RADIATING CABLES

RF Cables for Radio Transmission in Confined Areas

Edition 11 / 2011

Излучающие кабели 1/2”

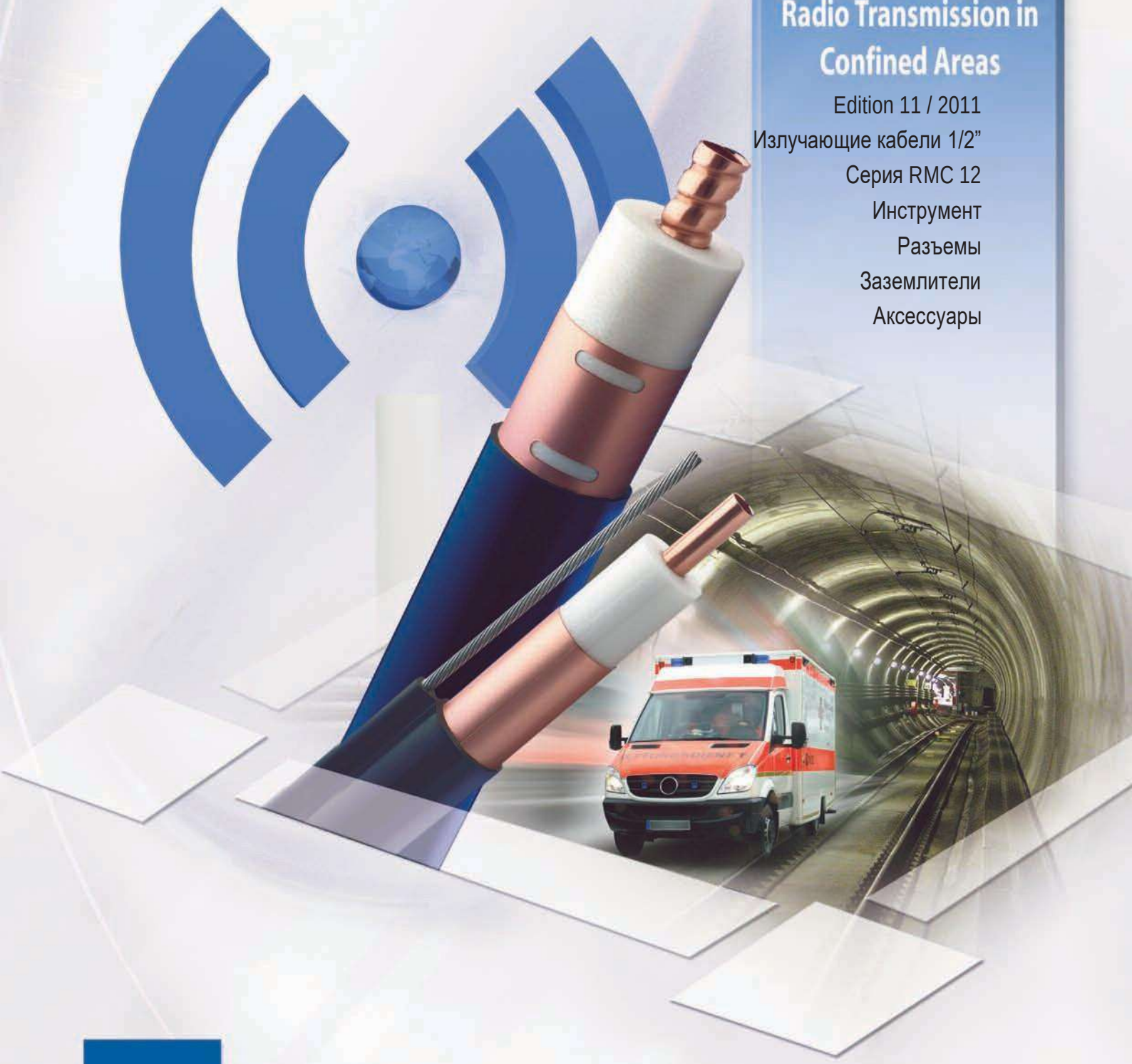
Серия RMC 12

Инструмент

Разъемы

Заземлители

Аксессуары



Kabelwerk EUPEN AG

cable

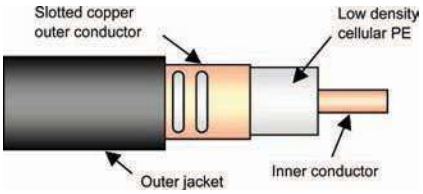
www.tt-telecom.ru

RMC 12

PRODUCT DESCRIPTION

RMC 12-HLFR

Reference suffix [1]: -HLFR



Fire behaviour

Halogen free and flame retardant outer sheath, Low corrosive gas emission acc. to IEC 60754-2
Flame retardant acc. to IEC 60332-1 and IEC 60332-3 cat. C, Low smoke emission acc. to IEC 61034

Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length.

FEATURES and BENEFITS

- From 30 MHz to 2.5 GHz with resonant frequencies
- Robust Cable, with low bending radius
- Main Applications: Tunnel - GSM, GSM-R, DCS-1800, WLAN

TECHNICAL FEATURES

• Size		1/2”
• Previous Model Number		512RC8RM-HLFR
• Frequency Range	MHz	30 - 2500
• Recommended for Frequency	MHz	900 and above
• Cable Type		RMC (Radiated Mode Cable)
• Jacket		HLFR (Halogen Free Low Smoke Flame Retardant)
• Slot Design		Groups of Slots at short intervals
• Impedance	∧	50 +/- 3
• Velocity Ratio	%	88
• Capacitance	pF/m	76
• Inner Conductor dc Resistance	∧/1000 m (∧/1000 ft)	1.48 (0.45) HLFR
• Outer Conductor dc Resistance	∧/1000 m (∧/1000 ft)	2.90 (0.88)
• Inner Conductor Material		Copper clad aluminium (HLFR)
• Dielectric Material		Cellular polyethylene
• Outer Conductor Material		Overlapping copper foil, with slot groups, bonded to the jacket

