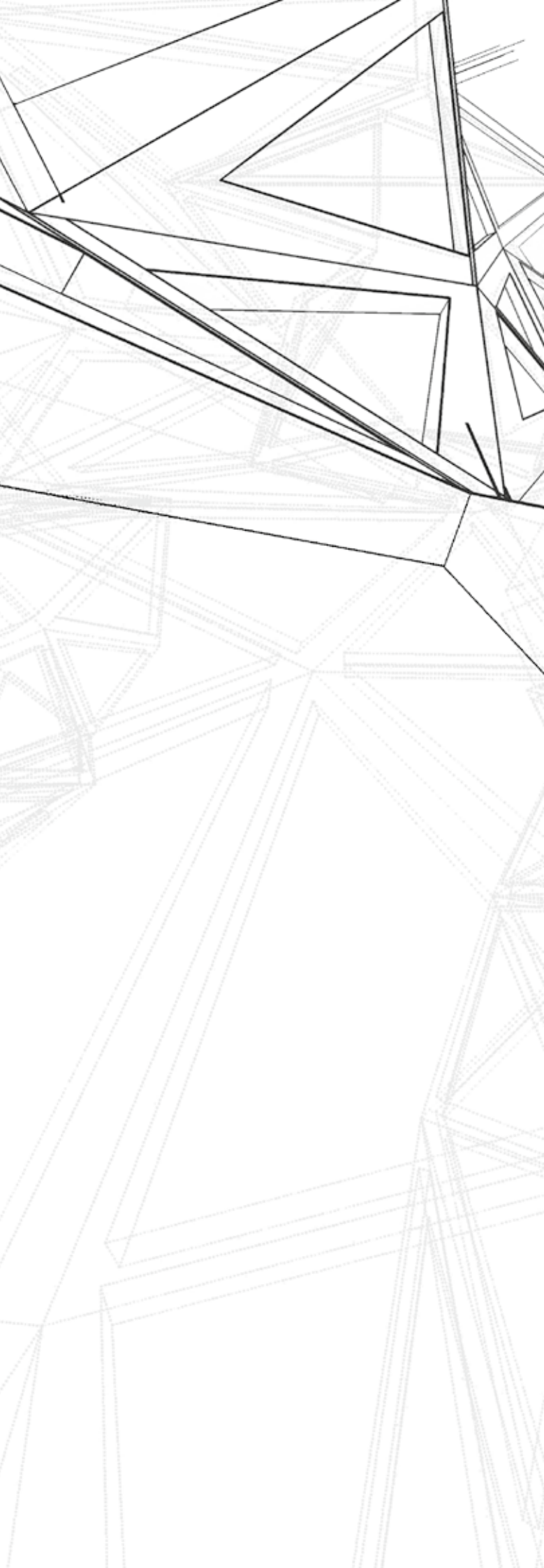


- Pleated blinds 
- Roller blinds 
- Panel blinds 
- Vertical blinds 
- Blackout installations 
- Venetian blinds 

Overview of fabrics / Textiles information / Certificates / Overview of colours

Objecta



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Overview of fabrics

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds | Blackout installations

Name	Catalogue page	Colour number	Price group	Fabric width pleated blinds (cm)	Fabric width roller/panel blinds (cm)	Slat width		Material	Material properties																				
						89 mm	127 mm		Fabric weight (g/m ²)	Light fastness	Fabric thickness	Flame resistant				Transparency	Reverse side	Optical properties in %			Thermal properties in %			Openness factor in %	Suited for workstations	Fc-value (DIN EN 14501) in %	g-total in % (DIN EN 13363-1)		
brussel	I-10	040.00	0	245	●	●	PES	210	5	0.30	●					○		78	20	2	70	21	9	4	-	☐	49	35	
																		67	15	18	62	18	20	0	-	☐	54	39	
																		52	5	43	51	8	41	0	-	☐	40	47	
																		51	7	42	56	16	28	0	-	☐	58	41	
																		60	11	29	56	14	30	0	-	☐	57	41	
																		72	17	11	65	19	16	0	-	☐	52	37	
																		75	18	7	66	21	13	0	-	☐	53	37	
																		040.22	67	14	19	60	16	24	0	-	☐	55	40
																		040.26	67	15	18	58	18	24	0	-	☐	58	40
																		040.28	33	3	64	46	11	43	0	-	☐	63	46
																		040.31	13	1	86	29	5	66	0	-	☐	74	53
																		040.59	10	1	89	23	3	74	0	-	☐	78	56
																		040.60	21	1	78	40	9	51	0	-	☐	67	48
																		040.76	35	1	64	43	8	49	0	-	☐	65	47
																		040.95	54	9	37	49	13	38	0	-	☐	62	44
																		dublin	I-20	420.00	2	240	●	●	T-CS	255	5-6	0.50	●
47	32	21	54	37	9	27	2		59	44																			
27	14	59	46	28	26	14	2	☐	63	47																			
3	1	96	32	20	48	3	2	☐	72	54																			
8	4	88	35	21	44	5	2	☐	70	52																			
420.12	44	22	34	53	29	18	13	2		59	44																		
420.20	56	37	7	57	37	6	29	3		57	43																		
420.22	58	35	7	58	35	7	22	3		56	42																		
420.24	50	34	16	52	35	13	18	3		60	45																		
420.26	52	35	13	51	34	15	14	3		60	45																		
420.28	27	14	59	44	27	29	7	2	☐	64	48																		
420.32	8	5	87	37	24	39	5	2	☐	69	52																		
420.33	8	3	89	37	21	42	6	2	☐	68	51																		
420.58	7	4	89	36	21	43	5	2	☐	69	52																		
420.61	30	17	53	47	31	22	21	2	☐	63	47																		
420.88	10	4	86	34	20	46	4	2	☐	70	53																		
420.89	33	17	50	43	26	31	7	2	☐	65	49																		
420.93	48	27	25	54	31	15	19	3		58	44																		

Name	Colour number	Material properties							Care instructions			Suited for use					
		PVC-free / halogen-free	Antibacterial / fungicidal	Water and dirt resistant	Suited for wet rooms	Oeko-Tex	Greenguard	Cradle to Cradle	Additional feature	Cleaning (VDS)	Care	Iron setting	Pleated blind	Roller blind	Panel blind	Vertical blind	Blackout blind
brussel	040.00											•	•	•			
	040.01											•	•	•			
	040.02											•	•	•			
	040.11											•	•	•			
	040.15											•	•	•			
	040.19											•	•	•			
	040.21											•	•	•			
	040.22	•			•	•							•	•	•		
	040.26											•	•	•			
	040.28											•	•	•			
	040.31											•	•	•			
	040.59											•	•	•			
	040.60											•	•	•			
	040.76											•	•	•			
	040.95											•	•	•			
dublin	420.00											•	•	•			
	420.01											•	•	•			
	420.02													•			
	420.04													•			
	420.05											•	•	•			
	420.12													•			
	420.20											•	•	•			
	420.22											•	•	•			
	420.24													•			
	420.26	•			•	•							•	•	•		
	420.28											•	•	•			
	420.32											•	•	•			
	420.33													•			
	420.58													•			
	420.61											•	•	•			
420.88													•				
420.89											•	•	•				
420.93													•				

Transparent
Allows to look out

Not transparent
Allows to look through to limited degree

Blackout
Fabric is optically opaque

Suited for workstations

B1 – flame resistant DIN 4102-B1
A2 – inflammable DIN 4102-A2
M1 – flame resistant French standard M1
US – flame resistant US standard NFPA/701

