

CABLES FOR A MOVING WORLD

TRATOS ASNZS MTO®

for Mining and Tunnelling Applications

AS/NZS 1802:2003

AS/NZS 2802:2000

AS/NZS 1972:2006



INDEX

TRATOS ASNZS MTO®

Approvals, quality system and product certification	pag. 03
Technical information	pag. 04

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-209° - from 1,1/1,1 to 11/11 kV	pag. 12
TRATOS ASNZS MTO-210° - 1,1/1,1	pag. 19
TRATOS ASNZS MTO-240° - from 1,1/1,1 to 11/11 kV	pag. 19
TRATOS ASNZS MTO-241° - from 1,1/1,1 to 11/11 kV	pag. 19
TRATOS ASNZS MTO-241-Tratosflex® - from 1,1/1,1 to 6,6/6,6 kV	pag. 19
TRATOS ASNZS MTO-245° - from 1,1/1,1 to 3,3/3,3 kV	pag. 19
TRATOS ASNZS MTO-260° - from 1,1/1,1 to 11/11 kV	pag. 19
TRATOS ASNZS MTO-275° - 1,1/1,1	pag. 19

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-409° - Class 2 - from 1,1/1,1 to 22/22 kV	pag. 18
TRATOS ASNZS MTO-412° - Class 2 - 1,1/1,1 kV only	pag. 19
TRATOS ASNZS MTO-440° - Class 2 - from 1,1/1,1 to 22/22 kV	pag. 19
TRATOS ASNZS MTO-441.2° - Class 2 - 1,1/1,1 kV only	pag. 19
TRATOS ASNZS MTO-441.1° - Class 1 - from 3,3/3,3 to 22/22 kV	pag. 19
TRATOS ASNZS MTO-450° - Class 1 - from 3,3/3,3 to 33/33 kV	pag. 19
TRATOS ASNZS MTO-455° - Class 1 - from 3,3/3,3 to 11/11 kV	pag. 19

CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-IS° - 1,1/1,1 - Individually Screened	pag. 18
TRATOS ASNZS MTO-CS° - 1,1/1,1 - Collectively Screened	pag. 18
TRATOS ASNZS MTO-2S-IS° - 1,1/1,1kV & 3,3/3,3kV - Individually Screened	pag. 18
TRATOS ASNZS MTO-2S-CS° - 1,1/1,1kV & 3,3/3,3kV - Collectively Screened	pag. 18
TRATOS ASNZS MTO-A&B° - 1,1/1,1kV	pag. 18
TRATOS ASNZS MTO-XLPE° - 6,35/11kV - XLPE Insulated	pag. 18
TRATOS ASNZS MTO-PAPER° - 11/11 kV - Paper Insulated	pag. 18

STANDARDS AND QUALITY SYSTEM

STANDARDS

Cables manufactured based on:

- AS/NZS 1802:2003** Electric cables –reeling and trailing– for underground coal mining
- AS/NZS 2802:2000** Electric cables –reeling and trailing– for mining and general use (other than underground coal mining)
- AS/NZS 1972:2006** Electric cables –Underground coal mines– other than reeling and trailing
- AS/NZS 1125: 2001** Conductors in insulated electric cables and flexible cords
- AS/NZS 3808: 2000.** Insulating and sheathing materials for electric cables
- AS/NZS 5000.1: 2005** Electric cables – Polymeric insulated, Part 1: for working voltages up to and including 0.6/1 (1.2) kV

QUALITY SYSTEM

Our Quality System management includes two certificates: Basec (UK) and AENOR-IQNET (E), in accordance to ISO 9001:2000 covering the production, purchasing of raw materials design and final test including various document types. Tratos Quality System management is under constant control by inspector working for the certification bodies.



Mining & Tunnelling Cables are approved by the following Quality Systems:



TRATOS CAVI S.p.A. reserves the right to make at any time and without previous notice, variations on products described in this catalogue. Moreover TRATOS CAVI S.p.A. shall not have responsibility for improper use of its electrical cables.

TECHNICAL INFORMATION

CABLE TYPE DEFINITION

Cable Type Definition According to AS/NZS 1802

Type No.	Description	Voltage Designation kV
Cable Type Definition According to AS/NZS 1802		
209	Semiconductive screened three-core cable with central pilot core	from 1,1/1,1 to 11/11
210	Composite screened three-core cable with central pilot core	1,1/1,1
240	Composite screened three-core cable with interstitial pilot cores	from 1,1/1,1 to 11/11
241	Semiconductive screened three-core cable with interstitial earth conductors and a central pilot core	from 1,1/1,1 to 11/11
245	Semiconductive screened three-core cable with interstitial earth conductors and three central pilot/control cores	from 1,1/1,1 to 3,3/3,3
260	Semiconductive screened pliable armoured three-core cable with interstitial pilot cores	from 1,1/1,1 to 11/11
275	Semiconductive screened three-core cable with interstitial earth conductors and a central pilot core	1,1/1,1

Cable Type Definition According to AS/NZS 1802

Cable Class	Type No.	Description	Voltage Designation kV
Cable Type Definition According to AS/NZS 2802			
Class 1	441.1	Semiconductive screened three-core cable with three interstitial earth conductors and a central pilot core	from 3,3/3,3 to 22/22
	450	Composite screened three-core cable with two interstitial earth conductors and one interstitial pilot core	from 3,3/3,3 to 33/33
	455	Semiconductive screened three-core cable with two interstitial earth conductors and one interstitial pilot core	from 3,3/3,3 to 11/11
Class 2	409	Composite screened three-core cable with a central pilot core	from 1,1/1,1 to 22/22
	412	Unscreened pliable armoured three-core cable with three interstitial earth cores (no pilot)	1,1/1,1 only
	440	Composite screened three-core cable with three interstitial pilot cores	from 1,1/1,1 to 22/22
	441.2	Semiconductive screened three-core cable with three interstitial earth conductors and a central pilot core	1,1/1,1 only

TECHNICAL INFORMATION

REELING & TRAILING CABLE ELECTRICAL CHARACTERISTICS

1. Power Core Conductor Characteristic

Nominal Cross Sectional Area	Nominal Conductor Diameter	Max. DC Resistance at 20°	Max. AC Resistance at 90°*	Nominal 3-Phase Voltage Drop*	Nominal Reactance*
mm ²	mm	Ω/km	Ω/km	mV/A.m	Ω/km
1,5	1,6	14,0	17,4	30,1	0,17
2,5	2,0	8,37	10,5	18,2	0,15
6	3,5	3,39	4,33	7,5	0,14
10	4,6	2,02	2,58	4,5	0,13
16	5,7	1,24	1,57	2,7	0,12
25	7,6	0,746	0,936	1,6	0,11
35	8,8	0,547	0,675	1,2	0,10
50	10,1	0,410	0,523	0,92	0,10
70	12,1	0,271	0,346	0,62	0,097
70	12,4	0,271	0,346	0,62	0,096
95	13,3	0,212	0,270	0,50	0,095
95	14,5	0,208	0,266	0,49	0,093
120	15,4	0,164	0,209	0,40	0,092
120	16,2	0,162	0,208	0,39	0,091
150	17,2	0,129	0,166	0,33	0,091
150	18,1	0,127	0,163	0,32	0,089
185	19,3	0,106	0,137	0,28	0,089
240	23,0	0,0818	0,107	0,24	0,087
300	24,5	0,0644	0,0847	0,21	0,086

*The AC characteristics are valid for up to 1.1/1.1kV operating voltage and can be used as a guide for higher operating voltages.

TECHNICAL INFORMATION

REELING & TRAILING CABLE ELECTRICAL CHARACTERISTICS

1. Continuous Current Carrying Capacity

Power Conductor Nominal Area	Cable Voltage Rating			
	Protected From Sun		Exposed To Sun	
	1.1/1.1kV	3.3/3.3kV–33/33kV	1.1/1.1kV	3.3/3.3–33/33kV
mm ²	A	A	A	A
1,5	23	–	18	–
2,5	30	–	23	–
6	49	–	38	–
10	66	–	51	–
16	88	89	67	66
25	120	120	90	89
35	145	145	110	105
50	170	170	125	125
70	220	220	160	155
95	250	250	185	180
120	295	295	210	210
150	340	340	245	240
185	385	385	270	265
240	455	450	315	310
300	515	510	355	350

2. Current Rating Factor

Where the cable is wound on cylindrical or radial drum, the heat dispersion factor must be taken into consideration; therefore the current carrying capacity must be reduced by the derating factor:

Cylindrical Drum	
Number of layer on drum	Factor
1	0,85
2	0,65
3	0,45
4	0,35

Radial Drum	Ventilated	Unventilated
Factor	0,85	0,75

Variations in ambient temperature for cable installed in air or in underground:

Ambient Temperature	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C
Conductor Temperature is 90°C	1,26	1,20	1,15	1,10	1,05	1,0	0,94	0,88	0,81	0,73	0,65	0,57	0,47	0,34	0,19

Continues Current Rating above is calculated based on the IEC60287 Standard and Australian typical environment: 40 °C air ambient temperature, 0.8 solar radian absorption coefficients and 1000W/m² and the value is for guidance only.

TECHNICAL INFORMATION

REELING & TRAILING CABLE MECHANICAL & THERMAL CHARACTERISTICS

1. Cable Minimum Bending Radius

Installation condition	1.1/1.1kV	3.3/3.3~33/33kV
For dispatch drum barrel	6D	8D
For fixed bend	4D	6D
For free flexing	6D	10D
For permanently repeating reeling	10D	12D
For passing over sheaves	10D	15D

For XLPE and Paper insulated HV cables, bending radii is 18D (during installation) / 12D (installed).

2. Cable Maximum Pulling Tension

For trailing the cable	20N/mm ² of the total cross-sectional area of phase conductor
For dragging the cable	calculated by $T = L * W * f * 10$, where T is the pulling tension, L is the length of cable to be pulled (m), W is the weight of the cable (kg/m), f is the friction coefficient (usually take as 0.5)

3. Temperature

Maximum continuous conductor temperature: +90°C

Minimum continuous conductor temperature: -25°C

TECHNICAL INFORMATION

REELING & TRAILING CABLE MATERIAL CHARACTERISTICS

1. Conductor Screen

All cables with a voltage rating of 3.3/3.3 kV and above have a cross-linked semiconductive elastomeric material extruded directly over the power core conductor through a triple extrusion process. Textile-reinforced Semiconductive tape or water barrier (water-proof) tape can be applied on special request or particular purposes.

2. Insulation Screen

Semiconductive elastomer screen: The material used for insulation screen is cross-linked semiconductive elastomeric which directly applied over insulation of each power core. Textile reinforced semiconductive tape screen: As an alternative to an elastomer screen, the textilereinforced semiconductive tape screen may be applied over the insulation of power cores of 3.3/3.3kV Type 450 & 451 (Class 1) and 3.3/3.3kV up to and including 11/11kV Type 409 & 440 (Class 2). The semiconductive tape comprises a textile fabric, coated with a semiconductive elastomer and having a continuous print on one side identifying it as being semiconductive.

3. Cradle separators / Earth Covering / Screen for Core Assembly

Semiconductive elastomer used in cradle separators, the interstitial earth conductor covering (other than for Type 412) and the screen for core assembly (Types 241, 245, 275 and 441 only) is a compound based on polychloroprene (PCP) which complies with the table below.

Test (per AS/NZS1802 / AS/NZS 2802)		Specified Value
A	Mechanical tests without ageing	-
1	Tensile strength (MPa)	≥8,5
2	Elongation at rupture (percent)	≥200
3	Permanent set (percent)	≤20
B	Mechanical tests after ageing in air oven	-
1	Tensile strength (MPa)	≥6,2
2	Elongation at rupture (percent)	≥50
C	Volume resistivity at 23°C (Ω.m)	≤1,0

TECHNICAL INFORMATION

REELING & TRAILING CABLE MATERIAL CHARACTERISTICS

4. Power / Pilot Core Insulation

	AS /NZS 1802 reeling and trailing cable	AS /NZS 2802 reeling and trailing cable
Power Core Insulation	R-EP-90	XR-EP-90 (for class 1 cables) R-EP-90 (for class 2 cables)
Pilot Core Insulation	R-EP-90	XR-EP-90/R-EP-90

R-EP-90: a cross-linked compound based on ethylene propylene copolymer, terpolymer or a blend of the two, suitable for up to 90 °C maximum continuous operating temperature.

XR-EP-90: a cross-linked compound based on ethylene propylene copolymer (EPM), or ethylene propylene terpolymer (EPDM or EPT), having enhanced properties compares with R-EP-90, suitable for up to 90°C maximum continuous operating temperature.