RMC 12

TECHNICAL FEATURES (continued)

• Diameter Inner Conductor	mm (in)	4.8 (0.19)
• Diameter Dielectric	mm (in)	12.4 (0.49)
• Diameter over Jacket	mm (in)	15.5 (0.61)
• Minimum Bending Radius, Single Bend	mm (in)	200 (7.87)
• Cable Weight	kg/m (lb/ft)	0.23 (0.16) HLFR
• Tensile Strength	daN (lb)	110 (243)
• Indication of Slot Alignment		embossed line 180° opposite
• Storage Temperature	°C (°F)	-70 to +85 (-94 to +185)
• Installation Temperature	°C (°F)	-25 to +60 (-13 to +140)
• Operation Temperature	°C (°F)	-40 to +85 (-40 to +185)
• Longitudinal Loss and Coupling Loss [2]		

Frequency	Longitudinal Loss	Coupling Loss	
	dB/100 m (dB/100 ft)	C50% [dB]	C95% [dB]
75 MHz	2.35 (0.72)	52	66
150 MHz	3.25 (0.99)	62	74
225 MHz	3.70 (1.13)	72	82
450 MHz	5.00 (1.53)	79	88
900 MHz	7.70 (2.36)	60	63
1800 MHz	12.25 (3.76)	60	70
1900 MHz	12.70 (3.90)	60	70
2200 MHz	14.80 (4.54)	61	70
2400 MHz	16.50 (5.07)	60	68

• Resonant Frequencies	MHz	547, 1641, 2734
• Clamp Spacing Recommended / Maximum	m (ft)	0.5 (1.64) / 1.20 (3.90)
• Distance to Wall Recommended / Minimum	mm (in)	80 - 180 (3.15 - 7.00) / 50 (1.96)

[1] Must be specified in case of order - standard PE jacket available on request.
[2] Measured in tunnel according to **IEC 61196-4 - Ground Level Method**.
Distance = 2m. C50 & (C95) are the average coupling losses with 50% (95%) probability calculated in accordance with the standard.

The above stated values are nominal values and subject to manufacturing tolerances as follows: Longitudinal Loss +/-5% and Coupling Loss +/-3dB.

As with any radiating cable, the performance in building or tunnel may deviate from figures measured according to the IEC 61196-4 standard.

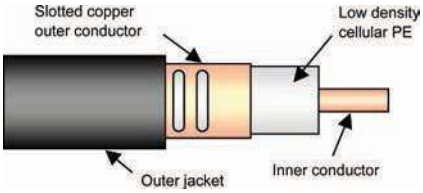
Coupling loss measurements taken in accordance with IEC 61196-4 - Free Space Method are available on request

RMC 12-A

PRODUCT DESCRIPTION

RMC 12-A-HLFR

Reference suffix [1]: -HLFR



Fire behaviour

Halogen free and flame retardant outer sheath
Low corrosive gas emission acc. to IEC 60754-2
Flame retardant acc. to IEC 60332-1 and IEC 60332-3 cat. C
Low smoke emission acc. to IEC 61034

Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length.

FEATURES and BENEFITS

- From 30 MHz to 2.5 GHz with resonant frequencies
- Robust Cable, with low bending radius
- Main Applications: AIRCRAFT - GSM, DCS-1800, UMTS, WLAN-short length
- Specially designed for use in Aircraft

TECHNICAL FEATURES

• Size		1/2”
• Previous Model Number		512RC8RMA-HLFR
• Frequency Range	MHz	30 - 2500
• Recommended for Frequency	MHz	450 and above
• Cable Type		RMC (Radiated Mode Cable)
• Jacket		HLFR (Halogen Free Low Smoke Flame Retardant)
• Slot Design		Groups of Slots at short intervals
• Impedance	∧	50 +/- 3
• Velocity Ratio	%	88
• Capacitance	pF/m	76
• Inner Conductor dc Resistance	∧/1000 m (∧/1000 ft)	1.48 (0.45)
• Outer Conductor dc Resistance	∧/1000 m (∧/1000 ft)	3 (0.91)
• Inner Conductor Material		Copper clad aluminium wire
• Dielectric Material		Cellular polyethylene
• Outer Conductor Material		Overlapping copper foil, with slot groups, bonded to the jacket

RMC 12-A

TECHNICAL FEATURES (continued)

• Diameter Inner Conductor	mm (in)	4.8 (0.19)
• Diameter Dielectric	mm (in)	12.4 (0.49)
• Diameter over Jacket	mm (in)	15.5 (0.61)
• Minimum Bending Radius, Single Bend	mm (in)	200 (7.87)
• Cable Weight	kg/m (lb/ft)	0.21 (0.14) HLFR
• Tensile Strength	daN (lb)	110 (242)
• Indication of Slot Alignment		embossed line 180° opposite
• Storage Temperature	°C (°F)	-70 to +85 (-94 to +185)
• Installation Temperature	°C (°F)	-25 to +60 (-13 to +140)
• Operation Temperature	°C (°F)	-40 to +85 (-40 to +185)
• Longitudinal Loss and Coupling Loss [2]		

Frequency	Longitudinal Loss	Coupling Loss	
	dB/100 m (dB/100 ft)	C50% [dB]	C95% [dB]
75 MHz	3.59 (1.09)	61	65
150 MHz	4.26 (1.30)	67	78
225 MHz	4.67 (1.42)	63	67
450 MHz	5.85 (1.78)	62	67
900 MHz	9.52 (2.90)	59	66
1800 MHz	20.8 (6.34)	52	59
1900 MHz	22.7 (6.92)	52	59
2200 MHz	30.4 (9.27)	52	63
2400 MHz	37.8 (11.52)	51	62

• Resonant Frequencies	MHz	184, 552, 920 ±5, 1288, 1656, 2024, 2392
• Clamp Spacing Recommended / Maximum	m (ft)	0.5 (1.64) / 1.20 (3.90)
• Distance to Wall Recommended / Minimum	mm (in)	80 - 180 (3.15 - 7.00) / 50 (1.96)

[1] Must be specified in case of order - standard PE jacket available on request.
[2] Measured in tunnel according to **IEC 61196-4 - Ground Level Method**.
Distance = 2m. C50 & (C95) are the average coupling losses with 50% (95%) probability calculated in accordance with the standard.

