----|---------------|----|-----|----------------|----|-----|----------------|-----|-----|
| h (m) N p | I             | II | III | I             | II | III | I              | II | III | I              | II  | III |
| 2         | 13            | 18 | 20  | 19            | 25 | 28  | 25             | 32 | 36  | 31             | 39  | 43  |
| 4         | 25            | 36 | 41  | 38            | 51 | 57  | 51             | 65 | 72  | 63             | 78  | 85  |
| 6         | 32            | 46 | 52  | 48            | 64 | 72  | 63             | 81 | 90  | 79             | 97  | 107 |
| 8         | 33            | 47 | 54  | 49            | 65 | 73  | 64             | 82 | 91  | 79             | 98  | 108 |
| 10        | 34            | 49 | 56  | 49            | 66 | 75  | 64             | 83 | 92  | 79             | 99  | 109 |
| 20        | 35            | 55 | 63  | 50            | 71 | 81  | 65             | 86 | 97  | 80             | 102 | 113 |
| 30        | 35            | 58 | 69  | 50            | 73 | 85  | 65             | 89 | 101 | 80             | 104 | 116 |
| 60        | 35            | 60 | 75  | 50            | 75 | 90  | 65             | 90 | 105 | 80             | 105 | 120 |

## Paratoner Direkleri | Lightning Conductor Poles

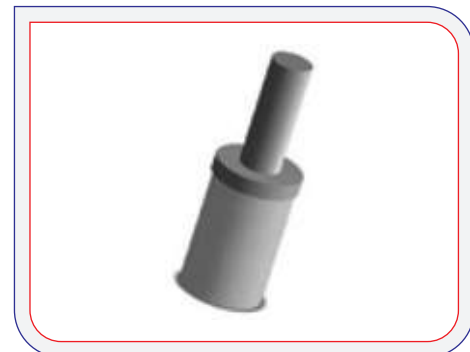
### Paratoner Direği Boru Tipi | Lightning Conductor Pole Pipe Type

| REF NO   | MALZEME<br>MATERIAL | UZUNLUK<br>LENGTH | DİREK ÇAP<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-------------------|----------------------------|-------------------|
|          |                     |                   |                            |                   |
| UB 41155 | GALVANİZE BORU      | 6.00              | 2"                         | 30,00             |
| UB 41156 | GALVANIZED MAST     | 3.00              | 2.5"                       | 19,50             |



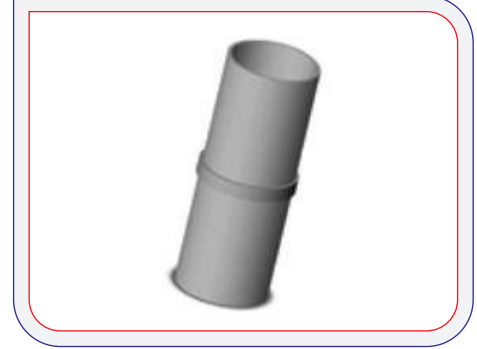
### Ünite Adaptörü | Unit Adapter

| REF NO   | MALZEME<br>MATERIAL                | DİREK ÇAP<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|----------------------------|-------------------|
|          |                                    |                            |                   |
| UB 41157 | PASLANMAZ ÇELİK<br>STAINLESS STEEL | 2.0"                       | 1,10              |

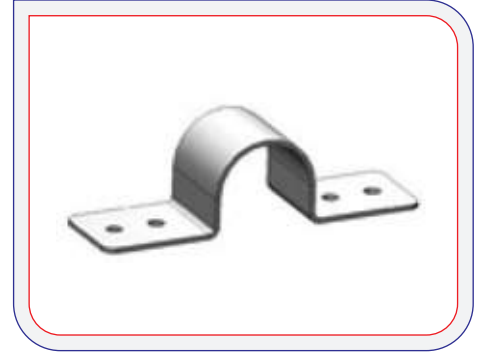



**Direk Ek Adaptörü | Pole Joint Adapter**

| REF NO   | MALZEME<br>MATERIAL | DİREK ÇAPI<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-----------------------------|-------------------|
|          |                     |                             |                   |
| UB 41158 | PASLANMAZ ÇELİK     | 2.0'' - 2.5''               | 2,48              |
| UB 41159 | STAINLESS STEEL     | 2.0'' - 3.0''               | 3,00              |


**Paratoner Direk Kelepçeleri | Lightning Conductor Pole Clips**
**Düz Tip (45x5 mm) | Regular Type (45x5 mm)**

| REF NO   | MALZEME<br>MATERIAL | DİREK ÇAPI<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-----------------------------|-------------------|
|          |                     |                             |                   |
| UB 41160 | GALVANİZ ÇELİK      | 2.0''                       | 0,40              |
| UB 41161 | GALVANIZED STEEL    | 2.5''                       | 0,47              |


**Duvar Tipi | Wall Type**

| REF NO   | MALZEME<br>MATERIAL     | DİREK ÇAPI<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|-------------------------|-----------------------------|-------------------|
|          |                         |                             |                   |
| UB 41162 | GALVANİZ ÇELİK U TİPİ   | 2.0''                       | 1,24              |
| UB 41163 | GALVANIZED STEEL U TYPE | 2.5 - 3''                   | 1,50              |


**Pilon Tip | Pylon Type**

| REF NO   | MALZEME<br>MATERIAL     | DİREK ÇAPI<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|-------------------------|-----------------------------|-------------------|
|          |                         |                             |                   |
| UB 41164 | GALVANİZ ÇELİK U TİPİ   | 2.0''                       | 0,80              |
| UB 41165 | GALVANIZED STEEL U TYPE | 2.5''                       | 0,90              |







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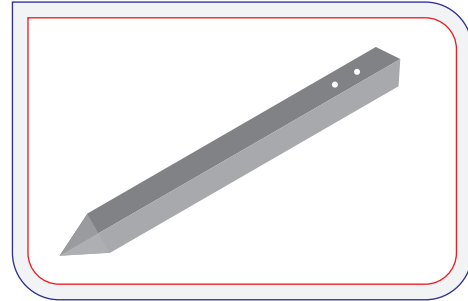
### Galvaniz Şerit İletken | Galvanized Tape Conductor

| REF NO                                                               | MALZEME<br>MATERIAL                                           | BOYUTLAR<br>DIMENSIONS                         |
|----------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------|
|                                                                      |                                                               | mm<br>                                         |
| UB 41629<br>UB 41630<br>UB 41631<br>UB 41632<br>UB 41633<br>UB 41634 | SICAK DALDIRMA GALVANİZ / RULO<br>HOT DIP GALVANIZED / ROLL   | 20x3<br>25x3<br>30x3<br>30x3,5<br>40x3<br>40x4 |
| UB 41635<br>UB 41636<br>UB 41637<br>UB 41638<br>UB 41639<br>UB 41640 | SICAK DALDIRMA GALVANİZ / PARÇA<br>HOT DIP GALVANIZED / PIECE | 20x3<br>25x3<br>30x3<br>40x3<br>40x4<br>50x5   |



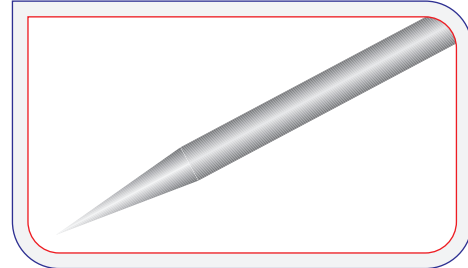
### Köşebent Topraklama Elektrodu | Earthing Electrode

| REF NO                                       | MALZEME<br>MATERIAL                           | BOYUTLAR<br>DIMENSIONS                                                       |
|----------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------|
|                                              |                                               | mm/mt<br>                                                                    |
| UB 41641<br>UB 41642<br>UB 41643<br>UB 41644 | SICAK DALDIRMA GALVANİZ<br>HOT DIP GALVANIZED | 40x40x4mmx1 mt.<br>50x50x5mmx1,5 mt.<br>60x60x6mmx1,5 mt.<br>65x65x7mmx2 mt. |

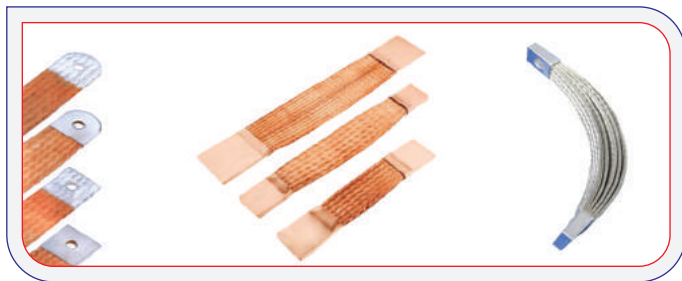


### Topraklama Elektrodu Galvaniz Çubuk | Earthing Electrode Galvanized Rod

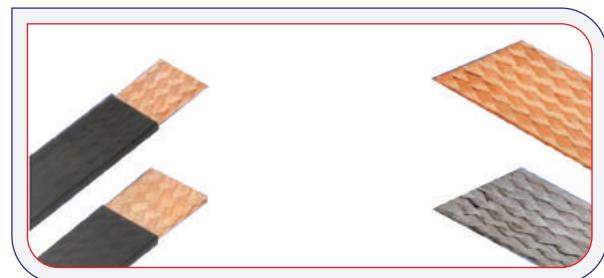
| REF NO                           | MALZEME<br>MATERIAL                           | BOYUTLAR<br>DIMENSIONS           |
|----------------------------------|-----------------------------------------------|----------------------------------|
|                                  |                                               | mm/mt<br>                        |
| UB 41645<br>UB 41646<br>UB 41647 | SICAK DALDIRMA GALVANİZ<br>HOT DIP GALVANIZED | 16 - 1,5<br>18 - 1,0<br>20 - 1,5 |



### Örgülü Flexible Bara | Braided Flexible Busbar



### Örgülü Şase Kablosu | Braided Ground Cable



### Pres Kaynaklı Yaprak Bağlantı Elemanları | Pressed Welded Connection Elements

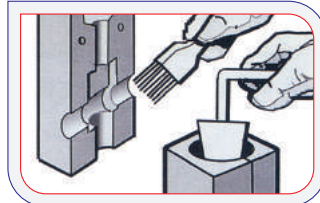
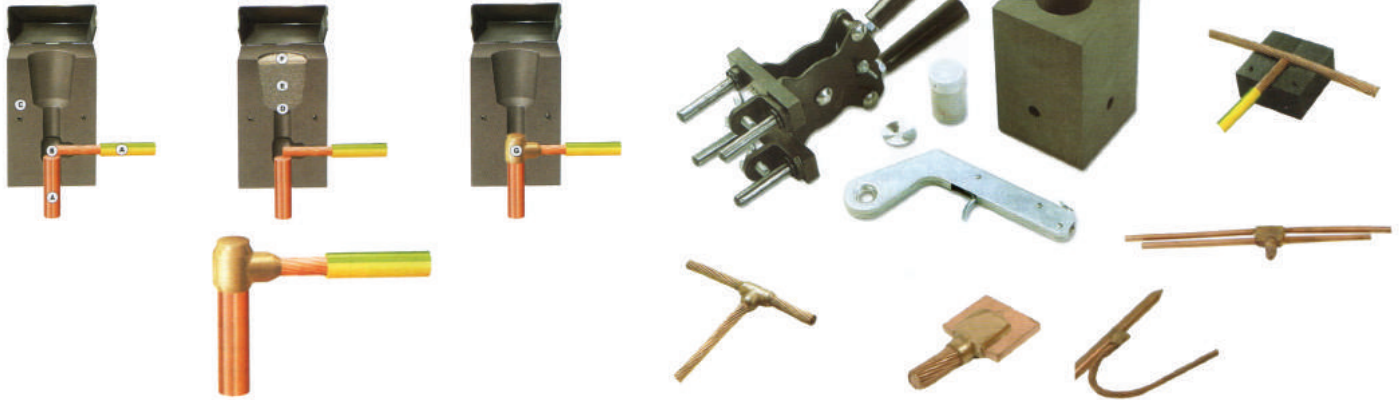
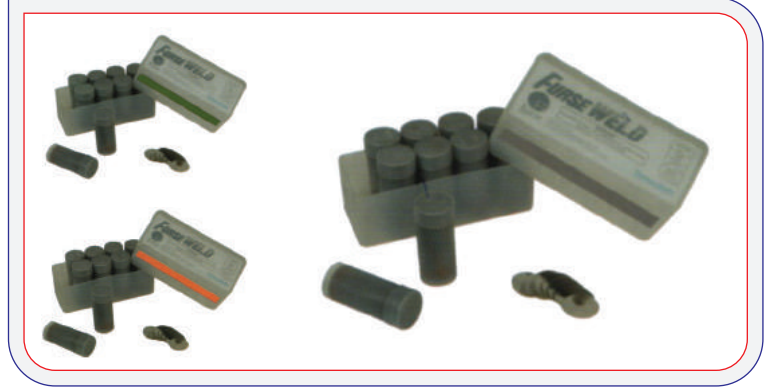




