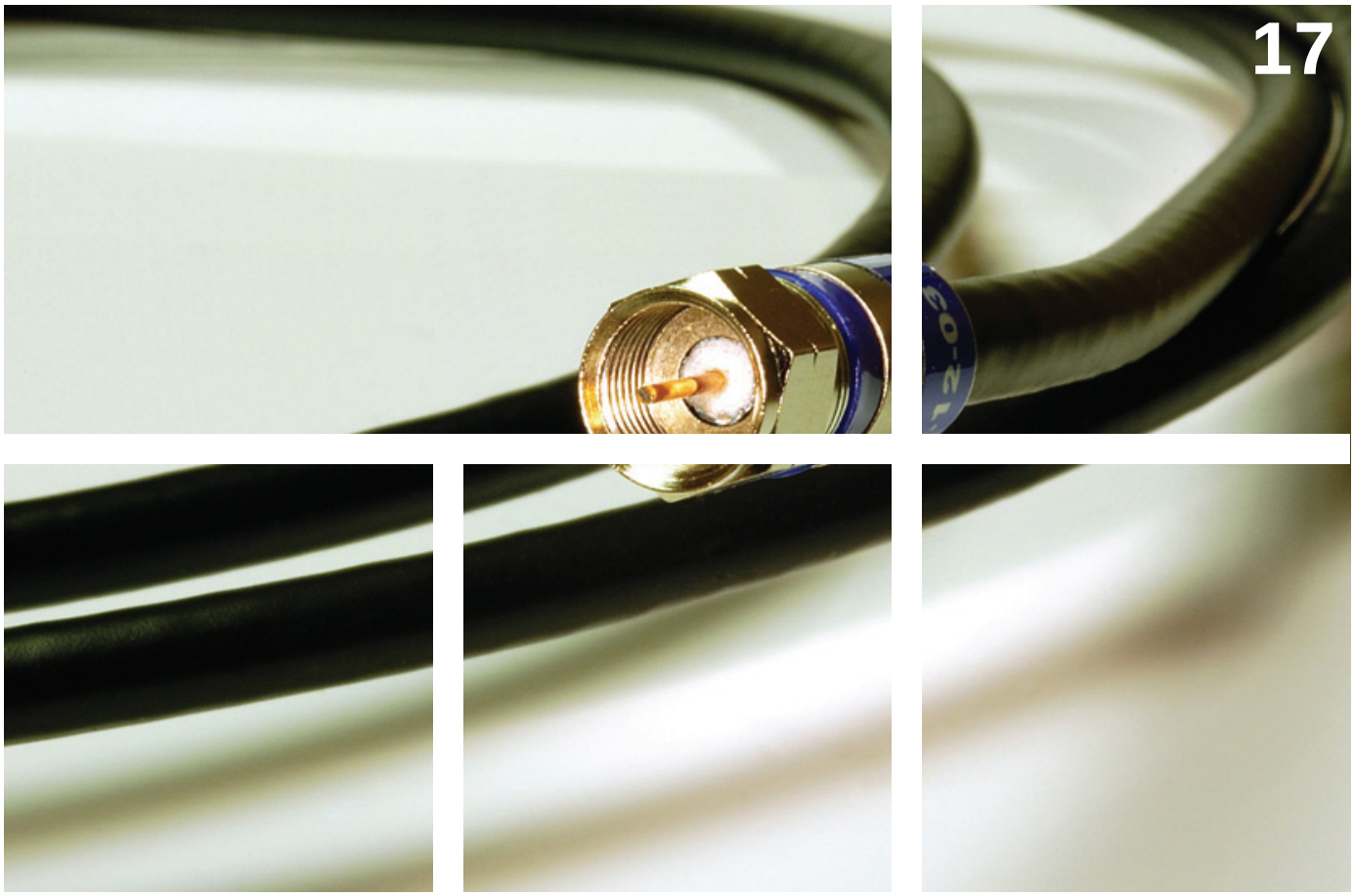
Habia Cable



Speedfoam

Low loss, performance coaxials

Speedfoam

Introduction

The Habia Cable Group is a world leader in the manufacture of coaxial cables. Our three cable production sites in Sweden, Germany and China offer a wide range of products, from Fluoropolymer and PE based RG Style cables through our massively successful Flexiform conformable cable, to our high performance Multibend cables.

The Speedfoam coaxial cable range from Habia is engineered to be low-loss and high performance yet flexible and tough. These cables fulfil all but the most demanding RF interconnect specifications; combining a low-loss dielectric with exceptional levels of screening effectiveness, this range is available in a number of options.

Speedfoam

A halogen free, low loss coaxial cable using a precision foamed polyolefin dielectric to provide low-loss properties in a flexible, light-weight package. A highly effective foil/braid combination gives Speedfoam excellent screening effectiveness for use in a wide range of applications such as vehicle based interconnection, land mobile radio systems, wireless LAN (local area network) and low end radar applications.

Speedfoam F

A flexible coaxial cable which offers all the low-loss, low smoke, zero halogen (LSZH) properties of the standard Speedfoam with the added benefits of a stranded centre conductor and soft and flexible outer jacket for improved flexibility and flex-life. Ease of installation in confined spaces such as cabinets is improved, as is the cable's ability to withstand the constant vibration and movement common to many vehicle based applications.

Speedfoam HT

A high temperature, low loss and high-power version of Speedfoam. Using our unique low density PTFE dielectric, Speedfoam HT offers much higher temperature and power ratings are ideal for high-power RF systems. The high performance nature of the Speedfoam HT product makes it ideal for military, land forces use and as such Speedfoam 240 HT and Speedfoam 400 HT have been tested and approved for use by the UK Ministry of Defence.

Speedfoam UL

Designed to fulfil the demands of UL Style 1375. Speedfoam UL offers the excellent physical and electrical benefits of the standard Speedfoam, including low smoke, zero halogen (LSZH) and flame retardancy. Speedfoam UL is ideal for general low-loss RF use in applications such as mobile antenna cable runs and jumper assemblies; where a 3rd party approval is required.

Speedfoam XL

A ruggedized, low loss coaxial which uses radiation cross-linked materials to enhance the flex-life, temperature range and mechanical properties of the standard Speedfoam product. Especially ideal for military applications where the cable will be exposed to environmental extremes and rough handling.

One of our strengths is in tailoring our products to meet specific customer needs. For more information, please contact your local sales office or visit www.habia.com.

Ref: SFoam_13 Created: CJV Approved: AE Date: 2013-09-12

Speedfoam comparison of types

Additives...

Speedfoam 500 offers the lowest attenuation of any Habia Cable coaxial.

In order to offer the high temperature concept, Speedfoam HT utilises a very different construction to the rest of the Speedfoam range.

Variations

In addition to the standard versions of our Speedfoam product offered in this brochure, Habia Cable is also able to offer customised variants of Speedfoam. Examples include, but are not limited to:

- Additional impedance values – by varying the conductor type and size, we can offer product in a range of impedances to suit your specific need.
- Non standard jacket colours – for easy identification of different polarities for example.
- Alternative jacket materials – polyurethane for example to facilitate overmolding.
- Multicore variants – two or more Speedfoam coaxials can be cabled together into a multicore cable with an overall shield and/or sheath.
- Water swellable tape can be added to make waterblocked cables.