Protects against electromagnetic radiation

Sound insulation acc. to
DIN EN ISO 354 / EN ISO 11654 / EN ISO 10534:2

See care instructions from page 18

Iron at smallest setting

Hand-wash

Washable to 30°C

Washable to 60°C

Clean with dry brush

Wipe with moist rag

Fabric is turned by 90° if used as roller blind or panel blind

Overview of fabrics

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds | Blackout installations

Name	Catalogue page	Colour number	Price group	Fabric width pleated blinds (cm)	Fabric width roller/panel blinds (cm)	89 mm	127 mm	Material	Material properties																		
									Fabric weight (g/m ²)	Light fastness	Fabric thickness	B1	M1	US	A2	Flame resistant	Transparency	Reverse side	Reflectance Rv	Transmittance Tv	Absorbance Av	Thermal properties in %	Reflection Rs	Transmission Ts	Absorption As	Transmittance Tuv	Openness factor in %
london	I-30	124.00	1	245	●	●	PES	240	5-6	0.30	●				○	white	81	18	1	73	20	7	4	-	☐	47	34
		124.02															77	9	14	69	13	18	1	-	☐	49	35
		124.12															78	5	17	69	11	20	1	-	☐	50	35
		124.19															79	15	6	71	17	12	2	-	☐	48	34
		124.27															78	10	12	71	16	13	0	-	☐	48	34
		124.64															76	4	20	69	13	18	0	-	☐	50	35
		124.91															80	11	9	70	14	16	2	-	☐	49	34
ottawa	I-40	096.01	2	310	●	●	PES	290	5-6	0.43	●	●			○		57	2	41	52	3	45	0	0	☐	57	43
		096.19															70	4	26	64	7	29	0	0	☐	49	37
		096.20															82	9	9	73	11	16	0	0	☐	44	33
		096.21															88	10	2	71	14	15	0	0	☐	49	34
houston	I-50	451.01	2	240	●	●	T-CS	155	5-6	0.4	●	●			○		41	27	32	53	36	11	22	5		59	44
		451.03															15	9	76	40	26	34	9	4	☐	67	50
		451.04															5	4	91	33	23	44	6	4	☐	71	53
		451.19															57	34	9	61	36	3	22	7		54	40
		451.21															54	46	0	55	45	0	34	9		59	44
córdoba	I-60	851.04	2	270			Re-cycled PET	230	6-8	0.41	●	●			○		4	1	95	4	1	95	1	1	☐	85	50
		851.01															31	7	62	30	9	61	2	1	☐	73	43
		851.06															8	3	89	11	3	86	1	1	☐	81	48
		851.20															50	25	25	60	26	14	3	1		59	35
		851.18															47	18	35	45	19	36	3	1	☐	66	39
newark	I-70	425.01	2	240	●	●	T-CS	155	6-7	0.37	●	●			○		54	30	16	59	36	5	6	1		55	41
		425.03															29	11	60	48	27	25	3	1	☐	62	46
		425.04															8	1	92	39	20	41	0	1	☐	67	50
		425.21															58	42	0	58	42	0	38	1		57	42
madrid	I-80	140.00	2	218	●	●	PES	340	5-6	0.35	●				○	white	83	0	17	70	0	30	0	-	☐	48	35
		140.02															83	0	17	70	0	30	0	-	☐	48	35
		140.12															83	0	17	70	0	30	0	-	☐	48	35
		140.19															83	0	17	70	0	30	0	-	☐	48	35
		140.27															83	0	17	70	0	30	0	-	☐	48	35
		140.64															83	0	17	70	0	30	0	-	☐	48	35
		140.91															83	0	17	70	0	30	0	-	☐	48	35
sevilla	I-90	153.01	2	290	●	●	PES	345	6-8	0.37	●				○	white	81	0	19	70	0	30	0	-	☐	52	31
		153.08															81	0	19	70	0	30	0	-	☐	52	31
		153.18															81	0	19	70	0	30	0	-	☐	52	31
		153.21															81	0	19	70	0	30	0	-	☐	52	31
		153.30															81	0	19	70	0	30	0	-	☐	52	31
		153.59															81	0	19	70	0	30	0	-	☐	52	31

The values given in the table are approximate values. Request further information if required. Subject to modifications - Edition: 12/2015

* This value was calculated from the optical properties and therefore it must be regarded as approximate value.

Name	Colour number	Material properties							Care instructions			Suited for use					
		PVC-free / halogen-free	Antibacterial / fungicidal	Water and dirt resistant	Suited for wet rooms	Oeko-Tex	Greenguard	Cradle to Cradle	Additional feature	Cleaning (VDS)	Care	Iron setting	Pleated blind	Roller blind	Panel blind	Vertical blind	Blackout blind
london	124.00												•	•	•		
	124.02												•	•	•		
	124.12												•	•	•		
	124.19	•			•	•							•	•	•		
	124.27												•	•	•		
	124.64												•	•	•		
	124.91												•	•	•		
ottawa	096.01												•	•	•		
	096.19	•	•		•	•							•	•	•		
	096.20												•	•	•		
	096.21												•	•	•		
houston	451.01												•	•	•		
	451.03												•	•	•		
	451.04	•			•	•							•	•	•		
	451.19												•	•	•		
	451.21												•	•	•		
córdoba	851.04												•	•			
	851.01												•	•			
	851.06	•	•		•	•	•						•	•			
	851.20												•	•			
	851.18												•	•			
newark	425.01												•	•	•		
	425.03												•	•	•		
	425.04	•			•	•							•	•	•		
	425.21												•	•	•		
madrid	140.00												•	•	•		
	140.02												•	•	•		
	140.12												•	•	•		
	140.19	•			•	•							•	•	•		
	140.27												•	•	•		
	140.64												•	•	•		
	140.91												•	•	•		
sevilla	153.01												•	•	•		
	153.08												•	•	•		
	153.18												•	•	•		
	153.21	•	•		•	•							•	•	•		
	153.30												•	•	•		
	153.59												•	•	•		

- Transparent
Allows to look out
- Not transparent
Allows to look through to limited degree
- Blackout
Fabric is optically opaque

Suited for workstations

B1 – flame resistant DIN 4102-B1
A2 – inflammable DIN 4102-A2
M1 – flame resistant French standard M1
US – flame resistant US standard NFPA/701

Protects against electromagnetic radiation

Sound insulation acc. to
DIN EN ISO 354 / EN ISO 11654 / EN ISO 10534:2

See care instructions from page 18

Iron at smallest setting

Hand-wash

Washable to 30°C

Washable to 60°C

Clean with dry brush

Wipe with moist rag

Fabric is turned by 90° if used as roller blind or panel blind

Overview of fabrics

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds | Blackout installations

Name	Catalogue page	Colour number	Price group	Fabric width pleated blinds (cm)	Fabric width roller/panel blinds (cm)	Slat width		Material	Material properties																		
						89 mm	127 mm		Fabric weight (g/m ²)	Light fastness	Fabric thickness	B1	M1	US	A2	Transparency	Reverse side	Optical properties in %			Thermal properties in %			Openness factor in %	Suited for workstations	FC-value (DIN EN 14501) in %	g-total in % (DIN EN 13363-1)
calgary	I-100	154.01	3	310	PES	430	6-7	0.51	•						white		80	0	20	67	0	33	0	0	☐	47	35
		154.19															80	0	20	67	0	33	0	0	☐	47	35
		154.20															80	0	20	67	0	33	0	0	☐	47	35
		154.21															80	0	20	67	0	33	0	0	☐	47	35
hampton	I-110	461.21	4	260	T-CS	390	5-6	0.45	•					weiss		79	0	21	66	0	34	0	-	☐	51	36	
		461.01														82	0	18	69	0	31	0	-	☐	49	34	
		461.19														76	0	24	63	0	37	0	-	☐	53	37	
		461.03														74	0	26	61	0	39	0	-	☐	54	38	
chicago	I-120	460.01	4	240	T-CS	340	5-6	0.47	•				coloured		37	0	63	33	0	67	0	0	☐	69	52		
		460.03													16	0	84	14	0	86	0	0	☐	82	61		
		460.04													8	0	92	7	0	93	0	0	☐	86	65		
		460.19													61	0	39	52	0	48	0	0	☐	57	42		
		460.21													80	0	20	67	0	33	0	0	☐	47	35		
lincoln	I-130	202.01	1	200	PES	265	6-7	0.31	•				Perlex		56	3	41	51	7	42	0	-	☐	61	42		
		202.03													60	1	39	49	1	50	0	-	☐	61	43		
		202.19													64	7	29	58	11	31	0	-	☐	57	40		
		202.21													58	7	35	51	7	42	1	-	☐	60	42		
		202.27													60	4	36	55	10	35	0	-	☐	61	43		
		202.60													46	1	53	52	8	40	0	-	☐	60	42		
oslo	I-140	211.02	2	240	PES	260	6-7	0.40	•				Perlex		85	2	13	77	3	20	0	-	☐	40	30		
		211.12													85	0	15	76	1	23	0	-	☐	41	31		
		211.19													86	4	10	78	6	16	0	-	☐	40	30		
		211.21													84	5	11	76	7	17	0	-	☐	41	31		
riga	I-150	210.00	0	245	PES	200	5-6	0.24	•				Perlex		82	10	8	53	11	36	2	-	☐	46	33		
		210.01													73	8	19	58	11	31	1	-	☐	50	36		
		210.19													77	16	7	52	8	40	2	-	☐	49	35		
lugano	I-160	010.02	4	300	T-CS	118	6	0.34	•	•						35	50	15	30	55	15	43	34		78	54	
		010.04														20	35	45	19	49	32	35	35		84	59	
		010.21														31	64	5	31	64	5	48	34		78	55	
arbron	I-160	452.01	3	300	T-CS	170	5-6	0.50	•							52	30	18	52	30	18	14	13		55	42	
		452.04														25	27	48	25	27	48	15	13		70	53	
		452.21														57	39	4	57	39	4	22	13		55	42	
miami	I-170	160.02	3	225	230	T-CS	80	5-7	0.17	•				silver		40	29	31	42	30	28	28	24		68	48	
		160.03														40	28	32	42	29	29	28	24		68	48	
		160.59														41	25	34	43	26	31	25	22		67	47	
		160.04														35	29	36	39	31	30	30	27		70	49	

The values given in the table are approximate values. Request further information if required. Subject to modifications - Edition: 12/2015

* This value was calculated from the optical properties and therefore it must be regarded as approximate value.