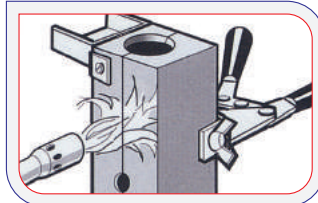
## Termo Kaynak Ekipmanları | Exothermic Welding Accessories

Bakır - Çelik | Copper - Steel

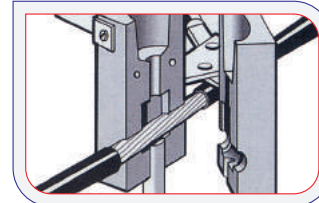
| REF NO   | MALZEME MATERIAL | AĞIRLIK WEIGHT |
|----------|------------------|----------------|
|          |                  |                |
| UB 41166 | 15 P10           | 0.015          |
| UB 41167 | 25 P10           | 0.025          |
| UB 41168 | 32 P10           | 0.032          |
| UB 41169 | 45 P10           | 0.045          |
| UB 41170 | 65 P10           | 0.065          |
| UB 41171 | 90 P10           | 0.090          |
| UB 41172 | 115 P10          | 0.115          |
| UB 41173 | 150 P10          | 0.150          |
| UB 41174 | 200 P10          | 0.200          |
| UB 41175 | 250 P10          | 0.250          |
| UB 41176 | 500 P10          | 0.500          |



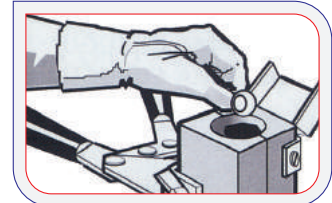
Bakır kablo ve elektrod ucuğunun kaynatılacak bölgesi fırça ile temizlenmeli.



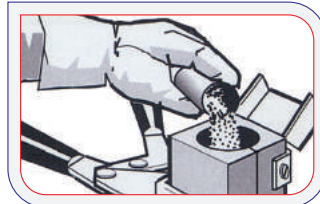
İyi bir kaynak için potanın nemden arındırılması gerekir, bunun için potanın yaklaşık 5 dk. ısıtılması gerekir.



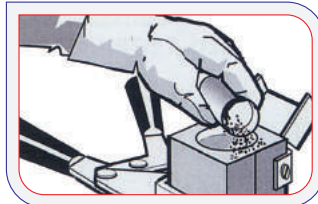
Kaynak yapılabilmesi için iletkenler potanın içerisine yerleştirilir.



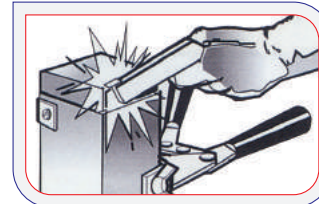
Metal disk kalıp haznesinin içine yerleştirilir.



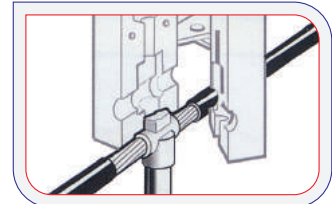
Toz hazne içerisine boşaltılır.



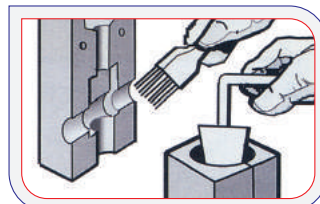
Siyah kapakçık açılarak ateşleme tozu üzerine serpiştirilir.



Kapak kapatılır ve yan delikten çakmak ile ateşleme yapılır.



Bir dakika bekleddikten sonra pota açılır ve kaynak yapılmış bölüm çıkarılır.



Kaynak bittikten sonra pota, ikinci bir kullanım için temizlik fırçası ve kazıyıcı ile temizlenmelidir.

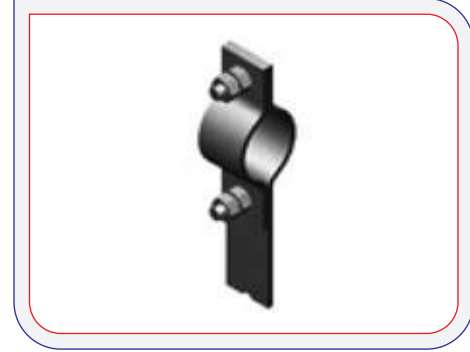
**Alüminotermik Kaynak Prosedürü**  
 Soldal Welding Procedure


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## Paratoner Direk Kelepçeleri | Lightning Conductor Pole Clips

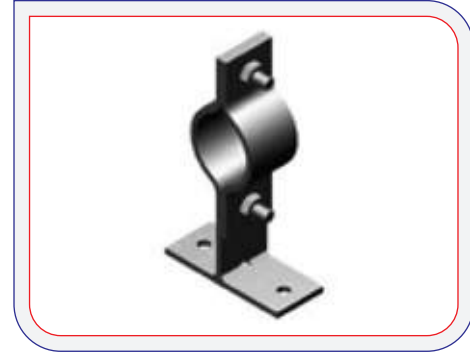
### Ankrajlı Tip | Nail Fitting Type

| REF NO   | MALZEME METERIAL                   | DİREK ÇAPI<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|-----------------------------|-------------------|
|          |                                    |                             |                   |
| UB 41177 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 2.0"                        | 0,90              |
| UB 41178 |                                    | 2.5"                        | 1,00              |
| UB 41179 |                                    | 3.0"                        | 1,20              |



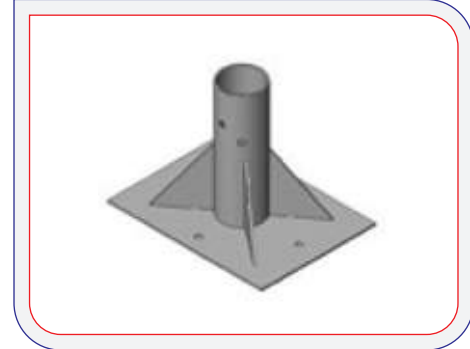
### Ayaklı Tip | Foot Type

| REF NO   | MALZEME METERIAL                   | DİREK ÇAPI<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|-----------------------------|-------------------|
|          |                                    |                             |                   |
| UB 41180 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 2.0"                        | 1,10              |
| UB 41181 |                                    | 2.5"                        | 1,15              |
| UB 41182 |                                    | 3.0"                        | 1,30              |



### Orta Tip Taban | Middle Type Base

| REF NO   | MALZEME METERIAL                   | DİREK ÇAPI<br>POLE DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|-----------------------------|-------------------|
|          |                                    |                             |                   |
| UB 41183 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 2.0"                        | 4,50              |
| UB 41184 |                                    | 2.5"                        | 5,00              |
| UB 41185 |                                    | 3.0"                        | 5,50              |



## İkaz Levhaları | Lightning Conductor Pole Clips

### Ankrajlı Tip | Nail Fitting Type

| REF NO   | MALZEME METERIAL               | BOYUTLAR<br>DIMENSIONS | AĞIRLIK<br>WEIGHT |
|----------|--------------------------------|------------------------|-------------------|
|          |                                |                        |                   |
| UB 41186 | FİRİN BOYALI / FURNACE COATING | 220 X 150              | 0,30              |
| UB 41187 | EMAYE / GLAZED                 | 220 X 150              | 0,30              |
| UB 41188 | ALUMİNYUM / ALUMINIUM          | 220 X 150              | 0,20              |







## Test Klemensleri | Test Clamps

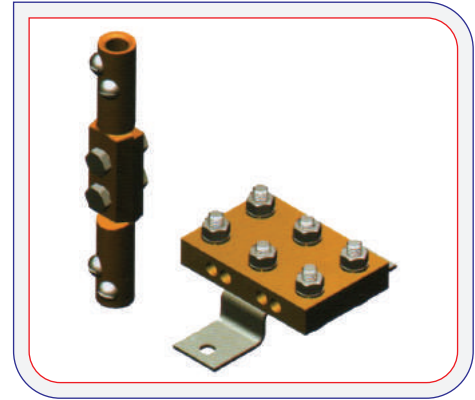
### Plastik Kapaklı Bakır Test Klemensi | Copper Test Clamp With Plastic

| REF NO   | MALZEME<br>MATERIAL                            | İLETKEN<br>CONDUCTOR   | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------------------|------------------------|-------------------|
|          |                                                |                        |                   |
| UB 41180 | YUVARLAK İLETKEN İÇİN<br>FOR ROUND CONDUCTOR   | 1 x 50 mm <sup>2</sup> | 0,40              |
| UB 41181 |                                                | 2 x 50 mm <sup>2</sup> | 0,40              |
| UB 41182 | ŞERİT İLETKEN İÇİN<br>FOR FLAT STRIP CONDUCTOR | 20 x 3 mm              | 0,40              |
| UB 41183 |                                                | 25 x 3 mm              | 0,40              |
| UB 41184 |                                                | 30 x 3 mm              | 0,42              |



### Pirinç Test Klemensi | Brass Test Clamp

| REF NO   | MALZEME<br>MATERIAL                          | İLETKEN<br>CONDUCTOR   | AĞIRLIK<br>WEIGHT |
|----------|----------------------------------------------|------------------------|-------------------|
|          |                                              |                        |                   |
| UB 41185 | YUVARLAK İLETKEN İÇİN<br>FOR ROUND CONDUCTOR | 1 x 25 mm <sup>2</sup> | 0,35              |
| UB 41186 |                                              | 1 x 50 mm <sup>2</sup> | 0,40              |
| UB 41187 |                                              | 2 x 50 mm <sup>2</sup> | 0,40              |
| UB 41188 |                                              | 2 x 95 mm <sup>2</sup> | 0,40              |



## Plastik İletken Tespit Kroşeleri | Plastic Conductor Fixing Clamps

### İzole Zeminler İçin Kroşe | Clamp For Isolated Ground

| REF NO   | MALZEME<br>MATERIAL                            | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------------------|----------------------|-------------------|
|          |                                                |                      |                   |
| UB 41189 | PLASTİK ALTLIKLI KROŞE<br>PLASTIC MOUNTED CLIP | 1x50                 | 0,97              |
| UB 41190 |                                                | 2x50                 | 1,07              |
| UB 41191 |                                                | 25x3                 | 1,07              |
| UB 41192 | BETON ALTLIKLI KROŞE<br>CONCRETE MOUNTED CLIP  | 1x50                 | 0,97              |
| UB 41193 |                                                | 25x3                 | 1,07              |
| UB 41194 |                                                | 30x3                 | 1,07              |