Construction	Electrical	Speedfoam range				
dielectric Ø	impedance Ω	Speedfoam	Speedfoam F	Speedfoam HT	Speedfoam UL	Speedfoam XL
2,80	50	Speedfoam 195 OD = 4,50mm	-	-	Speedfoam 195 UL OD = 4,50mm	Speedfoam 195 XL OD = 4,50mm
2,95	50	Speedfoam 200 OD = 4,95mm	-	-	Speedfoam 200 UL OD = 4,95mm	Speedfoam 200 XL OD = 4,95mm
3,80	50	Speedfoam 240 OD = 6,10mm	-	Speedfoam 240 HT OD = 5,30mm	Speedfoam 240 UL OD = 6,10mm	Speedfoam 240 XL OD = 6,10mm
4,80	50	Speedfoam 300 OD = 7,60mm	-	-	Speedfoam 300 UL OD = 7,60mm	Speedfoam 300 XL OD = 7,60mm
7,20	50	Speedfoam 400 OD = 10,30mm	Speedfoam 400 F OD = 10,30mm	Speedfoam 400 HT OD = 9,00mm	Speedfoam 400 UL OD = 10,30mm	Speedfoam 400 XL OD = 10,30mm
9,40	50	Speedfoam 500 OD = 12,70mm	-	-	Speedfoam 500 UL OD = 12,70mm	Speedfoam 500 XL OD = 12,70mm

Ref: SFoam_CC_08 Created: CJV Approved: AE Date: 2013-09-12

Speedfoam LSZH, low loss coax

-40ºC/+80ºC

Low loss coax

Flame retardant	IEC 60332-1-2
Smoke generation	IEC 61034-2
Toxicity	IEC 60754-2
Frequency range	Up to 6 GHz
Screening efficiency	90dB
Velocity propagation	81%

Construction

Conductor	Plain Copper (CU) Copper Covered Aluminium (CCA)	Dielectric	Foamed HFI 90
Shield	Aluminium Foil (F), bonded to dielectric Braid of Tin Plated Copper (T)	Sheath	HFS 80 T

Identification

Dielectric	Natural
Sheath	Black
Marking	TYPE Habia Cable ORDER REFERENCE YEAR-WEEK (e.g.: Speedfoam 195 Habia Cable 37000-195-00 2012-W20)

Description	Construction						Electrical			MBR	Order reference
	conductor material	conductor Ø	dielectric Ø	shield (s) Ø	sheath (s) Ø	weight g/m	V rms V DC	imp. Ω	cap. pF/m	static dynamic	(NSN)
Speedfoam 195	CU solid	0,95	2,80	F 2,95 B 3,40	4,50	30	500 1000	50	84	45 90	37000-195-00
Speedfoam 200	CU solid	1,12	2,95	F 3,07 B 3,70	4,95	35	500 1000	50	80	50 100	37000-200-00
Speedfoam 240	CU solid	1,40	3,80	F 3,90 B 4,50	6,10	59	500 1000	50	79	60 120	37000-240-00 (6145-01-517-6451)
Speedfoam 300	CU solid	1,80	4,80	F 5,00 B 5,70	7,60	94	500 1000	50	79	75 150	37000-300-00
Speedfoam 400	CCA solid	2,74	7,20	F 7,35 B 8,10	10,30	121	500 1000	50	77	100 200	37000-400-00 (6145-99-492-9840)
Speedfoam 500	CCA solid	3,61	9,40	F 9,55 B 10,30	12,70	150	500 1000	50	79	125 250	37000-500-00

Electrical data (table)	Attenuation (dB/100m)						Power (W)					
	Frequency (MHz)						Frequency (MHz)					
	30	100	400	1000	2500	6000	30	100	400	1000	2500	6000
Speedfoam 195	7	13	25	40	63	90	913	500	250	158	85	50
Speedfoam 200	6	11	22	35	56	80	1004	550	275	174	100	60
Speedfoam 240	5	9	17	27	43	65	1461	800	400	253	150	70
Speedfoam 300	4	7	14	23	37	55	2008	1100	550	348	210	95
Speedfoam 400	3	5	9	15	23	35	3213	1760	880	557	330	150
Speedfoam 500	2	4	7	12	18	26	4254	2330	1165	737	430	200

Speedfoam LSZH, low loss coax

-40°C/+80°C

Application

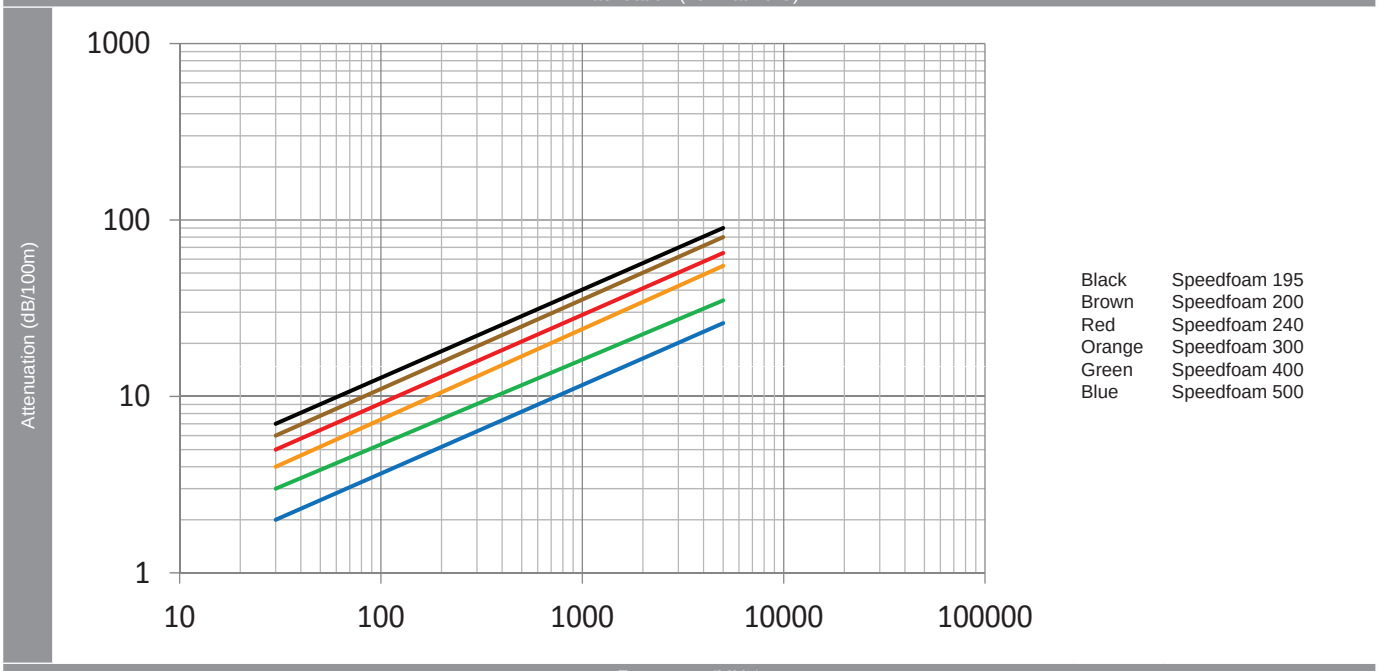
Speedfoam is a halogen free coaxial cable using a precision foamed polyolefin dielectric to offer low-loss properties in a flexible, light-weight package. A highly effective foil/braid combination provides excellent screening effectiveness which has found use in a range of applications from vehicle interconnection and land mobile radio systems to wireless LAN (local area network) and low end radar applications.

