ORSA *foam* S.p.A. **Summary of Technical Specifications and Specification Variants**

	Type	Density	Load-bearing characteristics				Compressive stiffness	Dynamic fatigue		Tensile strength		Residual deformation	Elasticity	Porosity	Block Size		Colours/Configuration		Certifications		
Notes		(± 5%)	Compressive force, CV 40 (± 15% on block material ± 20% on roll material)	Hardness determination at 25% (± 15%)	Hardness determination at 40% (± 15%)	Hardness determination at 65% (± 15%)	URL (± 20%)	Thickness loss (Max)	Loss of lift (Max)	Tensile strength (Min)	Elongation (Min)	50% compression (Max)	(Min)	(± 2)	Height BLOCKS	Width BLOCKS	BLOCKS	ROLLS	Fire behaviour	OEKO-TEX STD 100 Class 1 (CTC)	CertiPUR
		kg/m3	kPa	N	N	N	g/cm2	%	%	kPa	%	%	%	cells/cm	cm	cm					
HELIOCEL CONVENTIONAL POLYETHERS (HLC)																					
HLC	**HLC 21 I**	21,0	2,6	-	-	-	-	-	-	80	180	6	-	16	116	191/201 (218)	white			1000373.O	C-EN-0620-743-0447
	HLC 21 N	21,0	3,7	-	-	-	-	-	-	110	180	5	-	16	-	-		std/medium grey		1000373.O	C-EN-0620-743-0447
	HLC 21 P	21,0	4,3	-	-	-	-	-	-	110	150	6	-	16	-	-		yellow/light blue/lilac MRT4/ Red Q1/grey DT/std		1000373.O	C-EN-0620-743-0447
	HLC 22 IPP	22,0	3,0	-	-	-	-	-	-	100	180	4	-	16	115	192	white	light beige/std		1000373.O	C-EN-0620-743-0447
	HLC 22 N	22,0	3,7	-	-	-	-	-	-	100	150	6	-	16	114	190/200	light yellow/light blue			1000373.O	C-EN-0620-743-0447
	HLC 25 N	25,0	4,0	-	-	-	-	-	-	120	180	4	-	17	-	-		std		1000373.O	C-EN-0620-743-0447
	HLC 25 I	25,0	2,4	80	100	180	-	3,5	25	110	260	4	50	17	105	200	lobster	lobster/std		1000373.O	C-EN-0620-743-0447
	HLC 25 I/AT	25,0	2,0	60	80	140	-	3,0	30	60	200	7	40	17	117	210	white			1000373.O	C-EN-0620-743-0447
	HLC 25 IP/AT	25,0	3,5	110	140	270	-	-	-	110	180	3	45	17	116	215	light beige			1000373.O	C-EN-0620-743-0447
	HLC 25 IPP/AT	25,0	3,8	120	150	285	-	-	-	110	180	3	45	17	116	190^	yellow	yellow/std		1000373.O	C-EN-0620-743-0447
	//	//	//	//	//	//	-	-	-	//	//	//	//	//	116	201	green^	//		1000373.O	C-EN-0620-743-0447
	//	//	//	//	//	//	-	-	-	//	//	//	//	//	116	204	yellow/white*^/dark tobacco/light blue^	//		1000373.O	C-EN-0620-743-0447
	//	//	//	//	//	//	-	-	-	//	//	//	//	//	116	193	green	//		1000373.O	C-EN-0620-743-0447