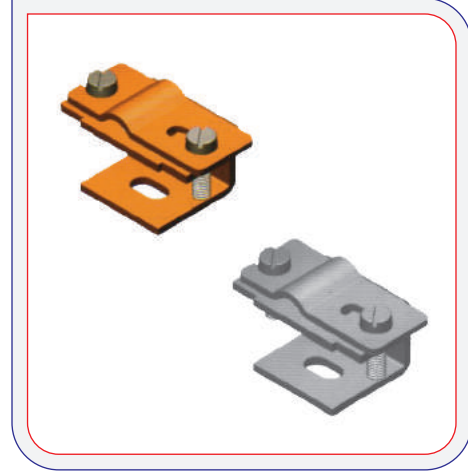



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## İletken Tespit Kroşeleri | Conductor Fixing Clamps

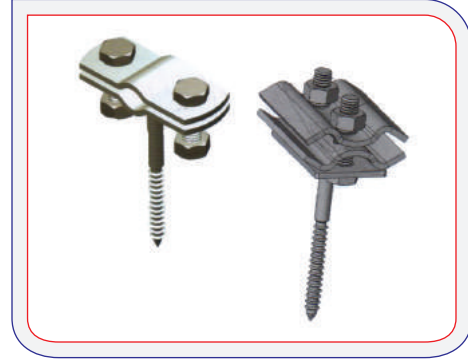
### U Tipi Duvar Kroşe | U-Type Wall Clamp

| REF NO   | MALZEME<br>MATERIAL                | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|----------------------|-------------------|
|          |                                    |                      |                   |
| UB 41195 | BAKIR<br>COPPER                    | 1x50                 | 0,09              |
| UB 41196 |                                    | 2x50                 | 0,12              |
| UB 41197 |                                    | 20x3                 | 0,09              |
| UB 41198 |                                    | 25x3                 | 0,09              |
| UB 41199 |                                    | 30x3                 | 0,09              |
| UB 41200 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 1x50                 | 0,08              |
| UB 41201 |                                    | 20x3                 | 0,08              |
| UB 41202 |                                    | 25x3                 | 0,08              |
| UB 41203 |                                    | 30x3                 | 0,08              |



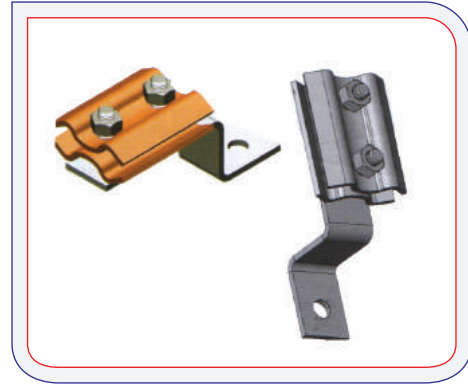
### Galvaniz Duvar Kroşe | Galvanized Wall Clamp

| REF NO   | MALZEME<br>MATERIAL                | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|----------------------|-------------------|
|          |                                    |                      |                   |
| UB 41204 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 1x50                 | 0,09              |
| UB 41205 |                                    | 2x50                 | 0,12              |
| UB 41206 |                                    | 20x3                 | 0,09              |



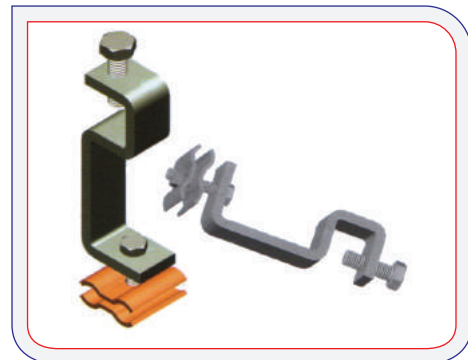
### "Z" Ayaklı Kroşe | "Z" Foot Clamp

| REF NO   | MALZEME<br>MATERIAL | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|----------------------|-------------------|
|          |                     |                      |                   |
| UB 41207 | BAKIR<br>COPPER     | 20x3 mm              | 0,10              |
| UB 41208 |                     | 25x3 mm              | 0,11              |
| UB 41209 |                     | 30x3 mm              | 0,12              |
| UB 41210 |                     | 1x50 mm <sup>2</sup> | 0,10              |
| UB 41211 |                     | 2x50 mm <sup>2</sup> | 0,10              |



### Pilon Kroşe | Pylon Clamp

| REF NO   | MALZEME<br>MATERIAL                | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|----------------------|-------------------|
|          |                                    |                      |                   |
| UB 41212 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 1x50                 | 0,09              |
| UB 41213 |                                    | 2x50                 | 0,12              |
| UB 41214 |                                    | 20x3                 | 0,09              |

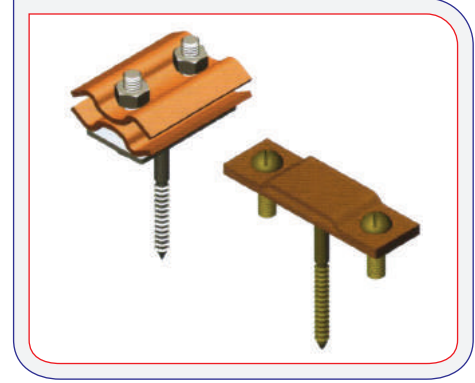




## İletken Tespit Kroşeleri | Conductor Fixing Clamps

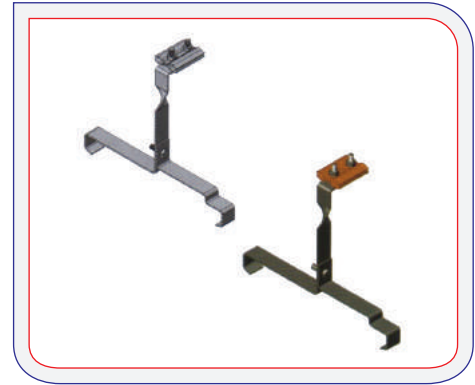
### Vidalı Tip Duvar Kroşe | Screw Type Wall Clamp

| REF NO   | MALZEME<br>MATERIAL                            | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------------------|----------------------|-------------------|
|          |                                                |                      |                   |
| UB 41215 | BAKIR / COPPER<br>BRASS SCREW<br>PİRİNÇ VIDALI | 20x3 mm              | 0,10              |
| UB 41216 |                                                | 25x3 mm              | 0,12              |
| UB 41217 |                                                | 30x3 mm              | 0,13              |
| UB 41218 |                                                | 1x50 mm <sup>2</sup> | 0,07              |
| UB 41219 |                                                | 2x50 mm <sup>2</sup> | 0,10              |



### Kiremit Kroşe | Tile Clamp

| REF NO   | MALZEME<br>MATERIAL | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|----------------------|-------------------|
|          |                     |                      |                   |
| UB 41220 | BAKIR<br>COPPER     | 1x50 mm              | 0,19              |
| UB 41221 |                     | 2x50 mm              | 0,19              |
| UB 41222 |                     | 25x3 mm              | 0,19              |



### Mahya Kroşe | Roof Tile Clamp

| REF NO   | MALZEME<br>MATERIAL | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|----------------------|-------------------|
|          |                     |                      |                   |
| UB 41223 | BAKIR<br>COPPER     | 1x50 mm              | 0,20              |
| UB 41224 |                     | 2x50 mm              | 0,20              |
| UB 41225 |                     | 25x3 mm              | 0,20              |



### U Tipi Direk Kroşe | U Type Pole Clamp

| REF NO   | MALZEME<br>MATERIAL | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|----------------------|-------------------|
|          |                     |                      |                   |
| UB 41226 | BAKIR<br>COPPER     | mm/mm <sup>2</sup>   |                   |
| UB 41227 |                     | 2.0'' - 1x50         | 0,12              |
| UB 41228 |                     | 2.5'' - 1x50         | 0,12              |
| UB 41229 |                     | 3.0'' - 1x50         | 0,13              |
|          |                     | 2.0'' - 2x50         | 0,12              |





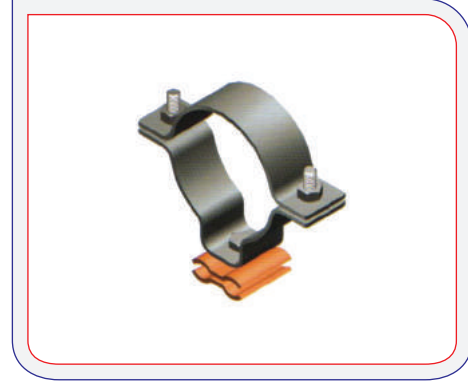


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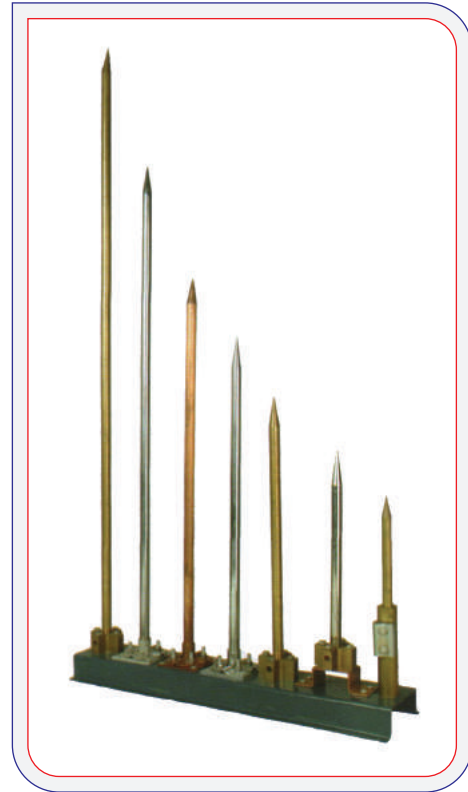
### U Tipi Direk Kroşe | U Type Pole Clamp

| REF NO   | MALZEME<br>METERIAL | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|----------------------|-------------------|
|          |                     |                      |                   |
| UB 41230 | BAKIR<br>COPPER     | 1.5" - 1x50          | 0,16              |
| UB 41231 |                     | 2.0" - 1x50          | 0,18              |
| UB 41232 |                     | 2.5" - 1x50          | 0,19              |
| UB 41233 |                     | 2.0" - 2x50          | 0,19              |
| UB 41234 |                     | 2.5" - 2x50          | 0,19              |
| UB 41235 |                     | 3.0" - 2x50          | 0,20              |
| UB 41236 |                     | 4.0" - 2x50          | 0,22              |
| UB 41237 |                     | 2.0" - 25x3          | 0,19              |
| UB 41238 |                     | 2.5" - 25x3          | 0,19              |
| UB 41239 |                     | 3,0 " - 25x3         | 0,20              |