Variants

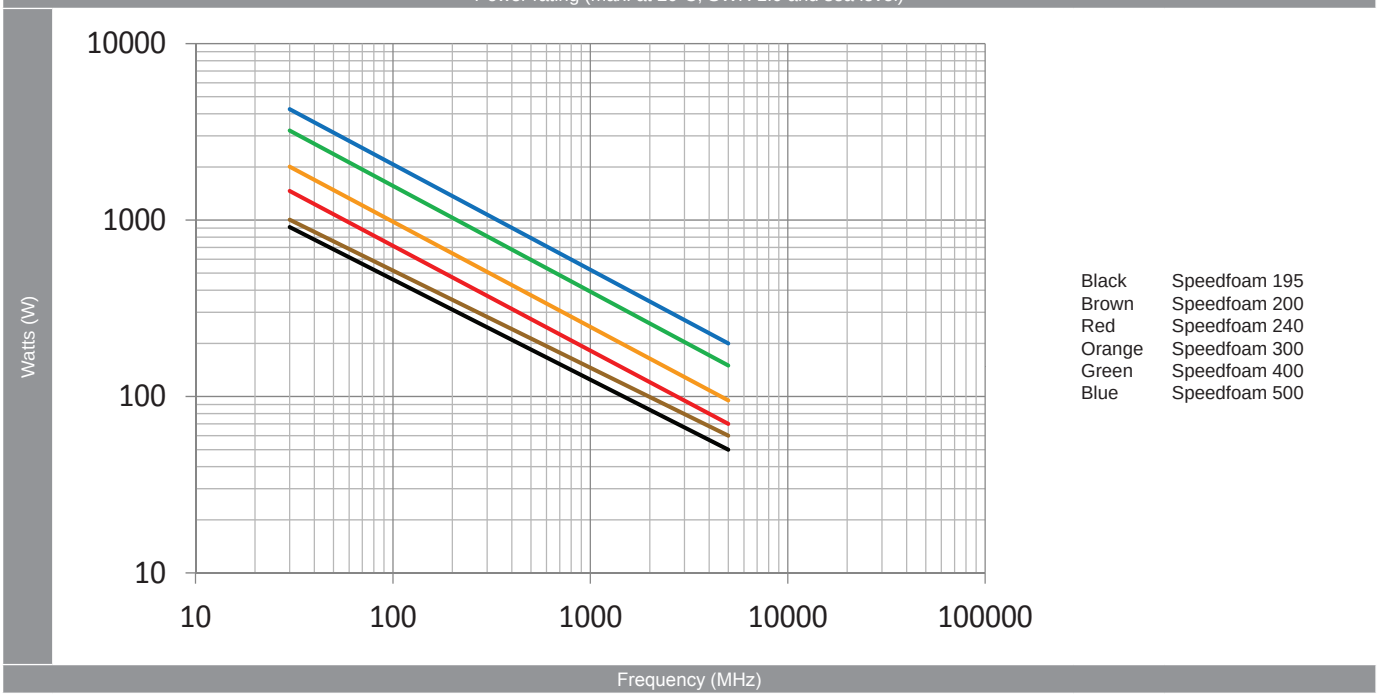
In addition to the standard Speedfoam, you may also consider the ruggedised Speedfoam XL product for increased temperature stability whilst maintaining the halogen free option or Speedfoam UL if third-party recognition is required.
A flexible variant, Speedfoam F offers the benefits of stranded conductor and a more flexible sheath.
For high temperature applications where halogen-free performance is not a requirement, Habia's Speedfoam HT range is to be recommended.

Electrical data (graph)

Attenuation (nom. at 20°C)



Power rating (max. at 20°C, SWR 1.0 and sea level)



Ref: SFoam_CC_07 Created: CJV Approved: AE Date: 2013-09-12

Speedfoam F LSZH, flexible low loss coax

-40ºC/+80ºC

Low loss coax

Flame retardant	IEC 60332-1-2
Toxicity	IEC 60754-2
Frequency range	Up to 6 GHz
Screening efficiency	90dB
Velocity propagation	81%

Construction

Conductor	Plain Copper (CU)	Dielectric	Foamed HFI 90
Shield	Aluminium Foil (F), bonded to dielectric Braid of Tin Plated Copper (T)	Sheath	HFS 100

Identification

Dielectric	Natural
Sheath	Black
Marking	TYPE Habia Cable ORDER REFERENCE YEAR-WEEK (e.g.: Speedfoam 400 F Habia Cable 37200-400-00 2012-W20)

Description	Construction						Electrical			MBR	Order reference
	conductor material	conductor Ø	dielectric Ø	shield (s) Ø	sheath (s) Ø	weight g/m	V rms V DC	imp. Ω	cap. pF/m	static dynamic	
Speedfoam 400 F	CU stranded	2,74	7,24	F 7,39 B 8,13	10,30	150	500 1000	50	78	100 200	37200-400-00

Electrical data (table)	Attenuation (dB/100m)						Power (W)					
	Frequency (MHz)						Frequency (MHz)					
	30	100	400	1000	2500	6000	30	100	400	1000	2500	6000
Speedfoam 400 F	3	5	9	15	23	35	3213	1760	880	557	330	150