Name	Colour number	Material properties							Care instructions			Suited for use				
		PVC-free / halogen-free	Antibacterial / fungicidal	Water and dirt resistant	Suited for wet rooms	Oeko-Tex	Greenguard	Cradle to Cradle	Additional feature	Cleaning (VDS)	Care	Iron setting	Pleated blind	Roller blind	Panel blind	Vertical blind
calgary	154.01															
	154.19															
	154.20	•											•	•		
	154.21				•	•							•	•		
hampton	461.21												•	•	•	
	461.01												•	•	•	
	461.19				•	•							•	•	•	
	461.03												•	•	•	
chicago	460.01												•	•		
	460.03												•	•		
	460.04	•											•	•		
	460.19				•	•							•	•		
	460.21												•	•		
lincoln	202.01												•	•		
	202.03													•		
	202.19												•	•		
	202.21	•	•		•								•	•		
	202.27												•	•		
	202.60													•		
oslo	211.02												•	•	•	
	211.12												•	•	•	
	211.19	•			•	•							•	•	•	
	211.21												•	•	•	
riga	210.00												•	•	•	
	210.01	•			•	•							•	•	•	
	210.19												•	•	•	
lugano	010.02													•	•	
	010.04	•			•	•								•	•	
	010.21													•	•	
arbron	452.01												•	•		
	452.04	•			•	•							•	•		
	452.21												•	•		
miami	160.02												•	•	•	•
	160.03												•	•	•	•
	160.59	•				•							•	•	•	•
	160.04												•	•	•	•

- Transparent
Allows to look out
- Not transparent
Allows to look through to limited degree
- Blackout
Fabric is optically opaque

Suited for workstations

B1 – flame resistant DIN 4102-B1
A2 – inflammable DIN 4102-A2
M1 – flame resistant French standard M1
US – flame resistant US standard NFPA/701

Protects against electromagnetic radiation

Sound insulation acc. to
DIN EN ISO 354 / EN ISO 11654 / EN ISO 10534:2

See care instructions from page 18

Iron at smallest setting

Hand-wash

Washable to 30°C

Washable to 60°C

Clean with dry brush

Wipe with moist rag

Fabric is turned by 90° if used as roller blind or panel blind

Overview of fabrics

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds | Blackout installations

Name	Catalogue page	Colour number	Price group	Fabric width pleated blinds (cm)	Fabric width roller/panel blinds (cm)	89 mm	127 mm	Material	Material properties																				
									Fabric weight (g/m ²)	Light fastness	Fabric thickness	B1	M1	US	A2	Flame resistant	Transparency	Reverse side	Reflectance Rv	Transmittance Tv	Absorbance Av	Reflection Rs	Transmission Ts	Absorption As	Transmittance Tuv	Openness factor in %	Suited for workstations	Fc-value (DIN EN 14501) in %	g-total in % (DIN EN 13363-1)
askim	I-180	171.02 171.18 171.58 171.03	3	225	230	•	•	T-CS	75	5-7	0.16	•					○	silver	58	7	35	56	8	36	5	1	☐	58	41
																			56	7	37	56	8	36	5	1	☐	58	41
																			51	3	46	52	7	41	4	1	☐	60	42
																			54	4	42	56	6	38	4	1	☐	58	40
wien	II-10	494.01 494.03 494.12 494.20	2	225	230	•	•	T-CS/ PES	125	6-7	0.18	•					○	silver	64	7	29	66	7	27	5	5	☐	52	36
																			57	4	39	60	6	34	4	5	☐	55	39
																			60	5	35	62	6	32	4	5	☐	54	38
																			57	6	37	55	7	38	6	5	☐	58	41
tunis	II-20	493.02 493.20 493.21	3	240	•	•	T-CS	220	5-6	0.43	•					○	silver	45	3	52	46	5	49	2	-	☐	63	45	
																		48	5	47	49	6	45	3	-	☐	61	44	
																		48	7	45	50	6	44	4	-	☐	61	44	
boston	II-30	482.01 482.02 482.03 482.04 482.05 482.12 482.19 482.21	3	235	240	•	•	T-CS	155	6-7	0.40	•	•				○	silver	51	10	39	56	9	35	12	4	☐	55	41
																			50	7	43	52	8	40	7	4	☐	60	42
																			51	5	44	54	8	38	5	4	☐	56	42
																			50	5	45	53	8	39	6	5	☐	57	43
																			50	5	45	53	8	39	4	4	☐	57	43
																			52	6	42	55	8	37	7	4	☐	58	41
																			51	12	37	58	10	32	9	4	☐	54	40
																			51	12	37	53	11	36	10	4	☐	60	42
																			newport	II-40	161.00 161.01 161.12 161.67	4	240	•	•	T-CS	175	5-6	0.44
48	5	47	50	7	43	5	-	☐	60	43																			
48	6	46	50	7	43	5	-	☐	62	43																			
44	2	54	48	6	46	2	-	☐	62	44																			
cannes	II-50	602.01 602.03 602.18 602.19 602.21	4	240			GF	165	7-8	0.23	•	•					○		52	29	19	51	31	18	8	5		56	41
																			12	6	82	14	8	78	6	5	☐	68	52
																			46	26	28	46	29	25	9	5		56	42
																			58	34	8	55	34	11	9	5		53	40
																			60	37	3	59	37	4	8	5		50	38
dayton	II-60	227.21 227.01 227.05 227.04 227.00 227.03	2	300	•	•	PVC/ PES	425	8	0.57	•	•					○	silver	66	13	21	66	19	15	3	3	☐	48	36
																			15	5	80	15	4	81	2	3	☐	77	58
																			60	9	31	58	15	27	2	3	☐	53	39
																			52	9	39	50	13	37	3	3	☐	57	43
																			20	4	76	20	4	76	3	3	☐	74	56
																			9	5	86	9	5	86	5	3	☐	81	61

The values given in the table are approximate values. Request further information if required. Subject to modifications - Edition: 12/2015

* This value was calculated from the optical properties and therefore it must be regarded as approximate value.

Name	Colour number	Material properties							Care instructions			Suited for use				
		PVC-free / halogen-free	Antibacterial / fungicidal	Water and dirt resistant	Suited for wet rooms	Oeko-Tex	Greenguard	Cradle to Cradle	Additional feature	Cleaning (VDS)	Care	Iron setting	Pleated blind	Roller blind	Panel blind	Vertical blind
askim	171.02															
	171.18															
	171.58	•				•						•	•	•	•	
	171.03											•	•	•	•	
wien	494.01											•	•	•	•	
	494.03											•	•	•	•	
	494.12	•			•	•						•	•	•	•	
	494.20											•	•	•	•	
tunis	493.02												•	•	•	
	493.20	•				•							•	•	•	
	493.21												•	•	•	
boston	482.01												•	•	•	
	482.02											•	•	•	•	
	482.03												•	•	•	
	482.04											•	•	•	•	
	482.05	•				•						•	•	•	•	
	482.12											•	•	•	•	
	482.19												•	•	•	
	482.21											•	•	•	•	
newport	161.00												•	•	•	
	161.01												•	•	•	
	161.12	•				•							•	•	•	
	161.67												•	•	•	
cannes	602.01												•	•		
	602.03												•	•		
	602.18	•	•		•	•	•						•	•		
	602.19												•	•		
	602.21												•	•		
dayton	227.21												•	•	•	
	227.01												•	•	•	
	227.05												•	•	•	
	227.04		•	•	•	•	•						•	•	•	
	227.00												•	•	•	
	227.03												•	•	•	

- Transparent
Allows to look out
- Not transparent
Allows to look through to limited degree
- Blackout
Fabric is optically opaque

Suited for workstations

B1 – flame resistant DIN 4102-B1
A2 – inflammable DIN 4102-A2
M1 – flame resistant French standard M1
US – flame resistant US standard NFPA/701

Protects against electromagnetic radiation

Sound insulation acc. to DIN EN ISO 354 / EN ISO 11654 / EN ISO 10534:2

See care instructions from page 18

Iron at smallest setting

Hand-wash

Washable to 30°C

Washable to 60°C

Clean with dry brush

Wipe with moist rag

Fabric is turned by 90° if used as roller blind or panel blind

Overview of fabrics

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds | Blackout installations

Name	Catalogue page	Colour number	Price group	Fabric width pleated blinds (cm)	Fabric width roller/panel blinds (cm)	89 mm 127 mm	Slat width	Material	Material properties																		
									Fabric weight (g/m ²)	Light fastness	Fabric thickness	B1	M1	US	A2	Flame resistant	Transparency	Reverse side	Reflectance Rv	Transmittance Tv	Absorbance Av	Thermal properties in %	Reflection Rs	Transmission Ts	Absorption As	Transmittance Tuv	Openness factor in %
tokio OF1		086.01	2	250	PVC/PES			480	8	0.68	•				☉		53	4	41	54	5	41	1	1	☐	46	39
		086.02															32	0	68	32	0	68	1	1	☐	51	46
		086.04															3	0	97	3	0	97	1	1	☐	69	55
		086.19															63	5	32	62	6	32	1	1	☐	35	35
		086.21															78	8	14	77	9	14	1	1	☐	22	31
tokio OF3	II-70	216.01	2	300	PVC/PES			470	8	0.58	•			☉		42	7	51	43	5	52	4	3	☐	46	40	
		216.02														40	6	54	38	9	53	4	3	☐	36	47	
		216.04														4	5	91	3	3	94	3	3	☐	70	56	
		216.19														58	7	35	58	7	35	4	3	☐	37	36	
		216.21														75	9	16	74	10	16	4	3	☐	27	32	
tokio OF5		089.01	2	300	PVC/PES	•	•	410	8	0.55	•			☉		47	8	45	47	8	45	6	5	☐	43	41	
		089.02														31	9	60	32	8	60	6	5	☐	37	48	
		089.04														3	7	90	3	5	92	5	5	☐	70	56	
		089.19														56	9	35	56	9	35	6	5	☐	38	36	
		089.21														75	11	14	74	12	14	7	5	☐	27	33	
oxford	II-80	852.01	4	300	PLA Ingeofiber			175	>6	0.45	•			☉		32	41	27	34	43	23	41	3		79	55	
		852.02														22	28	50	26	33	41	28	3		74	52	
		852.03														11	15	74	13	18	69	15	3		85	60	
		852.04														3	3	94	3	4	93	3	3		90	63	
		852.00														46	48	6	46	51	3	48	3		67	47	
leeds	II-80	853.01	5	240	PLA Ingeofiber			175	>6	0.47	•			☉	silver	44	8	47	46	9	45	8	3		64	45	
		853.02														43	9	48	46	10	44	9	3		64	45	
		853.03														37	6	57	38	7	55	6	3		69	48	
		853.04														42	4	54	44	4	52	4	3		65	46	
		853.00														42	11	47	43	11	46	11	3		66	46	
nancy	II-90	630.01	5	240	GF			160	7-8	0.21	•	•		☉	silver	66	8	26	70	7	23	5	5	☐	49	34	
		630.02														68	7	25	70	7	23	7	5	☐	49	34	
		630.03														67	6	27	70	6	24	6	5	☐	49	34	
		630.04														67	6	27	70	5	25	6	5	☐	49	34	
		630.12														69	8	23	70	8	22	8	5	☐	49	34	
denver	II-100	331.04	5	230	PVC/PES			320	8	0.45	•	•		☉	silver	72	4	24	74	4	22	3	3	☐	43	32	
		331.01														70	4	26	72	4	24	4	3	☐	44	33	
		331.19														71	4	25	73	4	23	3	3	☐	43	32	
		331.21														72	4	24	75	4	21	2	3	☐	43	32	

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* This value was calculated from the optical properties and therefore it must be regarded as approximate value.