### Krom Kaplı Yakalama Uçları | Chrome Plated Air Terminals

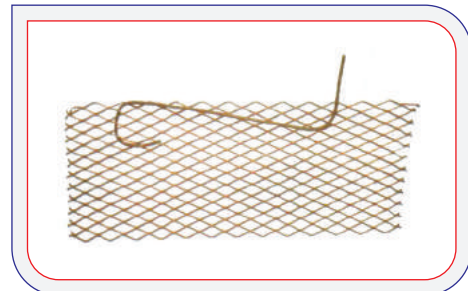
| REF NO   | MALZEME<br>METERIAL                      | ÇAP - UZUNLUK<br>DIAMETER - LENGTH | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------------|------------------------------------|-------------------|
|          |                                          |                                    |                   |
| UB 41240 | KROM KAPLI PİRİNÇ<br>CHROME PLATED BRASS | Ø 10-25                            | 0.175             |
| UB 41241 |                                          | Ø 16-20                            | 0.320             |
| UB 41242 |                                          | Ø 16-25                            | 0.400             |
| UB 41243 |                                          | Ø 16-35                            | 0.590             |
| UB 41244 |                                          | Ø 16-40                            | 0.640             |
| UB 41245 |                                          | Ø 16-50                            | 0.800             |
| UB 41246 |                                          | Ø 16-60                            | 1.960             |
| UB 41247 |                                          | Ø 16-80                            | 1.280             |
| UB 41248 |                                          | Ø 16-100                           | 1.600             |
| UB 41249 |                                          | Ø 16-150                           | 2.400             |
| UB 41250 |                                          | Ø 16-200                           | 3.200             |
| UB 41251 |                                          | Ø 20-20                            | 0.520             |
| UB 41252 |                                          | Ø 20-35                            | 0.900             |
| UB 41253 |                                          | Ø 20-40                            | 1.040             |
| UB 41254 |                                          | Ø 20-50                            | 1.300             |
| UB 41255 |                                          | Ø 20-60                            | 1.560             |
| UB 41256 |                                          | Ø 20-80                            | 2.080             |
| UB 41257 |                                          | Ø 20-100                           | 2.600             |
| UB 41258 |                                          | Ø 20-200                           | 5.200             |



### Topraklama Ağları | Earthing Grids

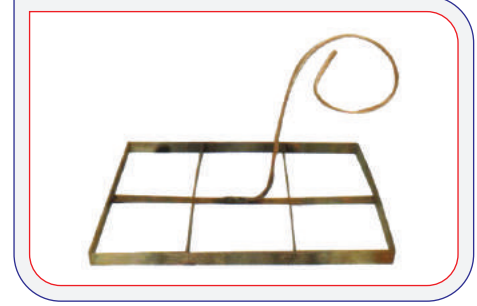
#### Bakır Ağ | Copper Grid

| REF NO   | MALZEME<br>METERIAL | BOYUTLAR<br>DIMENSIONS | AĞIRLIK<br>WEIGHT |
|----------|---------------------|------------------------|-------------------|
|          |                     |                        |                   |
| UB 41259 | BAKIR<br>COPPER     | 100x500x2              | 2,000             |
| UB 41260 |                     | 1000x1000x2            | 4,000             |

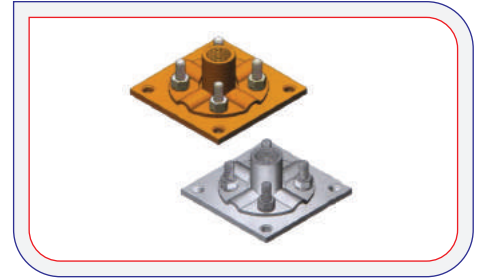



**Bakır Şerit Kafes | Lattice Copper**

| REF NO   | MALZEME<br>MATERIAL | BOYUTLAR<br>DIMENSIONS | AĞIRLIK<br>WEIGHT |
|----------|---------------------|------------------------|-------------------|
|          |                     | mm<br>                 | kg<br>            |
| UB 41261 | BAKIR<br>COPPER     | 100x500x2              | 2,700             |
| UB 41262 |                     | 1000x1000x2            | 5,400             |
| UB 41263 |                     | 1000x500x3             | 4,000             |
| UB 41264 |                     | 1000x1000x3            | 8,000             |

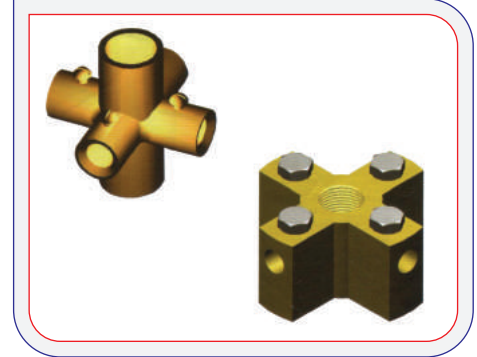

**Yakalama Ucu Tespit Elemanları | Air Terminal Fixing Parts**
**Düz Tip | Flat Type**

| REF NO   | MALZEME<br>MATERIAL | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-------------------|
|          |                     | kg<br>            |
| UB 41265 | ÇELİK / STEEL       | 0.30              |
| UB 41266 | PİRİNÇ / BRASS      | 0.30              |

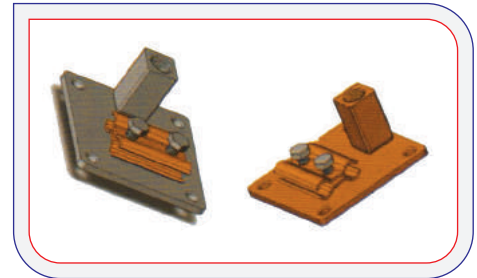

**Çift Taraflı Muft | Double Side Coupling**

UB 41273

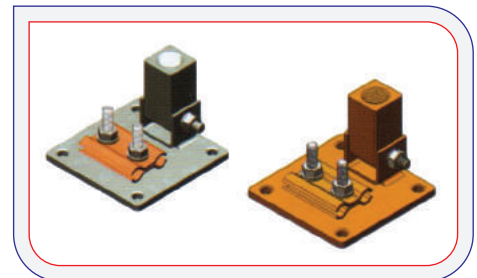
| REF NO   | MALZEME<br>MATERIAL        | UB 41274<br>DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|----------------------------|----------------------|-------------------|
|          |                            | mm<br>               | kg<br>            |
| UB 41267 | KIZIL DÖKÜM<br>NAVAL BRASS | 16                   | 0.18              |
| UB 41268 |                            | 20                   | 0.18              |
| UB 41269 | PİRİNÇ<br>BRASS            | 16                   | 0.18              |
| UB 41270 |                            | 20                   | 0.18              |


**A Tip | A Type**

| REF NO   | MALZEME<br>MATERIAL | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-------------------|
|          |                     | kg<br>            |
| UB 41271 | ÇELİK / STEEL       | 0.27              |
| UB 41272 | BAKIR / COPPER      | 0.30              |


**Eğri Tip | Curved Type**

| REF NO   | MALZEME<br>MATERIAL | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-------------------|
|          |                     | kg<br>            |
| UB 41273 | ÇELİK / STEEL       | 0.27              |
| UB 41274 | BAKIR / COPPER      | 0.30              |




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## Topraklama Elektrodu Başlıkları | Earth Electrode Clamps

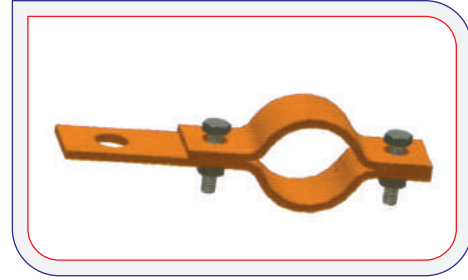
H Tipi | H Type

| REF NO   | MALZEME<br>MATERIAL | ÇAP<br>DIAMETER | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-----------------|-------------------------------------------|-------------------|
|          |                     |                 |                                           |                   |
| UB 41275 | BAKIR<br>COPPER     | Ø 18            | 1x25                                      | 0.060             |
| UB 41276 |                     | Ø 18            | 1x50                                      | 0.060             |
| UB 41277 |                     | Ø 20            | 1x16                                      | 0.080             |
| UB 41278 |                     | Ø 20            | 1x25                                      | 0.080             |
| UB 41279 |                     | Ø 20            | 1x35                                      | 0.080             |
| UB 41280 |                     | Ø 20            | 1x50                                      | 0.080             |
| UB 41281 |                     | Ø 20            | 1x70                                      | 0.080             |
| UB 41282 |                     | Ø 20            | 1x95                                      | 0.080             |
| UB 41283 |                     | Ø 20            | 2x50                                      | 0.150             |



K Tipi | K Type

| REF NO   | MALZEME<br>MATERIAL | ÇAP<br>DIAMETER | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-----------------|-------------------|
|          |                     |                 |                   |
| UB 41284 | BAKIR<br>COPPER     | Ø 16            | 0.250             |
| UB 41285 |                     | Ø 18            | 0.265             |
| UB 41286 |                     | Ø 20            | 0.280             |



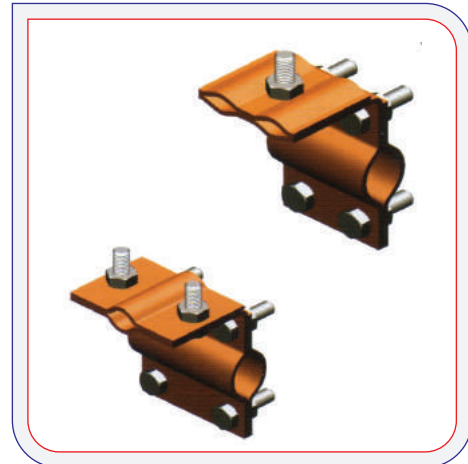
M Tipi | M Type

| REF NO   | MALZEME<br>MATERIAL | ÇAP<br>DIAMETER | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-----------------|-------------------------------------------|-------------------|
|          |                     |                 |                                           |                   |
| UB 41287 | BAKIR<br>COPPER     | Ø 20            | 25x3                                      | 0.240             |
| UB 41288 |                     | Ø 20            | 30x3                                      | 0.255             |
| UB 41289 |                     | Ø 30            | 30x5                                      | 0.270             |
| UB 41290 |                     | Ø 40            | 50x5                                      | 0.285             |
| UB 41291 |                     | Ø 40            | 50x10                                     | 0.300             |
| UB 41292 |                     | Ø 40            | 60x5                                      | 0.315             |
| UB 41293 |                     | Ø 40            | 60x10                                     | 0.330             |



L Tipi | L Type

| REF NO   | MALZEME<br>MATERIAL | ÇAP<br>DIAMETER | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-----------------|-------------------------------------------|-------------------|
|          |                     |                 |                                           |                   |
| UB 41294 | BAKIR<br>COPPER     | Ø 20            | 25X3 mm                                   | 0.250             |
| UB 41295 |                     | Ø 20            | 30x3 mm                                   | 0.250             |
| UB 41296 |                     | Ø 20            | 1x50 mm <sup>2</sup>                      | 0.250             |
| UB 41297 |                     | Ø 20            | 1x70 mm <sup>2</sup>                      | 0.250             |
| UB 41298 |                     | Ø 20            | 1x95 mm <sup>2</sup>                      | 0.250             |
| UB 41299 |                     | Ø 20            | 2x50 mm <sup>2</sup>                      | 0.300             |
| UB 41300 |                     | Ø 20            | 2x70 mm <sup>2</sup>                      | 0.300             |
| UB 41301 |                     | Ø 20            | 2x95 mm <sup>2</sup>                      | 0.320             |
| UB 41302 |                     | Ø 20            | 2x120 mm <sup>2</sup>                     | 0.350             |







## Topraklama Elektrodu Başlıkları | Earth Electrode Clamps

### J Tipi | J Type

| REF NO   | MALZEME<br>MATERIAL               | ÇAP<br>DIAMETER | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|-----------------------------------|-----------------|-------------------------------------------|-------------------|
|          |                                   | mm              |                                           | kg                |
| UB 41303 | BAKIR<br>COPPER                   | Ø 20            | 2x35 mm <sup>2</sup>                      | 0.300             |
| UB 41304 |                                   | Ø 20            | 2x50 mm <sup>2</sup>                      | 0.300             |
| UB 41305 |                                   | Ø 20            | 2x70 mm <sup>2</sup>                      | 0.300             |
| UB 41306 |                                   | Ø 20            | 25x3 mm                                   | 0.320             |
| UB 41307 |                                   | Ø 20            | 30x3 mm                                   | 0.320             |
| UB 41308 |                                   | Ø 20            | 40x4 mm                                   | 0.350             |
| UB 41309 |                                   | Ø 20            | 50x5 mm                                   | 0.370             |
| UB 41400 | GALVANİZ ÇELİK / GALVANIZED STEEL | Ø 20            | 30x3 mm                                   | 0.250             |



## Topraklama Direnç Düşürücü Kimyasalları | Ground Enhancement Material

1992 yılında geliştirilen iletkenliği artırıcı bir malzemedir. Her türlü toprak yapısında(kayalık, kumlu toprak gibi) topraklama direncini düşüren ve iletkenliği zayıf olan topraklar için ideal bir malzemedir. Topraklama direncini istenilen değerlerde elde edebilmek her zaman mümkün olmamaktadır. Fakat iyi bir koruma için belirtilen değerlerin (Bayındırlık Bakanlığı mevzuatına göre maksimum 10 ohm. Yıldırımından Korunma yönetmeliğine göre max 5 ohm.) altına düşürülmelidir. Topraklama sisteminin karakteristiği direkt olarak tesisatın yapıldığı toprağın yapışma bağlıdır, ideal bir topraklama sisteminde elektrik akımının rahatlıkla geçebilmesi için topraklama direnci mümkün olduğunca küçültülmelidir. Dolayısıyla sistem ve çevresi hızlı iyon akışım düzenleyecek şekilde olmalıdır. Bir iletken de elektrik akımının geçişini elektron hareketini sağlarken toprakta bunu iyonlar sağlar. Eğer toprakta bulunan iyonların hareketi az ise elektrik akımının geçişi de zorlaşır yani direnç yüksek olur.

