

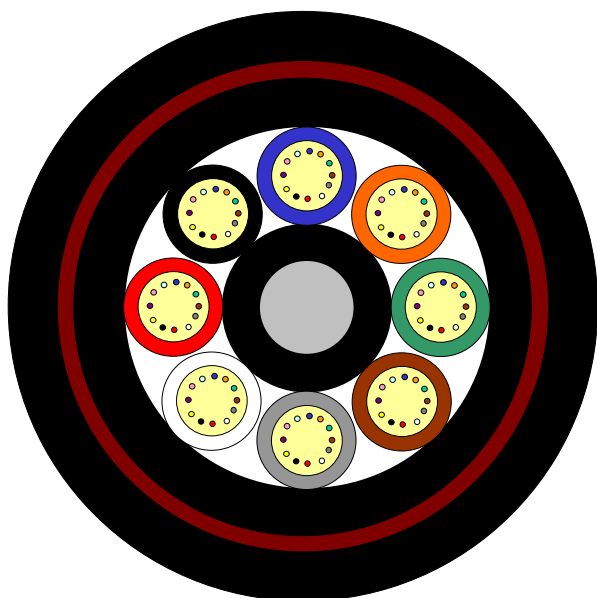
All-Dielectric, Self Supporting (ADSS) Aerial Loose Tube Fibre Optic Cable

Dry core design

Power Guide®



Issue April 2019
according to **Customised OFS Generic Specification**



Design

- Optical Fibres
- Gel-filled Buffer Tubes
- Non-metallic Central Member
- Water Blocking Threads
- Ripcords
- Inner PE-Jacket
- Non-metallic Aramid Strength Elements
- Outer PE-Jacket

Benefits

- Outstanding optical performance, durability, and field reliability
- Fast, one-step installation for valuable time and cost savings
- Easily strippable sheath for quick, convenient cable preparation

Version illustrated is the 96 Fibre Cable

| Fibre Count | Tubes | Core Design | Outer Diameter [mm] | Cable Weight [kg/km] | Standard Length [m] | AT-Code** |
|---------------------------|-------|-----------------|---------------------|----------------------|---------------------------|---------------------|
| 12 Fibres per tube | | | | | | |
| 24 | 2 | 1+5 (3 Filler*) | 13.4 | 145 | 2000 / 4000 / 6000 / 8000 | AT-3CE27DT-024-CMGB |
| 48 | 4 | 1+5 (1 Filler*) | 13.4 | 145 | 2000 / 4000 / 6000 / 8000 | AT-3CE27DT-048-CMGB |
| 96 | 8 | 1+8 | 17.0 | 220 | 2000 / 4000 / 6000 / 8000 | AT-3CE27DT-096-CMGB |

This table shows nominal diameter and weight values which may differ in shipments.

*Fillers are natural coloured. **Please refer to the OFS AT- Code.

Identification

Tube and Fibre Colour Code :

| | | | | | | | | | | | |
|---|------|---|--------|---|--------|----|--------|----|------|----|-------|
| 1 | Blue | 2 | Orange | 3 | Green | 4 | Brown | 5 | Grey | 6 | White |
| 7 | Red | 8 | Black | 9 | Yellow | 10 | Violet | 11 | Rose | 12 | Aqua |

Alternative tube and fibre colour code available on request.

Sheath Marking:

OFS OPTICAL ADSS CABLE [ID] [MM/YYYY] [Handset Sign] xxxF [Meter Marking]

Alternative sheath printing available on request.

In case of order the exact sheath printing text will be clarified with the customer.



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Sag and Tension Calculation

AT-3CE27DT-024-CMGB

NESC HEAVY Loading Conditions

| | |
|---------------|----------------------------------|
| Ice Thickness | 12.7 mm |
| Wind Pressure | 192 N/m ² (63.6 km/h) |
| Temperature | - 17.8 °C |
| Safety Factor | 4.38 N/m |

