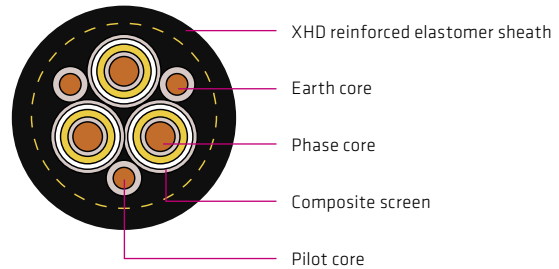


Type 451 3.3-33 kV



Cable description

Class 1 composite screened cable for general use.

Application

3.3/3.3 kV to 33/33 kV reeling cables similar to Type 450 cables but with reduced pilot size, for use with drag-lines, shovels, excavators, wharf cranes, and materials handling equipment. This cable is suitable for slow reeling and trailing applications.

Approvals

AS/NZS 2802

Behaviour in flame and fire

Fire retardant

Temperature range

Maximum operating temperature: +90 °C

Minimum operating temperature: -25 °C

Flexibility

Flexible

Resistance to

Chemical exposure: Very good/Frequent

Mechanical impact: Heavy

Water exposure: Immersion/Temporary coverage

Solar radiation and

weather exposure: Suitable for direct exposure

Cable design

Composite screened power cores with two earth and one pilot core.

Core: Metal: tinned copper, three core plus two earths and one pilot.
Semiconductive barrier taped and elastomer screened.

Insulation: EPR (XR-EP-90) semiconductive elastomer screened.

Screen: Composite tinned annealed copper wire and polyester yarn screen, under a semiconductive tape.

Core colours: red, white, blue, braid tracers.

Earth: Two semiconductive elastomer covered, disposed in the cable interstices.

Pilot: One, elastomer covered, disposed in the cable interstices.

Sheath: Extra heavy duty XHD-85-PCP, incorporating a polyaramid Kevlar® braid reinforcement.

Installation conditions

In free air

Mobile equipment

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Physical & electrical characteristics

