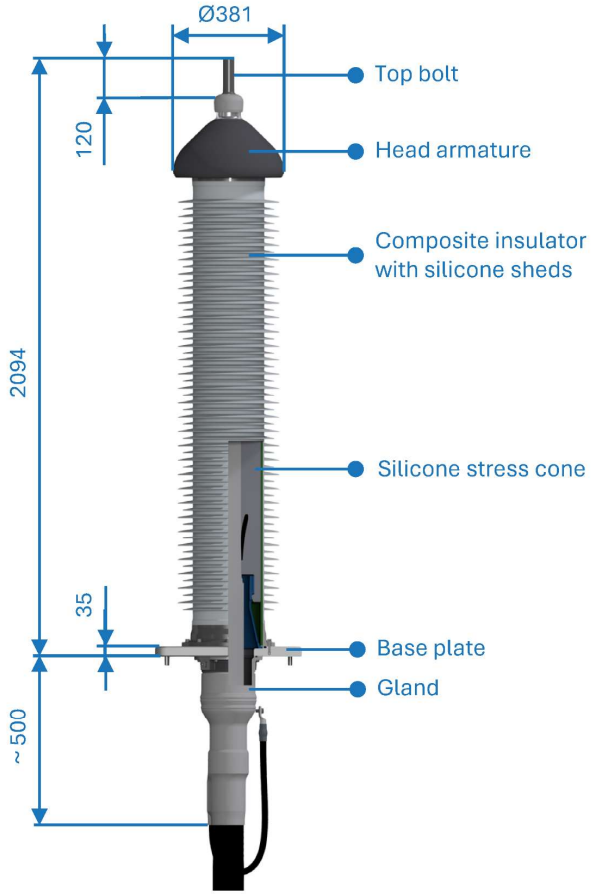
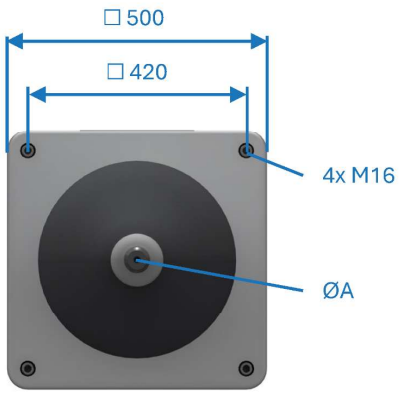
Outdoor Termination

# FRD 1.170-11




Dimension in mm




| Highest Voltage (Um) | Max. Cross Section | Cable Insulation Ø | Short Circuit Screen | Weight |
|---|---|---|---|---|
| 170 kV | 1600 mm² | 60-86 mm | 40 kA, 1 sec | 126 kg |

## Engineered for Reliability

FRD 1.170-11 is a factory pre-assembled dry type termination for 630 mm² to 1600 mm² cable cross-sections. Its geometrically controlled stress cone is positioned under factory conditions, reducing site variability and supporting reliable IEC 60840-qualified performance up to 170 kV.

### Dry-Type Solution

Dry-type design eliminates the need for oil, gel or other filling media, providing a clean, low-maintenance solution with reduced environmental impact.

### Outdoor Durability

Composite insulator provides strong UV, tracking and erosion resistance for reliable service in challenging outdoor environments.

### Fast Installation

Factory pre-assembled design minimizes on-site work and simplifies installation, helping reduce project time and ensure consistent quality.

## General product data

| | |
|---|---|
| Manufacturer | **Brugg Kabel AG** |
| Country | **Switzerland** |
| Standard | **IEC 60840** |
| Rated Voltage (U) | **150-161 kV** |
| Highest Voltage (Um) | **170 kV** |
| (U0) for determination of test voltage | **87 kV** |

## Cable compatibility

| | |
|---|---|
| Type | **XLPE** |
| Cable screen types | **-Lead sheath with/without wires**<br>**-Cu/Al corrugated**<br>**-Al smooth**<br>**-Cu/Al laminated sheath with wires** |
| Min. insulation thickness [1] | **10.5 mm** |
| Prepared insulation diameter | **60-86 mm** |
| Max. cable diameter | **150 mm** |
| Max. cable cross section | **1600 mm²** |

## Electrical type test levels

| | |
|---|---|
| Partial discharge test (< 5 pc at 1.5 U0) | **131 kV** |
| Heating cycle voltage test (2 U0) | **174 kV** |
| Lightning impulse voltage test (BIL) | **750 kV** |
| Switching impulse voltage test (SIL) | **n/a** |
| Voltage test | **218 kV (2,5 U0 for 30 min)** |

## Electrical routine test levels

| | |
|---|---|
| Voltage test | **218 kV (2,5 U0 for 15 min)** |
| Partial discharge test (< 5 pc at 1.5 U0) | **131 kV** |
| Each stress cone routine tested | **yes** |

## Operation conditions data

| | |
|---|---|
| Max. current rating | **Same as cable** |
| Max. short circuit current conductor | **Same as cable** |
| Max. short circuit current screen | **40 kA, 1 sec** |
| Min./Max. ambient temperature | **-25°C / +60°C** |
| Max. installation inclination without expansion tank | **n/a** |

## Field control design

| | |
|---|---|
| Field control method | **Geometrical** |
| Type | **Pre-moulded** |
| Material | **Silicone rubber** |
| Production method | **Injection moulding** |
| Production environment | **Clean room** |

## Construction & materials

| | |
|---|---|
| Head armature, bottom and base plate | **Aluminium Alloy** |
| Min. creepage distance | **5750 mm** |
| Flash over distance | **1545 mm** |
| Insulator material | **Fibre glass + silicone rubber** |
| Insulator length | **1700 mm** |
| Insulator cantilever bendling load | **2.5 kN** |
| Site pollution severity class IEC 60815 | **A-E** |
| Unified specific creapage distance | **58.5 mm/kV** |
| Specific creapage distance | **33.8 mm/kV** |
| Base plate | **500x500 mm** |
| Clamping length [2] | **120 mm** |
| Top bolt ØA | **Bolted \| Ø40/50 \| 630-1600 mm²** |

## Installation conditions

| | |
|---|---|
| Installation temperature | **+5°C / +45°C** |
| Personnel | **Only by Brugg Cables certified installers** |
| Site conditions | **Clean and dry environment** |

## Packaging information

| | |
|---|---|
| Scope of supply | **Material for 1 termination** |
| Earthing cable | **Provided by customer** |
| Packaging | **Export wooden boxes (ISPM15)** |

## Storage

| | |
|---|---|
| Storage environment | **Clean and dry** |
| Storage conditions | **Refer to Q-01089-en** |

**Brugg Kabel AG**
Industriestrasse 19
CH-5200 Brugg
Tel. +41 56 201 37 77
info@bruggcables.com

1. *Smaller insulation thickness upon request*
2. *Extended clamping length upon request*