Name	Colour number	Material properties							Care instructions			Suited for use				
		PVC-free / halogen-free	Antibacterial / fungicidal	Water and dirt resistant	Suited for wet rooms	Oeko-Tex	Greenguard	Cradle to Cradle	Additional feature	Cleaning (VDS)	Care	Iron setting	Pleated blind	Roller blind	Panel blind	Vertical blind
tokio OF1	086.01															
	086.02															
	086.04		•	•	•	•	•						•	•		
	086.19												•	•		
	086.21												•	•		
tokio OF3	216.01												•	•		
	216.02												•	•		
	216.04		•	•	•	•	•						•	•		
	216.19												•	•		
	216.21												•	•		
tokio OF5	089.01												•	•	•	
	089.02												•	•	•	
	089.04		•	•	•	•	•						•	•	•	
	089.19												•	•	•	
	089.21												•	•	•	
oxford	852.01												•	•		
	852.02												•	•		
	852.03	•						•					•	•		
	852.04												•	•		
	852.00												•	•		
leeds	853.01												•	•		
	853.02												•	•		
	853.03	•						•					•	•		
	853.04												•	•		
	853.00												•	•		
nancy	630.01												•	•		
	630.02												•	•		
	630.03	•	•		•	•	•						•	•		
	630.04												•	•		
	630.12												•	•		
denver	331.04												•	•		
	331.01												•	•		
	331.19	•	•		•	•							•	•		
	331.21												•	•		

Transparent
Allows to look out

Not transparent
Allows to look through to limited degree

Blackout
Fabric is optically opaque

Suited for workstations

B1 – flame resistant DIN 4102-B1
A2 – inflammable DIN 4102-A2
M1 – flame resistant French standard M1
US – flame resistant US standard NFPA/701

Protects against electromagnetic radiation

Sound insulation acc. to
DIN EN ISO 354 / EN ISO 11654 / EN ISO 10534:2

See care instructions from page 18

Iron at smallest setting

Hand-wash

Washable to 30°C

Washable to 60°C

Clean with dry brush

Wipe with moist rag

Fabric is turned by 90° if used as roller blind or panel blind

Overview of fabrics

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds | Blackout installations

Name	Catalogue page	Colour number	Price group	Fabric width pleated blinds (cm)	Fabric width roller/panel blinds (cm)	89 mm 127 mm	Slat width	Material	Material properties																															
									Fabric weight (g/m ²)	Light fastness	Fabric thickness	B1	M1	US	A2	Transparency	Reverse side	Reflectance Rv	Transmittance Tv	Absorptance Av	Reflection Rs	Transmission Ts	Absorption As	Transmittance Tuv	Openness factor in %	Suited for workstations	Fc-value (DIN EN 14501) in %	g-total in % (DIN EN 13363-1)												
detroit OF1		639.01	6		238			PVC/ fiber-glass	556	7	0.61	•	•			silver	73	3	24	74	3	23	2	1	☐	47	33													
		639.03															72	2	26	73	2	25	2	1	☐	47	33													
		639.04															71	2	27	72	2	26	2	1	☐	48	34													
		639.21															73	3	24	74	3	23	2	1	☐	47	33													
detroit OF5	II-110	640.01	6		238			PVC/ fiber-glass	379	7	0.46	•	•			silver	70	7	23	71	7	22	6	5	☐	49	34													
		640.03															70	8	22	71	8	21	7	5	☐	49	34													
		640.04															70	8	22	71	8	21	7	5	☐	49	34													
		640.21															70	8	22	71	8	21	7	5	☐	49	34													
detroit OF3		641.01	6		238			PVC/ fiber-glass	478	7	0.48	•	•			silver	72	4	24	73	4	23	4	3	☐	48	33													
		641.03															70	4	26	71	4	25	4	3	☐	49	34													
		641.04															71	4	25	72	4	24	4	3	☐	48	34													
		641.21															72	5	23	73	5	22	4	3	☐	48	33													
seoul 99		228.01	5		267	•		PES	290	7-8	0.32	•	•			silver	not specified			45	5	50	4	-	☐	64	45													
		228.02															not specified			42	9	49	4	-	☐	67	47													
		228.21															not specified			72	15	13	4	-	☐	49	34													
seoul 99-activ	II-120	046.21	5		177			PES	290		0.32	•	•			white	not specified			63	20	17	-	-	☐	53	37													
seoul 99-Lowe		020.21	5		177			PES	290		0.32	•	•			silver	not specified			69	6	25	-	-	☐	49	34													
		020.01															not specified			71	3	26	-	-	☐	49	34													
gela	II-130	903.03	5													silver	78	3	19	93	1	6	1	-	☐	34	24													
davos		901.03	5														148	152	•	PET	110	8	0.11							78	3	19	93	1	6	1	-	☐	34	24
genf		900.01	4														900.03	88	2	10	91	1	8	1	-	☐	36	25												
		900.03															80	3	17	93	1	6	1	-	☐	34	24													
	900.05	79		2	19	92	1	7	1	-	☐	35	25																											
bochum	II-140	413.21	2		240			T-CS bioactive	175	6-7	0.4	•	•				not specified																							
		413.01																																						
		413.19																																						
		413.17																																						
		413.23																																						
		413.62																																						
413.94																																								

The values given in the table are approximate values. Request further information if required. Subject to modifications - Edition: 12/2015
 * This value was calculated from the optical properties and therefore it must be regarded as approximate value.

Name	Colour number	Material properties							Care instructions			Suited for use						
		PVC-free / halogen-free	Antibacterial / fungicidal	Water and dirt resistant	Suited for wet rooms	Certification	Oeko-Tex	Greenguard	Cradle to Cradle	Additional feature	Cleaning (VDS)	Care	Iron setting	Pleated blind	Roller blind	Panel blind	Vertical blind	Blackout blind
detroit OF1	639.01																	
	639.03																	
	639.04		•		•									•	•			
	639.21													•	•			
detroit OF5	640.01																	
	640.03																	
	640.04		•		•									•	•			
	640.21													•	•			
detroit OF3	641.01																	
	641.03																	
	641.04		•		•									•	•			
	641.21													•	•			
seoul 99	228.01													•	•	•		
	228.02		•		•	•	•							•	•	•		
	228.21													•	•	•		
seoul 99-activ	046.21		•	•	•	•	•							•	•			
seoul 99-LowE	020.21																	
	020.01		•	•	•	•	•							•	•			
gela	903.03													•	•	•		
davos	901.03	•			•										•	•		
genf	900.01														•	•		
	900.03														•	•		
	900.05														•	•		
bochum	413.21															•		
	413.01															•		
	413.19															•		
	413.17	•	•		•	•										•		
	413.23															•		
	413.62															•		
	413.94															•		

- Transparent
Allows to look out
- Not transparent
Allows to look through to limited degree
- Blackout
Fabric is optically opaque

Suited for workstations

B1 – flame resistant DIN 4102-B1
A2 – inflammable DIN 4102-A2
M1 – flame resistant French standard M1
US – flame resistant US standard NFPA/701

