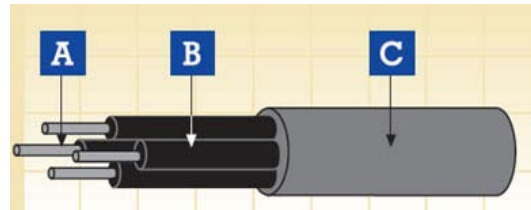






# RSE/STD/024 PART 6 Rolling Stock Cables

## RSE/STD/024 Part 6 Types VII Rolling Stock Cables 30/50V Multicore Standard Wall Cables



A.Conductor B.Insulation C.Sheath

### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

### Construction

#### Conductor

Flexible Stranded Tinned Copper

#### Insulation

Cross linked EPR rubber type EI 107

#### Sheath

Cross linked EVA rubber type EM 104

### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

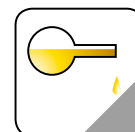
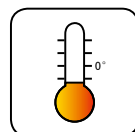
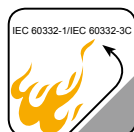
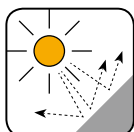
Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

Smoke index

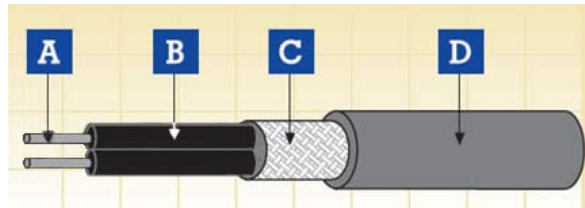
No.of core	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
12	1.0	32/0.20	20.25	309	20.0
42	1.5	30/0.25	38.35	1661	13.7





## RSE/STD/024 PART 6 Rolling Stock Cables

### RSE/STD/024 Part 6 Types VIII Rolling Stock Cables 30/50V Multipair Screened Standard Wall Cables



A. Conductor B. Insulation C. Screen D. Sheath

#### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

#### Construction

##### Conductor

Flexible Stranded Tinned Copper

##### Insulation

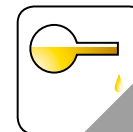
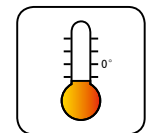
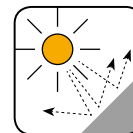
Cross linked EPR rubber type EI 107

##### Screen

Copper Braid Screen

##### Sheath

Cross linked EVA rubber type EM 104



#### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

#### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

#### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

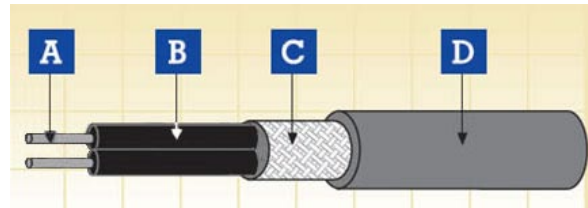
Smoke index

No. of Pair	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
1	0.5	16/0.2	8.45	99	40.1
1	0.75	24/0.2	9.2	110	26.7
1	1.0	32/0.2	9.5	139	20.0
1	1.0	32/0.2	11.7	186	20.0
1	1.0	32/0.2	15.6	306	20.0
2	1.0	32/0.2	15.7	443	20.0
3	1.0	32/0.2	21.7	662	20.0



# RSE/STD/024 PART 6 Rolling Stock Cables

## RSE/STD/024 Part 6 Types IX Rolling Stock Cables 30/50V Multipair Reduced Wall Screened Cables



A. Conductor B. Insulation C. Screen D. Sheath

### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles □

### Construction

#### Conductor

Flexible Stranded Tinned Copper

#### Insulation

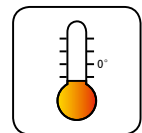
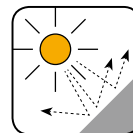
Cross linked EPR rubber type EI 107