Test (per AS/NZS 1802/AS/NZS 2802)		R-EP-90		XR-EP-90
A	Mechanical tests without ageing	-		-
1	Tensile strength (MPa)	≥4,2		≥8,5
2	Elongation at rupture (percent)	≥200		≥200
B	Mechanical tests after ageing in air oven	-		-
1	Tensile strength (percentage of values found in unaged specimens)	≥70		≥75
2	Elongation at rupture (percentage of values found in unaged specimens)	≥70		≥75
C	Hot set test	-		-
1	Elongation under load (percent)	≤175		≤175
2	Residual elongation after cooling (percent)	≤15		≤15
D	Electrical characteristics	≤1,1/1,1kV	≥3,3/3,3kV	-
1	Insulation resistance constant (ki) at room temperature (GΩ.m)	≥1500	≥4000	≥4000
2	Insulation resistance constant (ki) at 90 °C (GΩ.m)	≥1,5	≥4,0	≥4,0

5. Metallic Composite Screen

Composite screen consists of tinned annealed copper interwoven with polyester yarn and each strand consists of seven copper wires with nominal diameter between 0.25 and 0.5mm to form a braid.

6. Pliable Steel Strand Armour

Pliable amour comprises galvanized low carbon (mild) steel strands, each strand consist of seven wires helically over the inner sheath to provide close cover. The wires comply with the requirements of AS/NZS 3863.

TECHNICAL INFORMATION

REELING & TRAILING CABLE MATERIAL CHARACTERISTICS

7. Sheath

Inner sheath (Type 206 and 412 only): GP-85-PCP (Standard), GP-90-CSP or GP-90-CPE to AS/NZS 3803.

Outer sheath:

AS1802 reeling and trailing cable	HD-85-CSP, HD-90-PCP or HD-90-CPE to AS/NZS 3808
AS2802 reeling and trailing cable	HD-85-CSP, HD-90-PCP or HD-90-CPE to AS/NZS 3808 (for class 2 cable); XHD-85-CSP, XHD-90-PCP or XHD-90-CPE to AS/NZS 3808 (for class 1 cable)

GP-85-PCP: General purpose cross-linked compound based on Polychloroprene, suitable for up to 85°C maximum continuous operating temperature.

GP-90-CSP: General purpose cross-linked compound based on chlorinated polyethylene, suitable for up to 90°C maximum continuous operating temperature.

GP-90-CPE: General purpose cross-linked compound based on Chlorosulphonated polyethylene, suitable for up to 90°C maximum continuous operating temperature.

HD-85-PCP, HD-90-CSP or HD-90-CPE is the heavy duty version of GP-85-PCP, GP-90-CSP or GP-90-CPE, and XHD is the extra-heavy duty version, the characteristic is as follow:

Test (except for D and E, per AS/NZS 1802/AS/NZS 2802)		GP-85-PCP	HD-85-PCP	XHD-85-PCP
A	Mechanical tests without ageing	-	-	-
1	Tensile strength (MPa)	≥8,5	≥11	≥12,5
2	Elongation at rupture (percent)	≥250	≥250	≥300
3	Tear resistance (N/mm)	-	≥5	≥7
B	Mechanical tests after ageing in air oven	-	-	-
1	Tensile strength (MPa)	≥6,2	≥8,5	≥8,5
2	Elongation at rupture (percent)	≥125	≥125	≥150
C	Oil immersion test	-	-	-
1	Tensile strength (percentage of values found in unaged specimens)	≥60	≥60	≥60
2	Elongation at rupture (percentage of values found in unaged specimens)	≥60	≥60	≥60
D	Hot set test at 200±3 °C, 200kPa for 15mins	-	-	-
1	Elongation under load, maximum (percent)	≤175	≤175	≤175
2	Elongation after cooling, maximum (percent)	≤20	≤20	≤20
E	Oxygen index	-	-	-

TECHNICAL INFORMATION

CORE IDENTIFICATION OF REELING & TRAILING CABLE

1. Core Identification Method

1	2	3	4	5
Type No.	Voltage Designation, KV			
	≤1,1/1,1		≥3,3/3,3	
	Power Cores	Covered Conductor(S)	Power Cores	Covered Conductor
209	(a) or (b) or (d)	(a)	(a) or (c) or (d)	(a)
210	(a) or (b) or (d)	(a)	-	-
240	(a) or (b) or (d)	(a) and (b)*	(a) or (c) or (d)	(a) and (b)*
241 and 245	(a) or (e)	(a)	(a) or (e)	(a)
260	(a) or (b) or (d)	(a) and (b)*	(a) or (c) or (d)	(a) and (b)*
275	(a)	(a)	-	-
409	(a) or (b) or (d)	(a)	(a) or (c) or (d)	(a)
412	(a) or (b)	(a) or (b)	-	-
440	(a) or (b) or (d)	(a)	(a) or (c) or (d)	(a) or (b)
441	(a) or (e)	-	(a) or (e)	(a)
450	-	-	(c) or (d) or (f)	(a)
455	-	-	(e)	(a)

(a): colour-coded insulation or covering.

(b): colour-coded or continuously numbered proofed tape over the insulation or covering.

(c): colour-coded or continuously numbered semiconductive tape over the insulation.

(d): colour-coded yarn in composite screen.

(e): Type 441 and 455----colour-coded or numbered semiconductive elastomer insulation screen, identifiable at intervals not greater than 300mm.

(f): Type 450----colour-coded or numbered semiconductive tape over the composite screen.

* Grey or white tape may be used.

2. Identification And Rotational Sequence

Type No.	Rotational sequence of core colours
209*	Red, White, Blue
210*	Red, White, Blue
240	Red, Grey, White, Grey, Blue, Grey
241*	Red, Black, White, Black, Blue, Black**
245***	Red, Black, White, Black, Blue, Black**
260	Red, Grey, White, Grey, Blue, Grey
275*	Red, Black, White, Black, Blue, Black**
409	Red, White, Blue. The central pilot core is grey
412	Red, Green/Yellow, White, Green/Yellow, Blue, Green/Yellow
440	Red, Grey, White, Grey, Blue, Grey
441**	Red, Black, White, Black, Blue, Black. The central pilot core is grey
450**	Red, Black, White, Black, Blue, Grey
455	Red, Black, White, Black, Blue, Grey

* The central pilot conductor insulation in all cases is coloured grey.

** The earth conductors (Type 241, 245, 275, 441 and 450) are covered with semiconductive elastomer which is inherently black; it is not possible to assign the normal (green/yellow) earth colour identification to these conductors.

*** The central pilot/control conductor insulation are coloured grey and numbered 1, 2 and 3.

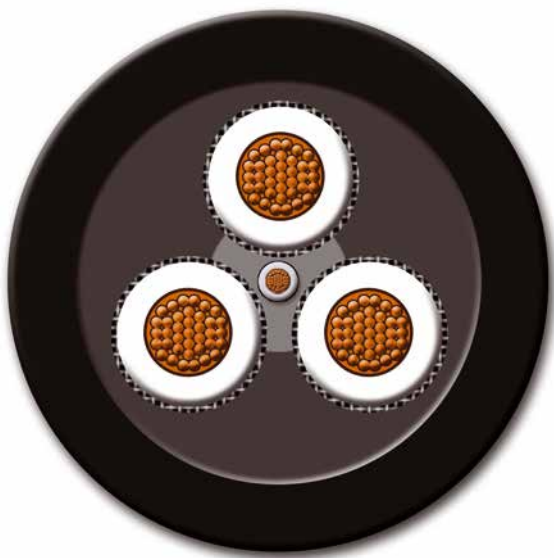
TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-209[®] - from 1,1/1,1 to 11/11 kV

Mainly used as a flexible feeder to machinery, more suitable as a trailing cable rather than for reeling. Smaller cables are used for drills and hand held tools and equipment

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation screen:** TRATOS Semiconductive elastomer
- **Composite Screen (earth conductor):** Tinned annealed copper braiding interwove with polyester yarn
- **Cradle Separator:** Semiconductive PCP
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Outer sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3,3/3,3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-209) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-209® - from 1,1/1,1 to 11/11 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Area of Core Screen mm ²	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 209.1 - 1,1 kV							
6	ASMTO209.1A1306	1,5	7,2	0,8	3,8	30,0	1290
10	ASMTO209.1A1310	1,5	8,6	0,8	3,8	32,6	1570
16	ASMTO209.1A1316	1,6	9,6	0,8	4,0	35,8	1970
25	ASMTO209.1A1325	1,6	11,3	0,8	4,3	39,7	2550
35	ASMTO209.1A1335	1,6	12,4	0,8	4,6	43,1	3120
50	ASMTO209.1A1350	1,7	14,1	0,8	5,0	47,7	3860
70	ASMTO209.1A1370	1,8	16,5	0,8	5,4	52,8	5030
95	ASMTO209.1A1395	2,0	18,2	0,8	6,0	58,6	6050
120	ASMTO209.1A130A	2,1	20,3	0,8	6,4	64,4	7410
150	ASMTO209.1A130B	2,3	22,3	0,8	6,9	70,2	8960
185	ASMTO209.1A130C	2,5	30,2	0,8	7,4	77,4	10920
240	ASMTO209.1A130D	2,8	33,6	0,8	8,2	86,0	13650
300	ASMTO209.1A130E	3,0	50,1	0,8	8,8	95,1	17150
Type 209.3 - 3,3 kV							
16	ASMTO209.3B1316	3,0	13,1	0,8	5,3	46,2	3010
25	ASMTO209.3B1325	3,0	14,8	0,8	5,6	50,1	3690
35	ASMTO209.3B1335	3,0	15,8	0,8	5,9	53,5	4310
50	ASMTO209.3B1350	3,0	17,2	0,8	6,3	57,6	5070
70	ASMTO209.3B1370	3,0	18,6	0,8	6,6	62,5	6240
95	ASMTO209.3B1395	3,0	20,3	0,8	7,1	66,2	7190
120	ASMTO209.3B130A	3,0	27,2	0,8	7,4	72,0	8760
150	ASMTO209.3B130B	3,0	39,6	0,8	7,8	78,0	10720
185	ASMTO209.3B130C	3,0	42,2	0,8	8,2	83,4	12360
240	ASMTO209.3B130D	3,0	46,6	0,8	8,8	90,3	15000
300	ASMTO209.3B130E	3,0	63,2	0,8	9,4	98,4	18400
Type 209.6 - 6,6 kV							
16	ASMTO209.6C1316	5,0	17,2	0,8	6,4	57,3	4350
25	ASMTO209.6C1325	5,0	18,6	0,8	6,7	61,2	5120
35	ASMTO209.6C1335	5,0	18,6	0,8	7,0	64,6	5820
50	ASMTO209.6C1350	5,0	21,3	0,8	7,3	68,5	6680
70	ASMTO209.6C1370	5,0	23,4	0,8	7,7	73,7	7990
95	ASMTO209.6C1395	5,0	29,2	0,8	8,1	77,8	9350
120	ASMTO209.6C130A	5,0	31,7	0,8	8,5	83,1	10900
150	ASMTO209.6C130B	5,0	45,7	0,8	8,9	89,1	13100
185	ASMTO209.6C130C	5,0	48,4	0,8	9,3	94,5	14800
240	ASMTO209.6C130D	5,0	52,8	0,8	9,9	101,4	17500
300	ASMTO209.6C130E	5,0	71,5	0,8	10,4	109,3	21200
Type 209.11- 11,11kV							
25	ASMTO209.11D1325	7,6	23,7	0,8	8,1	75,6	7500
35	ASMTO209.11D1335	7,6	30,2	0,8	8,4	79,7	8580
50	ASMTO209.11D1350	7,6	31,7	0,8	8,7	83,6	9600
70	ASMTO209.11D1370	7,6	34,1	0,8	9,1	88,8	10930
95	ASMTO209.11D1395	7,6	47,5	0,8	9,6	93,7	12670
120	ASMTO209.11D130A	7,6	51,0	0,8	9,9	98,8	14360
150	ASMTO209.11D130B	7,6	53,7	0,8	10,3	103,5	16140
185	ASMTO209.11D130C	7,6	57,2	0,8	10,7	108,8	18300

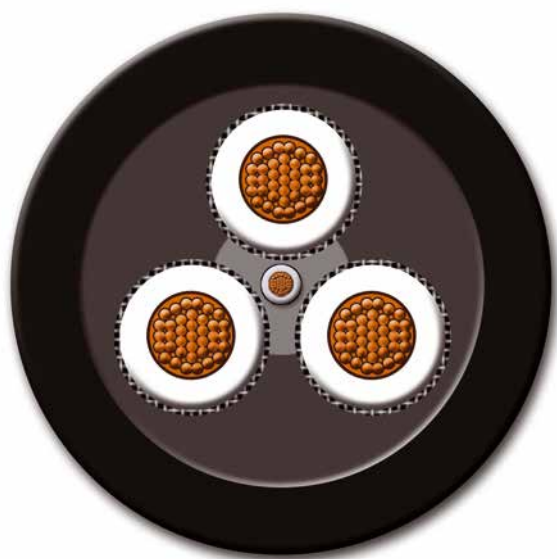
TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-210[®] - 1,1/1,1 kV