	HLC 25 P	25,0	4,7	-	-	-	-	-	-	110	130	5	-	16	-	-		std		1000373.O	C-EN-0620-743-0447
	HLC 30 ISP	30,0	3,5	120	140	280	-	3,0	25	120	220	3	50	17	116	203^/215	light green	light green/beige ch./std		1000373.O	C-EN-0620-743-0447
	HLC 30 IP/AT	30,0	4,3	145	175	330	-	2,5	20	130	200	3	50	17	110	212	light blue	light blue ch./beige ch./std		1000373.O	C-EN-0620-743-0447
	HLC 32	32,0	3,2	102	125	230	-	3,0	25	120	160	4	50	16	115	210	silver grey			1000373.O	C-EN-0620-743-0447
	HLC 32/32	32,0	3,2	102	125	230	-	3,0	25	120	160	4	45	16	106	203	white^ (exclusive)			1000373.O	C-EN-0620-743-0447
	HLC 32/38	32,0	3,8	145	175	325	-	-	-	120	160	5	40	16	106	203	DT^ grey (exclusive)			1000373.O	C-EN-0620-743-0447
	HLC 32/48	32,0	4,8	155	195	365	-	-	-	120	160	6	40	16	106	203	azure DT^ (exclusive)			1000373.O	C-EN-0620-743-0447
	HLC 34 P	34,0	4,8	-	-	-	-	-	-	90	150	5	-	16	-	-		dark anthracite/std		1000373.O	C-EN-0620-743-0447
	HLC 34 P/BO	34,0	4,8	-	-	-	-	-	-	90	150	5	-	16	-	-		white		1000373.O	C-EN-0620-743-0447
	HLC 35 IP/AT	35,0	4,0	140	170	320	-	2,5	20	120	220	3	55	17	110	202	hazelnut	hazelnut/std		1000373.O	C-EN-0620-743-0447
	HLC 36 M	36,0	2,8	-	-	-	-	-	-	90	190	3	-	17	-	-		std/dark anthracite		1000373.O	C-EN-0620-743-0447
	HLC 36 M/BO	36,0	2,8	-	-	-	-	-	-	90	190	3	-	17	-	-		white		1000373.O	C-EN-0620-743-0447
	HLC 40	40,0	6,5	215	270	510	-	3,0	30	150	150	2	45	17	108	210	white	std		1000373.O	C-EN-0620-743-0447
	HLC 40 IP	40,0	4,8	155	195	365	-	3,0	25	110	170	2	55	17	113	210	light orange	std		1000373.O	C-EN-0620-743-0447
	HLC 40 IPP	40,0	5,8	-	-	-	-	-	-	110	170	3	-	17	-	-		std/grey BT1		1000373.O	C-EN-0620-743-0447
HLC NIR series	**NIR 21**	21,0	3,7	115	145	285	-	-	-	110	160	5	40	16	110/(116)	201/(191)^	white			1000373.O	C-EN-0620-743-0447
	NIR 21/E	21,0	4,3	130	170	340	-	-	-	100	120	6	-	16	110	212/(201)	white (yellow gold)^			1000373.O	C-EN-0620-743-0447
	NIR 25/E	25,0	4,7	140	180	360	-	-	-	110	130	5	-	16	113	212/(202)	white (silver grey)^			1000373.O	C-EN-0620-743-0447
	NIR 25/EG	25,0	4,4	-	-	-	-	-	-	100	130	5	-	12	100	212	black extra			1000373.O	C-EN-0620-743-0447
	NIR 25 S	25,0	3,1	100	130	240	-	-	-	120	230	4	45	17	110	202	white			1000373.O	C-EN-0620-743-0447
	NIR 27	27,0	4,2	130	170	340	-	-	-	110	150	5	40	17	115	192/200	azure			1000373.O	C-EN-0620-743-0447