### GENEL ÖZELLİKLER

Zamanla çözülmez veya bozulmaz.  
 Sistemin ömrü boyunca elde edilen direnci korur.  
 Donma dayanıklılığı yaklaşık %10 artırır.  
 Periyodik olarak kontrol edilmesine gerek yoktur.  
 Hazırlanması ve yapılması için bir kişi yeterlidir.  
 Toprağa zararlı bir etkisi yoktur ve yer altı sularını kirletmez.

### Gem Tozu (11 kg) UB 41629



## İnşaat Demiri Branşman Klemensleri | Reinforcing Bar Clamps

### IDK 1 Tipi | Type IDK 1

| REF NO   | MALZEME<br>MATERIAL                | DEMİR<br>IRON | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|---------------|----------------------|-------------------|
|          |                                    |               | mm                   | kg                |
| UB 41401 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 8 - 18        | 20x3                 | 0.180             |
| UB 41402 |                                    | 8 - 18        | 30x3                 | 0.210             |
| UB 41403 |                                    | 18 - 38       | 20x3                 | 0.210             |
| UB 41404 |                                    | 18 - 38       | 30x3                 | 0.230             |





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### IDK 2 Tipi | Type IDK 2

| REF NO   | MALZEME<br>MATERIAL                | DEMİR<br>IRON | İLETKEN<br>CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|---------------|----------------------|-------------------|
|          |                                    |               | mm                   | kg                |
| UB 41405 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 8 - 18        | 20x3                 | 0.180             |
| UB 41406 |                                    | 8 - 18        | 30x3                 | 0.210             |
| UB 41407 |                                    | 18 - 38       | 20x3                 | 0.210             |
| UB 41408 |                                    | 18 - 38       | 30x3                 | 0.230             |



### Ek ve Branşman Klemensleri | Conductor Joining Clamps

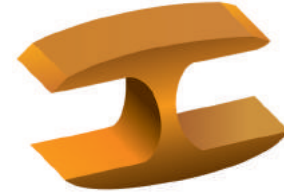
#### Sıkmalı Tip C Klemens | Pressed Type C Clamp

| REF NO   | MALZEME<br>MATERIAL                       | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|-------------------------------------------|-------------------------------------------|-------------------|
|          |                                           | mm <sup>2</sup>                           | kg                |
| UB 41409 | ELEKTROLİTİK BAKIR<br>ELECTROLYTIC COPPER | 35 - 35                                   | 0.155             |
| UB 41410 |                                           | 50 - 50                                   | 0.155             |
| UB 41411 |                                           | 70 - 70                                   | 0.155             |
| UB 41412 |                                           | 95 - 95                                   | 0.155             |



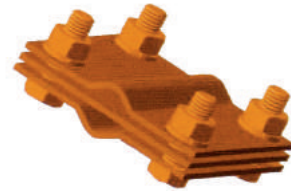
#### Sıkmalı Tip H Klemens | Pressed Type H Clamp

| REF NO   | MALZEME<br>MATERIAL                       | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|-------------------------------------------|-------------------------------------------|-------------------|
|          |                                           | mm <sup>2</sup>                           | kg                |
| UB 41413 | ELEKTROLİTİK BAKIR<br>ELECTROLYTIC COPPER | 25 - 35                                   | 0.090             |
| UB 41414 |                                           | 35 - 35                                   | 0.090             |
| UB 41415 |                                           | 35 - 50                                   | 0.090             |
| UB 41416 |                                           | 50 - 50                                   | 0.090             |
| UB 41417 |                                           | 50 - 70                                   | 0.090             |



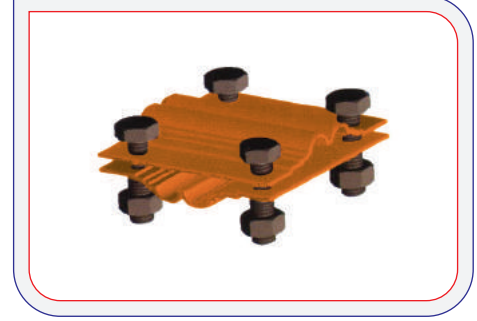
#### Kare Düz Tip | Square Straight Type

| REF NO   | MALZEME<br>MATERIAL | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-------------------------------------------|-------------------|
|          |                     | mm <sup>2</sup>                           | kg                |
| UB 41418 | BAKIR<br>COPPER     | 16 - 16                                   | 0.210             |
| UB 41419 |                     | 16 - 70                                   | 0.210             |
| UB 41420 |                     | 25 - 25                                   | 0.210             |
| UB 41421 |                     | 35 - 35                                   | 0.210             |
| UB 41422 |                     | 35 - 50                                   | 0.210             |
| UB 41423 |                     | 50 - 50                                   | 0.210             |
| UB 41424 |                     | 50 - 70                                   | 0.210             |
| UB 41425 |                     | 50 - 95                                   | 0.210             |

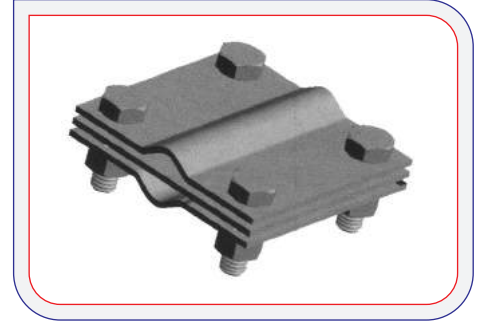



**Kare Çoklu Tip | Square Multi Type**

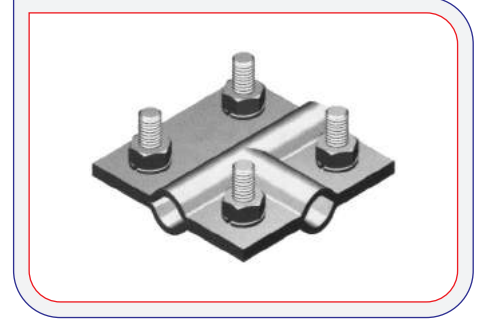
| REF NO   | MALZEME<br>MATERIAL | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-------------------------------------------|-------------------|
|          |                     | mm <sup>2</sup>                           | kg                |
| UB 41426 | BAKIR<br>COPPER     | ÇOKLU<br>MULTI                            | 0.400             |


**Kare Düz Tip | Square Straight Type**

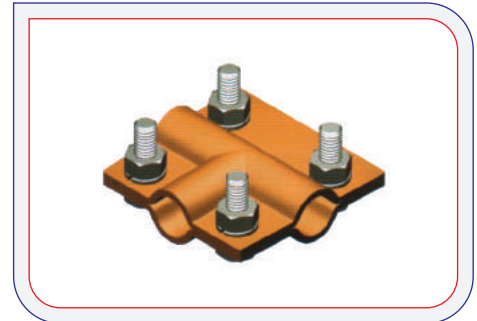
| REF NO   | MALZEME<br>MATERIAL                | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|-------------------------------------------|-------------------|
|          |                                    | mm <sup>2</sup>                           | kg                |
| UB 41427 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 16 - 16                                   | 0.166             |
| UB 41428 |                                    | 16 - 70                                   | 0.166             |
| UB 41429 |                                    | 25 - 25                                   | 0.166             |
| UB 41430 |                                    | 35 - 35                                   | 0.166             |
| UB 41431 |                                    | 35 - 50                                   | 0.166             |
| UB 41432 |                                    | 50 - 50                                   | 0.166             |


**Kare T Tip İletken Ek Mufu | Square Type T**

| REF NO   | MALZEME<br>MATERIAL                | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------------------|-------------------------------------------|-------------------|
|          |                                    | mm <sup>2</sup>                           | kg                |
| UB 41433 | GALVANİZ ÇELİK<br>GALVANIZED STEEL | 16 - 16                                   | 0.110             |
| UB 41434 |                                    | 16 - 70                                   | 0.110             |
| UB 41435 |                                    | 25 - 25                                   | 0.110             |
| UB 41436 |                                    | 35 - 35                                   | 0.110             |
| UB 41437 |                                    | 35 - 50                                   | 0.110             |
| UB 41438 |                                    | 50 - 50                                   | 0.110             |


**Kare T Tip İletken Ek Mufu | Square Type T**

| REF NO   | MALZEME<br>MATERIAL | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|---------------------|-------------------------------------------|-------------------|
|          |                     | mm <sup>2</sup>                           | kg                |
| UB 41439 | BAKIR<br>COPPER     | 16 - 16                                   | 0.110             |
| UB 41440 |                     | 16 - 70                                   | 0.110             |
| UB 41441 |                     | 25 - 25                                   | 0.110             |
| UB 41442 |                     | 35 - 35                                   | 0.110             |
| UB 41443 |                     | 35 - 50                                   | 0.110             |
| UB 41444 |                     | 50 - 50                                   | 0.110             |
| UB 41445 |                     | 50 - 70                                   | 0.110             |
| UB 41446 |                     | 50 - 95                                   | 0.110             |





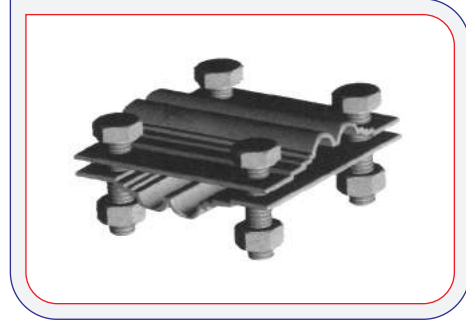


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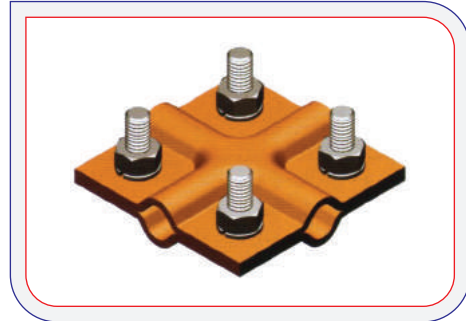
### Kare Çoklu Tip | Square Multi Type

| REF NO   | MALZEME<br>MATERIAL                       | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|-------------------------------------------|-------------------------------------------|-------------------|
|          |                                           | mm <sup>2</sup>                           | kg                |
| UB 41447 | <b>GALVANİZ ÇELİK</b><br>GALVANIZED STEEL | <b>ÇOKLU</b><br>MULTI                     | 0.400             |