Mainly used for hand-held boring machines and drills.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Insulation:** EPR
- **Insulation screen:** Semiconductive elastomer
- **Composite Screen** (earth conductor): Tinned annealed copper braiding interwove with polyester yarn
- **Cradle Separator:** Semiconductive PCP
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Outer sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-210) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-210[®] - 1,1/1,1 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Area of Core Screen mm ²	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
1,5	ASMT0210A1301	1,4	5,2	0,8	3,0	23,7	830
2,5	ASMT0210A1302	1,5	5,8	0,8	3,0	25,1	920



TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-240[®] - from 1,1/1,1 to 11/11 kV

Mainly used as feeder cables for power supply to machinery or longwall supply. Cable contains 3 large pilots and large Core Screens provide for low resistance earthing.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation screen:** Semiconductive elastomer
- **Composite Screen** (earth conductor): Tinned annealed copper braiding interwove with polyester yarn
- **Interstitial Pilot:** EPR covered flexible stranded tinned copper conductor
- **Cradle Separator:** Semiconductive PCP
- **Outer sheath:** TRATOS OUTER SHEATH[®], better than Heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-240) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-240® - from 1,1/1,1 to 11/11 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Area of Core Screen mm ²	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 240.1 - 1,1 kV							
6	ASMTO240.1A1306	1,5	7,2	1,0	3,8	30,0	1310
10	ASMTO240.1A1310	1,5	8,6	1,0	3,8	32,6	1590
16	ASMTO240.1A1316	1,6	9,6	1,0	4,0	35,8	2020
25	ASMTO240.1A1325	1,6	11,3	1,2	4,3	39,7	2650
35	ASMTO240.1A1335	1,6	12,4	1,2	4,6	43,1	3260
50	ASMTO240.1A1350	1,7	14,1	1,2	5,0	47,7	4040
70	ASMTO240.1A1370	1,8	16,5	1,2	5,4	53,9	5330
95	ASMTO240.1A1395	2,0	18,2	1,2	6,0	58,6	6350
120	ASMTO240.1A130A	2,1	20,3	1,4	6,4	64,4	7750
150	ASMTO240.1A130B	2,3	22,3	1,4	6,9	70,2	9400
185	ASMTO240.1A130C	2,5	30,2	1,4	7,4	77,4	11500
240	ASMTO240.1A130D	2,8	33,6	1,6	8,2	86,0	14400
300	ASMTO240.1A130E	3,0	50,1	1,6	8,8	95,1	18100
Type 240.3 - 3,3 kV							
16	ASMTO240.3B1316	3,0	13,1	1,4	5,3	46,2	3060
25	ASMTO240.3B1325	3,0	14,8	1,4	5,6	50,1	3790
35	ASMTO240.3B1335	3,0	15,8	1,4	5,9	53,5	4440
50	ASMTO240.3B1350	3,0	17,2	1,4	6,3	57,6	5250
70	ASMTO240.3B1370	3,0	18,6	1,4	6,6	62,5	6560
95	ASMTO240.3B1395	3,0	20,3	1,4	7,1	66,2	7500
120	ASMTO240.3B130A	3,0	27,2	1,6	7,4	72,0	9100
150	ASMTO240.3B130B	3,0	39,6	1,6	7,8	78,0	11150
185	ASMTO240.3B130C	3,0	42,2	1,8	8,2	83,4	12800
240	ASMTO240.3B130D	3,0	46,6	1,8	8,8	90,3	15400
300	ASMTO240.3B130E	3,0	63,2	1,8	9,4	98,4	19200
Type 240.6 - 6,6 kV							
16	ASMTO240.6C1316	5,0	17,2	1,4	6,4	57,3	4400
25	ASMTO240.6C1325	5,0	18,6	1,4	6,7	61,2	5210
35	ASMTO240.6C1335	5,0	18,6	1,6	7,0	64,6	5930
50	ASMTO240.6C1350	5,0	21,3	1,6	7,3	68,5	6850
70	ASMTO240.6C1370	5,0	23,4	1,6	7,7	73,7	8300
95	ASMTO240.6C1395	5,0	29,2	1,6	8,1	77,8	9540
120	ASMTO240.6C130A	5,0	31,7	1,8	8,5	83,1	11110
150	ASMTO240.6C130B	5,0	45,7	1,8	8,9	89,1	13350
185	ASMTO240.6C130C	5,0	48,4	1,8	9,3	94,5	15150
240	ASMTO240.6C130D	5,0	52,8	1,8	9,9	101,4	18100
300	ASMTO240.6C130E	5,0	71,5	1,8	10,4	109,3	21900
Type 240.11 - 11,11 kV							
25	ASMTO240.11D1325	7,6	23,7	2,0	8,1	75,6	7520
35	ASMTO240.11D1335	7,6	30,2	2,0	8,4	79,7	8600
50	ASMTO240.11D1350	7,6	31,7	2,0	8,7	83,6	9610
70	ASMTO240.11D1370	7,6	34,1	2,0	9,1	88,8	11250
95	ASMTO240.11D1395	7,6	47,5	2,0	9,6	93,7	13000
120	ASMTO240.11D130A	7,6	51,0	2,2	9,9	98,8	14700
150	ASMTO240.11D130B	7,6	53,7	2,2	10,3	103,5	16590
185	ASMTO240.11D130C	7,6	57,2	2,2	10,7	108,8	18800

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-241[®] - from 1,1/1,1 to 11/11 kV

Suitable for several applications, including main feeder cable for continuous miners, pump cable, and power supply cable. Overall semiconductive screen provides protective earth contact for any object breaching the sheath prior to contact with power conductors.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation screen:** Semiconductive elastomer
- **Cradle Separator:** Semiconductive PCP
- **Overall Core Screen:** Semiconductive PCP filling and covering.
- **Interstitial Earth Conductor:** Semiconductive PCP covered flexible stranded tinned copper conductor.
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor.
- **Textile Reinforcement:** Open-weave braid reinforcement.
- **Outer sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-241) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-241[®] - 1,1/1,1 to 11/11 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Thickness of Earth Conductor Covering mm	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath* mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 241.1 - 1,1 kV							
6	ASMTO241.1A1306	1,5	1,0	0,8	3,8	28,5	1060
10	ASMTO241.1A1310	1,5	1,0	0,8	3,8	31,1	1270
16	ASMTO241.1A1316	1,6	1,0	0,8	3,9	34,1	1640
25	ASMTO241.1A1325	1,6	1,0	0,8	4,2	37,9	2080
35	ASMTO241.1A1335	1,6	1,0	0,8	4,4	41,2	2540
50	ASMTO241.1A1350	1,7	1,0	0,8	4,9	45,9	3280
70	ASMTO241.1A1370	1,8	1,0	0,8	5,3	52,2	4800
95	ASMTO241.1A1395	2,0	1,0	0,8	5,8	56,7	6000
120	ASMTO241.1A130A	2,1	1,2	0,8	6,3	62,7	7100
150	ASMTO241.1A130B	2,3	1,2	0,8	6,7	68,3	8650
185	ASMTO241.1A130C	2,5	1,4	0,8	7,3	74,9	10300
240	ASMTO241.1A130D	2,8	1,4	0,8	8,0	83,3	13000
300	ASMTO241.1A130E	3,0	1,4	0,8	8,7	91,2	16000
Type 241.3 - 3,3 kV							
16	ASMTO241.3B1316	3,0	1,0	0,8	5,0	43,8	2490
25	ASMTO241.3B1325	3,0	1,0	0,8	5,3	47,7	3150
35	ASMTO241.3B1335	3,0	1,0	0,8	5,6	51,1	3760
50	ASMTO241.3B1350	3,0	1,2	0,8	6,0	55,2	4500
70	ASMTO241.3B1370	3,0	1,2	0,8	6,4	60,3	5760
95	ASMTO241.3B1395	3,0	1,2	0,8	6,8	63,8	6750
120	ASMTO241.3B130A	3,0	1,2	0,8	7,2	69,1	8100
150	ASMTO241.3B130B	3,0	1,2	0,8	7,6	73,8	9520
185	ASMTO241.3B130C	3,0	1,4	0,8	8,0	79,2	11300
240	ASMTO241.3B130D	3,0	1,4	0,8	8,6	86,0	13800
300	ASMTO241.3B130E	3,0	1,4	0,8	9,1	92,6	16600
Type 241.6 - 6,6 kV							
16	ASMTO241.6C1316	5,0	1,4	0,8	6,1	54,9	3650
25	ASMTO241.6C1325	5,0	1,4	0,8	6,4	58,8	4400
35	ASMTO241.6C1335	5,0	1,4	0,8	6,7	62,2	5090
50	ASMTO241.6C1350	5,0	1,4	0,8	7,1	66,2	5920
70	ASMTO241.6C1370	5,0	1,4	0,8	7,4	71,2	7270
95	ASMTO241.6C1395	5,0	1,4	0,8	7,9	74,8	8350
120	ASMTO241.6C130A	5,0	1,4	0,8	8,3	80,2	9900
150	ASMTO241.6C130B	5,0	1,4	0,8	8,6	84,6	11400
185	ASMTO241.6C130C	5,0	1,4	0,8	9,0	90,0	13110
240	ASMTO241.6C130D	5,0	1,4	0,8	9,6	96,8	15760
300	ASMTO241.6C130E	5,0	1,4	0,8	10,2	103,6	19000
Type 241.11 - 11,11 kV							
25	ASMTO241.11D1325	7,6	1,8	0,8	7,8	73,2	6450
35	ASMTO241.11D1335	7,6	1,8	0,8	8,1	76,6	7240
50	ASMTO241.11D1350	7,6	1,8	0,8	8,5	80,6	8250
70	ASMTO241.11D1370	7,6	1,8	0,8	8,9	85,7	9750
95	ASMTO241.11D1395	7,6	1,8	0,8	9,3	89,1	10880
120	ASMTO241.11D130A	7,6	1,8	0,8	9,7	94,4	12580
150	ASMTO241.11D130B	7,6	1,8	0,8	10,0	98,9	14230
185	ASMTO241.11D130C	7,6	1,8	0,8	10,4	104,2	16100

* Includes SC PCP layer

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-241-Tratosflex[®] from 1,1/1,1 to 6,6/6,6 kV

Similar to TRATOS ASNZS MTO- 241, except more flexible and have a smaller 'natural' bending radius, suitable for use as monorail cable where cable loops will be narrower, thus allowing more space for other equipment and reducing opportunities for getting snagged.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Cradle Separator:** Semiconductive PCP
- **Overall Core Screen:** Semiconductive PCP filling and covering
- **Interstitial Earth Conductor:** Semiconductive PCP covered flexible stranded tinned copper conductor
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Textile Reinforcement:** Open-weave braid reinforcement
- **Outer sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-241-Tratosflex) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-241-Tratosflex® - from 1,1/1,1 to 6,6/6,6 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Thickness of Earth Conductor Covering mm	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath* mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 241.1 - 1,1 kV							
70	TASMTO241.1A1370	1,8	1,0	0,8	5,3	53,0	4850
95	TASMTO241.1A1395	2,0	1,0	0,8	5,8	58,8	5950
120	TASMTO241.1A130A	2,1	1,2	0,8	6,3	62,5	7150
150	TASMTO241.1A130B	2,3	1,2	0,8	6,7	67,0	8400
185	TASMTO241.1A130C	2,5	1,4	0,8	7,3	75,1	10400
240	TASMTO241.1A130D	2,8	1,4	0,8	8,0	85,7	13400
Type 241.3 - 3,3 kV							
70	TASMTO241.3B1370	3,0	1,2	0,8	6,4	61,2	5900
95	TASMTO241.3B1395	3,0	1,2	0,8	6,8	65,9	7100
120	TASMTO241.3B130A	3,0	1,2	0,8	7,2	68,9	8200
150	TASMTO241.3B130B	3,0	1,2	0,8	7,6	72,5	9400
185	TASMTO241.3B130C	3,0	1,4	0,8	8,0	79,4	11300
240	TASMTO241.3B130D	3,0	1,4	0,8	8,6	88,3	14200
Type 241.6 - 6,6 kV							
70	TASMTO241.6C1370	5,0	1,4	0,8	7,4	72,1	7500
95	TASMTO241.6C1395	5,0	1,4	0,8	7,9	77,0	8850
120	TASMTO241.6C130A	5,0	1,4	0,8	8,3	79,9	10000
150	TASMTO241.6C130B	5,0	1,4	0,8	8,6	83,3	11300
185	TASMTO241.6C130C	5,0	1,4	0,8	9,0	90,2	13300
240	TASMTO241.6C130D	5,0	1,4	0,8	9,6	99,1	16400