Tension @ Maximum Span for 1.5 % Installation Sag

| | |
|------------|--------|
| Short Term | 827 kg |
| Long Term | 220 kg |

| | |
|------------------------------|------------------------|
| Maximum Span | 200 m |
| Cable Weight | 145 kg/km |
| Cable Diameter | 13.4 mm |
| Installation Temperature | 20 °C |
| Cable Modulus | 588 kg/mm ² |
| Linear Expansion Coefficient | 0.00000887 1/°C |
| Breaking Load | 1250 kg |

| No Loading @ Install Temperature 20 C | | | | All Loading Conditions @ Temperature -17,8 C | | | | |
|---------------------------------------|-----|-------------|---------|--|---------|--------------|----------------|-------|
| Span | Sag | Install Sag | Tension | Vertical Sag | Tension | Vertical Sag | Horizontal Sag | Angle |
| m | m | % | kg | % of Span | kg | m | m | Deg |
| 10 | 0,2 | 1,50 | 11 | 1,8 | 99 | 0,2 | 0,1 | 35 |
| 30 | 0,5 | 1,50 | 33 | 2,5 | 217 | 0,7 | 0,5 | 35 |
| 50 | 0,8 | 1,50 | 55 | 2,9 | 312 | 1,5 | 1,0 | 35 |
| 70 | 1,1 | 1,50 | 77 | 3,2 | 395 | 2,2 | 1,6 | 35 |
| 90 | 1,4 | 1,50 | 99 | 3,5 | 471 | 3,1 | 2,2 | 35 |
| 110 | 1,7 | 1,50 | 121 | 3,7 | 543 | 4,0 | 2,8 | 35 |
| 130 | 2,0 | 1,50 | 143 | 3,9 | 610 | 5,0 | 3,5 | 35 |
| 150 | 2,3 | 1,50 | 165 | 4,0 | 675 | 6,0 | 4,2 | 35 |
| 170 | 2,6 | 1,50 | 187 | 4,2 | 738 | 7,1 | 5,0 | 35 |
| 190 | 2,9 | 1,50 | 209 | 4,3 | 798 | 8,2 | 5,7 | 35 |
| 200 | 3,0 | 1,50 | 220 | 4,4 | 827 | 8,8 | 6,1 | 35 |

The recommended maximum space potential at ADSS attachment point is 12 kV

Dead End Assembly:

MOSDORFER Dead-End: AS01-FDES-0500, Max. Tension: 2,500 lbs. (1,134 kg)
PLP Dead-End: 2872005C1E1, Max. Tension: 2,500 lbs. (1135 kg)

Fixed Tangent Support (Line Angle Changes <= 20 deg & Spans <= 600 ft (183 m))

MOSDORFER: Support Clamp: FOSC 0575
PLP: Dielectric block: 44009823
PLP: Aluminum Support: 4450101

Suspended Support (Line Angle Changes <= 20 deg & Spans <= 600 ft (183 m))

PLP: Aluminum Suspension: 4450201-S

Low Tension / Short Span Hardware:

MOSDORFER: Light Tension DE: FOLT1285-CTO, Max. Tension: 800 lbs. (362 kg)
PLP: Lite Tension DE: 2875004C1N, Max. Tension: 800 lbs. (362 kg)
PLP: Lite Support: 4800114, Max. Span 300 ft (91 m)
PLP PGTTH Dead End: Not Available

Slack Storage Devices: Not recommended for TR cables

PLP Fiberlign® CLAS Storage System w/cable guide: 710012375U

Heliformed Suspension Units (Line angle changes <= 30 degrees):

PLP: 43009922YC :Spans 1200ft to 2000ft (365m to 610m)
PLP: 4470201-S Aluminum Suspension with SRR rods, Max Span: 1200 ft (365m)

Vibration Dampers, see Application Note 812 for recommendations:

MORSORFER Vibration Dampers: SVD0462
PLP Vibration Dampers: 50502274

Down Lead Cushion & Abrasion Protector:

PLP: 8003042, Add "H1" - Wood Attachment Kit & "LTC1" - Lattice Clamp Kit
PLP Abrasion Protector: PTG-0203 Length: 6 ft

Corona coils not required

PLP: Sized to fit appropriate hardware, part numbers available upon request

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A Furukawa Company

Issue April 2019
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Sag and Tension Calculation

AT-3CE27DT-048-CMGB

NESC HEAVY Loading Conditions

| | |
|---------------|----------------------------------|
| Ice Thickness | 12.7 mm |
| Wind Pressure | 192 N/m ² (63.6 km/h) |
| Temperature | - 17.8 °C |
| Safety Factor | 4.38 N/m |