Ref: SFoam_F_07 Created: CJV Approved: AE Date: 2013-09-12

Speedfoam F LSZH, flexible low loss coax

-40°C/+80°C

Application

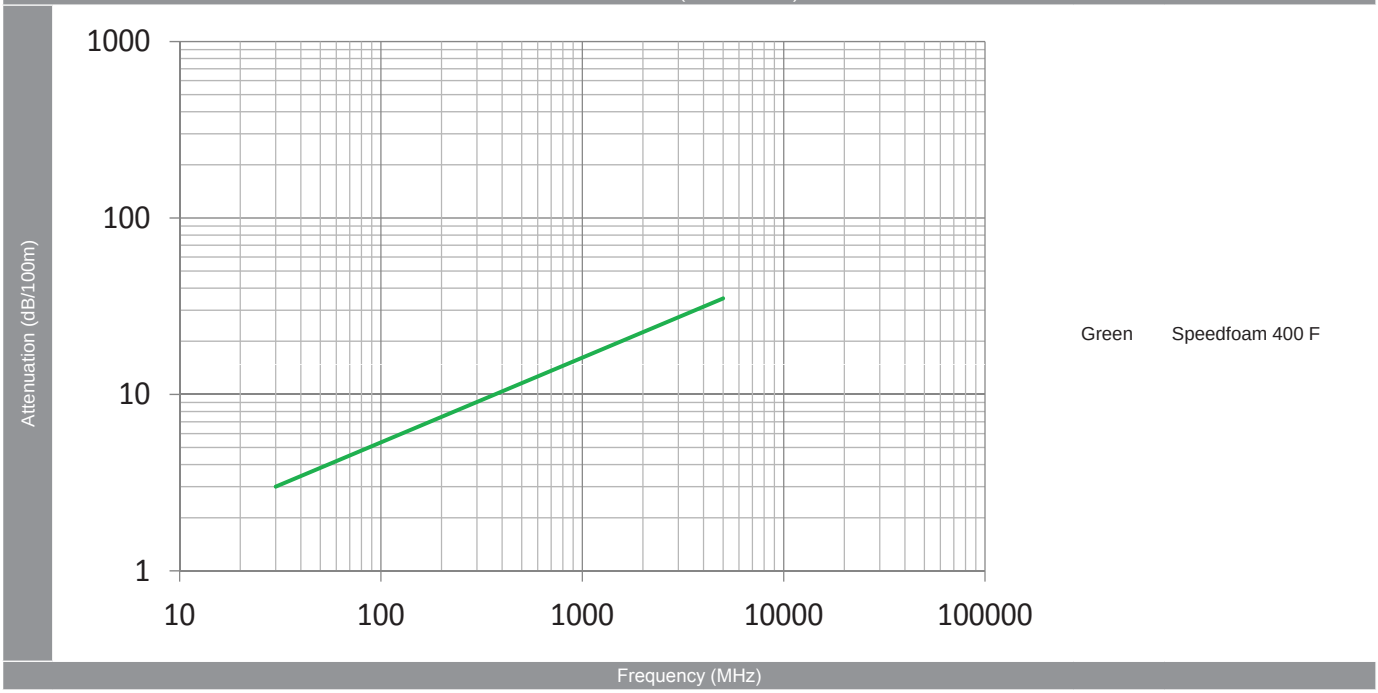
Speedfoam F offers the low-loss, low smoke, zero halogen (LSZH) properties of the standard Speedfoam with the added benefits of a stranded centre conductor with a soft and flexible outer jacket for improved flexibility and flex-life. Ease of installation in confined spaces such as cabinets is improved, as is the cable's ability to withstand the constant vibration and movement associated with many vehicle based applications.

Variants

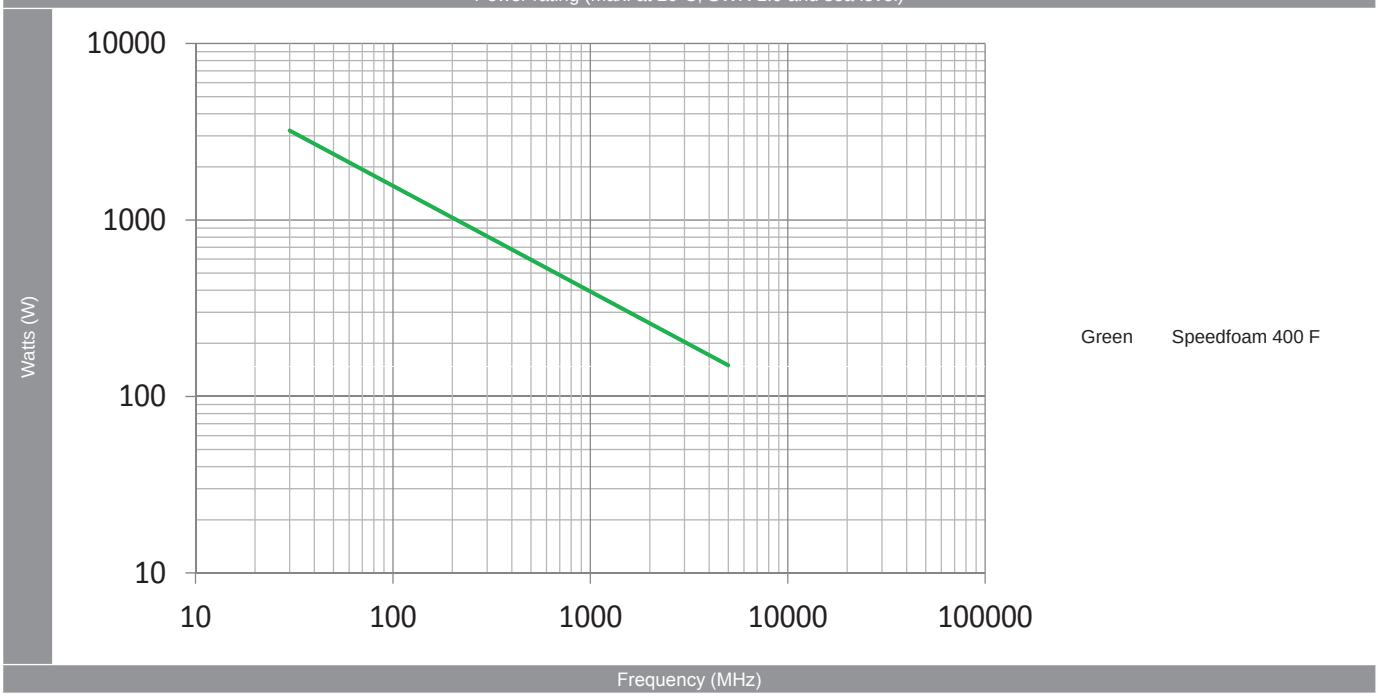
In addition to the flexible Speedfoam F, you may also consider the standard Speedfoam product, the ruggedised Speedfoam XL product for increased temperature stability whilst maintaining the halogen free option or Speedfoam UL if third-party recognition is required.
For high temperature applications where halogen-free performance is not a requirement, Habia's Speedfoam HT range is to be recommended.

Electrical data (graph)

Attenuation (nom. at 20°C)



Power rating (max. at 20°C, SWR 1.0 and sea level)



Ref: SFoam_F_07 Created: CJV Approved: AE Date: 2013-09-12

Speedfoam HT high temperature, low loss coax

-65ºC/+200ºC

Low loss coax

Flame retardant	IEC 60332-1-2
	UL 1581 VW-1
Smoke generation	IEC 61034-2
Frequency range	Up to 6 GHz
Screening efficiency	90dB
Velocity propagation	81%

Construction

Conductor	Silver Plated Copper (SPC)	Dielectric	Low density PTFE
Shield	Aluminium Foil (F), bonded to dielectric Braid of Tin Plated Copper (T)	Sheath	FEP

Identification

Dielectric	Natural
Sheath	Brown-transparent
Marking	TYPE Habia Cable ORDER REFERENCE YEAR-WEEK (e.g.: Speedfoam 240 HT Habia Cable 37100-240-00 2012-W20)

Description	Construction						Electrical			MBR	Order reference
	conductor material	conductor Ø	dielectric Ø	shield (s) Ø	sheath (s) Ø	weight g/m	V rms V DC	imp. Ω	cap. pF/m	static dynamic	(NSN)
Speedfoam 240 HT	SPC solid	1,28	3,80	F 4,00 B 4,60	5,30	50	500 1000	50	89	25 50	37100-240-00 (6145-99-983-1204)
Speedfoam 400 HT	SPC solid	2,40	7,20	F 7,40 B 8,10	9,00	160	500 1000	50	78	90 180	37100-400-00 (6145-99-297-7643)