* Includes SC PCP layer

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-245[®] - from 1,1/1,1 to 6,6/6,6 kV

Mainly used as longwall shearer cables, and also for continuous miners and peripheral longwall cables. Cable has 3 central pilots for earth continuity monitoring and for control circuits.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Cradle Separator:** Semiconductive PCP
- **Overall Core Screen:** Semiconductive PCP filling and covering
- **Interstitial Earth Conductor:** Semiconductive PCP covered flexible stranded tinned copper conductor
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Textile Reinforcement:** Open-weave braid reinforcement
- **Outer sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-245) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-245® - from 1,1/1,1 to 6,6/6,6 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Thickness of Earth Conductor Covering mm	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath* mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 245.1 - 1,1 kV							
16	ASMTO245.1A1316	2,0	1,8	0,8	4,1	42,6	2350
25	ASMTO245.1A1325	1,6	1,8	0,8	4,2	43,4	2690
35	ASMTO245.1A1335	1,6	1,4	0,8	4,4	45,6	3150
50	ASMTO245.1A1350	1,7	1,0	0,8	4,8	48,4	3900
70	ASMTO245.1A1370	1,8	1,0	0,8	5,1	53,9	5010
95	ASMTO245.1A1395	2,0	1,0	0,8	5,6	60,4	6300
120	ASMTO245.1A130A	2,1	1,2	0,8	6,0	65,5	7650
150	ASMTO245.1A130B	2,3	1,2	0,8	6,3	70,5	9150
Type 245.3 - 3,3 kV							
25	ASMTO245.3B1325	3,0	1,5	0,8	5,2	51,1	3380
35	ASMTO245.3B1335	3,0	1,0	0,8	5,4	54,5	3980
50	ASMTO245.3B1350	3,0	1,0	0,8	5,7	56,8	4900
70	ASMTO245.3B1370	3,0	1,2	0,8	6,0	61,2	5920
95	ASMTO245.3B1395	3,0	1,2	0,8	6,4	66,6	7390
120	ASMTO245.3B130A	3,0	1,2	0,8	6,7	71,0	8700
150	ASMTO245.3B130B	3,0	1,2	0,8	7,0	75,2	10280
Type 245.6 - 6,6 kV							
50	ASMTO245.6C1350	5,0	1,4	0,8	6,7	67,2	6350
70	ASMTO245.6C1370	5,0	1,4	0,8	7,0	71,7	7550
95	ASMTO245.6C1395	5,0	1,4	0,8	7,4	77,1	9050
120	ASMTO245.6C130A	5,0	1,4	0,8	7,7	81,3	10500
150	ASMTO245.6C130B	5,0	1,4	0,8	8,0	85,8	12100

* Includes SC PCP layer

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-260[®] - from 1,1/1,1 to 11 kV

Armoured cables mainly used as feeder cables for power supply where mechanical protection and strength is required. Can also be the feeder to machinery and i.e. transportable mining substation (sand mining).

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Composite Screen (earth conductor):** Tinned annealed copper braiding interwove with polyester yarn
- **Cradle Separator:** Semiconductive PCP
- **Interstitial Pilot:** EPR covered flexible stranded tinned copper conductor
- **Inner Sheath:** PCP sheath. CPE/CSP sheath can be offered upon request
- **Pliable Armour:** Galvanized low carbon (mild) steel strands
- **Outer sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-260) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-260[®] - from 1,1/1,1 to 11/11 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Area of Core Screen mm	Thickness of Pilot Conductor Covering mm	Thickness of Inner Sheath mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 260.1 - 1,1 kV								
6	ASMT0260.1A1306	1,5	7,2	1,0	2,0	3,8	36,9	2300
10	ASMT0260.1A1310	1,5	8,6	1,0	2,0	3,8	39,5	2650
16	ASMT0260.1A1316	1,6	9,6	1,0	2,5	4,0	46,5	4100
25	ASMT0260.1A1325	1,6	11,3	1,2	2,5	4,3	50,4	4950
35	ASMT0260.1A1335	1,6	12,4	1,2	2,5	4,6	53,8	5760
50	ASMT0260.1A1350	1,7	14,1	1,2	2,5	5,0	58,4	6790
70	ASMT0260.1A1370	1,8	16,5	1,2	2,5	5,4	64,6	8370
95	ASMT0260.1A1395	2,0	18,2	1,2	3,5	6,0	71,4	10030
120	ASMT0260.1A130A	2,1	20,3	1,4	3,5	6,4	77,2	11760
150	ASMT0260.1A130B	2,3	22,3	1,4	3,5	6,9	83,0	13720
185	ASMT0260.1A130C	2,5	30,2	1,4	3,5	7,4	90,0	16100
240	ASMT0260.1A130D	2,8	33,6	1,6	4,5	8,2	103,0	21500
300	ASMT0260.1A130E	3,0	50,1	1,6	4,5	8,8	112,1	25900
Type 260.3 - 3,3 kV								
16	ASMT0260.3B1316	3,0	13,1	1,4	2,5	5,3	56,9	5660
25	ASMT0260.3B1325	3,0	14,8	1,4	2,5	5,6	60,8	6610
35	ASMT0260.3B1335	3,0	15,8	1,4	3,5	5,9	66,3	7790
50	ASMT0260.3B1350	3,0	17,2	1,4	3,5	6,3	70,4	8860
70	ASMT0260.3B1370	3,0	18,6	1,4	3,5	6,6	75,3	10440
95	ASMT0260.3B1395	3,0	20,3	1,4	3,5	7,1	78,9	11560
120	ASMT0260.3B130A	3,0	27,2	1,6	3,5	7,4	84,7	13500
150	ASMT0260.3B130B	3,0	39,6	1,6	4,5	7,8	95,0	17790
185	ASMT0260.3B130C	3,0	42,2	1,8	4,5	8,2	100,4	19900
240	ASMT0260.3B130D	3,0	46,6	1,8	4,5	8,8	107,3	23000
300	ASMT0260.3B130E	3,0	63,2	1,8	4,5	9,4	115,4	27100
Type 260.6 - 6,6 kV								
16	ASMT0260.6C1316	5,0	17,2	1,4	3,5	6,4	70,1	7960
25	ASMT0260.6C1325	5,0	18,6	1,4	3,5	6,7	74,0	8970
35	ASMT0260.6C1335	5,0	18,6	1,6	3,5	7,0	77,4	9900
50	ASMT0260.6C1350	5,0	21,3	1,6	3,5	7,3	81,2	11020
70	ASMT0260.6C1370	5,0	23,4	1,6	4,5	7,7	90,7	14560
95	ASMT0260.6C1395	5,0	29,2	1,6	4,5	8,1	94,8	16100
120	ASMT0260.6C130A	5,0	31,7	1,8	4,5	8,5	100,2	18070
150	ASMT0260.6C130B	5,0	45,7	1,8	4,5	8,9	106,2	20800
185	ASMT0260.6C130C	5,0	48,4	1,8	4,5	9,3	111,5	23000
240	ASMT0260.6C130D	5,0	52,8	1,8	4,5	9,9	118,4	26300
300	ASMT0260.6C130E	5,0	71,5	1,8	4,5	10,4	126,3	30600
Type 260.11 - 11,11 kV								
25	ASMT0260.11D1325	7,6	23,7	2,0	4,5	8,1	92,7	13800
35	ASMT0260.11D1335	7,6	30,2	2,0	4,5	8,4	96,7	15280
50	ASMT0260.11D1350	7,6	31,7	2,0	4,5	8,7	100,6	16640
70	ASMT0260.11D1370	7,6	34,1	2,0	4,5	9,1	105,8	18670
95	ASMT0260.11D1395	7,6	47,5	2,0	4,5	9,6	110,7	20800
120	ASMT0260.11D130A	7,6	51,0	2,2	4,5	9,9	115,8	22900
150	ASMT0260.11D130B	7,6	53,7	2,2	4,5	10,3	120,5	25100
185	ASMT0260.11D130C	7,6	57,2	2,2	4,5	10,7	125,9	27500

TRATOS ASNZS MTO®

REELING & TRAILING CABLES BASED ON AS/NZS 1802:2003

TRATOS ASNZS MTO-275® - 1,1/1,1 kV

Mainly used as a flexible feeder for shuttle cars and pump. Earth cores designed to reduce instances of wire breaks during reeling while under tension.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Insulation:** EPR
- **Cradle Separator:** Semiconductive PCP
- **Overall Core Screen:** Semiconductive PCP filling and covering
- **Interstitial Earth Conductor:** Semiconductive PCP covered flexible stranded tinned copper conductor
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Textile Reinforcement:** Open-weave braid reinforcement
- **Outer Sheath:** TRATOS OUTER SHEATH®, better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-275) Cable Size (e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1802:2003
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-275® - 1,1/1,1 kV

Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Thickness of Earth Conductor Covering mm ²	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath* mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
16	ASMT0275A1316	1,6	1,0	0,8	3,8	30,2	1450
25	ASMT0275A1325	1,6	1,0	0,8	4,0	33,9	2040
35	ASMT0275A1335	1,6	1,0	0,8	4,3	37,9	2700
50	ASMT0275A1350	1,7	1,0	0,8	4,7	41,6	3330

* Includes SC PCP layer



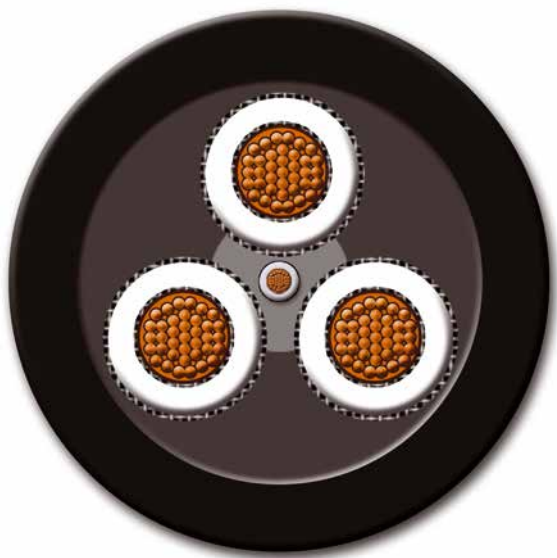
TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-409[®] - Class 2 - from 1,1/1,1 to 22/22 kV

Mainly used as a flexible feeder to machinery, more suitable as a trailing cable rather than for reeling. Smaller cables are used for drills and hand held tools and equipment, while larger ones are used for power supply to draglines, shovels and drills.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Composite Screen (earth conductor):** Tinned annealed copper braiding interwove with polyester yarn
- **Cradle Separator:** Semiconductive PCP
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-409) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 2802:2000
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-409[®] - Class 2 - from 1,1/1,1 to 22/22 kV