Protects against electromagnetic radiation

Sound insulation acc. to
DIN EN ISO 354 / EN ISO 11654 / EN ISO 10534:2

See care instructions from page 18

Iron at smallest setting

Hand-wash

Washable to 30°C

Washable to 60°C

Clean with dry brush

Wipe with moist rag

Fabric is turned by 90° if used as roller blind or panel blind

Overview of fabrics

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds | Blackout installations

Name	Catalogue page	Colour number	Price group	Fabric width pleated blinds (cm)	Fabric width roller/panel blinds (cm)	89 mm	127 mm	Material	Material properties																												
									Fabric weight (g/m ²)	Lightfastness	Fabric thickness	B1	M1	US	A2	Flame resistant	Transparency	Reverse side	Reflectance Rv	Transmittance Tv	Absorbance Av	Thermal properties in %	Reflection Rs	Transmission Ts	Absorption As	Transmittance Tuv	Openness factor in %	Suited for workstations	Fc-value (DIN EN 14501) in %	g-total in % (DIN EN 13363-1)							
jarmen	II-150	437.00 437.01 437.08 437.20 437.26 437.28 437.32 437.58 437.89	2	240	T-CS	250	5-6	0.5	●	●				○		60	40	0	60	40	1	47	3		55	41											
																											47	32	21	54	37	9	27	2		59	44
																											20	13	67	40	28	32	9	3	☐	70	49
																											56	37	7	57	37	6	29	3		57	43
																											52	35	13	51	34	15	14	3		60	45
																											27	14	59	44	27	29	7	2	☐	64	48
																											8	5	87	37	24	39	5	2	☐	72	50
																											7	4	89	36	21	43	4	2	☐	69	52
																											33	20	47	43	28	29	7	2	☐	65	49
movie	II-160	224.21	3	240 310	PES	290	6-7	0.31	●				●	black	87	0	13	76	0	24	0	0	0	☐	47	35											
dietz	II-170	111.56 111.14 111.21 111.03 111.04	3	140	PES	540	6-7	0.75	●					●		13	0	87	31	0	69	0	-	☐	73	51											
																											43	0	57	46	0	54	0	-	☐	63	44
																											70	0	30	64	0	36	0	-	☐	52	36
																											17	0	83	28	0	72	0	-	☐	74	52
																											3	0	97	7	0	93	0	-	☐	88	61
krefeld	II-180	108.00 108.02 108.19	4	295	PES	138	4-5	0.21	●				○	white	49	33	18	46	40	14	17	-		66	47												
																										41	27	32	47	33	20	14	-		65	46	
																										47	36	17	48	40	12	18	-		65	46	
merane	II-180	157.00 157.02 157.20	5	295	PES	166	4-5	0.19	●				●	silver	67	0	33	67	0	33	0	-	☐	50	35												
																										67	0	33	67	0	33	0	-	☐	50	35	
																										67	0	33	67	0	33	0	-	☐	50	35	
delft	II-180	191.00 191.02	4	225	PES	280	5-7	0.35	●				●	silver	63	0	37	59	0	41	0	-	☐	55	40												
																										63	0	37	60	0	40	0	-	☐	53	40	
minsk	II-180	401.02 401.21	2	225	T-CS	135	6	0.35	●	●			○		23	29	48	34	41	25	30	11		74	52												
																										46	52	2	45	54	1	47	13		68	48	
turin	II-180	506.03 506.12 506.21 506.58	3	205	PES	230	5-6	0.34	●				●	white	74	0	26	69	0	31	0	-	☐	55	39												
																										74	0	26	69	0	31	0	-	☐	55	39	
																										74	0	26	69	0	31	0	-	☐	55	39	
																										74	0	26	69	0	31	0	-	☐	55	39	
suhl	II-180	511.01 511.19 511.21 511.59	1	225	PES	90	5-6	0.13	●				○	Perlex	60	29	11	56	33	11	6	-		60	42												
																										58	22	20	56	30	14	5	-		59	42	
																										65	32	3	58	34	8	6	-		57	41	
																										36	2	62	47	22	31	3	-	☐	64	46	

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Name	Colour number	Material properties							Care instructions			Suited for use				
		PVC-free / halogen-free	Antibacterial / fungicidal	Water and dirt resistant	Suited for wet rooms	Oeko-Tex	Greenguard	Cradle to Cradle	Additional feature	Cleaning (VDS)	Care	Iron setting	Pleated blind	Roller blind	Panel blind	Vertical blind
jarmen	437.00															
	437.01															
	437.08															
	437.20															
	437.26	•			•	•									•	
	437.28															
	437.32															
	437.58															
437.89																
movie	224.21	•				•									•	
dietz	111.56															•
	111.14															•
	111.21	•														•
	111.03															•
	111.04															•
krefeld	108.00															•
	108.02	•			•	•										•
	108.19															•
merane	157.00															•
	157.02	•			•	•										•
	157.20															•
delft	191.00	•				•										•
	191.02															•
minsk	401.02															•
	401.21	•			•	•										•
turin	506.03															•
	506.12	•														•
	506.21															•
	506.58															•
suhl	511.01															•
	511.19															•
	511.21	•			•	•										•
	511.59															•

- Transparent
Allows to look out
- Not transparent
Allows to look through to limited degree
- Blackout
Fabric is optically opaque

Suited for workstations

B1 – flame resistant DIN 4102-B1
A2 – inflammable DIN 4102-A2
M1 – flame resistant French standard M1
US – flame resistant US standard NFPA/701

Protects against electromagnetic radiation

Sound insulation acc. to
DIN EN ISO 354 / EN ISO 11654 / EN ISO 10534:2

See care instructions from page 18

Iron at smallest setting

Hand-wash

Washable to 30°C

Washable to 60°C

Clean with dry brush

Wipe with moist rag

Fabric is turned by 90° if used as roller blind or panel blind

Textiles Information

Roller blinds | Panel blinds | Vertical blinds

General notes

1. FIELD OF APPLICATION

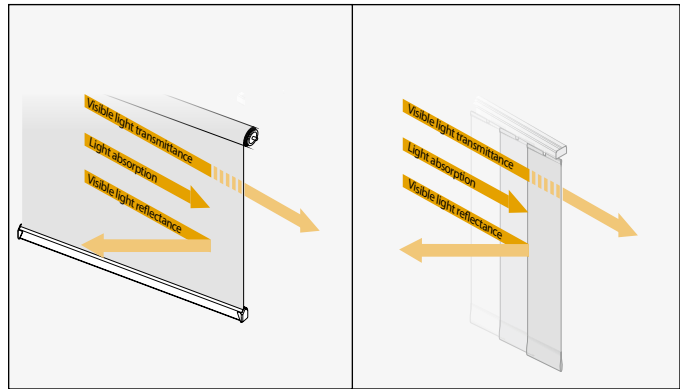
Roller blinds/panel blinds and vertical blinds are suited for use in rooms that can be heated and ventilated. As to the humidity classification according to DIN EN 13120, Annex A, the fields of application must comply with the sections a) **Rooms with low humidity** and b) **Rooms with medium humidity**.

2. OPTICAL PROPERTIES

Visible light transmittance – Percentage of light coming through the fabric

Light absorption – Percentage of light absorbed by the fabric and converted into heat

Visible light reflectance – Percentage of light reflected by the fabric



3. SUITABILITY FOR WORKSTATIONS

Ordinance on occupational safety and health protection during work with visual display terminals (DIN EN ISO 9241-6)

Ordinance on occupational safety and health protection during work with visual display terminals - BildscharbV

Annex containing requirements for workstations with visual display terminals (VDT)

Workstations with VDT must be set up so that shiny or illuminated surfaces do not cause any glare and reflections on the screen are avoided if possible. The windows must be equipped with a suitable shading device that reduces the intensity of the day light incidence to the VDT workstation.

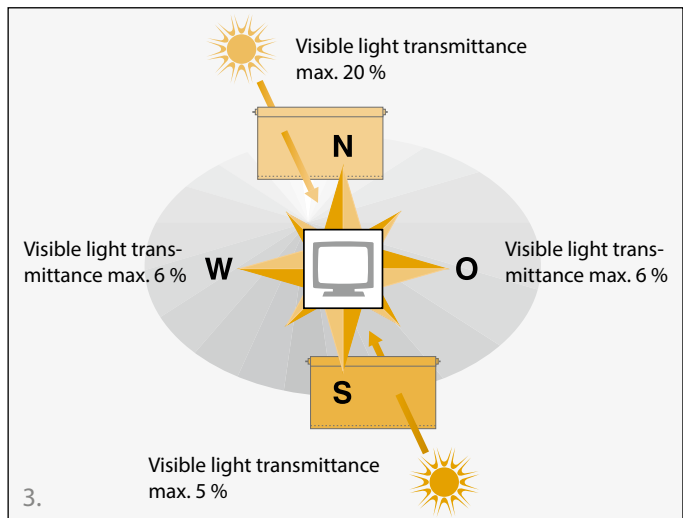
» Bundesgesetzblatt 1996 Part 1 No.63 – Bonn 10 Dec. 1996 «



Fabrics marked with the VDT symbol have visible light transmittance values of max. 20 %. Thus they fulfil the recommendations for VDT workstations when the compass direction is taken into consideration.

In addition further workstation-specific requirements and optical parameters must be fulfilled. We will be happy to provide a brochure on shading requirements for VDT workstations.

Recommendations for fabrics depending on compass direction



Care instructions

Roller blind / panel blind and vertical blind fabrics are made of high-quality textiles that are enhanced with finishes as required.

General notes



When textile panels and blinds are cleaned improperly, the flame resistant finish and the anti-ageing properties can be lost partially or even entirely. When you clean the window be careful not to spill cleaning agent onto the fabric. **We will not accept any liability for damage due to improper use, from cleaning agents or insect excrements.**

Important: Insect excrements on aluminized fabrics must be removed regularly as otherwise damage will be caused to the fabric.

Can be brushed dry



Treat fabrics by brushing carefully with a soft brush. Do not use any water or cleaning agent.

Can be wiped with moist rag



Dilute mild detergent with handwarm water, wipe carefully, do not soak. Do not use any solvent. Do not apply undiluted cleaning agent or disinfectant on the fabric.

Handwash



Fabrics marked with **handwash** can be washed carefully by **hand** in a mild detergent wash liquor. Remove the connecting chains and weights before you wash blinds or panels!

Machine wash



Fabrics marked with **machine wash** can be washed in the washing machine (max. 10 slats rolled up in a net bag) at 30°, delicate cycle (do not tumble dry) with a mild detergent. Remove connecting chains and weights before you wash vertical blinds or panel blinds!

Cleaning of VDS-tested fabric qualities



The cleaning properties of the range was tested by VERBAND DEUTSCHER SONNENSCHUTZREINIGER E.V. All fabrics bearing the VDS quality mark can be cleaned by certified specialist cleaners. For VDS approved cleaners in your area and for further information refer to www.vds-sonnenschutz.de.