| Type 451 3.3-33 kV | | | | | | | | | | | | | |
|------------------------------|------------------------------|---------------------|-------------------------|----------------------------------|-----------------------|---|----------------------------------|--------|-------|-------|------------------------------------|------------------------------------|-----------------------------|
| Voltage rating & part number | Power conductor | | | | | | | Screen | Earth | Pilot | Cable | | |
| | Nominal area mm ² | Nominal diameter mm | Insulation thickness mm | ac Resistance @ 90°C & 50Hz Ω/km | Reactance @ 50Hz Ω/km | 3 phase voltage drop @ 90°C & 50Hz mV/A.m | Capacitance to earth μF/phase/km | | | | Approx area mm ² /phase | Approx area (each) mm ² | Approx area mm ² |
| Type 451.3 | | | | | | | | | | | | | |
| 25-451-3 | 25 | 7.2 | 2.2 | 0.951 | 0.118 | 1.66 | 0.395 | 7.9 | 8 | 9 | 4.8 | 46.7 | 360 |
| 35-451-3 | 35 | 8.4 | 2.2 | 0.698 | 0.113 | 1.22 | 0.437 | 8.5 | 8 | 9 | 5.1 | 49.7 | 415 |
| 50-451-3 | 50 | 9.7 | 2.4 | 0.523 | 0.109 | 0.925 | 0.450 | 9.3 | 12 | 9 | 5.6 | 54.5 | 510 |
| 70-451-3 | 70 | 12.0 | 2.4 | 0.346 | 0.103 | 0.625 | 0.525 | 14 | 18 | 9 | 6.0 | 60.5 | 655 |
| 95-451-3 | 95 | 13.3 | 2.4 | 0.271 | 0.0986 | 0.500 | 0.563 | 15 | 25 | 9 | 6.3 | 63.9 | 755 |
| 120-451-3 | 120 | 15.3 | 2.4 | 0.210 | 0.0947 | 0.399 | 0.628 | 16 | 31 | 13.2 | 6.4 | 68.4 | 890 |
| 150-451-3 | 150 | 17.2 | 2.4 | 0.166 | 0.0918 | 0.329 | 0.687 | 17 | 39.5 | 13.2 | 6.6 | 72.8 | 1050 |
| Type 451.6 | | | | | | | | | | | | | |
| 25-451-6 | 25 | 7.2 | 3.0 | 0.951 | 0.124 | 1.66 | 0.309 | 8.8 | 8 | 9 | 5.2 | 51.1 | 415 |
| 35-451-6 | 35 | 8.4 | 3.0 | 0.698 | 0.118 | 1.23 | 0.340 | 9.3 | 8 | 9 | 5.5 | 54.2 | 470 |
| 50-451-6 | 50 | 9.7 | 3.0 | 0.523 | 0.113 | 0.927 | 0.375 | 10 | 12 | 9 | 5.9 | 57.8 | 555 |
| 70-451-6 | 70 | 12.0 | 3.0 | 0.346 | 0.106 | 0.627 | 0.435 | 15 | 18 | 9 | 6.3 | 63.9 | 705 |
| 95-451-6 | 95 | 13.3 | 3.0 | 0.271 | 0.102 | 0.502 | 0.465 | 16 | 25 | 9 | 6.4 | 66.8 | 800 |
| 120-451-6 | 120 | 15.3 | 3.0 | 0.210 | 0.0979 | 0.401 | 0.518 | 17 | 31 | 13.2 | 6.5 | 71.4 | 940 |
| 150-451-6 | 150 | 17.2 | 3.0 | 0.166 | 0.0948 | 0.331 | 0.566 | 18 | 39.5 | 13.2 | 6.6 | 75.5 | 1100 |
| Type 451.11 | | | | | | | | | | | | | |
| 25-451-11 | 25 | 7.2 | 5.0 | 0.951 | 0.136 | 1.66 | 0.217 | 14 | 8 | 13.2 | 6.3 | 62.3 | 570 |
| 35-451-11 | 35 | 8.4 | 5.0 | 0.698 | 0.129 | 1.23 | 0.236 | 15 | 8 | 13.2 | 6.4 | 65.0 | 630 |
| 50-451-11 | 50 | 9.7 | 5.0 | 0.523 | 0.123 | 0.931 | 0.258 | 16 | 12 | 13.2 | 6.5 | 68.1 | 715 |
| 70-451-11 | 70 | 12.0 | 5.0 | 0.346 | 0.115 | 0.632 | 0.296 | 17 | 18 | 13.2 | 6.6 | 73.1 | 850 |
| 95-451-11 | 95 | 13.3 | 5.0 | 0.271 | 0.111 | 0.507 | 0.317 | 18 | 25 | 13.2 | 6.7 | 76.1 | 955 |
| 120-451-11 | 120 | 15.3 | 5.0 | 0.210 | 0.107 | 0.408 | 0.350 | 20 | 31 | 13.2 | 6.9 | 80.7 | 1105 |
| 150-451-11 | 150 | 17.2 | 5.0 | 0.166 | 0.103 | 0.338 | 0.381 | 26 | 39.5 | 13.2 | 7.0 | 85.2 | 1295 |
| Type 451.22 | | | | | | | | | | | | | |
| 35-451-22 | 35 | 8.4 | 7.6 | 0.698 | 0.142 | 1.23 | 0.178 | 19 | 8 | 13.2 | 6.8 | 77.2 | 840 |
| 50-451-22 | 50 | 9.7 | 7.6 | 0.523 | 0.135 | 0.936 | 0.194 | 20 | 12 | 13.2 | 6.9 | 80.2 | 930 |
| 70-451-22 | 70 | 12.0 | 7.6 | 0.346 | 0.127 | 0.638 | 0.219 | 27 | 18 | 13.2 | 7.0 | 85.6 | 1100 |
| 95-451-22 | 95 | 13.3 | 7.6 | 0.271 | 0.122 | 0.515 | 0.234 | 27 | 25 | 13.2 | 7.2 | 88.9 | 1220 |
| 120-451-22 | 120 | 15.3 | 7.6 | 0.210 | 0.117 | 0.416 | 0.256 | 29 | 31 | 13.2 | 7.3 | 93.4 | 1380 |
| 150-451-22 | 150 | 17.2 | 7.6 | 0.165 | 0.113 | 0.346 | 0.276 | 31 | 39.5 | 13.2 | 7.4 | 97.5 | 1560 |
| *33 kV available on request. | | | | | | | | | | | | | |

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