		NIR 30/E	29,0	5,2	170	220	400	-	-	-	110	120	6	-	17	110	210	white			1000373.O	C-EN-0620-743-0447
	HLC high hardness	HLC 30 PR	30,0	7,0	-	-	-	-	-	-	150	120	4	-	16	105	210	pearl grey	std		1000373.O	C-EN-0620-743-0447
		HLC 40 R	40,0	8,0	-	-	-	-	-	-	160	100	4	-	18	108	210	white	std		1000373.O	C-EN-0620-743-0447
		HLC 48 RR	48,0	11,0	-	-	-	-	-	-	220	100	4	-	18	-	-		std		1000373.O	C-EN-0620-743-0447
		HLC 52 RR	52,0	11,5	-	-	-	-	-	-	220	100	3	-	20	-	-		std		1000373.O	C-EN-0620-743-0447

NOTES

N	New product
V	Variation of specification in density and/or bearing characteristics
	Change since last issue

^ Materials in block configuration are to be considered as always in stock except those with colours or dimensions accompanied by this symbol, in which case the material is produced to order.

* Some exclusive colours

The standard (std) colours for the types in ROLL configuration are WHITE, LIGHT GREY, GREY, ANTHACITE and BLACK

HLC 'AU'	Fire behaviour according to regulations: class 1 IM according to UNI 9175 with appropriate fabrics. (A)
HLC 'AU/F1'	Fire behaviour according to regulations: class HF1 according to UL 94. (C-HF1)
HLC 'HBF'	Fire behaviour according to regulations: Class HBF according to UL 94. (C-HBF)
HLC 'FR'	Fire behaviour according to regulations: FMVSS 302.
HLC 'LF'	Polyether for flame lamination.
ORSOFT 'CM'	Fire behaviour according to: Schedule 1 Part I of The Furniture and Furnishings (Fire) (Safety) Regulations 1988, amended 1989, 1993 and 2010, BS 5852: Part 2: 1982, source 5.
ORSOFT 'F'	Fire behaviour according to regulations: class 1 IM according to UNI 9175 with appropriate fabrics. (A)
MOON 'F'	Fire behaviour according to regulations: class 1 IM according to UNI 9175 with appropriate fabrics. (A)
NOVOLATEX 'F'	Fire behaviour according to regulations: class 1 IM according to UNI 9175 with appropriate fabrics. (A)
CM	Fire behaviour according to: Schedule 1 Part I of The Furniture and Furnishings (Fire) (Safety) Regulations 1988, amended 1989, 1993 and 2010, BS 5852: Part 2: 1982, source 5.
WATERLILY	Fire behaviour according to regulations: class 1 IM according to UNI 9175 with appropriate fabrics. Excluding WL/A and WL VE (A)
VE AU	Fire behaviour according to regulations: class 1 IM according to UNI 9175 with appropriate fabrics. (A)
CM' RESOURCE	Fire behaviour according to: Schedule 1 Part I of The Furniture and Furnishings (Fire) (Safety) Regulations 1988, amended 1989, 1993 and 2010, BS 5852: Part 2: 1982, source 5.
DS FOAM 'AU'	Fire behaviour according to regulations: class 1 IM according to UNI 9175 with appropriate fabrics. (A)
MTP 'AU/F1'	Fire behaviour according to regulations: class HF1 according to UL 94. (C-HF1)
MTP 'FR'	Fire behaviour according to regulations: FMVSS 302.
OFM	Polyesters for the automotive sector; 'F' with fire behaviour according to FMVSS 302 (D).
OFH	Automotive polyethers; 'F' with fire behaviour according to FMVSS 302 (D).
OFL	Flame-retardant polyethers for the automotive sector; 'F' with fire behaviour according to FMVSS 302 (D).

All materials marked HF are produced without the use or intentional introduction of halogenated flame retardant additives.

All materials labelled 'RisORSA' and 'GAIA' are produced using raw materials from renewable sources.

All materials marked '/S' contain a biocide.Biocide active substance: Tetradecyldimoniosilane (CAS: 41591-87-1).
All i-fo@m Silver materials (Si, TS, ...) contain a biocide that protects the article from colonisation by micro-organisms. Biocide active substance: Silver Phosphate Glass.

All materials marked '/SO' or '/BO' are additivated with optical brightener and/or substances that retard yellowing.