Electrical data (table)	Attenuation (dB/100m)						Power (W)					
	Frequency (MHz)						Frequency (MHz)					
	30	100	400	1000	2500	6000	30	100	400	1000	2500	6000
Speedfoam 240 HT	4	9	18	28	45	72	2600	1350	675	427	270	174
Speedfoam 400 HT	2	5	10	16	25	41	7500	3500	1750	1107	700	452

Speedfoam HT high temperature, low loss coax

-65°C/+200°C

Application

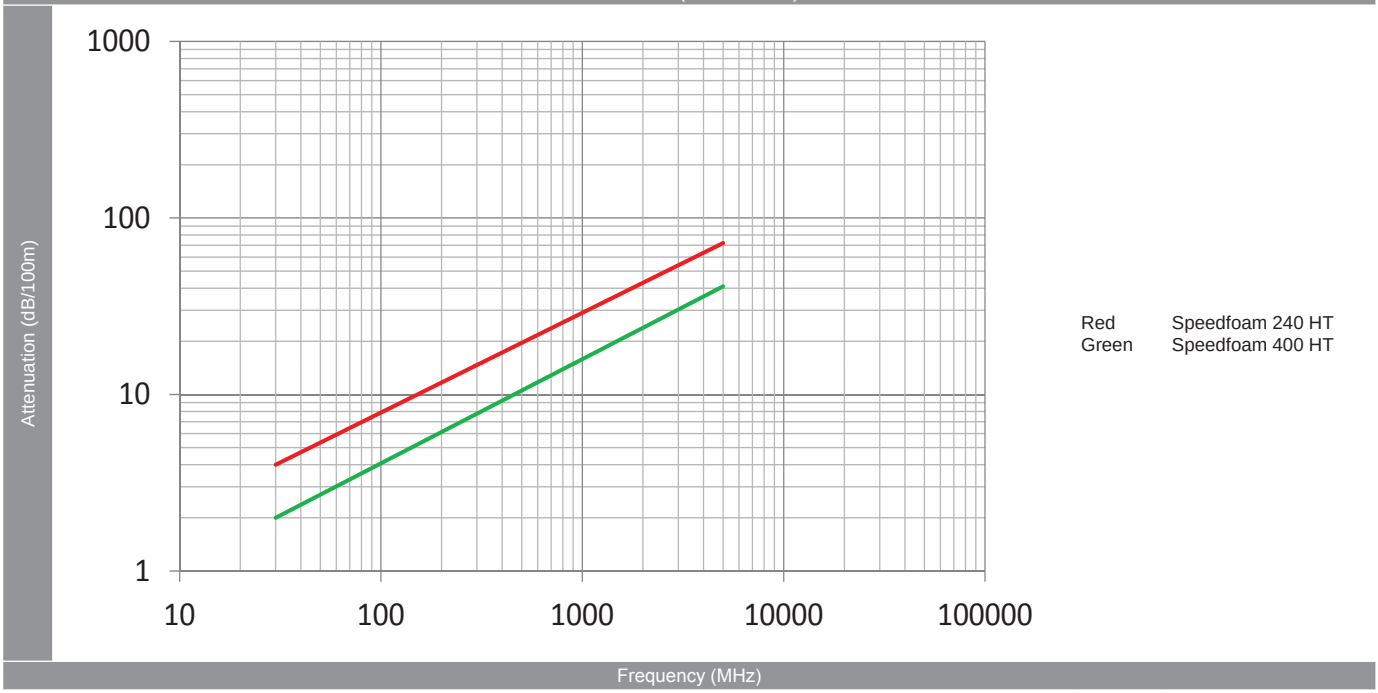
Speedfoam HT is a high-power version of Speedfoam. Using our unique low density PTFE dielectric, Speedfoam HT offers much higher temperature and power ratings which are ideal for high-power RF systems.
The high-performance nature of the Speedfoam HT product makes it ideal for military use and as such Speedfoam 240 HT and Speedfoam 400 HT have been tested and approved for use by the UK MoD.

Variants

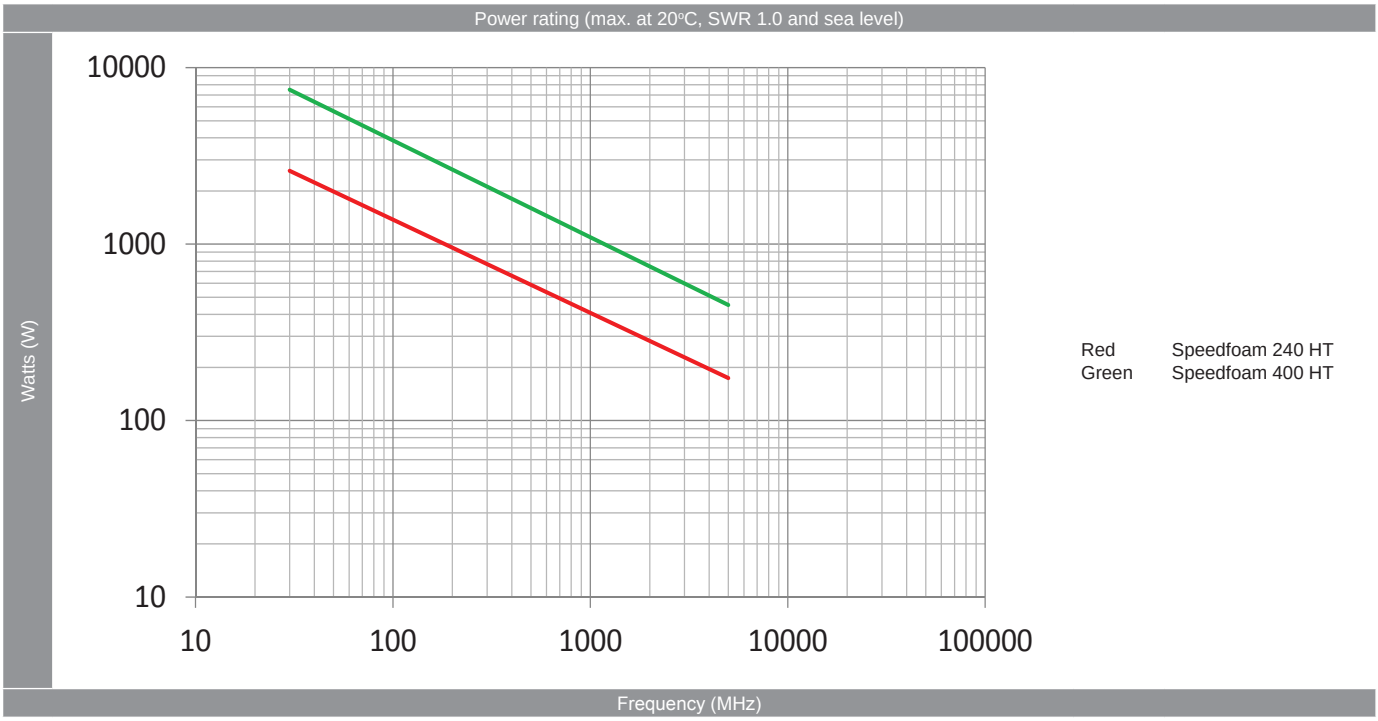
For applications where high temperature is not so essential, or where the cable is required to be low smoke zero halogen we recommend the use of the standard Speedfoam range. You may also consider the ruggedised properties of the Speedfoam XL product for increased temperature stability whilst maintaining the halogen free option or Speedfoam UL if third-party recognition is required.
A flexible variant, Speedfoam F offers the benefits of stranded conductor and a more flexible sheath.