The above stated values are nominal values and subject to manufacturing tolerances as follows: Longitudinal Loss +/-5% and Coupling Loss +/-3dB.

As with any radiating cable, the performance in building or tunnel may deviate from figures measured according to the IEC 61196-4 standard.

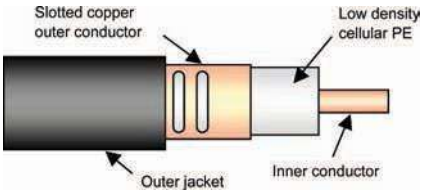
Coupling loss measurements taken in accordance with IEC 61196-4 - Free Space Method are available on request

RMC 12-T

PRODUCT DESCRIPTION

RMC 12-T-HLFR

Reference suffix [1]: -HLFR



Fire behaviour

Halogen free and flame retardant outer sheath, Low corrosive gas emission acc. to IEC 60754-2
Flame retardant acc. to IEC 60332-1 and IEC 60332-3 cat. C, Low smoke emission acc. to IEC 61034

Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length.

FEATURES and BENEFITS

- From 30 MHz to 1 GHz with resonant frequencies
- Robust Cable, with low bending radius
- Main Applications: Tunnel - FM, TETRA

TECHNICAL FEATURES

• Size		1/2”
• Previous Model Number		512RC8RMT-HLFR
• Frequency Range	MHz	30 - 1000
• Recommended for Frequency	MHz	450
• Cable Type		RMC (Radiated Mode Cable)
• Jacket		HLFR (Halogen Free Low Smoke Flame Retardant)
• Slot Design		Groups of Slots at short intervals
• Impedance	∧	50 +/- 3
• Velocity Ratio	%	88
• Capacitance	pF/m	76
• Inner Conductor dc Resistance	∧/1000 m (∧/1000 ft)	1.48 (0.45) HLFR
• Outer Conductor dc Resistance	∧/1000 m (∧/1000 ft)	2.80 (0.85)
• Inner Conductor Material		Copper clad aluminium (HLFR)
• Dielectric Material		Cellular polyethylene
• Outer Conductor Material		Overlapping copper foil, with slot groups, bonded to the jacket

RMC 12-T

TECHNICAL FEATURES (continued)

• Diameter Inner Conductor	mm (in)	4.8 (0.19)
• Diameter Dielectric	mm (in)	12.4 (0.49)
• Diameter over Jacket	mm (in)	15.5 (0.61)
• Minimum Bending Radius, Single Bend	mm (in)	200 (7.87)
• Cable Weight	kg/m (lb/ft)	0.22 (0.15) HLFR
• Tensile Strength	daN (lb)	110 (243)
• Indication of Slot Alignment		embossed line 180° opposite
• Storage Temperature	°C (°F)	-70 to +85 (-94 to +185)
• Installation Temperature	°C (°F)	-25 to +60 (-13 to +140)
• Operation Temperature	°C (°F)	-40 to +85 (-40 to +185)
• Longitudinal Loss and Coupling Loss [2]		

Frequency	Longitudinal Loss	Coupling Loss	
	dB/100 m (dB/100 ft)	C50% [dB]	C95% [dB]
75 MHz	2.2 (0.67)	55	67
150 MHz	3.0 (0.91)	59	70
225 MHz	3.8 (1.16)	56	63
400 MHz	5.4 (1.65)	55	57
450 MHz	5.9 (1.80)	53	56
900 MHz	10.6 (3.23)	63	74
1800 MHz	-	-	-
1900 MHz	-	-	-
2200 MHz	-	-	-
2400 MHz	-	-	-

• Resonant Frequencies	MHz	37,111,185,259,334,408,482,556,630,704,778,853,927,1001
• Clamp Spacing Recommended / Maximum	m (ft)	0.5 (1.64) / 1.20 (3.90)
• Distance to Wall Recommended / Minimum	mm (in)	80 - 180 (3.15 - 7.00) / 50 (1.96)

[1] Must be specified in case of order - standard PE jacket available on request.
[2] Measured in tunnel according to **IEC 61196-4 - Ground Level Method**.
Distance = 2m. C50 & (C95) are the average coupling losses with 50% (95%) probability calculated in accordance with the standard. All Values are going to be confirmed by independent Test Centre soonest.

The above stated values are nominal values and subject to manufacturing tolerances as follows: Longitudinal Loss +/-5% and Coupling Loss +/-3dB.

As with any radiating cable, the performance in building or tunnel may deviate from figures measured according to the IEC 61196-4 standard.

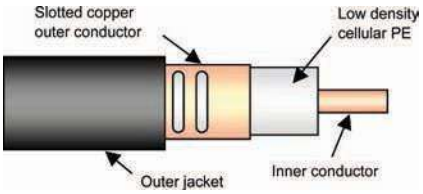
Coupling loss measurements taken in accordance with IEC 61196-4 - Free Space Method are available on request

RMC 12-CL

PRODUCT DESCRIPTION

RMC 12-CL-HLFR

Reference suffix [1]: -HLFR



Fire behaviour

Halogen free and flame retardant outer sheath
Low corrosive gas emission acc. to IEC 60754-2
Flame retardant acc. to IEC 60332-1 and IEC 60332-3 cat. C
Low smoke emission acc. to IEC 61034

Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length.