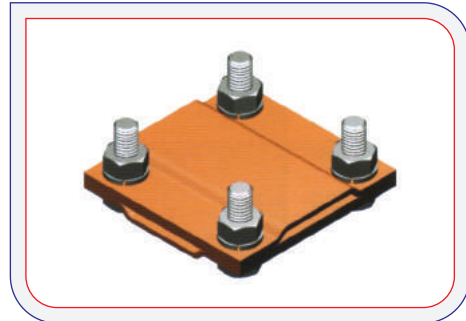
### Kare 4'lü Tip İletken Mufu | Square 4 Armed Type

| REF NO   | MALZEME<br>MATERIAL    | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------|-------------------------------------------|-------------------|
|          |                        | mm <sup>2</sup>                           | kg                |
| UB 41448 | <b>BAKIR</b><br>COPPER | 16 - 16                                   | 0.110             |
| UB 41449 |                        | 16 - 70                                   | 0.110             |
| UB 41450 |                        | 25 - 25                                   | 0.110             |
| UB 41451 |                        | 35 - 35                                   | 0.110             |
| UB 41452 |                        | 35 - 50                                   | 0.110             |
| UB 41453 |                        | 50 - 50                                   | 0.150             |
| UB 41454 |                        | 50 - 70                                   | 0.150             |
| UB 41455 |                        | 50 - 95                                   | 0.150             |
| UB 41456 |                        | 50 - 120                                  | 0.150             |
| UB 41457 |                        | 70 - 70                                   | 0.150             |
| UB 41458 |                        | 70 - 95                                   | 0.150             |
| UB 41459 |                        | 70 - 120                                  | 0.150             |
| UB 41460 |                        | 70 - 150                                  | 0.150             |
| UB 41461 |                        | 95 - 95                                   | 0.130             |
| UB 41462 |                        | 95 - 150                                  | 0.130             |



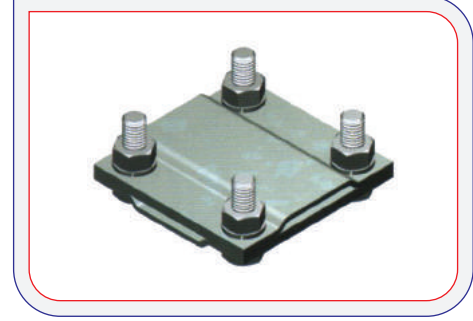
### Kare Tip Şerit İletken Şerite | Square Type Tape to Tape

| REF NO   | MALZEME<br>MATERIAL    | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------|-------------------------------------------|-------------------|
|          |                        | mm/mm                                     | kg                |
| UB 41463 | <b>BAKIR</b><br>COPPER | 20x3 - 20x3                               | 0.310             |
| UB 41464 |                        | 20x3 - 25x3                               | 0.310             |
| UB 41465 |                        | 20x3 - 30x3                               | 0.310             |
| UB 41466 |                        | 20x3 - 30x5                               | 0.310             |
| UB 41467 |                        | 20x3 - 40x3                               | 0.420             |
| UB 41468 |                        | 20x3 - 40x5                               | 0.420             |
| UB 41469 |                        | 20x3 - 50x5                               | 0.420             |
| UB 41470 |                        | 25x3 - 25x3                               | 0.310             |
| UB 41471 |                        | 25x3 - 30x3                               | 0.310             |

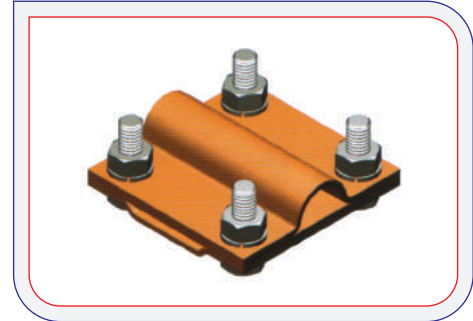



**Kare Tip Şerit İletken Şerite | Square Type Tape to Tape**

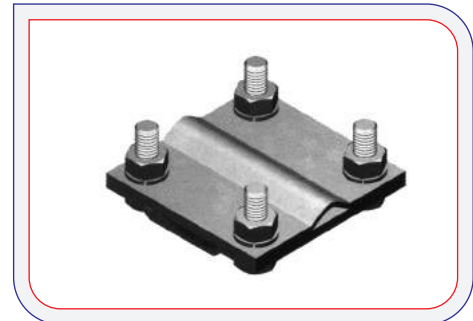
| REF NO   | MALZEME<br>MATERIAL                       | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|-------------------------------------------|-------------------------------------------|-------------------|
|          |                                           | mm/mm                                     |                   |
| UB 41472 | <b>GALVANİZ ÇELİK</b><br>GALVANIZED STEEL | 20x3 - 20x3                               | 0.310             |
| UB 41473 |                                           | 20x3 - 25x3                               | 0.310             |
| UB 41474 |                                           | 20x3 - 30x3                               | 0.310             |
| UB 41475 |                                           | 20x3 - 30x5                               | 0.310             |
| UB 41476 |                                           | 20x3 - 40x3                               | 0.420             |
| UB 41477 |                                           | 20x3 - 40x5                               | 0.420             |
| UB 41478 |                                           | 20x3 - 50x5                               | 0.420             |
| UB 41479 |                                           | 25x3 - 25x3                               | 0.310             |
| UB 41480 |                                           | 25x3 - 30x3                               | 0.310             |
| UB 41481 |                                           | 25x3 - 30x5                               | 0.420             |
| UB 41482 |                                           | 25x3 - 40x3                               | 0.420             |
| UB 41483 |                                           | 25x3 - 40x5                               | 0.420             |
| UB 41484 |                                           | 25x3 - 50x5                               | 0.420             |
| UB 41485 |                                           | 30x3 - 30x3                               | 0.420             |


**Kare Tip Şerit İletken Şerite | Square Type Tape to Tape**

| REF NO   | MALZEME<br>MATERIAL    | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|------------------------|-------------------------------------------|-------------------|
|          |                        | mm-mm                                     |                   |
| UB 41486 | <b>BAKIR</b><br>COPPER | 20x3 - 25                                 | 0.220             |
| UB 41487 |                        | 20x3 - 35                                 | 0.220             |
| UB 41488 |                        | 20x3 - 50                                 | 0.220             |
| UB 41489 |                        | 20x3 - 70                                 | 0.315             |
| UB 41490 |                        | 25x3 - 25                                 | 0.315             |
| UB 41491 |                        | 25x3 - 35                                 | 0.315             |
| UB 41492 |                        | 25x3 - 50                                 | 0.315             |
| UB 41493 |                        | 25x3 - 70                                 | 0.315             |
| UB 41494 |                        | 25x3 - 95                                 | 0.315             |
| UB 41495 |                        | 30x3 - 35                                 | 0.315             |
| UB 41496 |                        | 30x3 - 50                                 | 0.315             |
| UB 41497 |                        | 30x3 - 70                                 | 0.315             |
| UB 41498 |                        | 30x3 - 95                                 | 0.315             |


**Kare Tip Yuvarlak İletkenden Şeride | Square Type - Round To Type**

| REF NO   | MALZEME<br>MATERIAL                       | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|-------------------------------------------|-------------------------------------------|-------------------|
|          |                                           | mm <sup>2</sup>                           |                   |
| UB 41499 | <b>GALVANİZ ÇELİK</b><br>GALVANIZED STEEL | 20x3 - 25                                 | 0.220             |
| UB 41500 |                                           | 20x3 - 35                                 | 0.220             |
| UB 41501 |                                           | 20x3 - 50                                 | 0.220             |
| UB 41502 |                                           | 20x3 - 70                                 | 0.315             |
| UB 41503 |                                           | 25x3 - 25                                 | 0.315             |
| UB 41504 |                                           | 25x3 - 35                                 | 0.315             |
| UB 41505 |                                           | 25x3 - 50                                 | 0.315             |
| UB 41506 |                                           | 25x3 - 70                                 | 0.315             |
| UB 41507 |                                           | 25x3 - 95                                 | 0.315             |
| UB 41508 |                                           | 30x3 - 35                                 | 0.315             |
| UB 41509 |                                           | 30x3 - 50                                 | 0.315             |
| UB 41510 |                                           | 30x3 - 70                                 | 0.315             |
| UB 41511 |                                           | 30x3 - 95                                 | 0.315             |





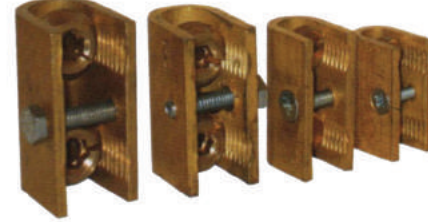
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### U Klemensler

| REF NO   | MALZEME<br>MATERIAL | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|---------------------|-------------------------------|
|          |                     |                               |
| UB 41512 | 6'lık U Klemens     | 150                           |
| UB 41513 | 10'lık U Klemens    | 125                           |
| UB 41514 | 16'lık U Klemens    | 100                           |
| UB 41515 | 25'lık U Klemens    | 100                           |
| UB 41516 | 35'lık U Klemens    | 75                            |
| UB 41517 | 50'lık U Klemens    | 50                            |
| UB 41518 | 70'lık U Klemens    | 40                            |
| UB 41519 | 95'lık U Klemens    | 25                            |
| UB 41520 | 120'lık U Klemens   | 20                            |
| UB 41521 | 150'lık U Klemens   | 15                            |

Gövde: Piring ve Nikel kaplamalı vidalar



### Tırnaklı Klemensler

| REF NO   | MALZEME<br>MATERIAL       | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|---------------------------|-------------------------------|
|          |                           |                               |
| UB 41522 | No:1 16 mm <sup>2</sup>   | 150                           |
| UB 41523 | No:2 25 mm <sup>2</sup>   | 100                           |
| UB 41524 | No:3 35 mm <sup>2</sup>   | 100                           |
| UB 41525 | No:4 50 mm <sup>2</sup>   | 50                            |
| UB 41526 | No:5 70 mm <sup>2</sup>   | 50                            |
| UB 41527 | No:6-7 95 mm <sup>2</sup> | 25                            |

Gövde: Piring ve Nikel kaplamalı vidalar



### AL-CU Klemensler

| REF NO   | MALZEME<br>MATERIAL  | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|----------------------|-------------------------------|
|          |                      |                               |
| UB 41528 | A25-B16 Al-Cu Klm.   | 100                           |
| UB 41529 | A40-B25 Al-Cu Klm.   | 100                           |
| UB 41530 | A70-B50 Al-Cu Klm.   | 50                            |
| UB 41531 | A120-B70 Al-Cu Klm.  | 50                            |
| UB 41532 | A240-B120 Al-Cu Klm. | 25                            |



### Branşman Klemensler

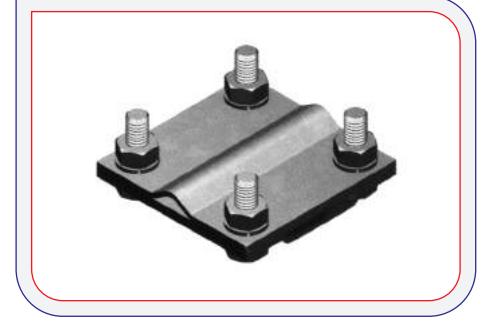
| REF NO   | MALZEME<br>MATERIAL     | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41533 | A25-A25 Branşman Klm.   | 100                           |
| UB 41534 | A40-A40 Branşman Klm.   | 100                           |
| UB 41535 | A70-A70 Branşman Klm.   | 50                            |
| UB 41536 | A120-A120 Branşman Klm. | 50                            |
| UB 41537 | A240-A240 Branşman Klm. | 25                            |