Electrical data (graph)

Attenuation (nom. at 20°C)



Power rating (max. at 20°C, SWR 1.0 and sea level)



Ref: SFoam_HT_08 Created: CJV Approved: AE Date: 2013-09-12

Speedfoam UL LSZH, UL rated, low loss coax

-40ºC/+60ºC

Low loss coax

Flame retardant	IEC 60332-1-2
Smoke generation	IEC 61034-2
Toxicity	IEC 60754-2

Frequency range	Up to 6 GHz
Screening efficiency	90dB
Velocity propagation	81%
Voltage	30V

Construction

Conductor	Plain Copper (CU) Copper Covered Aluminium (CCA)	Dielectric	Foamed HFI 90
Shield	Aluminium Foil (F), bonded to dielectric Braid of Tin Plated Copper (T)	Sheath	HFS 80 T

Identification

Dielectric	Natural
Sheath	Black
Marking	TYPE ORDER REFERENCE AWM 1375 Habia Cable ZZ 30V 60ºC YEAR-WEEK (e.g. Speedflex 195 UL 37000-195-01 AWM 1375 Habia Cable AB 30V 60ºC 2012-W20) *ZZ to be replaced with production: Sweden: 'AB', Germany: 'G', China: 'Changzhou Plant'*

Description	Construction						Electrical			MBR	Order reference
	conductor material	conductor Ø	dielectric Ø	shield (s) Ø	sheath (s) Ø	weight g/m	V rms V DC	imp. Ω	cap. pF/m	static dynamic	
Speedfoam 195 UL	CU solid	0,95	2,80	F 2,95 B 3,40	4,50	30	500 1000	50	84	45 90	37000-195-01
Speedfoam 200 UL	CU solid	1,12	2,95	F 3,07 B 3,70	4,95	35	500 1000	50	80	50 100	37000-200-01
Speedfoam 240 UL	CU solid	1,40	3,80	F 3,90 B 4,50	6,10	59	500 1000	50	79	60 120	37000-240-01
Speedfoam 300 UL	CU solid	1,80	4,80	F 5,00 B 5,70	7,60	94	500 1000	50	79	75 150	37000-300-01
Speedfoam 400 UL	CCA solid	2,74	7,20	F 7,35 B 8,10	10,30	121	500 1000	50	77	100 200	37000-400-01
Speedfoam 500 UL	CCA solid	3,61	9,40	F 9,55 B 10,30	12,70	150	500 1000	50	79	125 250	37000-500-01

Electrical data (table)	Attenuation (dB/100m)						Power (W)					
	Frequency (MHz)						Frequency (MHz)					
	30	100	400	1000	2500	6000	30	100	400	1000	2500	6000
Speedfoam 195 UL	7	13	25	40	63	90	240	130	64	40	24	15
Speedfoam 200 UL	6	11	22	35	56	80	291	158	77	48	29	18
Speedfoam 240 UL	5	9	17	27	43	65	441	239	117	72	44	26
Speedfoam 300 UL	4	7	14	23	37	55	673	364	177	108	65	39
Speedfoam 400 UL	3	5	9	15	23	35	1247	670	322	195	115	68
Speedfoam 500 UL	2	4	7	12	18	26	1889	1012	482	289	169	98

Speedfoam UL LSZH, UL rated, low loss coax

-40°C/+60°C

Application

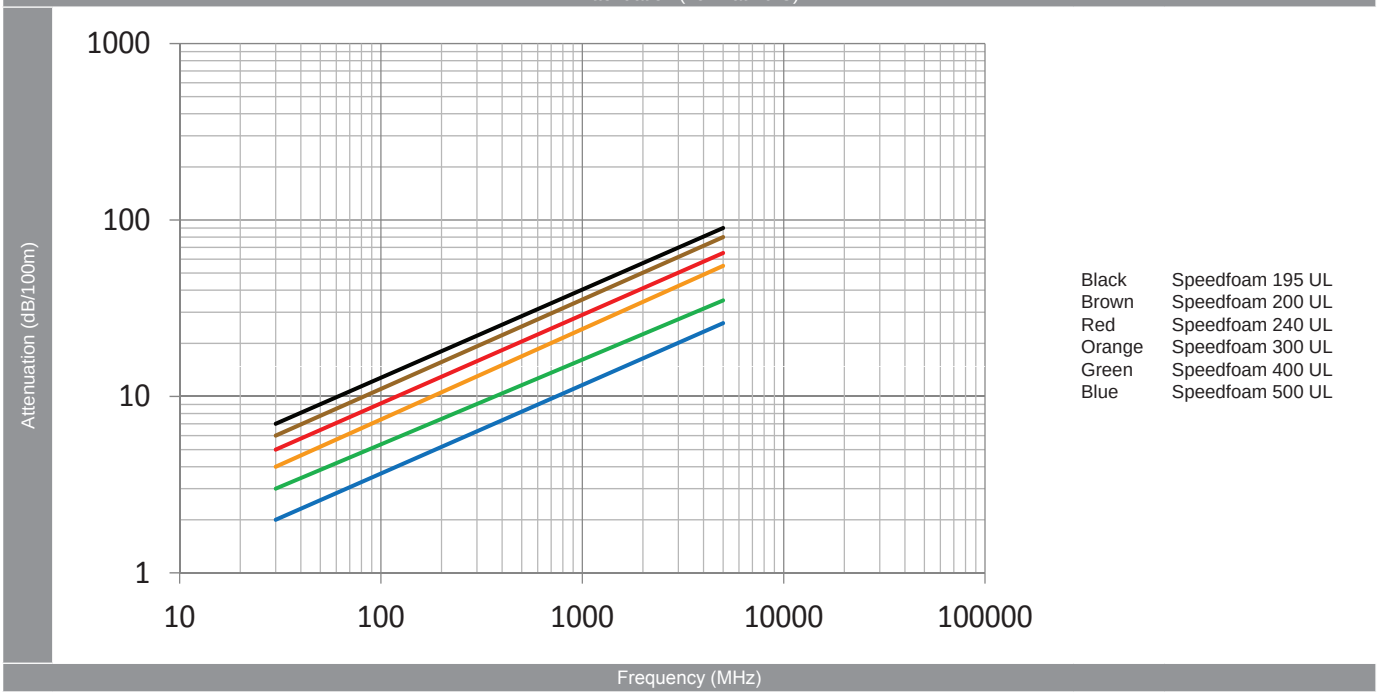
Speedfoam UL is designed to fulfil the demands of UL Style 1375. Habia Cable's Speedfoam UL offers the excellent physical and electrical benefits of the standard Speedfoam, including low smoke, zero halogen (LSZH) and flame retardancy. Speedfoam UL is ideal for general low-loss RF use such as mobile antenna runs and jumper assemblies where 3rd party approval is required.