Nominal Cross Sectional Area	Part Number	Thickness of Insulation	Area of Core Screen	Thickness of Pilot Conductor Covering	Thickness of Outer Sheath	Overall Diameter (approx.)	Weight (approx.)
mm ²	TT	mm	mm ²	mm	mm	mm	kg/km
Type 409.1 Class2 - 1,1 kV							
6	ASMTO409.1A1306	1,5	7,2	0,8	3,8	30,0	1290
10	ASMTO409.1A1310	1,5	8,6	0,8	3,8	32,6	1570
16	ASMTO409.1A1316	1,6	9,6	0,8	4,0	35,8	1970
25	ASMTO409.1A1325	1,6	11,3	0,8	4,3	39,7	2550
35	ASMTO409.1A1335	1,6	12,4	0,8	4,6	43,1	3120
50	ASMTO409.1A1350	1,7	14,1	0,8	5,0	47,7	3860
70	ASMTO409.1A1370	1,8	16,5	0,8	5,4	53,9	5030
95	ASMTO409.1A1395	2,0	21,8	0,8	6,0	59,3	6220
120	ASMTO409.1A130A	2,1	24,7	0,8	6,4	65,1	7600
150	ASMTO409.1A130B	2,3	36,1	0,8	6,9	72,1	9600
185	ASMTO409.1A130C	2,5	40,5	0,8	7,4	78,6	11600
240	ASMTO409.1A130D	2,8	57,7	0,8	8,2	88,6	14900
300	ASMTO409.1A130E	3,0	63,2	0,8	8,8	96,3	18000
Type 409.3 Class2 - 3,3 kV							
16	ASMTO409.3B1316	3,0	13,1	0,8	5,3	46,2	3010
25	ASMTO409.3B1325	3,0	14,8	0,8	5,6	50,1	3710
35	ASMTO409.3B1335	3,0	15,8	0,8	5,9	53,5	4300
50	ASMTO409.3B1350	3,0	17,2	0,8	6,3	57,6	5110
70	ASMTO409.3B1370	3,0	18,6	0,8	6,6	62,5	6240
95	ASMTO409.3B1395	3,0	20,3	0,8	7,1	66,2	7240
120	ASMTO409.3B130A	3,0	27,2	0,8	7,4	72,0	8800
150	ASMTO409.3B130B	3,0	39,6	0,8	7,8	78,0	10790
185	ASMTO409.3B130C	3,0	42,2	0,8	8,2	83,4	12510
240	ASMTO409.3B130D	3,0	46,6	0,8	8,8	90,3	15020
300	ASMTO409.3B130E	3,0	63,2	0,8	9,4	98,4	18400
Type 409.6 Class2 - 6,6 kV							
16	ASMTO409.6C1316	5,0	17,2	0,8	6,4	57,3	4400
25	ASMTO409.6C1325	5,0	18,6	0,8	6,7	61,2	5160
35	ASMTO409.6C1335	5,0	18,6	0,8	7,0	64,6	5840
50	ASMTO409.6C1350	5,0	21,3	0,8	7,3	68,5	6690
70	ASMTO409.6C1370	5,0	23,4	0,8	7,7	73,7	8040
95	ASMTO409.6C1395	5,0	29,2	0,8	8,1	77,8	9340
120	ASMTO409.6C130A	5,0	31,7	0,8	8,5	83,1	10900
150	ASMTO409.6C130B	5,0	45,7	0,8	8,9	89,1	13100
185	ASMTO409.6C130C	5,0	48,4	0,8	9,3	94,5	14790
240	ASMTO409.6C130D	5,0	52,8	0,8	9,9	101,4	17490
300	ASMTO409.6C130E	5,0	71,5	0,8	10,4	109,3	21200
Type 409.11 Class2 - 11,11 kV							
25	ASMTO409.11D1325	7,6	23,7	0,8	8,1	75,6	7500
35	ASMTO409.11D1335	7,6	30,2	0,8	8,4	79,7	8590
50	ASMTO409.11D1350	7,6	31,7	0,8	8,7	83,6	9540
70	ASMTO409.11D1370	7,6	34,1	0,8	9,1	88,8	11050
95	ASMTO409.11D1395	7,6	47,5	0,8	9,6	93,7	12900
120	ASMTO409.11D130A	7,6	51,0	0,8	9,9	98,8	14600
150	ASMTO409.11D130B	7,6	53,7	0,8	10,3	103,5	16360
185	ASMTO409.11D130C	7,6	57,2	0,8	10,7	108,8	18300
Type 409.22 Class2 - 22,22 kV							
35	ASMTO409.22E1335	10,5	55,4	0,8	10,0	105,0	14050
50	ASMTO409.22E1350	10,5	58,1	0,8	10,3	108,9	15250
70	ASMTO409.22E1370	10,5	60,7	0,8	10,7	114,0	17100

TRATOS ASNZS MTO®

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-412® - Class 2 - 1,1/1,1 kV

Cables with green/yellow earths and pliable armour for mechanical protection. Main applications are where damage is likely and armour can reduce cases of costly downtime. Suitable to be installed as feeder cables in sand mining operations.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Filler:** Elastomer centre filler
- **Interstitial Earth Conductor:** EPR covered flexible stranded tinned copper conductor
- **Inner Sheath:** PCP sheath. CPE/CSP sheath can be offered upon request
- **Pliable Armour:** Galvanized low carbon (mild) steel strands
- **Outer Sheath:** TRATOS OUTER SHEATH®, better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-412) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

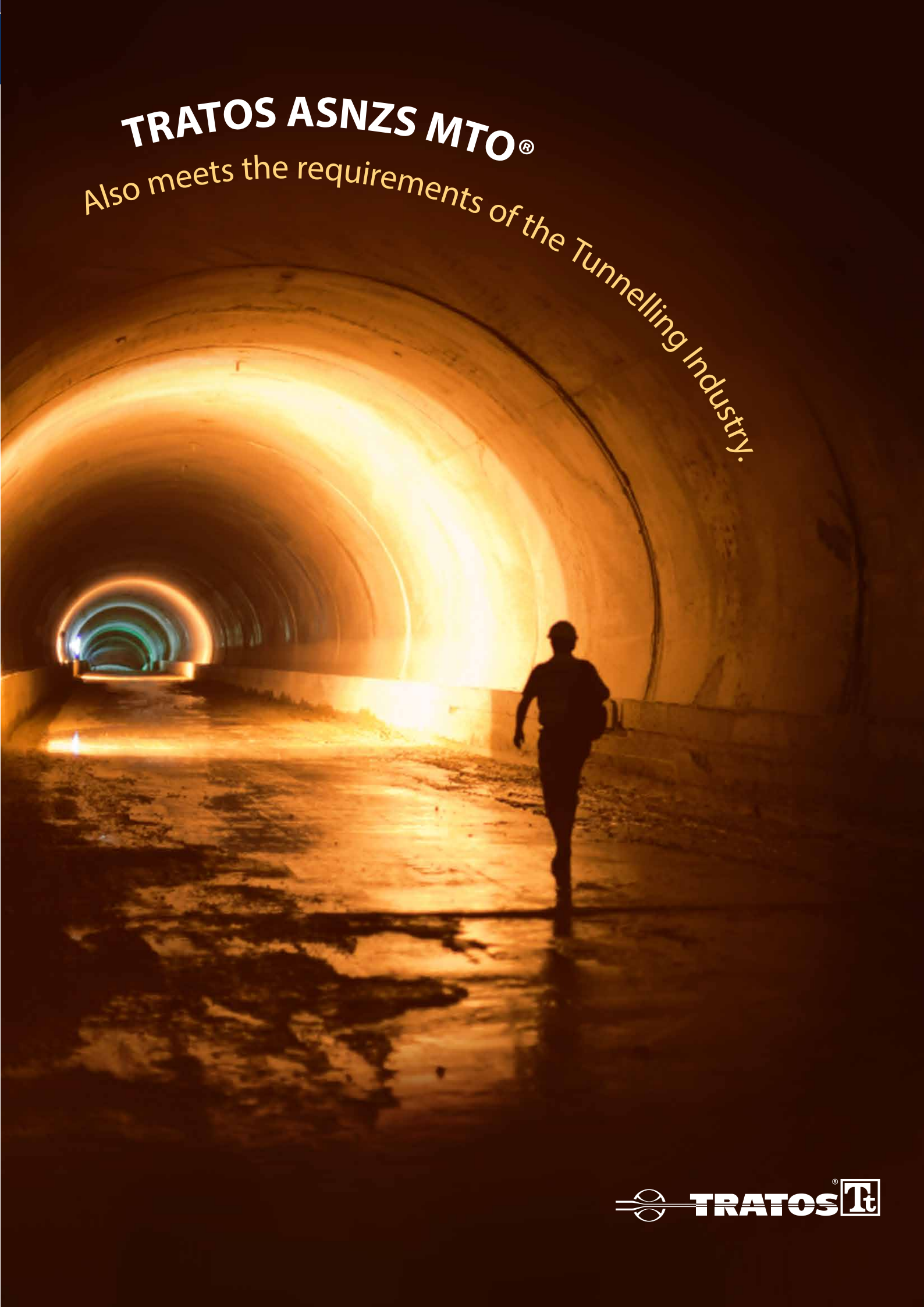
- AS/NZS 2802:2000
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-412® - Class 2 - 1,1/1,1 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Thickness of Earth Conductor Covering mm ²	Thickness of Inner Sheath mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
16	ASMTO412A1316	1,6	0,6	2,5	3,8	38,3	2650
25	ASMTO412A1325	1,6	0,6	2,5	3,8	38,4	2940
35	ASMTO412A1335	1,6	0,6	2,5	4,0	44,6	4020
50	ASMTO412A1350	1,7	0,8	2,5	4,4	49,2	5000
70	ASMTO412A1370	1,8	0,8	2,5	4,8	55,4	6550
95	ASMTO412A1395	2,0	0,8	2,5	5,4	60,1	7750
120	ASMTO412A130A	2,1	1,0	3,5	5,8	68,1	9900
150	ASMTO412A130B	2,3	1,0	3,5	6,3	73,8	11860
185	ASMTO412A130C	2,5	1,0	3,5	6,8	80,2	13600
240	ASMTO412A130D	2,8	1,2	3,5	7,5	88,7	16700
300	ASMTO412A130E	3,0	1,2	4,5	8,2	100,9	22000

TRATOS ASNZS MTO®

Also meets the requirements of the Tunnelling Industry.



TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-440[®] - Class 2 - from 1,1/1,1 to 22/22 kV

Mainly used as flexible feeder trailing cables for power supply to machinery and equipment. Include 3 large pilots and a central semiconductive cradle for support and protection of power cores.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above).
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Composite Screen** (earth conductor): Tinned annealed copper braiding interwove with polyester yarn
- **Cradle Separator:** Semiconductive PCP
- **Interstitial Pilot:** EPR covered flexible stranded tinned copper conductor
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-440) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 2802:2000
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-440® - Class 2 - from 1,1/1,1 to 22/22 kV

Nominal Cross Sectional Area	Part Number (TT)	Thickness of Insulation	Area of Core Screen	Thickness of Pilot Conductor Covering	Thickness of Outer Sheath	Overall Diameter (approx.)	Weight (approx.)
mm ²		mm	mm ²	mm	mm	mm	kg/km
Type 440.1 Class2 - 1,1 kV							
6	ASMT0440.1A1306	1,5	7,2	1,0	3,8	30,0	1350
10	ASMT0440.1A1310	1,5	8,6	1,0	3,8	32,6	1660
16	ASMT0440.1A1316	1,6	9,6	1,0	4,0	35,8	2040
25	ASMT0440.1A1325	1,6	11,3	1,2	4,3	39,7	2690
35	ASMT0440.1A1335	1,6	12,4	1,2	4,6	43,1	3240
50	ASMT0440.1A1350	1,7	14,1	1,2	5,0	47,7	4030
70	ASMT0440.1A1370	1,8	16,5	1,2	5,4	53,9	5390
95	ASMT0440.1A1395	2,0	21,8	1,2	6,0	59,3	6590
120	ASMT0440.1A130A	2,1	24,7	1,4	6,4	65,1	8020
150	ASMT0440.1A130B	2,3	36,1	1,4	6,9	72,1	10180
185	ASMT0440.1A130C	2,5	40,5	1,4	7,4	78,6	11980
240	ASMT0440.1A130D	2,8	57,7	1,6	8,2	88,6	15490
300	ASMT0440.1A130E	3,0	63,2	1,6	8,8	96,3	18700
Type 440.3 Class2 - 3,3 kV							
16	ASMT0440.3B1316	3,0	13,1	1,4	5,3	46,2	3040
25	ASMT0440.3B1325	3,0	14,8	1,4	5,6	50,1	3790
35	ASMT0440.3B1335	3,0	15,8	1,4	5,9	53,5	4460
50	ASMT0440.3B1350	3,0	17,2	1,4	6,3	57,6	5240
70	ASMT0440.3B1370	3,0	18,6	1,4	6,6	62,5	6590
95	ASMT0440.3B1395	3,0	20,3	1,6	7,1	66,2	7540
120	ASMT0440.3B130A	3,0	27,2	1,6	7,4	72,0	9140
150	ASMT0440.3B130B	3,0	39,6	1,6	7,8	78,0	11190
185	ASMT0440.3B130C	3,0	42,2	1,6	8,2	83,4	12890
240	ASMT0440.3B130D	3,0	46,6	1,6	8,8	90,3	15590
300	ASMT0440.3B130E	3,0	63,2	1,6	9,4	98,4	19200
Type 440.6 Class2 - 6,6 kV							
16	ASMT0440.6C1316	5,0	17,2	1,4	6,4	57,3	4440
25	ASMT0440.6C1325	5,0	18,6	1,6	6,7	61,2	5230
35	ASMT0440.6C1335	5,0	18,6	1,6	7,0	64,6	5990
50	ASMT0440.6C1350	5,0	21,3	1,6	7,3	68,5	6890
70	ASMT0440.6C1370	5,0	23,4	1,6	7,7	73,7	8340
95	ASMT0440.6C1395	5,0	29,2	1,8	8,1	77,8	9640
120	ASMT0440.6C130A	5,0	31,7	1,8	8,5	83,1	11190
150	ASMT0440.6C130B	5,0	45,7	1,8	8,9	89,1	13490
185	ASMT0440.6C130C	5,0	48,4	1,8	9,3	94,5	15290
240	ASMT0440.6C130D	5,0	52,8	1,8	9,9	101,4	18100
300	ASMT0440.6C130E	5,0	71,5	1,8	10,4	109,3	21900
Type 440.11 Class2 - 11,11 kV							
25	ASMT0440.11D1325	7,6	23,7	2,0	8,1	75,6	7590
35	ASMT0440.11D1335	7,6	30,2	2,0	8,4	79,7	8690
50	ASMT0440.11D1350	7,6	31,7	2,0	8,7	83,6	9740
70	ASMT0440.11D1370	7,6	34,1	2,0	9,1	88,8	11390
95	ASMT0440.11D1395	7,6	47,5	2,2	9,6	93,7	13190
120	ASMT0440.11D130A	7,6	51,0	2,2	9,9	98,8	14890
150	ASMT0440.11D130B	7,6	53,7	2,2	10,3	103,5	16790
185	ASMT0440.11D130C	7,6	57,2	2,2	10,7	108,8	18800
Type 440.22 Class2 - 22,22 kV							
35	ASMT0440.22E1335	10,5	53,2	2,5	10,0	105,0	12700
50	ASMT0440.22E1350	10,5	54,1	2,5	10,3	108,9	13920
70	ASMT0440.22E1370	10,5	58,0	2,5	10,7	111,2	15580