Tension @ Maximum Span for 1.5 % Installation Sag

| | |
|------------|--------|
| Short Term | 830 kg |
| Long Term | 224 kg |

| | |
|------------------------------|------------------------|
| Maximum Span | 200 m |
| Cable Weight | 145 kg/km |
| Cable Diameter | 13.4 mm |
| Installation Temperature | 20 °C |
| Cable Modulus | 588 kg/mm ² |
| Linear Expansion Coefficient | 0.00000934 1/°C |
| Breaking Load | 1250 kg |

No Loading @ Install Temperature 20 C

| Span m | Sag m | Install Sag % | Tension kg |
|-----------|----------|------------------|---------------|
| 10 | 0,2 | 1,50 | 11 |
| 30 | 0,5 | 1,50 | 34 |
| 50 | 0,8 | 1,50 | 56 |
| 70 | 1,1 | 1,50 | 79 |
| 90 | 1,4 | 1,50 | 101 |
| 110 | 1,7 | 1,50 | 123 |
| 130 | 2,0 | 1,50 | 146 |
| 150 | 2,3 | 1,50 | 168 |
| 170 | 2,6 | 1,50 | 191 |
| 190 | 2,9 | 1,50 | 213 |
| 200 | 3,0 | 1,50 | 224 |

All Loading Conditions @ Temperature -17,8 C

| Vertical Sag % of Span | Tension kg | Vertical Sag m | Horizontal Sag m | Angle Deg |
|---------------------------|---------------|-------------------|---------------------|--------------|
| 1,8 | 100 | 0,2 | 0,1 | 35 |
| 2,5 | 218 | 0,7 | 0,5 | 35 |
| 2,9 | 313 | 1,5 | 1,0 | 35 |
| 3,2 | 396 | 2,2 | 1,6 | 35 |
| 3,5 | 473 | 3,1 | 2,2 | 35 |
| 3,7 | 545 | 4,0 | 2,8 | 35 |
| 3,9 | 613 | 5,0 | 3,5 | 35 |
| 4,0 | 678 | 6,0 | 4,2 | 35 |
| 4,2 | 740 | 7,1 | 4,9 | 35 |
| 4,3 | 801 | 8,2 | 5,7 | 35 |
| 4,4 | 830 | 8,7 | 6,1 | 35 |

The recommended maximum space potential at ADSS attachment point is 12 kV

Dead End Assembly:

MOSDORFER Dead-End: AS01-FDES-0500, Max. Tension: 2,500 lbs. (1,134 kg)
PLP Dead-End: 2872005C1E1, Max. Tension: 2,500 lbs. (1135 kg)

Fixed Tangent Support (Line Angle Changes <= 20 deg & Spans <= 600 ft (183 m))

MOSDORFER: Support Clamp: FOSC 0575
PLP: Dielectric block: 44009823
PLP: Aluminum Support: 4450101

Suspended Support (Line Angle Changes <= 20 deg & Spans <= 600 ft (183 m))

PLP: Aluminum Suspension: 4450201-S

Low Tension / Short Span Hardware:

MOSDORFER: Light Tension DE: FOLT1285-CTO, Max. Tension: 800 lbs. (362 kg)
PLP: Lite Tension DE: 2875004C1N, Max. Tension: 800 lbs. (362 kg)
PLP: Lite Support: 4800114, Max.Span 300 ft (91 m)
PLP PGTTH Dead End: Not Available

Slack Storage Devices: Not recommended for TR cables

PLP Fiberlign® CLAS Storage System w/cable guide: 710012375U

Heliformed Suspension Units (Line angle changes <= 30 degrees):

PLP: 43009922YC :Spans 1200ft to 2000ft (365m to 610m)
PLP: 4470201-S Aluminum Suspension with SRR rods, Max Span: 1200 ft (365m)

Vibration Dampers, see Application Note 812 for recommendations:

MOSDORFER Vibration Dampers: SVD0462
PLP Vibration Dampers: 50502274

Down Lead Cushion & Abrasion Protector:

PLP: 8003042, Add "H1" - Wood Attachment Kit & "LTC1" - Lattice Clamp Kit
PLP Abrasion Protector: PTG-0203 Length: 6 ft

Corona coils not required

PLP: Sized to fit appropriate hardware, part numbers available upon request

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Sag and Tension Calculation

AT-3CE27DT-096-CMGB

NESC HEAVY Loading Conditions

| | |
|---------------|----------------------------------|
| Ice Thickness | 12.7 mm |
| Wind Pressure | 192 N/m ² (63.6 km/h) |
| Temperature | - 17.8 °C |
| Safety Factor | 4.38 N/m |