FEATURES and BENEFITS

- Low Fading at short Aerial to Cable distance
- Robust Cable
- Main Applications: WLAN controlled Transportation Systems
- Optimised for WLAN applications in the 2.40 - 2.485 GHz band

TECHNICAL FEATURES

• Size		1/2”
• Previous Model Number		N.A.
• Frequency Range	MHz	75 - 2900
• Recommended for Frequency	MHz	2400 - 2485
• Cable Type		RMC (Radiated Mode Cable)
• Jacket		HLFR (Halogen Free Low Smoke Flame Retardant)
• Slot Design		Groups of Slots at short intervals
• Impedance	Ω	50 +/- 3
• Velocity Ratio	%	88
• Capacitance	pF/m	76
• Inner Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	1.48 (0.45)
• Outer Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	2.8 (0.85)
• Inner Conductor Material		Copper clad aluminium wire
• Dielectric Material		Cellular polyethylene
• Outer Conductor Material		Overlapping copper foil, with slot groups, bonded to the jacket

RMC 12-CL

TECHNICAL FEATURES (continued)

• Diameter Inner Conductor	mm (in)	4.8 (0.19)
• Diameter Dielectric	mm (in)	12.4 (0.49)
• Diameter over Jacket	mm (in)	15.5 (0.61)
• Minimum Bending Radius, Single Bend	mm (in)	200 (7.87)
• Cable Weight	kg/m (lb/ft)	0.23 (0.16) HLFR
• Tensile Strength	daN (lb)	110 (243)
• Indication of Slot Alignment		embossed line 180° opposite
• Storage Temperature	°C (°F)	-70 to +85 (-94 to +185)
• Installation Temperature	°C (°F)	-25 to +60 (-13 to +140)
• Operation Temperature	°C (°F)	-40 to +85 (-40 to +185)
• Longitudinal Loss and Coupling Loss [2]		

Frequency	Longitudinal Loss	Coupling Loss	
	dB/100 m (dB/100 ft)	C50% [dB]	C95% [dB]
75 MHz	1.87 (0.57)	54	66
150 MHz	2.75 (0.83)	64	75
225 MHz	3.42 (1.04)	62	66
450 MHz	4.96 (1.51)	65	69
900 MHz	7.32 (2.22)	63	73
1800 MHz	11.94 (3.63)	59	67
1900 MHz	12.45 (3.78)	59	67
2200 MHz	13.90 (4.22)	58	67
2400 MHz	14.71 (4.47)	54	60

• Resonant Frequencies	MHz	156, 469, 781, 1094, 1406, 1718, 2031, 2344, 2656
• Clamp Spacing Recommended / Maximum	m (ft)	0.5 (1.64) / 1.20 (3.90)
• Distance to Wall Recommended / Minimum	mm (in)	80 - 180 (3.15 - 7.00) / 50 (1.96)

[1] Must be specified in case of order - standard PE jacket available on request.
[2] Measured in tunnel according to IEC 61196-4 - Ground Level Method.
Distance = 2m. C50 & (C95) are the average coupling losses with 50% (95%) probability calculated in accordance with the standard.

The above stated values are nominal values and subject to manufacturing tolerances as follows: Longitudinal Loss +/-5% and Coupling Loss +/-3dB.

As with any radiating cable, the performance in building or tunnel may deviate from figures measured according to the IEC 61196-4 standard.

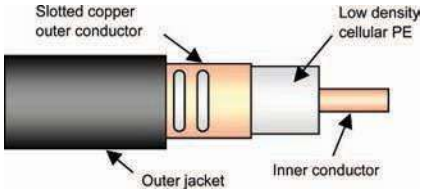
Coupling loss measurements taken in accordance with IEC 61196-4 - Free Space Method are available on request

RMC 12-CH

PRODUCT DESCRIPTION

RMC 12-CH-HLFR

Reference suffix [1]: -HLFR



Fire behaviour

Halogen free and flame retardant outer sheath
Low corrosive gas emission acc. to IEC 60754-2
Flame retardant acc. to IEC 60332-1 and IEC 60332-3 cat. C
Low smoke emission acc. to IEC 61034

Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length.

FEATURES and BENEFITS

- Low Fading at short Aerial to Cable distance
- Robust Cable
- Main Applications: WLAN controlled Transportation Systems
- Optimised for WLAN applications in the 5.15 - 5.35 and 5.47 - 5.85 GHz bands

TECHNICAL FEATURES

• Size		1/2”
• Previous Model Number		N.A.
• Frequency Range	MHz	5000 - 6000
• Recommended for Frequency	MHz	5150 - 5350 and 5470 - 5850
• Cable Type		RMC (Radiated Mode Cable)
• Jacket		HLFR (Halogen Free Low Smoke Flame Retardant)
• Slot Design		Groups of Slots at short intervals
• Impedance	Ω	50 +/- 3
• Velocity Ratio	%	88
• Capacitance	pF/m	76
• Inner Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	1.48 (0.45)
• Outer Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	2.8 (0.85)
• Inner Conductor Material		Copper clad aluminium wire
• Dielectric Material		Cellular polyethylene
• Outer Conductor Material		Overlapping copper foil, with slot groups, bonded to the jacket

RMC 12-CH

TECHNICAL FEATURES (continued)

• Diameter Inner Conductor	mm (in)	4.8 (0.19)
• Diameter Dielectric	mm (in)	12.4 (0.49)
• Diameter over Jacket	mm (in)	15.5 (0.61)
• Minimum Bending Radius, Single Bend	mm (in)	200 (7.87)
• Cable Weight	kg/m (lb/ft)	0.23 (0.16) HLFR
• Tensile Strength	daN (lb)	110 (243)
• Indication of Slot Alignment		embossed line 180° opposite
• Storage Temperature	°C (°F)	-70 to +85 (-94 to +185)
• Installation Temperature	°C (°F)	-25 to +60 (-13 to +140)
• Operation Temperature	°C (°F)	-40 to +85 (-40 to +185)
• Longitudinal Loss and Coupling Loss [2]		