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-441.2[®] - Class 2 - 1,1/1,1 kV

Class 2 cables designed for various applications such as trailing and reeling applications. Include one central pilot and a semiconductive cradle supporting and protecting the power cores, which makes these cables less likely to be damaged from crushing and squashing.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Cradle Separator:** Semiconductive PCP
- **Overall Core Screen:** Semiconductive PCP filling and covering
- **Interstitial Earth Conductor:** Semiconductive PCP covered flexible stranded tinned copper conductor
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Textile Reinforcement:** Open-weave braid reinforcement.
- **Standard colour:** black
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than heavy duty PCP sheath. Heavy duty CPE/CSP sheath can be offered upon request
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-441.2) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 2802:2000
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-441[®] - Class 2 - 1,1/1,1 kV

Nominal Cross Sectional Area	Part Number	Thickness of Insulation	Thickness of Earth Conductor Covering	Thickness of Pilot Conductor Covering	Thickness of Outer Sheath	Overall Diameter (approx.)	Weight (approx.)
mm ²	TT	mm	mm ²	mm	mm	mm	kg/km
6	ASMT0441A1306	1,5	0,8	0,8	3,8	28,5	1110
10	ASMT0441A1310	1,5	0,8	0,8	3,8	31,1	1360
16	ASMT0441A1316	1,6	1,0	0,8	3,9	34,1	1760
25	ASMT0441A1325	1,6	1,0	0,8	4,2	37,9	2310
35	ASMT0441A1335	1,6	1,0	0,8	4,4	41,2	2740
50	ASMT0441A1350	1,7	1,0	0,8	4,9	45,9	3490
70	ASMT0441A1370	1,8	1,0	0,8	5,3	52,2	4810
95	ASMT0441A1395	2,0	1,0	0,8	5,8	56,7	5790
120	ASMT0441A130A	2,1	1,0	0,8	6,3	62,7	7240
150	ASMT0441A130B	2,3	1,2	0,8	6,7	68,3	8810
185	ASMT0441A130C	2,5	1,2	0,8	7,3	74,9	10490
240	ASMT0441A130D	2,8	1,2	0,8	8,0	83,3	13290
300	ASMT0441A130E	3,0	1,4	0,8	8,7	91,2	16290

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-441.1[®] - Class 1 - from 3,3/3,3 to 22/22 kV

Class 1 series cable has lower insulation and sheath radials than Class 2 cables. They have various applications such as trailing and reeling applications. They have one central pilot and a semiconductive cradle supporting and protecting the power cores, which makes these cables less likely to be damaged from crushing and squashing.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor.
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above).
- **Insulation:** EPR.
- **Insulation Screen:** Semiconductive elastomer.
- **Cradle Separator:** Semiconductive PCP.
- **Overall Core Screen:** Semiconductive PCP filling and covering.
- **Interstitial Earth Conductor:** Semiconductive PCP covered flexible stranded tinned copper conductor.
- **Central Extensible Pilot:** EPR covered flexible stranded tinned copper conductor
- **Textile Reinforcement:** Open-weave braid reinforcement
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than extra-heavy duty PCP sheath. Extra-heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-441.1) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 2802:2000
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-441[®] - Class 1 - from 3,3/3,3 to 22/22 kV

Nominal Cross Sectional Area	Part Number	Thickness of Insulation	Thickness of Earth Conductor Covering	Thickness of Pilot Conductor Covering	Thickness of Outer Sheath	Overall Diameter (approx.)	Weight (approx.)
mm ²	TT	mm	mm ²	mm	mm	mm	kg/km
Type 441.3-Class1 - 3,3 kV							
16	ASMTO441.3B1316	2,2	1,0	0,8	4,6	43,0	2410
25	ASMTO441.3B1325	2,2	1,0	0,8	4,9	46,9	3040
35	ASMTO441.3B1335	2,2	1,0	0,8	5,2	50,3	3590
50	ASMTO441.3B1350	2,4	1,0	0,8	5,7	55,5	4460
70	ASMTO441.3B1370	2,4	1,0	0,8	6,0	60,4	5710
95	ASMTO441.3B1395	2,4	1,2	0,8	6,4	63,6	6590
120	ASMTO441.3B130A	2,4	1,2	0,8	6,5	68,6	7940
150	ASMTO441.3B130B	2,4	1,2	0,8	6,6	72,7	9310
185	ASMTO441.3B130C	2,4	1,4	0,8	6,7	77,4	10800
240	ASMTO441.3B130D	2,4	1,4	0,8	6,9	83,4	13100
300	ASMTO441.3B130E	2,4	1,4	0,8	7,0	89,2	15700
Type 441.6-Class1 - 6,6 kV							
16	ASMTO441.6C1316	3,0	1,0	0,8	5,0	47,4	2760
25	ASMTO441.6C1325	3,0	1,0	0,8	5,3	51,2	3500
35	ASMTO441.6C1335	3,0	1,0	0,8	5,6	54,6	4050
50	ASMTO441.6C1350	3,0	1,2	0,8	6,0	58,7	4850
70	ASMTO441.6C1370	3,0	1,2	0,8	6,3	63,7	6340
95	ASMTO441.6C1395	3,0	1,2	0,8	6,4	66,5	7000
120	ASMTO441.6C130A	3,0	1,2	0,8	6,6	71,4	8350
150	ASMTO441.6C130B	3,0	1,2	0,8	6,7	75,5	9750
185	ASMTO441.6C130C	3,0	1,4	0,8	6,8	80,3	11300
240	ASMTO441.6C130D	3,0	1,4	0,8	7,0	86,2	13600
300	ASMTO441.6C130E	3,0	1,4	0,8	7,1	92,0	16500
Type 441.11-Class1 - 11,11 kV							
25	ASMTO441.11D1325	5,0	1,2	0,8	6,3	62,2	4810
35	ASMTO441.11D1335	5,0	1,4	0,8	6,4	65,2	5420
50	ASMTO441.11D1350	5,0	1,4	0,8	6,5	68,6	6200
70	ASMTO441.11D1370	5,0	1,4	0,8	6,6	73,1	7500
95	ASMTO441.11D1395	5,0	1,4	0,8	6,8	76,2	8500
120	ASMTO441.11D130A	5,0	1,4	0,8	6,9	80,9	9860
150	ASMTO441.11D130B	5,0	1,4	0,8	7,0	85,0	11290
185	ASMTO441.11D130C	5,0	1,4	0,8	7,1	89,6	12890
240	ASMTO441.11D130D	5,0	1,4	0,8	7,3	95,7	15390
Type 441.22-Class1 - 22,22 kV							
35	ASMTO441.22E1335	7,6	1,8	0,8	6,9	77,9	7330
50	ASMTO441.22E1350	7,6	1,8	0,8	7,0	81,4	8200
70	ASMTO441.22E1370	7,6	1,8	0,8	7,1	85,8	9600
95	ASMTO441.22E1395	7,6	1,8	0,8	7,2	88,6	10700
120	ASMTO441.22E130A	7,6	1,8	0,8	7,3	93,4	12200
150	ASMTO441.22E130B	7,6	1,8	0,8	7,4	97,5	13800
185	ASMTO441.22E130C	7,6	1,8	0,8	7,6	102,4	15450

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-450[®] - Class 1 - from 3,3/3,3 to 33/33 kV

These cables are suitable for supply of power to a wide range of applications, from dragline cable to slow reeling applications, where copper screened cable is required but light weight and smaller dimensions are also desired.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Composite Screen:** Tinned annealed copper braiding interwove with polyester yarn, covered with semiconductive tape
- **Filler:** Elastomer centre filler
- **Interstitial Earth Conductor×2:** CSP covered flexible stranded tinned copper conductor
- **Interstitial Pilot:** EPR covered flexible stranded tinned copper conductor
- **Textile Reinforcement:** Open-weave braid reinforcement
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than extra-heavy duty PCP sheath. Extra-heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-450) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 2802:2000
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-450® - Class 1 - from 3,3/3,3 to 33/33 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Area of Core Screen mm ²	Thickness of Pilot/Earth Conductor Covering mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 450.3-Class1 - 3,3 kV							
16	ASMTO450.3B1316	2,2	6,3	1,4	4,5	42,8	2660
25	ASMTO450.3B1325	2,2	8,3	1,4	4,8	46,9	3380
35	ASMTO450.3B1335	2,2	9,0	1,4	5,1	50,3	3920
50	ASMTO450.3B1350	2,4	10,0	1,4	5,6	55,5	4870
70	ASMTO450.3B1370	2,4	14,7	1,4	6,0	61,1	6370
95	ASMTO450.3B1395	2,4	15,5	1,6	6,3	64,3	7340
120	ASMTO450.3B130A	2,4	17,0	1,6	6,4	69,0	8670
150	ASMTO450.3B130B	2,4	18,1	1,6	6,6	73,3	10220
185	ASMTO450.3B130C	2,4	18,1	1,6	6,7	78,1	11750
240	ASMTO450.3B130D	2,4	26,7	1,6	6,9	84,5	14400
300	ASMTO450.3B130E	2,4	28,3	1,6	7,0	90,4	17410
Type 450.6 Class1- 6,6 kV							
16	ASMTO450.6C1316	3,0	8,3	1,4	5,0	47,6	3170
25	ASMTO450.6C1325	3,0	9,1	1,6	5,2	51,2	3820
35	ASMTO450.6C1335	3,0	9,8	1,6	5,5	54,7	4430
50	ASMTO450.6C1350	3,0	10,5	1,6	5,9	58,8	5340
70	ASMTO450.6C1370	3,0	15,5	1,6	6,3	64,3	6820
95	ASMTO450.6C1395	3,0	16,3	1,8	6,4	67,1	7710
120	ASMTO450.6C130A	3,0	17,7	1,8	6,5	71,9	9120
150	ASMTO450.6C130B	3,0	18,1	1,8	6,6	76,0	10730
185	ASMTO450.6C130C	3,0	18,1	1,8	6,8	80,9	12220
240	ASMTO450.6C130D	3,0	27,7	1,8	7,0	87,4	15020
300	ASMTO450.6C130E	3,0	28,3	1,8	7,1	93,2	17900
Type 450.11 Class1 - 11,11 kV							
25	ASMTO450.11D1325	5,0	15,1	2,0	6,3	62,8	5420
35	ASMTO450.11D1335	5,0	16,0	2,0	6,4	65,8	6010
50	ASMTO450.11D1350	5,0	17,0	2,0	6,5	69,3	6920
70	ASMTO450.11D1370	5,0	18,1	2,0	6,6	73,8	8260
95	ASMTO450.11D1395	5,0	18,1	2,2	6,7	76,6	9260
120	ASMTO450.11D130A	5,0	18,1	2,2	6,9	81,6	10820
150	ASMTO450.11D130B	5,0	27,3	2,2	7,0	86,1	12630
185	ASMTO450.11D130C	5,0	28,3	2,2	7,1	90,8	14330
240	ASMTO450.11D130D	5,0	28,3	2,2	7,3	96,8	16900
300	ASMTO450.11D130E	5,0	28,3	2,2	7,4	102,7	20000
Type 450.22 Class1 - 22,22 kV							
35	ASMTO450.22E1335	7,6	18,1	2,5	6,8	78,4	8050
50	ASMTO450.22E1350	7,6	18,1	2,5	6,9	81,8	9000
70	ASMTO450.22E1370	7,6	27,5	2,5	7,0	86,8	10700
95	ASMTO450.22E1395	7,6	28,3	2,5	7,2	89,8	11800
120	ASMTO450.22E130A	7,6	28,3	2,5	7,3	94,5	13500
150	ASMTO450.22E130B	7,6	28,3	2,5	7,4	98,6	15200
185	ASMTO450.22E130C	7,6	28,3	2,5	7,5	103,4	17000
240	ASMTO450.22E130D	7,6	28,3	2,5	7,7	109,4	19800
300	ASMTO450.22E130E	7,6	28,3	2,5	7,9	115,4	23100
Type 450.33 Class1 - 33,33 kV							
50	ASMTO450.33F1350	10,5	28,3	2,5	7,4	96,9	12220
70	ASMTO450.33F1370	10,5	28,3	2,5	7,5	101,4	13850
95	ASMTO450.33F1395	10,5	28,3	2,5	7,7	104,4	15050
120	ASMTO450.33F130A	10,5	28,3	2,5	7,8	109,2	16800
185	ASMTO450.33F130B	10,5	28,3	2,5	8,0	118,0	20600
240	ASMTO450.33F130C	10,5	28,3	2,5	8,2	124,0	23600
300	ASMTO450.33F130D	10,5	28,3	2,5	8,4	130,1	27100