General notes

1. FIELD OF APPLICATION

Pleated blinds/honeycomb pleated blinds are suited for use in rooms that can be heated and ventilated. As to the humidity classification according to DIN EN 13120, Annex A, the fields of application must comply with the sections a) **Rooms with low humidity** and b) **Rooms with medium humidity**.

2. OPTICAL PROPERTIES

Visible light transmittance – Percentage of light coming through the fabric

Light absorption – Percentage of light absorbed by the fabric and converted into heat

Visible light reflectance – Percentage of light reflected by the fabric

3. SUITABILITY FOR WORKSTATIONS

Ordinance on occupational safety and health protection during work with visual display terminals (DIN EN ISO 9241-6)

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» Bundesgesetzblatt 1996 Part 1 No.63 – Bonn 10 Dec. 1996 «



Fabrics marked with the VDT symbol have visible light transmittance values of max. 20 %. Thus they fulfil the recommendations for VDT workstations when the compass direction is taken into consideration.

In addition further workstation-specific requirements and optical parameters must be fulfilled. We will be happy to provide a brochure on shading requirements for VDT workstations.

4. HEAT BUILD-UP / AIR CIRCULATION

Pleated blinds/honeycomb pleated blinds are ideal and functional sunshades. When you mount them provide for sufficient air circulation. This is necessary to avoid heat build-up and the corresponding high risk of **glass breakage**.

Mounting distance in conservatories

Provide for a **distance of min. 100 mm** between the pleated blind and the glazing and a **distance of min. 50 mm** between the assembly profile and the wall (top and bottom) to allow sufficient air circulation (use spacers).

Poor air circulation can result in condensation of water. erfal will not assume any liability for damage caused to the fabric due to **dripping condensation** and **aggressive glass cleaners** that have direct or indirect contact with the fabric.

5. COLOUR AND TEXTURE

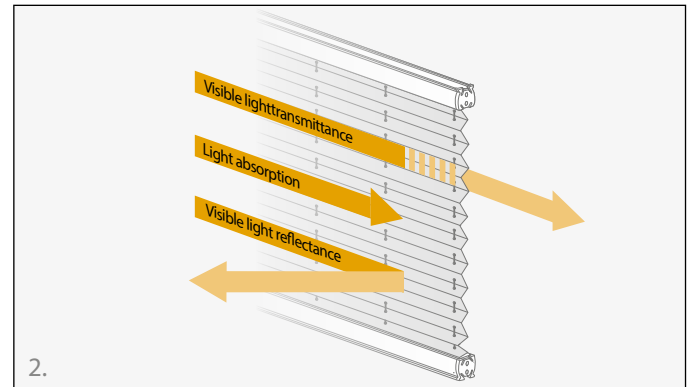
Slight deviations of the fabrics in colour and texture cannot be excluded and they are not a just reason for complaint.

6. PLEATS

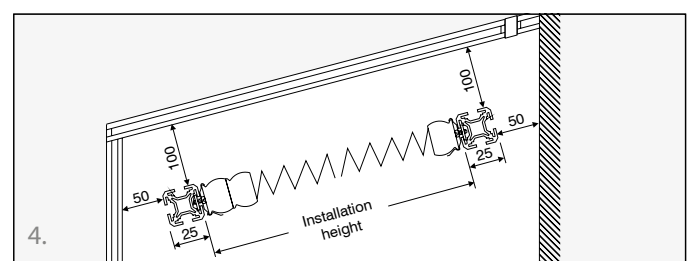
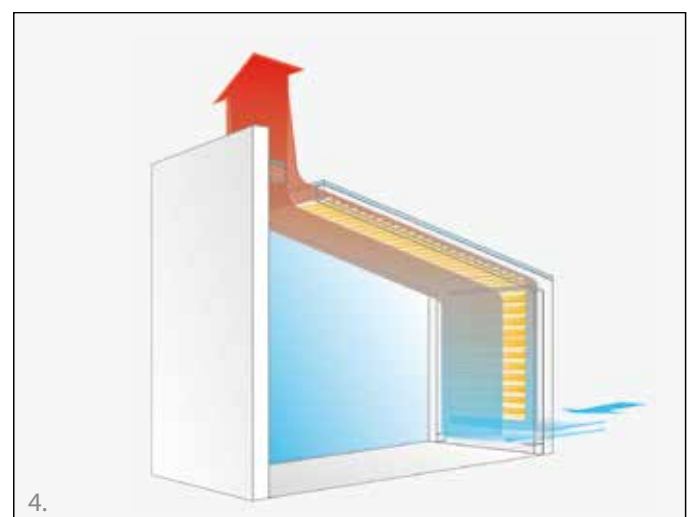
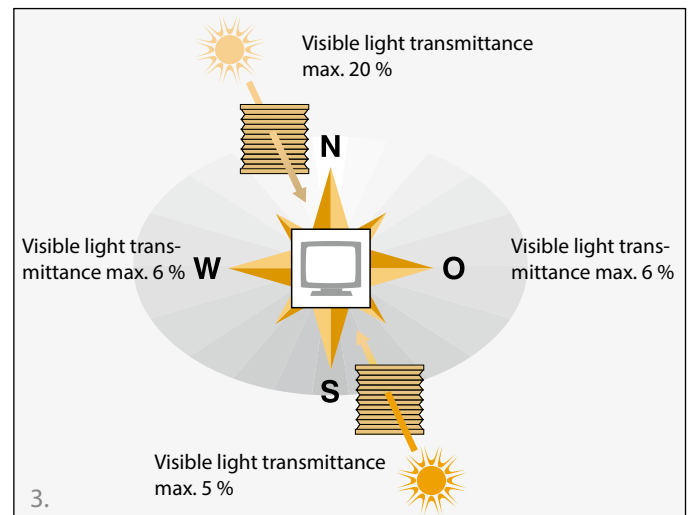
In order to avoid sagging of the pleats, the blinds must be operated regularly. Pleated blinds that had been extended for a longer time must be retracted carefully to ensure pleats are formed properly and to avoid damage to the fabric.

7. FABRIC EDGES

Fraying of fabric edges does not occur on the finished product. For manufacturing reasons it may occur though that beginning threads extend from the fabric. They can be cut off with scissors.



Recommendations for fabrics depending on compass direction



Textiles Information

Pleated blinds

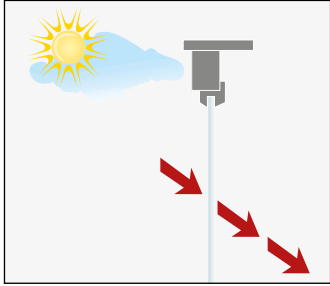
General notes

8. SAVING ENERGY

Saving effectively with honeycomb pleated blinds

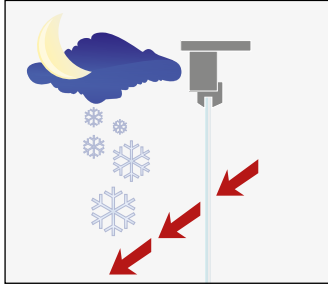
High-quality sun protection can control different energy flows at the window that occur due to summer and winter, day and night. This creates a pleasant comfort climate. When used properly (open during the day, closed during the night) savings of **up to 350 Watt** per m² window area can be reached per day in winter. This equals **up to 7 % savings in heating costs**. Energy efficiency is improved considerably by this. Benefit from decorative window design, optimum privacy and eco-friendly aspects with this special pleated blind made by erfal. Its honeycomb texture retains the heat particularly well.

Summer without honeycomb pleated blinds



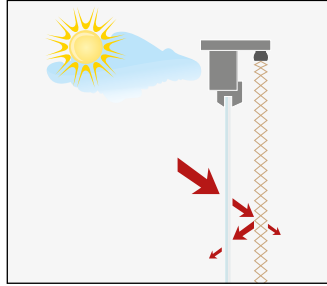
Windows with common glazing (double glazing according to DIN 4108 / EN 13363-1, U = 1.6) and without sun protection transmit ca. 72 % of the sunlight.

Winter without honeycomb pleated blinds



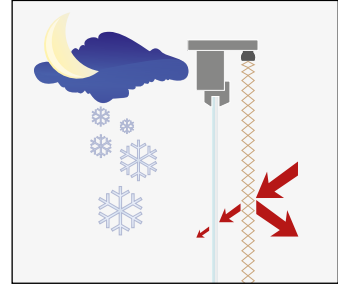
Since windows account for up to 44 % of the heat loss, the energy-efficient performance of the sun protection unleashes its full effect. The thermal outflow through the glazing from inside to outside is reduced by up to 50 %.

Summer with honeycomb pleated blinds



The heat input is reduced considerably with an internal, highly reflecting sun protection. The solar heat that enters the room is only ca. 22 % then. The heat input in summer can be reduced to 5 % even when internal sun protection is combined with external sun protection.

Winter with honeycomb pleated blinds



An air cushion between the internal sun protection and the glass reduces the heat loss from inside to outside. Combined with an external sun protection, this effect is even enhanced.

Mounting instructions

2. DETERMINING TENSION CORD BRACKET POSITION

A difference is made between installation in the glazing rebate (directly in front of the pane) and installation on the window or door frame (windows or doors with glazing bars). If drilling is not allowed, installation is possible with block holders on the leaf of windows or doors. Certain basic principles must be observed for the installation in the glazing rebate.

Where vertical installations are used (mounted in glazing rebate) a minimum distance between the pleated blind / honeycomb pleated blind and the glazing must be provided for as a rule!