Warnings

a) The data given in the "TECHNICAL DATA SHEET/QUALITY CERTIFICATE" refer to test specimens obtained in the plane perpendicular to the direction of growth of the reacting product and not near the outer surfaces.
Highly resilient materials (HR, OS, NLTX, GAIA, WL, BREEZE, ResORSA CM) must first undergo appropriate mechanical treatments to generate cell wall rupture ('manganatura' or 'calendering').
The density indicated refers to the 'clean' material. The density of the raw block must take into account an increase due to the higher density of the outer "skins".

b) We advise the user to cut the parts in such a way that during final use they are stressed in a direction parallel to the direction of growth.

c) Data and information contained in this document and in the individual Technical Specifications and Technical Data Sheets/Quality Certificates are based on the knowledge available at the date of issue (or subsequent revisions).

d) No guarantee can be given as to the sufficiency of the suggested recommendations contained in this document, nor can it be excluded that other or further measures may be required in special or exceptional circumstances.

e) The user must ensure the appropriateness and completeness of the information in relation to the particular use to be made of it.

f) In the case of fire behaviour in accordance with Schedule 1 Part I of The Furniture and Furnishings (Fire) (Safety) Regulations 1988, as amended 1989, 1993 and 2010, BS 5852 Part 2: 1982, source 5: The test requires to test the fire reaction of the upholstery in combination with a standard 100% polyester fibre flame retardant fabric; this test is normally required for application in the "DOMESTIC" sector.
We emphasise that the class of the upholstery in combination with other types of fabric can only be attributed to the complete package of products constituting the article (foam+fabric+any interposed); test normally required for application in the "CONTRACT" sector (BS 7176). Sometimes such a combination can lead to even significant variations from the fire reaction of the upholstery with the standard fabric mentioned above.
We therefore invite the customer to use the material only after having ensured that it meets the required fire behaviour characteristics.

g) In the case of fire behaviour according to UNI 9175, the product class can only be attributed to the complete package of constituent products (foam+fabric+any interposed products).
Sometimes such a combination can lead to even significant variations in the fire behaviour of the individual constituents. We therefore invite the customer to use the material only after having ensured that the artefact meets the required fire behaviour characteristics.

h) For the reference standards of the physical and mechanical properties listed in this document, see the "Technical Data Sheets/Quality Certificate" of each type.

i) The data in this document are up to date at the time of issue. ORSA foam reserves the right to change the contents at any time.

Dimensional tolerances

Cutting dimensional tolerances for materials (excluding viscoelastics) in roll configuration:

Height (cm)	- 1	+ 3	

Thickness (mm)	- 0,2	+ 0,3	1.8 to 3.0 mm
Thickness (mm)	- 0,2	+ 0,4	3.1 to 5.0 mm
Thickness (mm)	- 0,3	+ 0,5	5.1 to 10.0 mm
Thickness (mm)	- 0,4	+ 0,6	10.1 to 15.0 mm
Thickness (mm)	- 0,4	+ 0,8	15.1 to 30.0 mm
Thickness (mm)	- 0,5	+ 1,3	over 30.1 mm

Length (m)	± 3%

The tolerance associated with viscoelastic materials in rolls is defined as -2/+3 mm. Furthermore, the minimum thickness achievable in this case is 15 mm.

The dimensions, for uncompressed materials, are guaranteed 30 minutes after the product has been unrolled, as the roll-up takes place under slight tension, which may cause slight transient shrinkage.
In the case of compressed materials, it is necessary to wait at least 24 hours after decompression of the material.
The material should be kept compressed for as short a time as possible, ideally only for the time needed for transport. Bear in mind that the material is compressed in line with the cut.

Cutting dimensional tolerances for materials in block configuration:

Height (cm)	- 3	+ 3	
Width (cm)	- 1	+ 4	
Length (cm)	- 0	+ 4	
Length (cm)	- 1	+ 4	For viscoelastics, including DS FOAM

The material should be stored compressed for as short a time as possible, ideally only for the time needed for transport.
The block must not be subjected to pressure (in any direction, by compression, stacked blocks or pressed against a wall) for at least 24 hours.
For viscoelastic materials, the storage conditions for the mentioned time must take into account the thermosensitivity of the material, indicatively temperatures should be above about 15 °C.
The base should also be smooth enough to allow the material to slide.
This is because the viscoelastic material, by its nature, has little 'thrust', and a surface that is far from this condition (e.g. asphalt) could prevent the material from 'returning' to its initial measurements after compression.