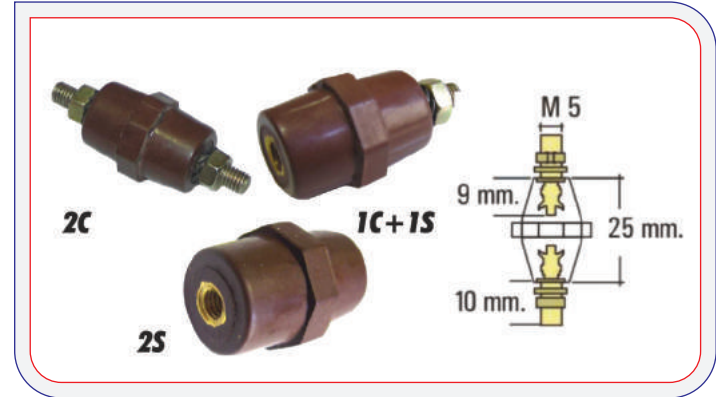



**Kare Tip Yuvarlak İletkenden Şeride | Square Type - Round To Type**

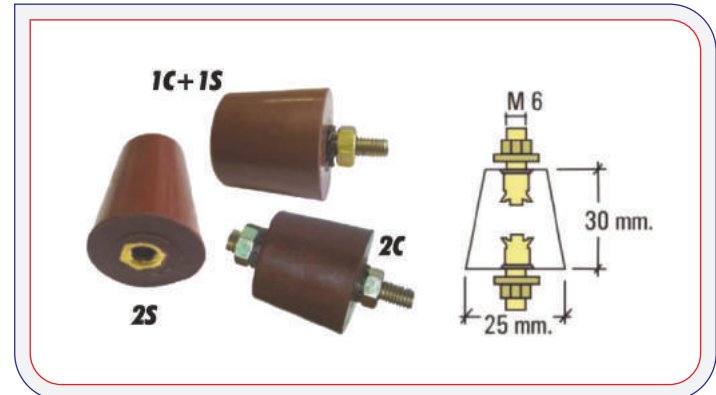
| REF NO   | MALZEME<br>MATERIAL                       | BAĞLANTI İLETKENİ<br>CONNECTING CONDUCTOR | AĞIRLIK<br>WEIGHT |
|----------|-------------------------------------------|-------------------------------------------|-------------------|
|          |                                           | mm <sup>2</sup>                           | kg                |
| UB 41538 | <b>GALVANİZ ÇELİK</b><br>GALVANIZED STEEL | 30x3 - 6                                  | 0.315             |
| UB 41539 |                                           | 30x3 - 8                                  | 0.315             |
| UB 41540 |                                           | 30x3 - 10                                 | 0.315             |
| UB 41541 |                                           | 30x3 - 12                                 | 0.315             |
| UB 41542 |                                           | 30x3 - 14                                 | 0.315             |
| UB 41543 |                                           | 30x3 - 16                                 | 0.315             |
| UB 41544 |                                           | 30x3 - 18                                 | 0.315             |
| UB 41545 |                                           | 30x3 - 20                                 | 0.315             |
| UB 41546 |                                           | 30x3 - 22                                 | 0.315             |
| UB 41547 |                                           | 30x3 - 26                                 | 0.315             |


**İzolatörler | insulators**
**Mini İzolatör | Small Insulator**

| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41548 | BMI - M 5/2 C           | 200                           |
| UB 41549 | BMI - M 5/1 C + 1 S     | 200                           |
| UB 41550 | BMI - M 5/2 S           | 200                           |


**Mini Boy Konik İzolatör | Small Size Conical Insulator**

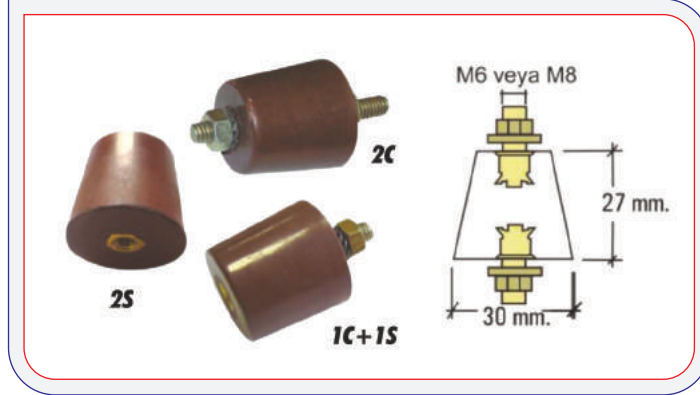
| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41551 | BMI - M 6/2 C           | 100                           |
| UB 41552 | BMI - M 6/1 C + 1 S     | 100                           |
| UB 41553 | BMI - M 6/ 2 S          | 100                           |




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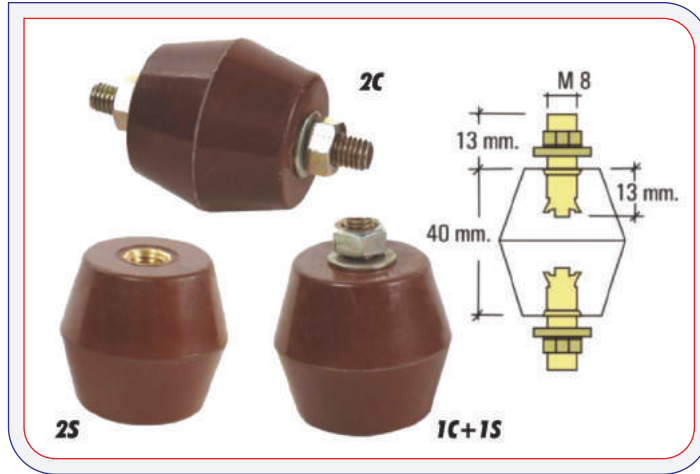

### Orta Boy Konik İzolatör | Conical Insulator Medium

| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41554 | BMI - M 6/2 C           | 50                            |
| UB 41555 | BMI - M 6/1 C + 1 S     | 50                            |
| UB 41556 | BMI - M 6/2 S           | 50                            |
| UB 41557 | BMI - M 8/2 C           | 50                            |
| UB 41558 | BMI - M 8/1 C + 1 S     | 50                            |
| UB 41559 | BMI - M 8/2 S           | 50                            |



### Büyük Boy İzolatör | Insulator Large

| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41560 | BMI - M 8/2 C           | 25                            |
| UB 41561 | BMI - M 8/1 C + 1 S     | 25                            |
| UB 41562 | BMI - M 8/2 S           | 25                            |
| UB 41563 | BMI - M 10/2 C          | 25                            |
| UB 41564 | BMI - M 10/1 C + 1 S    | 25                            |
| UB 41565 | BMI - M 10/2 S          | 25                            |



### Bara Tutucu Serfil

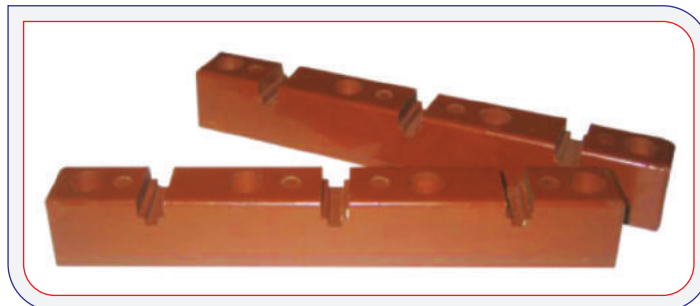
| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41566 | BMS (M 8 - M 10)        | 50                            |



-  **2c** : İki tarafı civatalı izolatör  
 **1c + 1s** : Bir tarafı civatalı bir tarafı kör somunlu izolatör  
 **2s** : İki tarafı kör somunlu izolatör

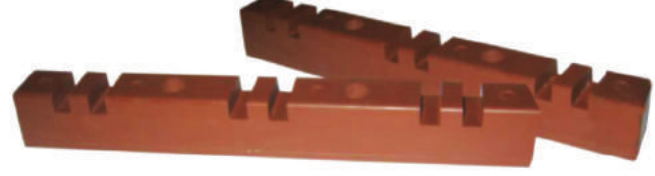
### Tarak İzolatörleri | Comb Insulators

| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41567 | 3 x 1 F Tarak İzolatör  | 40                            |

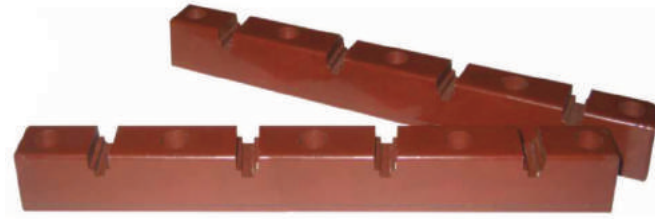




| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41568 | 3 x 2 F Tarak İzolatör  | 12                            |



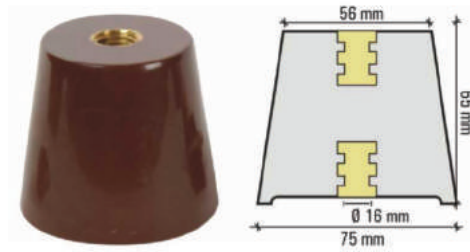
| REF NO   | AÇIKLAMA<br>DESCRIPTION     | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-----------------------------|-------------------------------|
|          |                             |                               |
| UB 41569 | 3 x 1 F+N<br>Tarak İzolatör | 12                            |



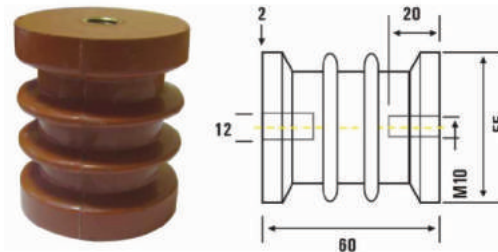
| REF NO   | AÇIKLAMA<br>DESCRIPTION     | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-----------------------------|-------------------------------|
|          |                             |                               |
| UB 41570 | 3 x 2 F+N<br>Tarak İzolatör | 12                            |



| REF NO   | AÇIKLAMA<br>DESCRIPTION                    | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|--------------------------------------------|-------------------------------|
|          |                                            |                               |
| UB 41571 | 1NK İzolatör M12<br>(Tepe Kuvveti 500 Kg.) | 6                             |
| UB 41572 | 1NK İzolatör M16<br>(Tepe Kuvveti 500 Kg.) | 6                             |



| REF NO   | AÇIKLAMA<br>DESCRIPTION       | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------------|-------------------------------|
|          |                               |                               |
| UB 41573 | 1N-500 Mesnet İzolatörü (M8)  | 10                            |
| UB 41574 | 1N-500 Mesnet İzolatörü (M10) | 10                            |
| UB 41575 | N-500 Mesnet İzolatörü (M12)  | 10                            |




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## Baralar | Busbars

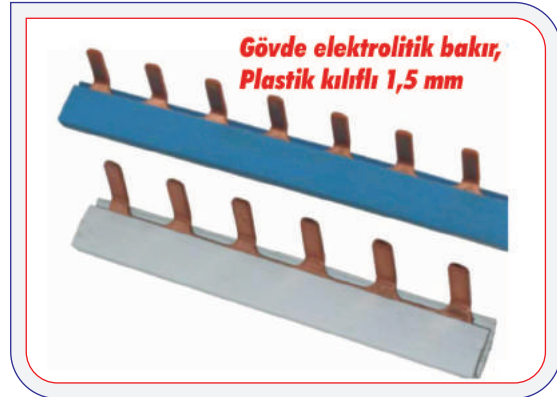
### Trifaze W Otomat Barası

| REF NO   | AÇIKLAMA<br>DESCRIPTION          | KUTU ADEDİ<br>NUMBER OF BOXES | MODÜL<br>MODULE |
|----------|----------------------------------|-------------------------------|-----------------|
|          |                                  |                               |                 |
| UB 41576 | 1 mm Elektrolitik Bakır 53 cm    | 25                            | 10              |
| UB 41577 | 1 mm Elektrolitik Bakır 106 cm   | 8                             | 20              |
| UB 41578 | 1,5 mm Elektrolitik Bakır 53 cm  | 25                            | 10              |
| UB 41579 | 1,5 mm Elektrolitik Bakır 106 cm | 8                             | 20              |