#### Screen

Copper Braid Screen

#### Sheath

Cross linked EVA rubber type EM 104



### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

Halogen Free

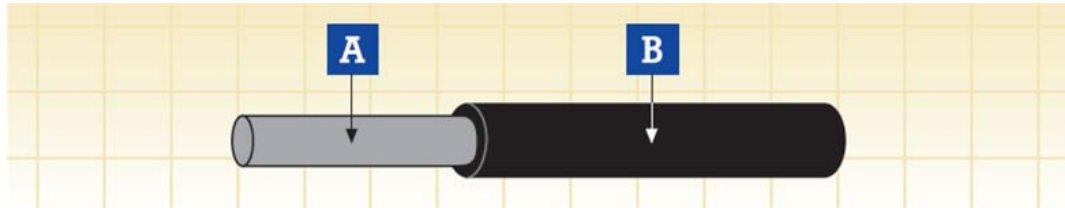
Corrosivity of gases (Acidity & Conductivity)

Toxicity index

Smoke index

No. of pair	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
1	0.5	19/0.18	6.1	57	40.1
2	0.5	19/0.18	10.2	110	40.1
1	1.0	37/0.18	7.0	86	20.0
2	1.0	37/0.18	12.2	188	20.0
3	1.0	37/0.18	12.9	217	20.0
4	1.0	37/0.18	14.0	290	20.0

## RSE/STD/024 Part 6 Types XII Rolling Stock Cables 300/500V Singlecore Standard Wall Unsheathed Cables



A.Conductor B.Insulation

### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

### Construction

#### Conductor

Flexible Stranded Tinned Copper

#### Insulation

Cross linked EPR rubber type EI 107

### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

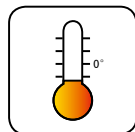
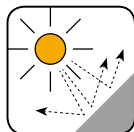
Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

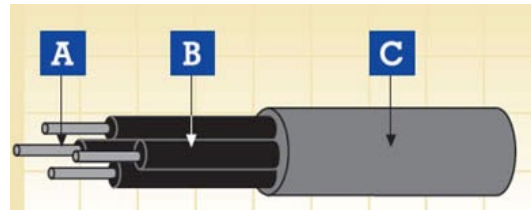
Smoke index

No. of core	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
1	1.0	32/0.2	3.3	19	20.0
1	1.5	30/0.25	3.7	26	13.7
1	2.5	50/0.25	4.2	38	8.21
1	4.0	56/0.3	5.0	57	5.09
1	6.0	84/0.3	5.6	80	3.39



# RSE/STD/024 PART 6 Rolling Stock Cables

## RSE/STD/024 Part 6 Types XIII Rolling Stock Cables 300/500V Multicore Standard Wall Cables



A.Conductor B.Insulation C.Sheath

### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

### Construction

#### Conductor

Flexible Stranded Tinned Copper

#### Insulation

Cross linked EPR rubber type EI 107

#### Sheath

Cross linked EVA rubber type EM 104

### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

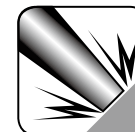
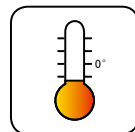
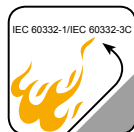
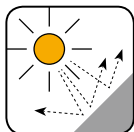
Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

Smoke index

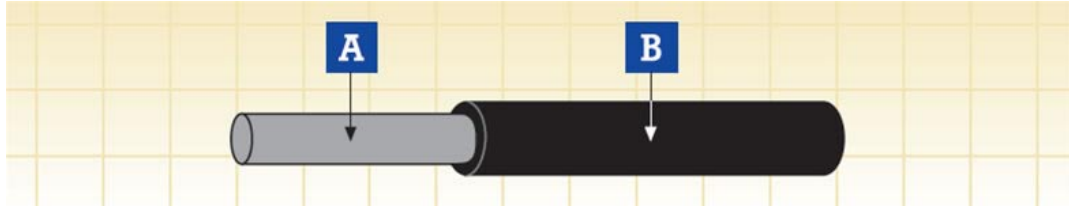
No.of core	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
12	1.0	32/0.2	20.3	309	20.0
42	1.5	30/0.25	38.1	1775	13.7