Frequency	Longitudinal Loss	Coupling Loss	
	dB/100 m (dB/100 ft)	C50% [dB]	C95% [dB]
5200 MHz	19.1 (5,82)	62	71
5500 MHz	20.0 (6,10)	60	61
5800 MHz	21.5 (6,55)	55	59

• Resonant Frequencies	MHz	415, 1246, 2077, 2907, 3738, 4568, 5399, 6230
• Clamp Spacing Recommended / Maximum	m (ft)	0.5 (1.64) / 1.20 (3.90)
• Distance to Wall Recommended / Minimum	mm (in)	80 - 180 (3.15 - 7.00) / 50 (1.96)

[1] Must be specified in case of order - standard PE jacket available on request.
[2] Measured in tunnel according to IEC 61196-4 - Ground Level Method.
Distance = 2m. C50 & (C95) are the average coupling losses with 50% (95%) probability calculated in accordance with the standard.

The above stated values are nominal values and subject to manufacturing tolerances as follows: Longitudinal Loss +/-5% and Coupling Loss +/-3dB.

As with any radiating cable, the performance in building or tunnel may deviate from figures measured according to the IEC 61196-4 standard.

Coupling loss measurements taken in accordance with IEC 61196-4 - Free Space Method are available on request

4

Accessories

Radiating Cables
Accessories

Connectors for LSC/RMC 1/2", 5/8", 7/8" radiating cables

PRODUCT DESCRIPTION

The connectors are designed according the standard interfaces as N or DIN 7-16. Contact components are silver plated to minimize insertion loss; mechanical parts are nickel plated for heavy-duty handling and best corrosion resistance. The special quick trimming tool makes installation very easy and cost effective in time.

FEATURES and BENEFITS

- High contact force and Cu-Be inner contacts
- Silver plated
- Watertight (IP67/IP68)
- Corrosion resistant
- Quick trimming tool
- Installation "fit on and tighten it"

TECHNICAL FEATURES

Connector type	N-male	N-female	7-16 male	7-16 female
Electrical specifications				
• Nominal impedance [Ω]		50		
• Reflection coefficient @ 3 GHz [dB]		≥ 35		
• Insulation resistance [GΩ]	≥ 5		≥ 10	
• Test voltage (at sea level) [kV rms, 50Hz]	2.5		4	
• Working voltage (at sea level) [kV rms,50Hz]	1		2.7	
• Contact resistance (outer contact) [mΩ]		≤ 2		
• Contact resistance (inner contact) [mΩ]		≤ 2		
Mechanical specifications				
• Torque of coupling mechanism [Nm]	8		30	
• Tensile strength of coupling mechanism [N]	400		1000	
• Cable retention [N]	> 500		> 1000	
• Mechanical endurance (Nr of couplings)		≥ 500		

Connectors for LSC/RMC 1/2", 5/8", 7/8" radiating cables

TECHNICAL FEATURES (continued)

Connector type	N-male	N-female	7-16 male	7-16 female
Environmental specifications				
• Temperature range	-40 °C to +85 °C (-40 °F to +185 °F)			
• Degree of protection	IP67/IP68 (mated connectors)			
Materials				
• External sparts	Passivated silver plated or electroless nickel plated brass			
• Outer contact	Passivated silver plated brass			
• Inner contact	Passivated silver plated Cu-Be and brass			
• Dielectric	PTFE and (or) TPX			
• Gaskets	High quality silicone & nitrile			
Tool codes				
• 1/2"	SPTC50R12			
• 5/8"	SPTC50R58			
• 7/8"	SPTC50R78			
• 1-1/4"	SPTC50R114			
• 1-5/8"	SPTC50R158			
Connectors codes				
• 1/2"	NM50R12	NF50R12	-	716FR12
• 5/8"	NM50R58	NF50R58	-	-
• 7/8"	NM50R78	NF50R78	-	716FR78

Cable Preparation Tools

PRODUCT DESCRIPTION

The use of the appropriate EUPEN stripping tools enables EUPEN connectors to be fitted with a consistently high standard.

Cable type	Connector reference	Connector type	Connector part number	Tool type	Tool part number	Picture
1/2"	NM50R12	N male	0087	SPTC50R12	0088	
CMC12	NF50R12	N female	B712			
LSC12	716FR12	7-16 female	4075			
RMC12						
5/8"	NM50R58	N male	7087	SPTC50R58	0875	
LSC58	716FR58	7-16 female	7090			
RMC58						
7/8"	NM50R78	N male	J990	SPTC50R78	9323	
LSC78	NF50R78	N female	J991			
RMC78	716FR78	7-16 male	J989			
1-1/4"	NM50R114MPA	N male	I508	SPTC50R114	0972	
RMC114	NF50R114MPA	N female	I511			
"A" Series	716MR114MPA	7-16 male	I501			
	716FR114MPA	7-16 female	I502			
1-5/8"	NM50R158MPA	N male	J939	SPTC50R158	0876	
RMC158	NF50R158MPA	N female	J938			
"A" Series	716FR158MPA	7-16 female	J937			

FEATURES and BENEFITS

- Fast and reliable preparation of cables
- One-step operation
- Removable handle allowing cutting head to be fitted on a power drill
- Long-lasting cutting blades

Grounding Kits

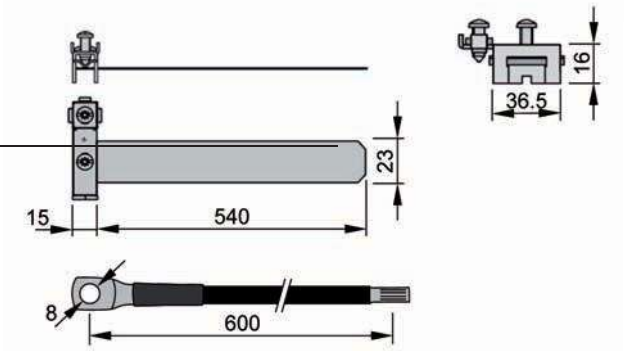
For connectors

PRODUCT DESCRIPTION

• All-purpose earthing clip with 16 mm² grounding conductor for all connector sizes from 1/2" to 1-5/8".