### Monafaze W Otomat Barası

| REF NO   | AÇIKLAMA<br>DESCRIPTION         | KUTU ADEDİ<br>NUMBER OF BOXES | MODÜL<br>MODULE |
|----------|---------------------------------|-------------------------------|-----------------|
|          |                                 |                               |                 |
| UB 41580 | 1,5 mm Elektrolitik Bakır 53cm  | 50                            | 30              |
| UB 41581 | 1 mm Elektrolitik Bakır 106cm   | 20                            | 60              |
| UB 41582 | 1,5 mm Elektrolitik Bakır 21cm  | 50                            | 12              |
| UB 41583 | 1 mm Elektrolitik Bakır 53cm    | 50                            | 30              |
| UB 41584 | 1,5 mm Elektrolitik Bakır 106cm | 20                            | 60              |



### Nötr Bara Mesnedi

| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------------------|
|          |                         |                               |
| UB 41585 | Nötr Bara Mesnedi       | 100                           |



### Nötr Topraklama Barası

| REF NO   | AÇIKLAMA<br>DESCRIPTION | KUTU ADEDİ<br>NUMBER OF BOXES | VİDA<br>SCREW |
|----------|-------------------------|-------------------------------|---------------|
|          |                         |                               |               |
| UB 41586 | 15 x 1,5 mm x 1 metre   | 20                            | 31            |
| UB 41587 | 15 x 2 mm x 1 metre     | 20                            | 31            |
| UB 41588 | 15 x 1,5 mm x 1 metre   | 20                            | 61            |
| UB 41589 | 15 x 2 mm x 1 metre     | 20                            | 61            |
| UB 41590 | 15 x 3 mm x 1 metre     | 20                            | 31            |
| UB 41591 | 15 x 3 mm x 1 metre     | 20                            | 61            |

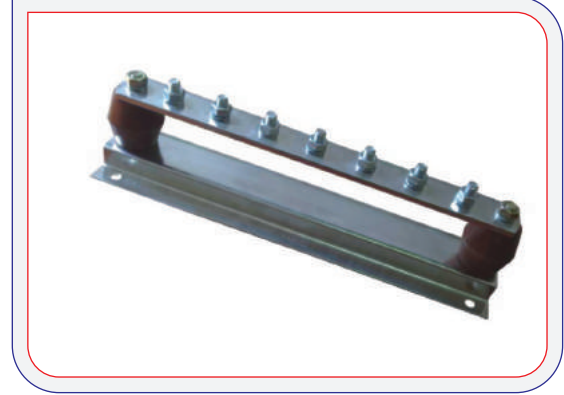






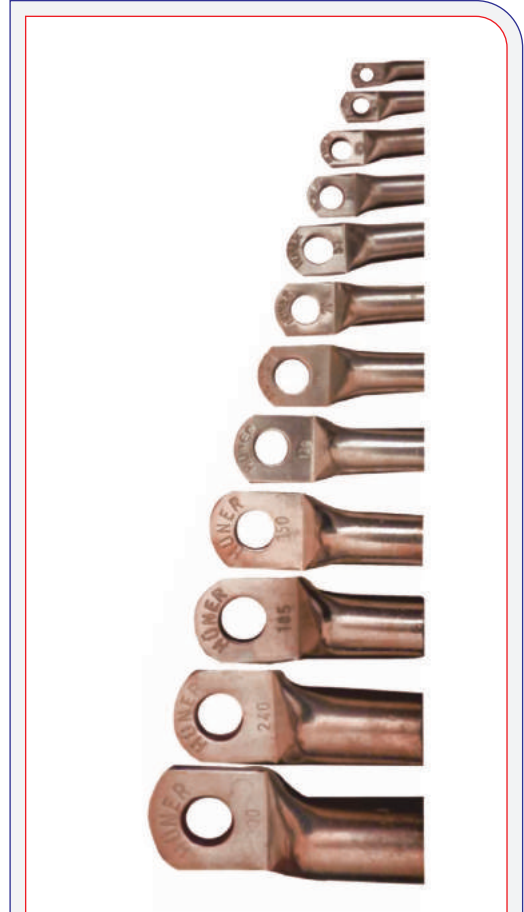
### Eş Potansiyel Baralar

| REF NO   | AÇIKLAMA<br>DESCRIPTION  | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|--------------------------|-------------------------------|
|          |                          |                               |
| UB 41592 | 30 x 3 21 cm 5 civatalı  | 1                             |
| UB 41593 | 30 x 3 30 cm 7 civatalı  | 1                             |
| UB 41594 | 30 x 5 21 cm 5 civatalı  | 1                             |
| UB 41595 | 30 x 5 30 cm 7 civatalı  | 1                             |
| UB 41596 | 30 x 5 40 cm 9 civatalı  | 1                             |
| UB 41597 | 30 x 5 50 cm 12 civatalı | 1                             |



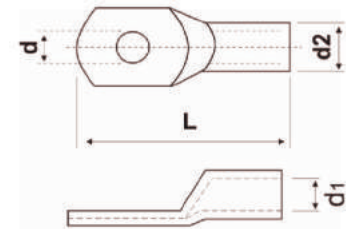
### SKP Kablo Pabucu Tip 1 Kalay Kaplamalı E-bakır

| REF NO   | KESİT<br>SECTION | AÇIKLAMA<br>DESCRIPTION |      |      |      | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|------------------|-------------------------|------|------|------|-------------------------------|
|          | mm <sup>2</sup>  | D                       | L    | D1   | D2   |                               |
| UB 41598 | 16               | M6                      | 28   | 5,5  | 7    | 250                           |
| UB 41599 | 25               | M8                      | 34,5 | 7    | 9    | 250                           |
| UB 41600 | 35               | M10                     | 39   | 8,5  | 10,5 | 200                           |
| UB 41601 | 50               | M10                     | 45   | 10   | 12   | 150                           |
| UB 41602 | 70               | M10                     | 47,6 | 11,5 | 14   | 100                           |
| UB 41602 | 95               | M12                     | 54,5 | 13,5 | 16   | 100                           |
| UB 41603 | 120              | M12                     | 60,5 | 15,5 | 18   | 50                            |
| UB 41604 | 150              | M14                     | 68   | 17   | 20   | 40                            |
| UB 41605 | 185              | M16                     | 76   | 18,5 | 22   | 30                            |
| UB 41606 | 240              | M18                     | 81   | 21,5 | 25,5 | 25                            |



### SKP Kablo Pabucu Tip 2 (Uzun) Kalay Kaplamalı E-bakır

| REF NO   | KESİT<br>SECTION | AÇIKLAMA<br>DESCRIPTION |     |      |      | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|------------------|-------------------------|-----|------|------|-------------------------------|
|          | mm <sup>2</sup>  | D                       | L   | D1   | D2   |                               |
| UB 41607 | 6                | M4                      | 24  | 4    | 5,5  | 500                           |
| UB 41608 | 10               | M5                      | 27  | 4,5  | 6,2  | 400                           |
| UB 41609 | 16               | M6                      | 32  | 6    | 8    | 250                           |
| UB 41610 | 25               | M8                      | 40  | 7    | 9,5  | 250                           |
| UB 41611 | 35               | M10                     | 45  | 9    | 11   | 200                           |
| UB 41612 | 50               | M10                     | 52  | 10   | 12,8 | 150                           |
| UB 41612 | 70               | M10                     | 57  | 11,5 | 14,3 | 100                           |
| UB 41613 | 95               | M12                     | 63  | 13,5 | 16,5 | 50                            |
| UB 41614 | 120              | M12                     | 72  | 15   | 18   | 50                            |
| UB 41615 | 150              | M14                     | 82  | 17   | 21   | 40                            |
| UB 41616 | 185              | M16                     | 88  | 19   | 23   | 30                            |
| UB 41617 | 240              | M18                     | 96  | 21,5 | 28   | 20                            |
| UB 41618 | 300              | M20                     | 100 | 24   | 29,5 | 15                            |

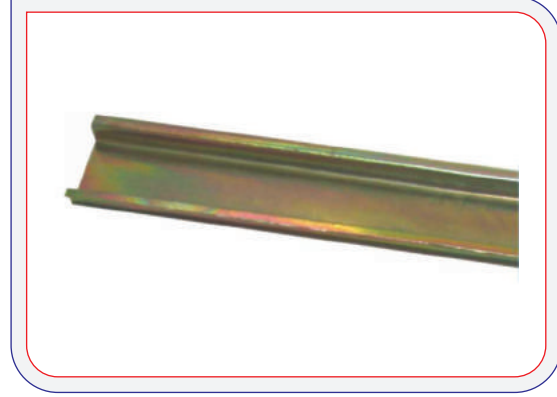



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## Raylar | Rails

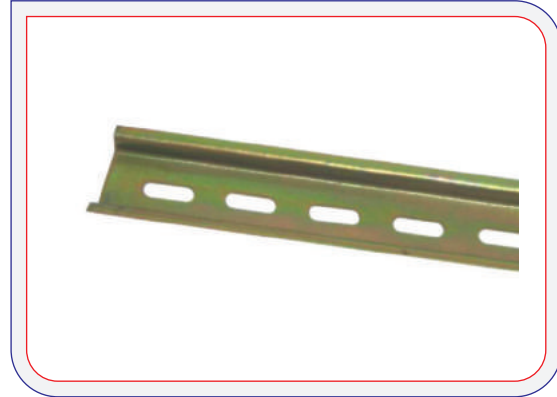
### Düz Sac Rayları

| REF NO   | AÇIKLAMA<br>DESCRIPTION | UZUNLUK<br>LENGTH | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------|-------------------------------|
|          |                         |                   |                               |
| UB 41619 | Düz Sac Ray             | 30 cm             | 40                            |
| UB 41620 | Düz Sac Ray             | 1 m               | 40                            |
| UB 41621 | Düz Sac Ray             | 2 m               | 40                            |



### Delikli Sac Rayları

| REF NO   | AÇIKLAMA<br>DESCRIPTION | UZUNLUK<br>LENGTH | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------|-------------------------------|
|          |                         |                   |                               |
| UB 41622 | Delikli Sac Rayları     | 30 cm             | 40                            |
| UB 41623 | Delikli Sac Rayları     | 1 m               | 40                            |
| UB 41624 | Delikli Sac Rayları     | 2 m               | 40                            |



### Düz Alüminyum Raylar

| REF NO   | AÇIKLAMA<br>DESCRIPTION | UZUNLUK<br>LENGTH | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------|-------------------------------|
|          |                         |                   |                               |
| UB 41625 | Düz Alüminyum Ray       | 1 m               | 35                            |
| UB 41626 | Düz Alüminyum Ray       | 30 cm             | 35                            |



### Delikli Alüminyum Raylar

| REF NO   | AÇIKLAMA<br>DESCRIPTION | UZUNLUK<br>LENGTH | KUTU ADEDİ<br>NUMBER OF BOXES |
|----------|-------------------------|-------------------|-------------------------------|
|          |                         |                   |                               |
| UB 41627 | Delikli Alüminyum Ray   | 1 m               | 35                            |
| UB 41628 | Delikli Alüminyum Ray   | 30 cm             | 35                            |





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