## RSE/STD/024 PART 6 Rolling Stock Cables

### RSE/STD/024 Part 6 Types I Rolling Stock Cables 600/1000V Singlecore Reduced Wall Unsheathed Cables



A.Conductor B.Insulation

#### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

#### Construction

##### Conductor

Flexible Stranded Tinned Copper

##### Insulation

Cross linked EPR rubber type EI 107

#### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

#### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

#### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

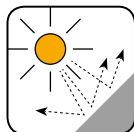
Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

Smoke index

No. of core	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
1	0.5	19/0.18	1.5	6	40.1
1	0.75	37/0.16	1.76	9	26.7
1	1.0	37/0.18	1.9	11	20.0
1	1.5	37/0.23	2.25	17	13.7
1	2.5	37/0.30	2.84	28	8.21
1	4.0	37/0.37	3.44	42	5.09

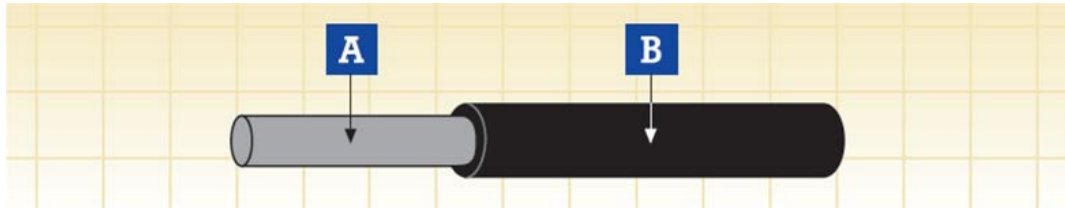






# RSE/STD/024 PART 6 Rolling Stock Cables

## RSE/STD/024 Part 6 Types II Rolling Stock Cables 600/1000V Singlecore Standard Wall Unsheathed Cables



A.Conductor B.Insulation

### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

### Construction

Conductor

Flexible Stranded Tinned Copper

Insulation

Cross linked EPR rubber type EI 107

### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

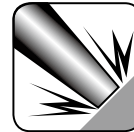
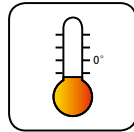
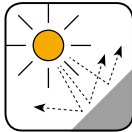
Smoke index

No.of core	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
1	0.75	24/0.20	2.99	15	26.7
1	1.0	32/0.20	3.3	19	20.0
1	1.5	30/0.25	3.69	26	13.7
1	2.5	50/0.25	4.16	38	8.21
1	4.0	56/0.30	4.95	57	5.09
1	6.0	84/0.30	5.55	81	3.39
1	10.0	80/0.40	7.0	135	1.94
1	16.0	128/0.40	8.35	202	1.24
1	25.0	196/0.40	10.2	309	0.795
1	35.0	276/0.40	11.75	404	0.565



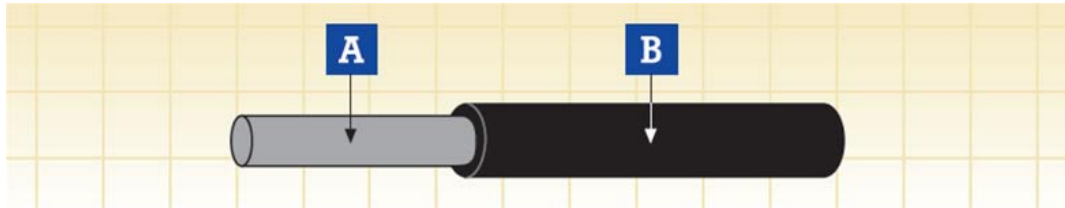
# RSE/STD/024 PART 6 Rolling Stock Cables

1	50.0	396/0.40	13.7	562	0.393
1	70.0	360/0.50	16.25	768	0.277
1	95.0	476/0.50	18.05	1003	0.210
1	150.0	756/0.50	22.95	1583	0.132
1	240.0	1221/0.50	27.9	2516	0.0817
1	300.0	1525/0.50	31.35	3089	0.0654