Grounding conductor

Strip earthing clip



FEATURES and BENEFITS

• Fast, easy and reliable installation
• Corrosion resistant
• Multiple use for connector sizes from 1/2" to 1-5/8"

TECHNICAL FEATURES

Strip earthing clip		
• Tightening block and screws material		Nickel-plated brass
• Tightening strap material		Stainless steel
• Clamping diameter range	mm	10 ... 150
• Connection options	mm²	max. 2 conductors 2.5 - 25
Grounding conductor		
• Insulation		PVC (free of lead)
• Color		black
• Cross section	mm²	16 (copper)
• Length	mm	600
• Cable lug	mm	16 x 8
• Screw: Stainless steel, hex socket cap screw	mm	M6 x 20

PRODUCT OVERVIEW

Product reference	Contents
• CGC 12-158	• 1 strip earthing clip
	• 1 earth lead (60 cm) with attached lug + M6 + washer + nut

Additional Weatherproofing Solutions

PRODUCT DESCRIPTION

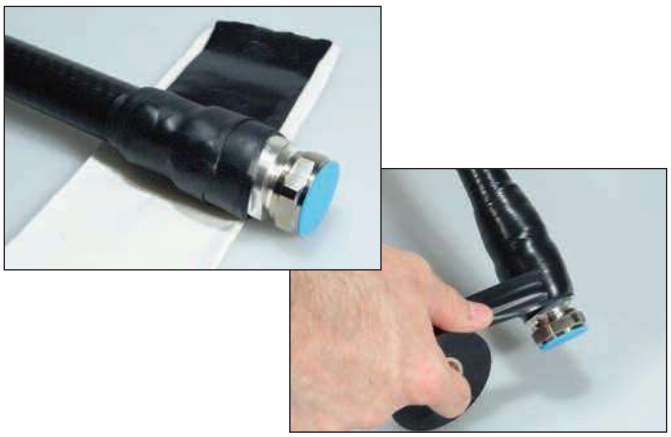
To provide additional Weatherproofing to Connector Joints of RF Cables

WEATHERPROOFING TAPE KIT

If additional weatherproofing is required, it can be obtained with appropriate adhesive tapes wrapped around the cable/connector interface.

Eupen supplies a weatherproofing tape kit for additional protection of connector, cable and jumper interfaces. The tape kit includes selffusing butyl tape (65 mm x 2 m) and black PVC tape (25 mm x 10 m).

The following table indicates the quantity of connectors or splices which can be protected by tape kit:



TECHNICAL FEATURES

Cable/Connector	1/4”	1/2”	7/8”	1-1/4”	1-5/8”
• Single connector	10	9	7	5	3
• Splice	6	5	4	3	2

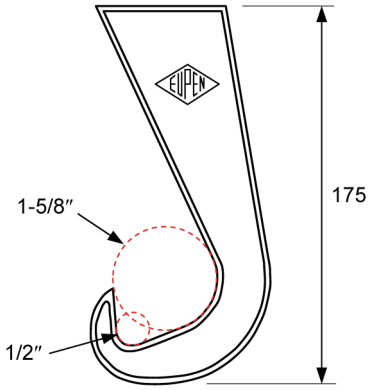
Hook Hanger

PRODUCT DESCRIPTION

The Hook Hanger (Durethan Hanger HLFR) is used for installing Radiating Cables in galleries or tunnels. The optimal distance to the wall is maintained and the hanger is universally for all cable sizes (1/2" to 1-5/8").

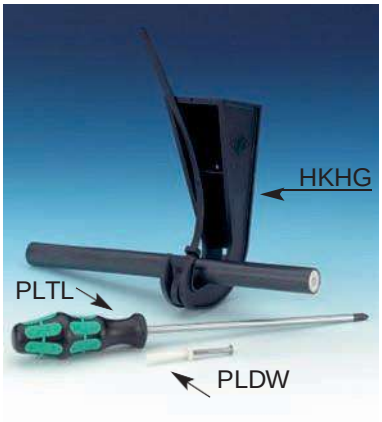
FEATURES and BENEFITS

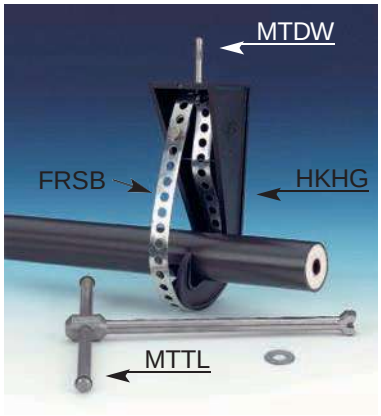
- **Universally for all cable sizes**
- **No spacer required**
- **Suitable for ceiling or wall mount**



TECHNICAL DATA

• Material		Durethan® (PA 6)
•Burning behavior		according to UL 94 V-0, halogen free
• Color		black (RAL 9005)
• Overall dimensions	mm	175 x 85
• Cable diameter	mm	15 to 50
• Maximum load	daN	
- Ceiling mount		100
- Wall mount		20
• Weight	kg	0.115





PRODUCT OVERVIEUW

Product reference	**Contents**
• HKHG	Hook hanger
	Plastic cable tie
	Metal washer (no screw, no dowel)
Other parts for HKHG*	**Contents**
• PLDW	Plastic dowel (Ø6 mm) with HPS hammer screw
• MTDW	Metallic HSA stud anchor (M6, V4A)
• FRSB	Fire resistant stainless steel belt (V4A)
• PLTL	Installation tool for HKHG with PLDW
• MTTL	Installation tool for HKHG with MTDW

* must be ordered separately

Clic Clamp

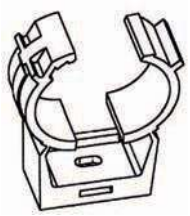
PRODUCT DESCRIPTION

Clic clamps are used for installing radiating cables in galleries and tunnels with or without spacers. The installation is very simple and quick.