Variants

In addition to this UL approved version, you may also consider the standard Speedfoam or Speedfoam XL products for increased temperature and voltage.
A flexible variant, Speedfoam F offers the benefits of stranded conductor and a more flexible sheath.
For high temperature applications where halogen-free performance is not a requirement, Habia's Speedfoam HT product range is to be recommended.

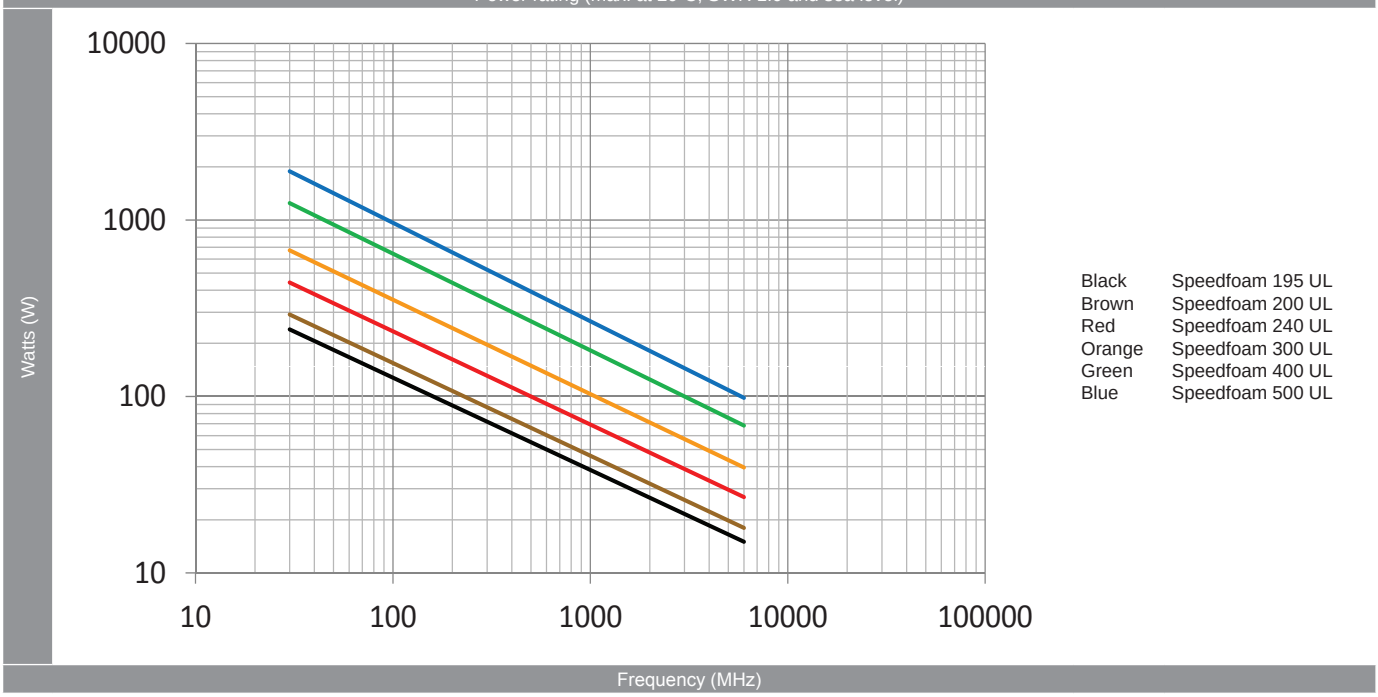
Electrical data (graph)

Attenuation (nom. at 20°C)



Black	Speedfoam 195 UL
Brown	Speedfoam 200 UL
Red	Speedfoam 240 UL
Orange	Speedfoam 300 UL
Green	Speedfoam 400 UL
Blue	Speedfoam 500 UL

Power rating (max. at 20°C, SWR 1.0 and sea level)



Black	Speedfoam 195 UL
Brown	Speedfoam 200 UL
Red	Speedfoam 240 UL
Orange	Speedfoam 300 UL
Green	Speedfoam 400 UL
Blue	Speedfoam 500 UL

Ref: SFoam_UL_09 Created: CJV Approved: AE Date: 2013-09-12

Habia Cable

Speedfoam XL LSZH, ruggedised, low loss coax

-40ºC/+105ºC

Low loss coax

Temperature range	-40ºC to +105ºC
Flame retardant	IEC 60332-1-2
	UL 1581 VW-1
Smoke generation	IEC 61034-2
Toxicity	IEC 60754-2
Frequency range	Up to 6 GHz
Screening efficiency	90dB
Velocity propagation	81%

Construction

Conductor	Plain Copper (CU) Copper Covered Aluminium (CCA)	Dielectric	Foamed HFI 90 XL
Shield	Aluminium Foil (F), bonded to dielectric Braid of Tin Plated Copper (T)	Sheath	HFS 105 XL B

Identification

Dielectric	Natural
Sheath	Black
Marking	TYPE Habia Cable ORDER REFERENCE YEAR-WEEK (e.g.: Speedfoam 400 XL Habia Cable 37000-195-02 2012-W20)

Description	Construction						Electrical			MBR	Order reference
	conductor material	conductor Ø	dielectric Ø	shield (s) Ø	sheath (s) Ø	weight g/m	V rms V DC	imp. Ω	cap. pF/m	static dynamic	
Speedfoam 195 XL	CU solid	0,95	2,80	F 2,95 B 3,40	4,50	30	500 1000	50	84	45 90	37000-195-02
Speedfoam 200 XL	CU solid	1,12	2,95	F 3,07 B 3,70	4,95	35	500 1000	50	80	50 100	37000-200-02
Speedfoam 240 XL	CU solid	1,40	3,80	F 3,90 B 4,50	6,10	59	500 1000	50	79	60 120	37000-240-02
Speedfoam 300 XL	CU solid	1,80	4,80	F 5,00 B 5,70	7,60	94	500 1000	50	79	75 150	37000-300-02
Speedfoam 400 XL	CCA solid	2,74	7,20	F 7,35 B 8,10	10,30	121	500 1000	50	77	100 200	37000-400-02
Speedfoam 500 XL	CCA solid	3,61	9,40	F 9,55 B 10,30	12,70	150	500 1000	50	79	125 250	37000-500-02

Electrical data (table)	Attenuation (dB/100m)						Power (W)					
	Frequency (MHz)						Frequency (MHz)					
	30	100	400	1000	2500	6000	30	100	400	1000	2500	6000
Speedfoam 195 XL	7	13	25	40	63	90	925	503	247	153	94	58
Speedfoam 200 XL	6	11	22	35	56	80	1126	612	301	187	114	71
Speedfoam 240 XL	5	9	17	27	43	65	2035	1104	540	333	203	124
Speedfoam 300 XL	4	7	14	23	37	55	2793	1512	736	452	273	166
Speedfoam 400 XL	3	5	9	15	23	35	5270	2838	1369	831	494	293
Speedfoam 500 XL	2	4	7	12	18	26	7886	4230	2023	1217	715	417