Recommendation for pleated blinds:

Transparent fabrics min. 3 mm distance for rear ventilation
Dimming fabrics min. 5 mm distance for rear ventilation
(special glazing might require bigger distances as per manufacturer's instructions)

Recommendation for honeycomb pleated blinds:

Transparent fabrics min. 5 mm distance for rear ventilation
Dimming fabrics, if possible, 20 mm distance for rear ventilation
Select the required mounting brackets from our range of accessories: e.g. wall fixing brackets, rebate brackets, bracket carriers for window bar mounting.

The distance for rear ventilation of windows without or with little solar radiation can be reduced to 5 mm.
(special glazing might require bigger distances as per manufacturer's instructions)

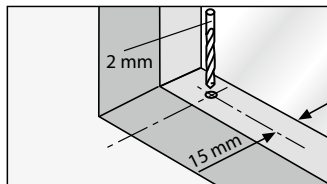
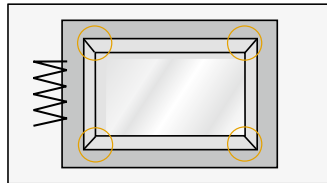
General note

We will **not accept any liability** for glazing damage that occurs after pleated blinds have been installed.

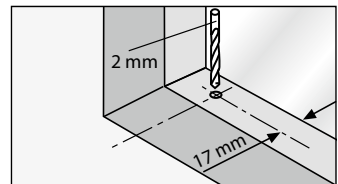
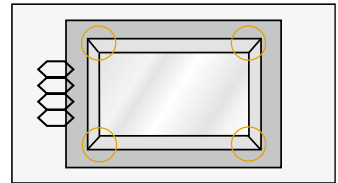
3. LENGTH OF TENSION CORDS

Tension cords of tensioned honeycomb pleated blind installations cannot be longer than the installation height.

Standard pleated blind



Honeycomb pleated blind



Care instructions

Pleated / honeycomb pleated blind fabrics are made of high-quality textiles that are enhanced with finishes as required.

General notes



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Important: Insect excrements on aluminized fabrics must be removed regularly as otherwise damage will be caused to the fabric.

Can be brushed dry



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Can be wiped with moist rag



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Cleaning of VDS-tested fabric qualities



The cleaning properties of the range was tested by VERBAND DEUTSCHER SONNENSCHUTZREINIGER E.V. All fabrics bearing the VDS quality mark can be cleaned by certified specialist cleaners.

For VDS approved cleaners in your area and for further information refer to www.vds-sonnenschutz.de.

Child safety

erfal products are versatile and can be installed in almost any construction situation.

1. CHILD SAFETY

This is a must: Child safety for internal privacy and sun protection



NOTE:

- Small children can strangle themselves in the cords, chains or belts for pulling and in the cords for operating blinds etc. Cords must be kept out of the reach of children to prevent the risk of strangulation and entanglement. Cords can also become wrapped around the neck.
- The manufacturer is responsible that all components of the product are produced and delivered in compliance with the relevant standards and laws. Beds, child's cots and furniture must be placed away from cords of blinds etc.
- Do not bind the cords together. Make sure that the cords will not be twisted and form a loop.

Warning according to DIN EN 13120

INSTRUCTIONS FOR SPECIALIST COMPANY!

As a specialist company, you are responsible for instructing the final customer about potential risks and for taking measurements and installing the products properly. As a specialist company you are expected to inform the final customer about potential hazards and to explain the functional principle of the safety devices.

Frequently asked questions and more information on the topic of child safety are given at kindersicherheit.vis-online.de or www.erfal.de/kindersicherheit/

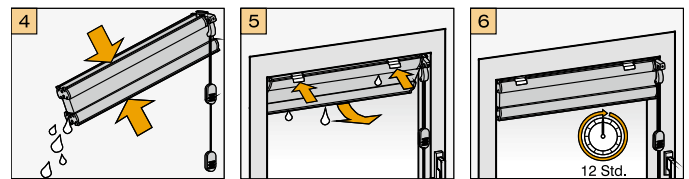
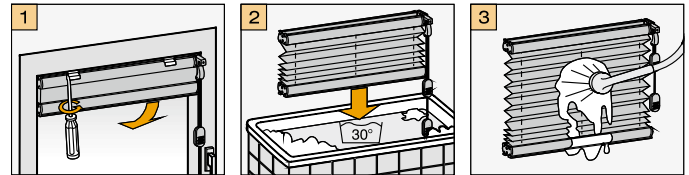


There are also products without cords and loops (e.g. tensioned, motor-operated) that meet the DIN requirements already today.

Washable



Fabric marked as "washable" can be swirled in mild detergent liquor at ca. 30°C. Rinse properly then, fold the fabric bunch and squeeze out the water slightly but do not press or wring out vigorously. The bunch must not drip any more. Hang the moist bunch and leave it to dry in closed condition. Open and close the pleated / honeycomb pleated blind repeatedly during drying so that the pleats will not stick on one another. Do not iron. The mechanical parts of electric units and crank units must not be immersed in the wash liquor or water.



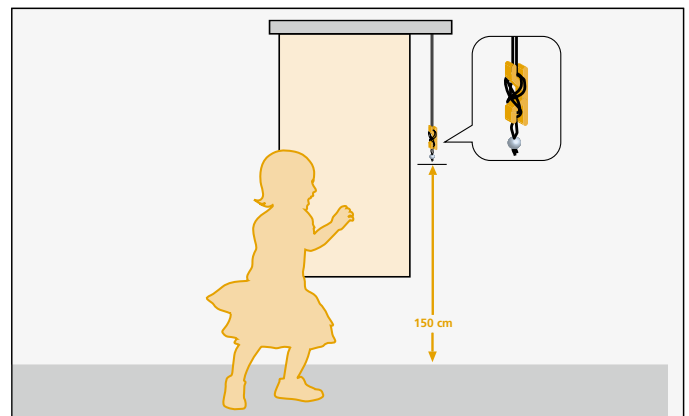
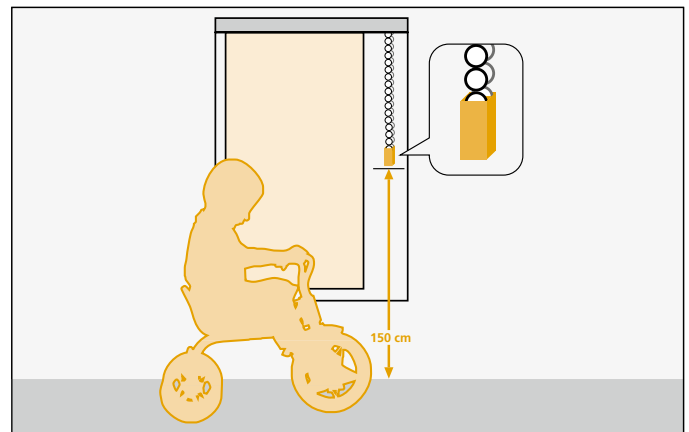
Compressed air spray

The honeycombs of the honeycomb pleated blinds should be cleaned once per year with a common compressed air spray.

General notes

Pleated blinds | Roller blinds | Panel blinds | Vertical blinds

You have to note the following for the installation: The loop with the tensioning device and pull cords end at least 150 cm from the floor.



Thermal and optical parameters

Roller blinds | Panel blinds | Pleated blinds | Vertical blinds | Blackout installations

Thermal and optical parameters

According to standard EN 14501: This standard defines the g_{tot} solar factor (fabric + glazing) as a thermal property. Internal sun protection yields better results with the light or reflecting side of the fabric to the outside.

THERMAL PARAMETERS

- Solar transmittance (Ts)**
 Proportion of the solar energy transmitted through the fabric. The lower this figure the higher the proportion of solar energy reduced by the fabric.
- Solar reflectance (Rs)**
 Proportion of solar radiation reflected by the fabric. The higher this figure the higher the proportion of solar energy reflected by the fabric.
- Solar absorptance (As)**
 Proportion of solar radiation absorbed by the fabric. The lower this figure the lower the proportion of solar energy absorbed by the fabric.

The solar radiation is partially transmitted, absorbed or reflected by the fabric. The sum of all three factors is 100.

- Total solar factor of glazing (g-value)**
 The total solar factor, g-value, measures the energy transmittance of a transparent structural component, such as glazing. It consists of the direct solar radiation and the secondary heat transfer through the glazing to the interior. Common glass has a g-value of ca. 0.85 or 85 % which means that 85 % of the radiated energy can enter the room. Windows manufacturers give 0.75 as value of double-glazed windows and for modern triple glazing this value is ca. 0.55.
- Total solar factor (gtot)**
 This is the proportion of solar energy effectively transmitted into the room through the fabric and the glazing. The total solar factor "gtot" is also referred to as "g-Wert", "solar factor", "g-value" or "solar heat gain SHGC". A low figure means a good thermal effect. The "gtot value" is given directly.
- Shading factor (Fc value)**
 Shows the reduction of solar energy that is transmitted through glazing and fabric. A low figure means a good thermal effect. The value 0.30 means that 30 % of the solar energy can be transmitted to the the room. The Fc value, or shading coefficient (Sc) is calculated from g_{tot}/g and it is defined in DIN 4108 Part 2.
- Thermal transmission coefficient (U-value)**
 Quantifies the value of the solar heat that enters the room through the glazing and the fabric. The value, also called Uvalue, is given in Watt per square metre and Kelvin (W/m²K).