TRATOS ASNZS MTO[®]

REELING & TRAILING CABLES BASED ON AS/NZS 2802:2000

TRATOS ASNZS MTO-455[®] - Class 1 - from 3,3/3,3 to 33/33 kV

Designed with reduced insulation and sheath thickness, no cradle, 2 earth and 1 pilot core (each earth and pilot are the same size) in the outer interstices. These cables are suitable for reeling and trailing applications where minimal diameter and mass is desired, particularly suited to stacker-reclaimer applications.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Flexible stranded tinned annealed copper conductor
- **Conductor Screen:** Semiconductive compound (for cables having a voltage rating of 3.3/3.3kV and above)
- **Insulation:** EPR
- **Insulation Screen:** Semiconductive elastomer
- **Filler:** Elastomer centre filler
- **Interstitial Earth Conductor:** CSP covered flexible stranded tinned copper conductor
- **Interstitial Pilot:** EPR covered flexible stranded tinned copper conductor
- **Textile Reinforcement:** Open-weave braid reinforcement
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than extra-heavy duty PCP sheath. Extra-heavy duty CPE/CSP sheath can be offered upon request
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 3.3/3.3 kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-455) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 2802:2000
- AS/NZS 1125
- AS/NZS 3808
- AS/NZS 5000.1

TRATOS ASNZS MTO-455[®] - Class 1- from 3,3/3,3 to 33/33 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Thickness of Pilot/ Earth Conductor Covering mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
Type 455.3-Class1 - 3,3 kV						
16	ASMTO455.3B1316	2,2	1,4	4,2	39,4	2240
25	ASMTO455.3B1325	2,2	1,4	4,5	43,3	2810
35	ASMTO455.3B1335	2,2	1,4	4,8	46,7	3360
50	ASMTO455.3B1350	2,4	1,4	5,3	51,9	4240
70	ASMTO455.3B1370	2,4	1,4	5,7	57,0	5560
95	ASMTO455.3B1395	2,4	1,6	6,1	60,5	6460
120	ASMTO455.3B130A	2,4	1,6	6,4	65,6	7860
150	ASMTO455.3B130B	2,4	1,6	6,5	69,7	9310
185	ASMTO455.3B130C	2,4	1,6	6,6	74,5	10720
240	ASMTO455.3B130D	2,4	1,6	6,8	80,5	13100
300	ASMTO455.3B130E	2,4	1,6	6,9	86,3	16000
Type 455.6-Class1 - 6,6 kV						
16	ASMTO455.6C1316	3,0	1,4	4,7	43,9	2660
25	ASMTO455.6C1325	3,0	1,6	5,0	47,8	3320
35	ASMTO455.6C1335	3,0	1,6	5,3	51,3	3870
50	ASMTO455.6C1350	3,0	1,6	5,6	55,1	4660
70	ASMTO455.6C1370	3,0	1,6	6,0	60,3	5970
95	ASMTO455.6C1395	3,0	1,8	6,3	63,5	6920
120	ASMTO455.6C130A	3,0	1,8	6,5	68,5	8260
150	ASMTO455.6C130B	3,0	1,8	6,6	72,6	9770
185	ASMTO455.6C130C	3,0	1,8	6,7	77,3	11220
240	ASMTO455.6C130D	3,0	1,8	6,9	83,3	13610
300	ASMTO455.6C130E	3,0	1,8	7,0	89,1	16520
Type 455.11-Class1 - 11,11 kV						
16	ASMTO455.11D1316	5,0	2,0	5,8	55,1	3920
25	ASMTO455.11D1325	5,0	2,0	6,1	59,0	4620
35	ASMTO455.11D1335	5,0	2,0	6,3	62,2	5270
50	ASMTO455.11D1350	5,0	2,0	6,4	65,6	6070
70	ASMTO455.11D1370	5,0	2,0	6,5	70,2	7420
95	ASMTO455.11D1395	5,0	2,2	6,7	73,2	8370
120	ASMTO455.11D130A	5,0	2,2	6,8	77,9	9820
150	ASMTO455.11D130B	5,0	2,2	6,9	82,0	11430
185	ASMTO455.11D130C	5,0	2,2	7,0	86,8	13050
240	ASMTO455.11D130D	5,0	2,2	7,2	92,8	15530
Type 455.22-class1 - 22,22 kV						
16	ASMTO455.22E1316	7,6	2,5	6,6	68,5	5780
25	ASMTO455.22E1325	7,6	2,5	6,6	71,7	6530
35	ASMTO455.22E1335	7,6	2,5	6,7	74,7	7190
50	ASMTO455.22E1350	7,6	2,5	6,8	78,2	8100
70	ASMTO455.22E1370	7,6	2,5	7,0	82,9	9560
95	ASMTO455.22E1395	7,6	2,5	7,1	85,7	10610
120	ASMTO455.22E130A	7,6	2,5	7,2	90,5	12210
150	ASMTO455.22E130B	7,6	2,5	7,3	94,6	13920
185	ASMTO455.22E130C	7,6	2,5	7,4	99,3	15640
Type 455.33-Class1 - 33,33 kV						
16	ASMTO455.33F1316	10,5	2,5	7,0	83,0	8220
25	ASMTO455.33F1325	10,5	2,5	7,1	86,4	9200
35	ASMTO455.33F1335	10,5	2,5	7,2	89,4	9930
50	ASMTO455.33F1350	10,5	2,5	7,3	92,8	10920
70	ASMTO455.33F1370	10,5	2,5	7,4	97,4	12540
95	ASMTO455.33F1395	10,5	2,5	7,6	100,4	13720
120	ASMTO455.33F130A	10,5	2,5	7,7	105,1	15430
150	ASMTO455.33F130B	10,5	2,5	7,8	109,2	17200

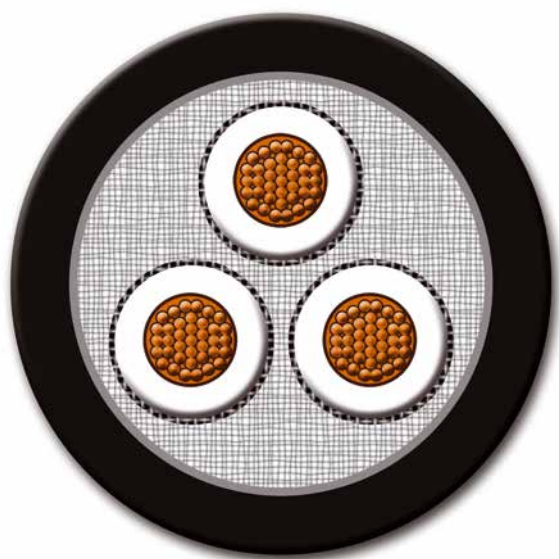
TRATOS ASNZS MTO®

MINING CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-IS® - 1,1/1,1 kV

These individually copper screened cables are used for wiring of machines, or between machines and equipment where PVC is suitable.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Stranded copper conductor
- **Insulation:** PVC
- **Individual Composite Screen** (earth conductor): Tinned annealed copper braiding interwove with polyester yarn
- **Binding:** Polyester tape
- **Outer Sheath:** TRATOS OUTER SHEATH®, better than PVC sheath
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-IS) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1972:2006
- AS/NZS 1125
- AS/NZS 3808

TRATOS ASNZS MTO-IS® - 1,1/1,1 kV

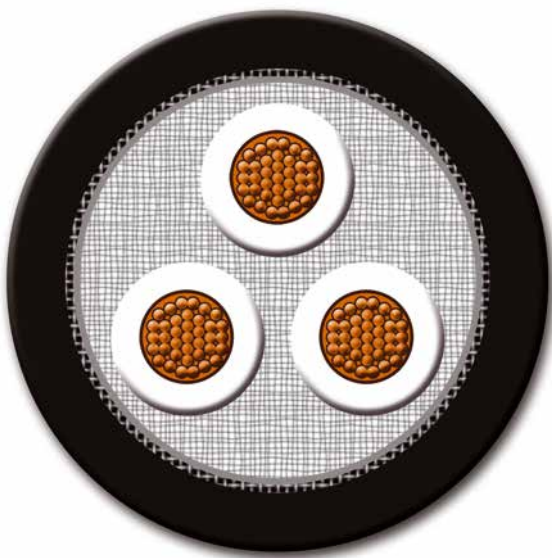
N° of Cores × Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Core Screen		Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
			Strand Size mm ²	Area Screen mm			
3x1,5	ASMTTOISA1301	0,8	0,20	3,5	0,8	10,1	160
4x1,5	ASMTTOISA1401	0,8	0,20	4,6	0,8	11,1	210
3x10	ASMTTOISA1310	1,0	0,20	6,8	1,0	18,6	590
4x10	ASMTTOISA1410	1,0	0,20	9,0	1,0	20,5	750
3x16	ASMTTOISA1316	1,0	0,20	7,9	1,3	21,6	840
4x16	ASMTTOISA1316	1,0	0,20	10,6	1,3	23,7	1100

MINING CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-CS[®] - 1,1/1,1 kV

These collectively copper screened cables are used for wiring of machines, or between machines and equipment where PVC is suitable.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Stranded copper conductor
- **Insulation:** PVC
- **Bedding:** Polyester tape
- **Collective Composite Screen** (earth conductor): Tinned annealed copper braiding interwove with polyester yarn
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than PVC sheath
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-CS) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1972:2006
- AS/NZS 1125
- AS/NZS 3808

TRATOS ASNZS MTO-CS[®] - 1,1/1,1 kV

N° of Cores × Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Core Screen		Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
			Strand Size mm ²	Area Screen mm			
2×1,5	ASMTOCSA1201	0,8	0,20	2,3	0,8	9,2	120
3×1,5	ASMTOCSA1301	0,8	0,20	2,5	0,8	9,7	150
4×1,5	ASMTOCSA1401	0,8	0,20	2,6	0,8	10,5	180
6×1,5	ASMTOCSA1601	0,8	0,20	3,4	0,8	12,6	250
16×1,5	ASMTOCSA1161	0,8	0,20	5,1	1,0	18,7	550
30×1,5	ASMTOCSA1301	0,8	0,25	8,8	1,3	24,6	960

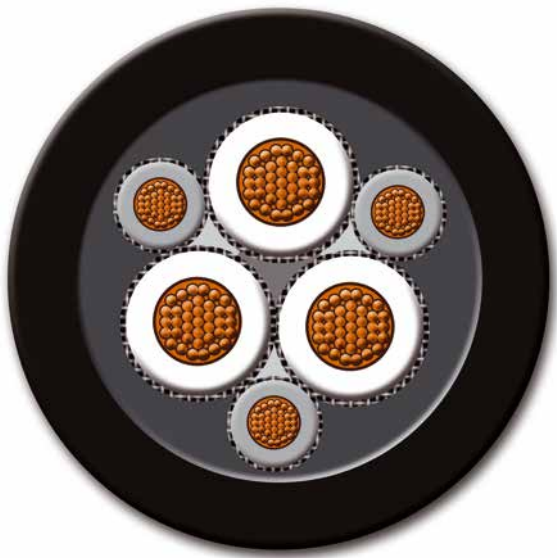
TRATOS ASNZS MTO[®]

MINING CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-2S-IS[®] - 1,1/1,1 kV & 3,3/3,3 kV