Speedfoam XL LSZH, ruggedised, low loss coax

-40°C/+105°C

Application

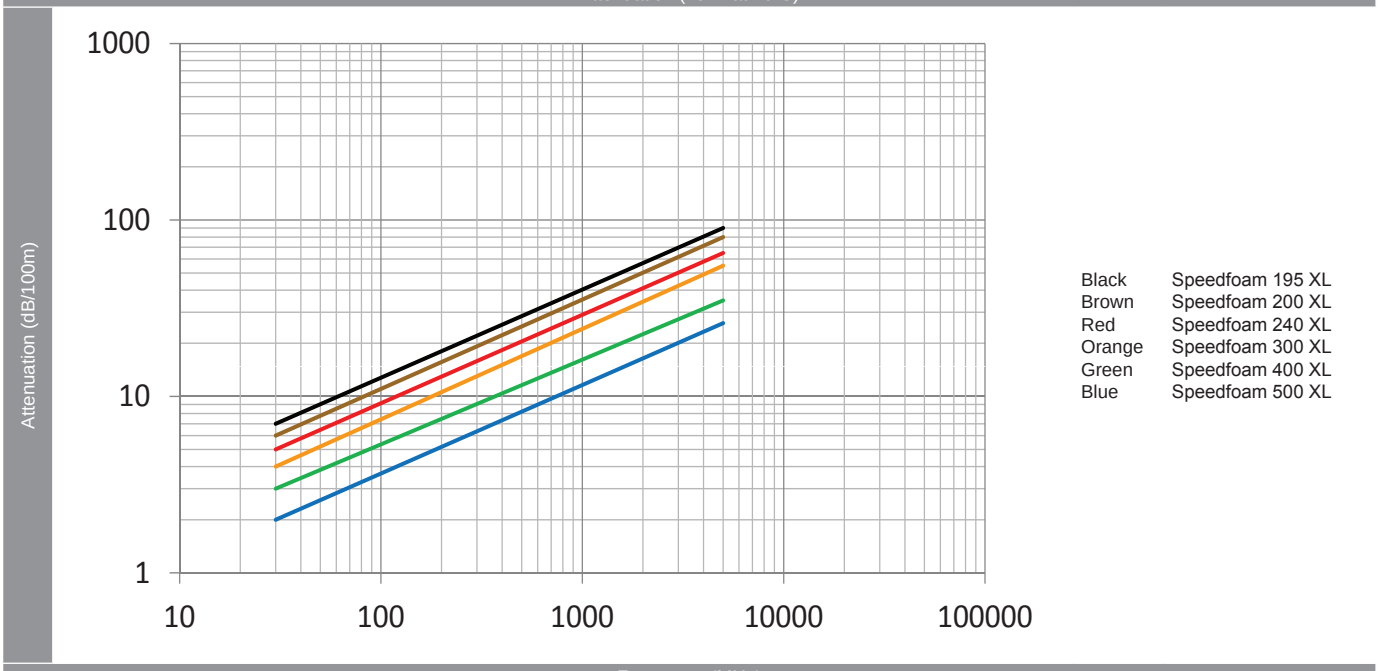
Habia Cable's Speedfoam XL uses radiation cross-linked materials to enhance the flex-life, temperature range and mechanical properties of the standard Speedfoam product. Especially ideal for military applications where the cable will be exposed to environmental extremes and rough handling.

Variants

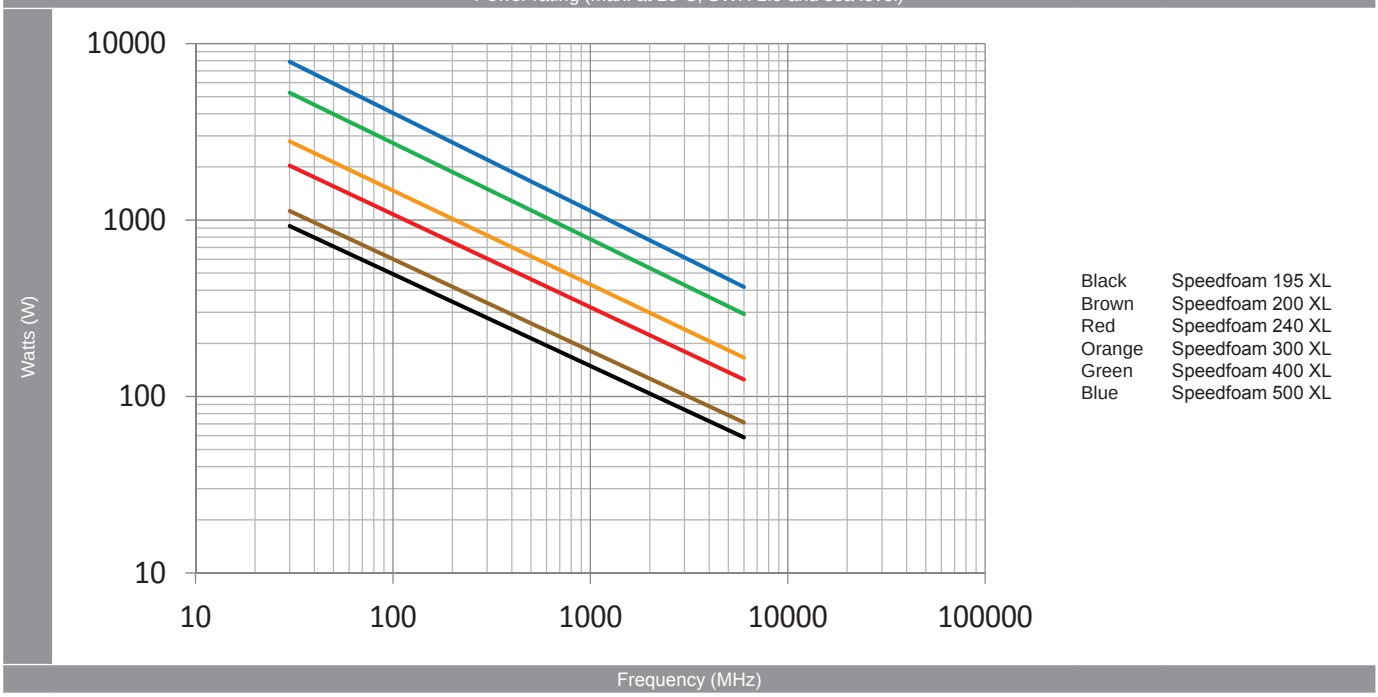
In addition to this ruggedised XL version, you may also consider the standard Speedfoam product for a lower cost, halogen free option or Speedfoam UL if third-party recognition is required.
A flexible variant, Speedfoam F offers the benefits of stranded conductor and a more flexible sheath.
For high temperature applications where halogen-free performance is not a requirement, Habia's Speedfoam HT coax range can be recommended.

Electrical data (graph)

Attenuation (nom. at 20°C)



Power rating (max. at 20°C, SWR 1.0 and sea level)



Ref: SFoam_XL_09 Created: CJV Approved: AE Date: 2013-09-12

Notes