Tension @ Maximum Span for 1.5 % Installation Sag

| | |
|------------|--------|
| Short Term | 980 kg |
| Long Term | 362 kg |

| | |
|------------------------------|--------------------------|
| Maximum Span | 200 m |
| Cable Weight | 220 kg/km |
| Cable Diameter | 17.0 mm |
| Installation Temperature | 20 °C |
| Cable Modulus | 402.6 kg/mm ² |
| Linear Expansion Coefficient | 0.00001426 1/°C |
| Breaking Load | 1377 kg |

No Loading @ Install Temperature 20 C

| Span m | Sag m | Install Sag % | Tension kg |
|-----------|----------|------------------|---------------|
| 10 | 0,2 | 1,50 | 18 |
| 30 | 0,5 | 1,50 | 54 |
| 50 | 0,8 | 1,50 | 91 |
| 70 | 1,1 | 1,50 | 127 |
| 90 | 1,4 | 1,50 | 163 |
| 110 | 1,7 | 1,50 | 199 |
| 130 | 2,0 | 1,50 | 235 |
| 150 | 2,3 | 1,50 | 272 |
| 170 | 2,6 | 1,50 | 308 |
| 190 | 2,9 | 1,50 | 344 |
| 200 | 3,0 | 1,50 | 362 |

All Loading Conditions @ Temperature -17,8 C

| Vertical Sag % of Span | Tension kg | Vertical Sag m | Horizontal Sag m | Angle Deg |
|---------------------------|---------------|-------------------|---------------------|--------------|
| 1,8 | 116 | 0,2 | 0,1 | 33 |
| 2,5 | 256 | 0,7 | 0,5 | 33 |
| 2,9 | 366 | 1,4 | 0,9 | 33 |
| 3,2 | 464 | 2,2 | 1,4 | 33 |
| 3,4 | 554 | 3,1 | 2,0 | 33 |
| 3,6 | 639 | 4,0 | 2,5 | 33 |
| 3,8 | 720 | 4,9 | 3,1 | 33 |
| 3,9 | 797 | 5,9 | 3,8 | 33 |
| 4,1 | 872 | 6,9 | 4,4 | 33 |
| 4,2 | 945 | 8,0 | 5,1 | 33 |
| 4,3 | 980 | 8,6 | 5,5 | 33 |

The recommended maximum space potential at ADSS attachment point is 12 kV

Dead End Assembly:

MOSDORFER Dead-End: AS01-FDES-0650, Max. Tension: 2,500 lbs. (1,134 kg)
PLP Dead-End: 2872009C1E1, Max. Tension: 2,500 lbs. (1135 kg)

Fixed Tangent Support (Line Angle Changes <= 20 deg & Spans <= 600 ft (183 m))

MOSDORFER: Support Clamp: FOSC 0675
PLP: Dielectric block: 44009776
PLP: Aluminum Support: 4450103

Suspended Support (Line Angle Changes <= 20 deg & Spans <= 600 ft (183 m))

PLP: Aluminum Suspension: 4450203-S

Low Tension / Short Span Hardware:

MOSDORFER: Light Tension DE: FOLT1560-CTO, Max. Tension: 800 lbs. (362 kg)
PLP: Lite Tension DE: 2875006C1N, Max. Tension: 800 lbs. (362 kg)
PLP: Lite Support: 4800119, Max.Span 300 ft (91 m)
PLP PGTTH Dead End: Not Available

Slack Storage Devices: Not recommended for TR cables

PLP Fiberlign® CLAS Storage System w/cable guide: 710012375U

Heliformed Suspension Units (Line angle changes <= 30 degrees):

PLP: 43004965YC :Spans 1200ft to 2000ft (365m to 610m)
PLP: 4470203-S Aluminum Suspension with SRR rods, Max Span: 1200 ft (365m)

Vibration Dampers, see Application Note 812 for recommendations:

MOSDORFER Vibration Dampers: SVD0564
PLP Vibration Dampers: 50509862

Down Lead Cushion & Abrasion Protector:

PLP: 8003044, Add "H1" - Wood Attachment Kit & "LTC1" - Lattice Clamp Kit
PLP Abrasion Protector: PTG-0203 Length: 6 ft

Corona coils not required

PLP: Sized to fit appropriate hardware, part numbers available upon request