These individually copper screened cables are used for wiring of machines or between machines and equipment where a rubber cable is desired. These cables are also used for longwall lighting circuits, and may contain pilot and control cores or twisted pair and screened cores.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Stranded copper conductor
- **Insulation:** EPR
- **Filling:** Elastomer centre filler
- **Pilot/Control Cores:** EPR covered and composite screened flexible stranded tinned copper conductor
- **Individual Composite Screen** (earth conductor): Tinned annealed copper braiding interwove with polyester yarn
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than heavy duty CPE sheath
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-2S-IS) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1972:2006
- AS/NZS 1125
- AS/NZS 3808

TRATOS ASNZS MTO-2S-IS[®] - 1,1/1,1 kV & 3,3/3,3 kV

N° of Cores × Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Core Screen		Pilot Conductor		Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
			Strand Size mm ²	Area Screen mm	N° of Pilots	Thickness of Covering			
Type 2S 1,1/1kV Individually Screened									
3×10	ASMT02SISA1310	1,2	0,2	7,9	3	–	1,8	22,1	690
4×10	ASMT02SISA1410	1,2	0,2	7,9	4	–	1,8	23,0	930
2×16	ASMT02SISA1216	1,2	0,2	9,0	2	–	1,8	22,0	810
3×16	ASMT02SISA1316	1,2	0,2	9,0	3	–	1,8	23,4	1000
4×16	ASMT02SISA1416	1,2	0,2	9,0	4	–	1,8	26,8	1350
3×10	ASMT02SISA1310	1,2	0,2	7,9	3	1,0	1,8	22,5	870
2×16	ASMT02SISA1216	1,2	0,2	9,0	2	1,0	1,8	22,7	880
3×16	ASMT02SISA1316	1,2	0,2	9,0	3	1,0	1,8	27,7	1300
3×25	ASMT02SISA1325	1,4	0,2	11,3	3	1,0	1,8	29,2	1650
3×35	ASMT02SISA1335	1,4	0,2	12,4	3	1,0	1,8	31,6	2000
3×50	ASMT02SISA1350	1,6	0,25	17,5	3	1,0	1,9	36,1	2600
Type 2S 1,1/1kV Individually and Collectively Screened									
30×1,5	ASMT02SISA13001	1,0	0,3	14,0	–	–	1,9	32,6	1700
Type 2S 3,3/3,3kV Individually Screened									
3×10	ASMT02SISB1310	3,0	0,2	11,3	3	1,0	1,8	28,9	1300
3×16	ASMT02SISB1316	3,0	0,2	12,4	3	1,0	1,8	31,3	1600
3×25	ASMT02SISB1325	3,0	0,2	13,6	3	1,0	1,9	34,8	2100
3×35	ASMT02SISB1335	3,0	0,2	15,3	3	1,0	2,0	37,8	2500
3×50	ASMT02SISB1350	3,0	0,2	17,0	3	1,0	2,1	41,3	3050
3×70	ASMT02SISB1370	3,0	0,3	30,5	3	1,0	2,2	46,8	4150
3×95	ASMT02SISB1395	3,0	0,3	30,5	3	1,0	2,3	49,6	4900
3×120	ASMT02SISB130A	3,0	0,4	47,5	3	1,0	2,5	55,0	6200

TRATOS ASNZS MTO[®]

MINING CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-2S-CS[®] - 1,1/1,1 kV & 3,3/3,3 kV - Collectively Screened

Mainly used for wiring of machines or between machines and equipment where a rubber cable is desired. These cables are also suitable for longwall lighting circuits, and may contain pilot and control cores or twisted pair and screened cores.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Stranded tinned annealed copper conductor
- **Insulation:** EPR
- **Filling:** Elastomer centre filler
- **Bedding:** Polyester tape
- **Composite Screen** (earth conductor): Tinned annealed copper braiding interwove with polyester yarn
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than heavy duty CPE sheath
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-2S-CS) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1972:2006
- AS/NZS 1125
- AS/NZS 3808

TRATOS ASNZS MTO-2S-IS[®] - 1.1/1.1 kV & 3.3/3.3 kV

N° of Cores × Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Core Screen		Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
			Strand Size mm	Area Screen mm ²			
2×1,5	ASMT02SISA1201	1,0	0,20	5,3	1,8	14,7	170
4×1,5	ASMT02SISA1401	1,0	0,20	12,1	1,8	19,9	260
6×1,5	ASMT02SISA1601	1,0	0,20	22,6	1,8	25,7	350
16×1,5	ASMT02SISA1161	1,0	0,25	113,1	1,8	47,1	710
20×1,5	ASMT02SISA12001	1,0	0,25	159,0	1,8	53,2	820

MINING CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-A&B® - 1,1/1,1 kV

These cables are used as 1.1kV cables to distribute power within the mine, suitable for use in underground coal mines. for Type A cables, optional 3 pilots can be selected.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Stranded tinned annealed copper conductor
- **Insulation:** EPR
- **Filling:** Elastomer centre filler
- **Optional Pilot Core** (Type A only): CPE composite insulated and covered pilot conductor
- **Screen** (earth conductor): Copper wire
- **Outer Sheath:** TRATOS OUTER SHEATH®, better than heavy duty CPE sheath
- **Standard colour:** black
- **Marking:** ELECTRIC CABLE 1.1/1.1kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-A&B) Cable Size (e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1972:2006
- AS/NZS 1125
- AS/NZS 3808

TRATOS ASNZS MTO-A&B® - 1.1/1.1 kV

Cross Sectional Area mm ²	Part Number TT	Thickness of Insulation mm	Area of Core Screen mm ²	Thickness of Pilot Conductor Covering mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
16	ASMTOABA1316	1,4	6,0	1,6	2,5	24,6	1200
25	ASMTOABA1325	1,4	7,2	1,8	2,5	28,0	1700
35	ASMTOABA1335	1,5	7,9	1,8	2,5	30,4	2050
50	ASMTOABA1350	1,7	9,0	2,0	3,0	34,9	2700
70	ASMTOABA1370	1,8	13,2	2,0	3,3	40,2	3700
95	ASMTOABA1395	2,0	15,1	2,0	3,8	46,1	4900
120	ASMTOABA130A	2,2	22,9	2,0	3,8	51,1	6150
150	ASMTOABA130B	2,3	24,7	2,0	4,4	56,0	7400
185	ASMTOABA130C	2,5	27,5	2,0	5,1	62,3	9150
240	ASMTOABA130D	2,7	64,4	2,0	5,7	72,9	12900

TRATOS ASNZS MTO[®]

MINING CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-XLPE[®] - 6,35/11 kV & 12,7/22kV - XLPE Insulated

Mainly used as HV feeder cables in fixed conditions.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Stranded plain copper conductor
- **Insulation:** XLPE
- **Individual Screen** (earth conductor): Copper wire
- **Inner Sheath:** PVC sheath
- **Armour:** Galvanized steel wire armour
- **Outer Sheath:** TRATOS OUTER SHEATH[®], better than PVC sheath to AS/NZS 1429.1
- **Standard colour:** Red
- **Marking:** ELECTRIC CABLE 6.35/11kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-XLPE) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1972:2006
- AS/NZS 1125
- AS/NZS 3808

TRATOS ASNZS MTO-XLPE® - 6,35/11 kV & 12,7/22 kV

Cross Sectional Area mm ²	Part Number TT	Nominal Conductor Area mm	Thickness of Insulation mm	Area of Core Screen mm ²	Armour Wire Diameter mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
6,35/11kV								
16	ASMTOXLPEC1316	4,8	3,4	5,7	2,00	2,4	46,6	3300
25	ASMTOXLPEC1325	5,8	3,4	5,7	2,50	2,5	50,1	4150
35	ASMTOXLPEC1335	6,8	3,4	6,2	2,50	2,6	52,8	4750
50	ASMTOXLPEC1350	8,0	3,4	8,5	2,50	2,7	55,7	5400
70	ASMTOXLPEC1370	9,6	3,4	11,9	2,50	2,8	59,6	6450
95	ASMTOXLPEC1395	11,5	3,4	16,5	2,50	2,9	63,9	7750
120	ASMTOXLPEC130A	13,1	3,4	20,4	2,50	3,1	67,9	9050
150	ASMTOXLPEC130B	14,5	3,4	25,0	2,50	3,2	71,5	10300
185	ASMTOXLPEC130C	16,1	3,4	31,5	3,15	3,3	78,6	12800
240	ASMTOXLPEC130D	18,5	3,4	41,5	3,15	3,5	84,7	15500
300	ASMTOXLPEC130E	20,7	3,4	53,0	3,15	3,7	90,4	18200
400	ASMTOXLPEC130F	23,6	3,4	67,3	3,15	4,0	97,9	22300
12,7/22kV								
35	ASMTOXLPED1335	6,8	5,5	7,9	2,5	2,9	63,2	6000
50	ASMTOXLPED1350	8,0	5,5	8,5	2,5	3,0	66,0	6650
70	ASMTOXLPED1370	9,6	5,5	11,9	2,5	3,1	69,9	7750
95	ASMTOXLPED1395	11,5	5,5	16,5	2,5	3,3	74,4	9200
120	ASMTOXLPED130A	13,1	5,5	20,4	3,15	3,4	79,5	11400
150	ASMTOXLPED130B	14,5	5,5	25,0	3,15	3,5	83,1	12800
185	ASMTOXLPED130C	16,1	5,5	31,5	3,15	3,7	89,1	14500
240	ASMTOXLPED130D	18,5	5,5	41,5	3,15	3,9	95,0	17200
300	ASMTOXLPED130E	20,7	5,5	53,0	3,15	4,1	101,1	20100
400	ASMTOXLPED130F	23,6	5,5	67,3	3,15	4,3	108,2	24200

TRATOS ASNZS MTO®

MINING CABLES BASED ON AS/NZS 1972:2006

TRATOS ASNZS MTO-PAPER® - 11/11 kV - Paper Insulated

Mainly used as HV feeder cables in fixed conditions.

FEATURES AND PERFORMANCES



CONSTRUCTION

- **Conductor:** Sector shaped stranded copper conductor
- **Insulation:** Paper tape
- **Filling:** Jute fillers
- **Insulation:** Paper tape belt insulation
- **Inner Sheath:** Lead sheath
- **Bedding:** PVC sheath
- **Armour:** Galvanized steel wire armour
- **Outer Sheath:** TRATOS OUTER SHEATH®, better than PVC sheath to AS/NZS 1026
- **Standard colour:** Red
- **Marking:** ELECTRIC CABLE 11/11kV + TRATOS Cable type (e.g. TRATOS ASNZS MTO-PAPER) Cable Size(e.g. "1x150") COMMODITY CODE STANDARD + lot production + year + CE + metrical marking

STANDARDS

- AS/NZS 1972:2006
- AS/NZS 1125
- AS/NZS 3808

TRATOS ASNZS MTO-PAPER® - 11/11 kV

Nominal Cross Sectional Area mm ²	Part Number TT	Minimum Insulation Thickness		Nominal Thickness of Lead Sheath mm ²	Armour Wire Diameter mm	Thickness of Outer Sheath mm	Overall Diameter (approx.) mm	Weight (approx.) kg/km
		Between Conductors mm	Between Conductors & Lead Sheath mm					
25	ASMTOPAPERD1325	5,6	5,4	1,8	2,5	2,4	47,9	6300
35	ASMTOPAPERD1335	5,6	5,4	1,8	2,5	2,5	50,3	6950
50	ASMTOPAPERD1350	5,6	5,4	1,8	2,5	2,5	50,1	7250
70	ASMTOPAPERD1370	5,6	5,4	1,9	2,5	2,6	53,5	8550
95	ASMTOPAPERD1395	5,6	5,4	2,0	2,5	2,6	57,2	10000
120	ASMTOPAPERD130A	5,6	5,4	2,0	2,5	2,7	60,1	11200
150	ASMTOPAPERD130B	5,6	5,4	2,1	2,5	2,8	63,0	12600
185	ASMTOPAPERD130C	5,6	5,4	2,3	3,15	2,9	68,0	15400
240	ASMTOPAPERD130D	5,6	5,4	2,4	3,15	3,0	73,1	18200
300	ASMTOPAPERD130E	5,6	5,4	2,6	3,15	3,2	77,9	21200
400	ASMTOPAPERD130F	5,6	5,4	2,7	3,15	3,4	83,5	25000

TRATOS MTO[®]

based on AS/NZS, VDE, BS, UL, CSA, MSHA, OSHA

Specifically customized for the mining market;
TRATOS MTO[®] is designed to **resist sunlight**,
water, extreme temperature, chemical,
oil and **abrasion**, while also performing
consistently in tough drilling environments.
The voltage range for TRATOS MTO[®]
is between **600V** and **35KV**.



Cables for a moving world

 **TRATOS** 



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