CC78

FEATURES and BENEFITS

- Lock with 1 or 2 locking positions
- Automatic locking by pushing cable into clamp, reusable
- Unlocks with screwdriver
- Pivoted hangers allow installation down to -25°C
- Slot design allows installation correction of up to 4.5 mm
- Slot for insertion of flange for rod and stud mounting



TECHNICAL FEATURES

Clic type		Clic Clamp
• Material		Pure Polyamide, halogen free, fire class UL94HB, UV-resistant
• Environmental		
Operating Temperature	°C	-40 to +110
Installation Temperature	°C	-25 to +60
• Color		standard: black, grey (RAL 7035) by request

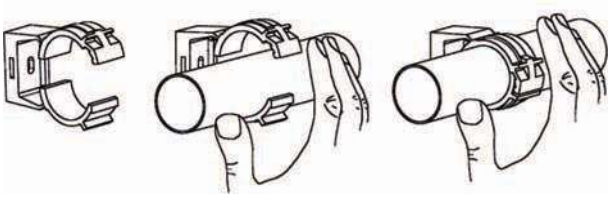
Clic type		for 1/2"	for 5/8"	for 7/8"	for 1-1/4"	for 1-5/8"
• Clamping range	mm	14.3 - 16.8	19.5 - 22.0	24.6 - 27.8	35.5 - 39.5	46.5 - 50.5
• Max. load	N	600	700	850	1100	1300
• Part reference		CC12	CC58	CC78	CC114	CC158

Clic Clamp

SPACERS and ACCESSORIES

Reference	Description	Use with	Picture
Spacers			
• RB80	Round base spacer 80 mm	WS125, B6/90-SS	
• SP45	Rectangular base spacer 45 mm	WS80	
• SP85	Rectangular base spacer 85 mm	WS125	
• SSP6/75/8	Stainless steel spacer 75 mm	HPM8, FN6	
Flat nuts			
• FN6	Flat nut M6, stainless steel	All clic clamps	
Wood screws, stainless steel			
• WS40	Wood screw 4.5 x 40 Clic Clamp without spacer		
• WS80	Wood screw 4.5 x 80	SP45	
• WS125	Wood screw 4.5 x 125	SP85 or RB80	
Bolt with metric thread, stainless steel			
• B6/90-SS	M6 x 90, hex socket head	RB80, HPM6	
Plugs			
• P6	Nylon plug for wood screw diameter 4.5 mm	Wood screws	
• HPM6-SS	Stainless steel plug M6	Bolt B6/90-SS	
• HPM8-SS	Stainless steel plug M8	Spacer SSP6/75/8	
• HSP6/84	Stainless steel hammer set plug	FN6, RB80	
• HSP6/90	Stainless steel hammer set plug	FN6, SP85	
• Drill HSP	Drill for installation of the hammer set plugs	HSP6/90	
• Tool HSP	Setting tool of the hammer set plugs	HSP6/90	