# RSE/STD/024 PART 6 Rolling Stock Cables

## RSE/STD/024 Part 6 Types III Rolling Stock Cables 600/1000V Singlecore Enhanced Wall Unsheathed Cables



A.Conductor B.Insulation

### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

### Construction

#### Conductor

Flexible Stranded Tinned Copper

#### Insulation

Cross linked EPR rubber type EI 107

### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

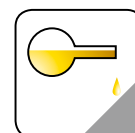
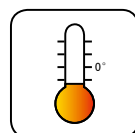
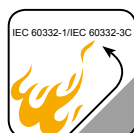
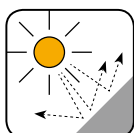
Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

Smoke index

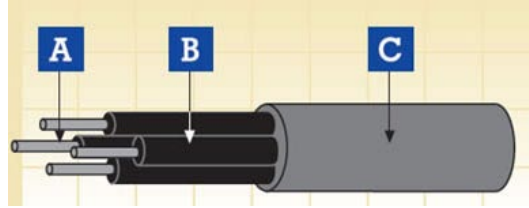
No.of core	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
1	50.0	396/0.40	16.45	657	0.393
1	70.0	360/0.50	18.35	873	0.277
1	95.0	476/0.50	19.5	1108	0.210
1	150.0	756/0.50	24.1	1663	0.132
1	185.0	925/0.50	26.5	2024	0.108
1	240.0	1221/0.50	29.0	2598	0.0817
1	300.0	1525/0.50	31.0	3181	0.0654





## RSE/STD/024 PART 6 Rolling Stock Cables

### RSE/STD/024 Part 6 Types VI Rolling Stock Cables 600/1000V Multicore Standard Wall Cables



A.Conductor B.Insulation C.Sheath

#### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

#### Construction

##### Conductor

Flexible Stranded Tinned Copper

##### Insulation

Cross linked EPR rubber type EI 107

##### Sheath

Cross linked EVA rubber type EM 104

#### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

#### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

#### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

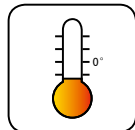
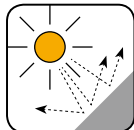
Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

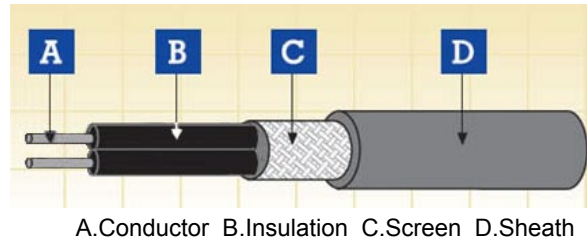
Smoke index

No.of core	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
10	2.5	50/0.25	28.1	1148	8.21
20	4.0	56/0.30	42.7	2421	5.09



# RSE/STD/024 PART 6 Rolling Stock Cables

## RSE/STD/024 Part 6 Types XI Rolling Stock Cables 600/1000V Singlepair Reduced Wall Screened Cables



### Application

These cables are used as power and control cables for protected, fixed installation inside railway vehicles

### Construction

#### Conductor

Flexible Stranded Tinned Copper

#### Insulation

Cross linked EPR rubber type EI 107

#### Screen

Copper Braid Screen

#### Sheath

Cross linked EPR rubber type EM 107

### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to oil & fuel

Resistance to ozone

### Fire Performance for rolling stock application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

FO

### Fire Performance in general

EN 50265-2-1; IEC 60332-1; BS 4066-1

EN 50266-2-4 + EN 50305; IEC 60332-3C;

VDE 0472 Teil 804; BS 4066-3; NFC 32070

EN 50268-2; IEC 61034-2; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; VDE 0472 Teil 815

EN 50267-2-2/3; IEC 60754-2; VDE 0472 Teil 813

EN 50305; NFX 70-100; NFF 63808; TM1-04; BS6853

NFF 16101; NFF 63808; BS6853

Vertical flame propagation for a single insulated wire/cable

Fire propagation of bunched wires and cables

Smoke density

Halogen Free

Corrosivity of gases (Acidity & Conductivity)

Toxicity index

Smoke index

No. of Pair	Nominal Cross Sectional Area	Nominal Diameter of Strands	Nominal Overall Diameter	Nominal Weight	Maximum Conductor Resistance@20°C
	mm <sup>2</sup>	No/mm	mm	kg/km	Ω/km
1	1.0	37/0.18	7.3	76	20.0