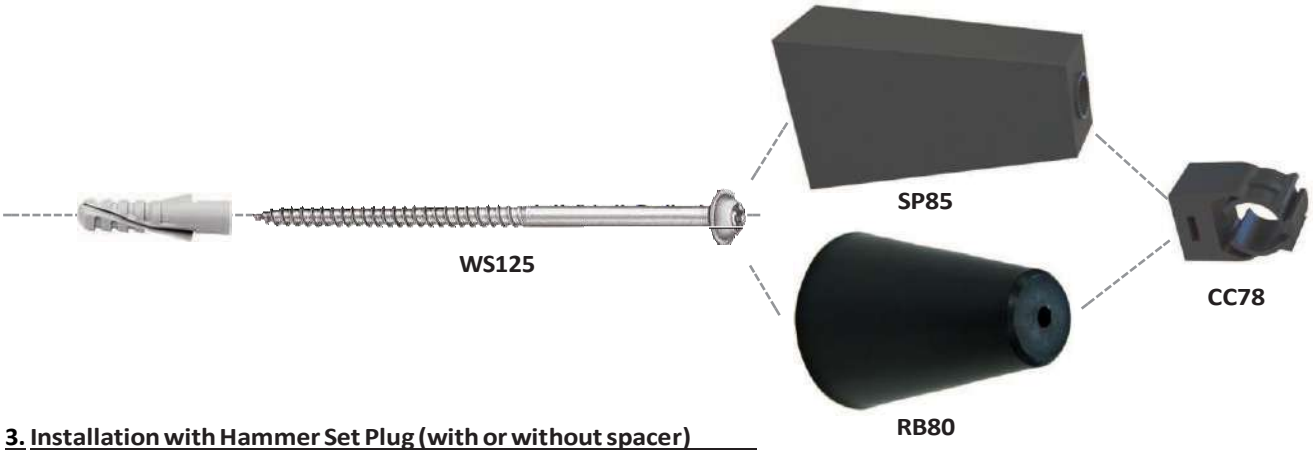
Clic Clamp - Installation examples



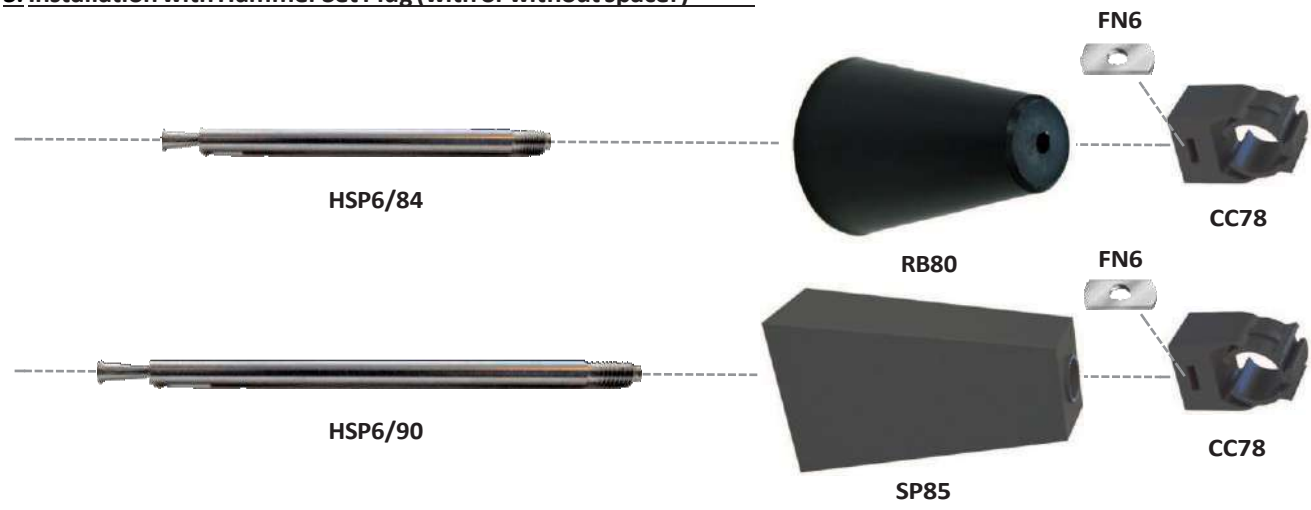
Single-hand installation – a matter of course with CLIC, place the cable, apply slight pressure and the clamp locks itself with a sharp clic.

1. Installation with wood screw and Nylon plug

2. Installation with Spacers, buttonhead wood screw pressed-on washer and Nylon plug



3. Installation with Hammer Set Plug (with or without spacer)



4. Installation with M8/M6 stainless steel spacer, FN6 and flush metal anchor

Stainless Steel Clamping Solutions *(Recomended every 10 m)*

PRODUCT DESCRIPTION

Stainless Stell Cable Clamps are used to provide Fire Resistant installations of Radiating Cables in galleries or tunnels with or without spacers. The installation is very simple and quick. To limit the interference that could be caused by Metal Objects on the RF Field generated by a Radiating Cable, only every 10th fixing should be metallic.

Stainless Steel Cable Clamp

Cable type	Clamp type	Use with
• 1/2”	DN 20	Hammer set plug
• 5/8”	DN 25	HSP6/90
• 7/8”	DN 32	or
• 1-1/4”	DN 40	Stainless Steel spacer
• 1-5/8”	DN 50	SSP6/75/8

TECHNICAL FEATURES

Product Reference	Clamp Type	Ø min. mm	Max. Load (N)
• MCFR12	DN 20	19	450
• MCFR58	DN 25	24	380
• MCFR78	DN 32	31	300
• MCFR114	DN 40	39	230
• MCFR158	DN 50	48	180

Installation with M8/M6 spacer and stainless steel clamp

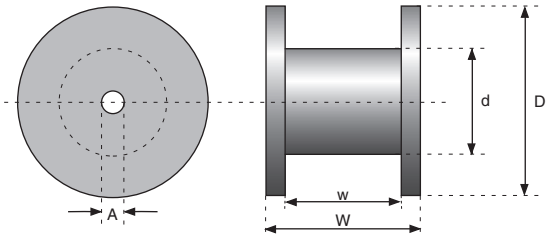
MCFR114

Cable Packing Information

The coaxial cable will be supplied on wooden drums made of planed wooden boards or plywood. In order to protect the cable during transportation and storage, the drums will be battened with wooden boards nailed on the flanges. The drums are provided with a label containing cable information as cable type, cable length and production batch. The drums can be impregnated on request.

The standard drum sizes used for the different cable types are shown in the table below.

To calculate the total weight, add the approximate cable weight to the drum weight.



Cable type		Drum type	Cable length m	(ft)	Outer dim.* D cm	(in)	Drum dim. d cm	(in)
RMC, LSC, CMC	1/2"	HE 10	500	(1640)	100	(39.37)	46	(18.11)
		HE 12	1000	(3280)	120	(47.24)	40	(15.74)
		HE 12	1500	(4921)	120	(47.24)	40	(15.74)
RMC	5/8"	HE 14S	600	(1968)	140	(55.11)	80	(31.49)
		HE 14B	1100	(3600)	140	(55.11)	80	(31.49)
		HF 17S	1800	(5900)	170	(66.92)	90	(35.43)
RMC, LSC	7/8"	HE 14	500	(1640)	140	(55.11)	80	(31.49)
		HF 17B	1000	(3280)	170	(66.92)	90	(35.43)
		HF 20	1500	(4921)	200	(78.74)	90	(35.43)
RMC, LSC	1-1/4"	HF 17S	500	(1640)	170	(66.92)	90	(35.43)
		HF 20	1000	(3280)	200	(78.74)	90	(35.43)
RMC, LSC	1-5/8"	HF 17B	350	(1148)	170	(66.92)	90	(35.43)
		HF 20	600	(1968)	200	(78.74)	90	(35.43)
F-RMC, F-LSC	7/8"	HF 17B	500	(1640)	170	(66.92)	90	(35.43)
		HF 20	1000	(3280)	200	(78.74)	90	(35.43)
F-RMC, F-LSC	1-1/4"	HF 17B	500	(1640)	170	(66.92)	90	(35.43)
		HF 20	1000	(3280)	200	(78.74)	90	(35.43)
F-RMC	1-5/8"	HF 20	600	(1968)	200	(78.74)	90	(35.43)

* battened + 5 cm

** Cables with mica tape: see cable data sheet

*** Depending on the humidity of the wood, drum weights can vary greatly !