OPTICAL PARAMETERS

- OF Openness factor (Tvnn)**
 The proportion of holes in the fabric in accordance with the European standard is independent of the fabric colour. For fabric with the same type of weave it must be determined on the fabric with the darkest colour though.
- Tv Visible light transmittance (or Tvnh)**
 This factor is the total percentage of light radiated through the fabric over a wavelength of 380 and 780 nm (nanometres), also called visible spectrum (total illumination).
- Rv Visible light reflectance (Rvnh)**
 Proportion of light reflected by the fabric.
 Tdif Diffuse transmission factor: Correlation of the two factors above: Tdif = Tv - OF. It is indicated with Tvndif for the aspects of glare and shape recognition (outward visibility/night privacy). A low figure shows a better visual comfort. The natural light control is designated as Tvdifh. It is used to ascertain a fabric's light diffusion capacity. A high figure means more natural light. Tv = Tvnh = Tvnn + Tvndif
- Tuv Ultra violet transmittance.**
 This factor measures the percentage of ultra violet light radiated through the fabric over a wavelength of 280 and 380 nm (nanometres). The UV radiation accelerates natural ageing. All sun protection installations also provide protection against UV radiation.
- Glare Control**
 Fabrics with the optical properties – direct transmittance Tv < 5 % and diffuse transmission Tdif less than 2 % - achieve a Glare Rating of 3 or "good" according to EN 14501.

The fabric that is suited best for shading can be determined with certain parameters:

- Orientation of the building
- Location
- Seasons

All these elements vary the direct effect of the solar radiation to the windows

AREAS OF SOLAR RADIATION

UVC radiation	(100-280 nm)	Very Short-wave, is absorbed by the Earth's top atmosphere
UVB radiation	(280-315 nm)	Short-wave, causes skin damage and sunburn
UVA radiation	(315-380 nm)	Long-wave, causes skin ageing
Visible light	(380-780 nm)	Visible radiation range
Infrared radiation	(780-2500 nm)	Heat radiation

Room acoustics

Poor sound insulation or poor acoustics can considerably impair the quality of use of rooms. Requirements are formulated ever more often for offices, conference rooms or public buildings that can only be met by using sound-absorbing products with acoustic properties.

The sound absorption coefficient α_w is determined according to ISO 354 in the frequency range of 125 Hz to 4000 Hz.

For comparison of different products for use in buildings in accordance with DIN EN ISO 11654 the determined sound absorption coefficients are classified as follows:

Sound absorption class	α_w values
A	0.90 0.95 1.00
B	0.80 0.85
C	0.60 0.65 0.70 0.75
D	0.30 0.35 0.40 0.45 0.50 0.55
E	0.25 0.20 0.15
Not classified	0.10 0.05 0.00



Greenguard

GREENGUARD CERTIFICATION



The first voluntary US product certification for indoor air improvement was developed for products for use in commercial buildings; this certification demands that the requirements for chemical emissions are fulfilled; originally, these requirements were developed as procurement specifications for construction projects of the US Environmental Protection Agency (US EPA) and of the State of Washington. The GREENGUARD Certification (formerly known as GREENGUARD Indoor Air Quality Certification) meets strict emission limits of more than 360 VOCs and an upper limit of all chemical emissions together (TVOC). GREENGUARD certified furniture also meets the BIFMA X7.1 requirements.

GREENGUARD GOLD

GREENGUARD Gold (formerly know as GREENGUARD Children and Schools Certification) considers safety factors to account for sensitive individuals (such as children or the elderly), and ensures that a product is acceptable for use in environments such as schools or healthcare facilities. In addition to the restriction of more than 360 VOCs and the total of all chemical emissions (TVOC) the GREENGUARD Gold Certified products meet the requirements of the State of California's Department of Public Health Services as determined in the "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers, Version 1.1 2010" (widely known as California Section 01350).

The following products bear the GREENGUARD Certificate:

- "Cannes" – sample card II-50
- "Dayton" – sample card II-60
- "Tokio OF1", "Tokio OF3", "Tokio OF5" – sample card II-70
- "Nancy" – sample card II-90
- "Denver" – sample card II-100
- "Detroit OF1", "Detroit OF3", "Detroit OF5" – sample card II-110
- "Seoul99", "Seoul99 LowE", "Seoul99-activ" – sample card II-120

Cradle-to-Cradle



The Cradle-to-Cradle design concept describes the option of sustainable production by emulating nature's own cycle of growth and decomposition in the manufacturing process. Like natural objects, products should be designed so that they can be recycled in natural supply cycles at the end of their life cycle so that they do not pose any burden on the environment.

This certificate has been awarded to our products "Oxford 852.xx" and "Leeds 853.xx – sample card II-80", both fabrics made of an Ingeo™ biopolymer PLA (PolyLactic Acid) fibre. Ingeo™ is an environmentally friendly biopolymer that is obtained from renewable resources. It is made by polymerisation of lactic acid that is obtained from the fermentation of plant-based sugars. Ingeo™ today emits 60 % less greenhouse gases in production and uses 50 % less non-renewable energies than would be the case for traditional polymers such as PET.

The fabric "Cordoba 851.00 - sample card I-60" is presently undergoing the complex process of Cradle-to-Cradle Certification. We expect the positive decision in summer 2015. This fabric is made of 100 % recycled PET and therefore it contributes to sustainability and conservation of resources. One square metre of fabric is made of ca. 6 discarded PET bottles.

Sustainability certificates

Roller blinds | Panel blinds | Pleated blinds | Vertical blinds | Blackout installations



OEKO-TEX® Standard 100



OEKO-TEX® Standard 100 is an independent test and certification system for textile raw, semi-finished and finished products of all processing levels. Examples of certifiable articles: raw and dyed / refined yarns, raw and dyed / refined woven and knitted fabrics, ready-made articles (apparel of any kind, home and house textiles, bed linen, terry products, textile toys, etc.).

CRITERIA

The tests for harmful substances comprise:

- substances forbidden by law
- substances regulated by law
- substances known to bear a health concern (but are no chemicals regulated by law)
- and parameters for preventive healthcare

In total their requirements clearly go beyond existing national acts.

LABORATORY TESTS AND PRODUCT CLASSES

OEKO-TEX® tests for harmful substances are always designed for the actual use of the textile product. The more a product comes into contact with the skin, the stricter the human ecological requirements it must fulfil.

Accordingly, there are four product classes:

- **Product class I:**
Textile articles for babies and infants up to 3 years of age (clothing, toys, bed linen, terry products, etc.)
- **Product class II:**
Direct skin contact textiles (underwear, bed linen, T shirts, etc.)
- **Product class III:**
Outerwear (jackets, coats, etc.)
- **Product class IV:**
Furnishing materials (curtains, table cloths, upholstery, fabrics for indoor sun protection, etc.)

CERTIFICATION

The prerequisite for certification of textile products according to OEKO-TEX® Standard 100 is that all components of an article comply with the required criteria without exception. Almost all fabrics of our "Objecta" line fulfil the requirements of OEKO-TEX® Standard 100.

LEED

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

is a classification system for ecological building that has been developed by the US Green Building Council in 1998. It defines a number of standards for environmentally friendly, resource-preserving and sustainable building and it was developed on the basis of the British certification system BREEAM. Certification has also been possible in Canada since 2002. The requirements of the US system were adopted there and in detail they were adapted to the climatic conditions, common ways of construction and national laws. The evaluation of buildings in both evaluation systems is made by awarding points for specific criteria. The sum of the points reached determines the certification level of the building. LEED refers to all phases of the life cycle. United States Green Building Council (USGBC) with its headquarters in Washington and Canada Green Building Council (CaGBC) with its headquarters in Ottawa, respectively, are responsible for the introduction and continuous further development of the system.

Evaluation categories:

- Sustainable sites
- Water efficiency
- Energy & atmosphere
- Materials & resources
- Indoor environmental quality
- Innovation & design process

Scope of application:

- New construction
- Existing buildings
- Core and shell
- Commercial interiors
- Retail
- Homes
- Neighbourhood development
- Schools
- Healthcare

Evaluation:

- Certified
- Silver
- Gold
- Platinum

In 2009 the version LEED v2.2, valid at that time, was replaced by LEED v3. According to the current standard the number of required points was raised from 69 to now 110 points. Accordingly, the distribution of points has been set up anew:

- Certified: 40–49 points
- Silver: 50–59 points
- Gold: 60–79 points
- Platinum: 80 and more points



BREEAM

BUILDING RESEARCH ESTABLISHMENT ENVIRONMENTAL ASSESSMENT METHOD

BREEAM is short for Building Research Establishment Environmental Assessment Method and it is the oldest and most widely used certification system for sustainable building. It was developed in Great Britain in 1990. BREEAM uses a simple point system in eight evaluation categories to award a quality label with four levels. The criteria take into consideration the effects on global, regional, local and indoor levels. BREEAM originally evaluated the phases from planning through execution to use. In 2008 a comprehensive revision took place so that now the entire life cycle is taken into consideration and, among other things, a changed weighting of the environmental effects has been introduced and mandatory points to be reached are demanded.

Evaluation categories:

- Management
- Energy
- Water
- Land consumption and ecology
- Health and well-being
- Transport
- Material
- Pollution

A certain number of points is awarded for each of these categories. The points are awarded in each category where the combination also plays a role so that due to different weights single points are summed up to a total number of points. The valuation will then result from the number of awarded points. The evaluation is made in 3 sections, T1 building, T2 management (after the 1st year) and T3 user (after the 1st year).

Scope of application:

- Reconstruction and new construction
- Wide spectrum of building types such as offices, public buildings
- Industry
- Residential houses and settlements

Evaluation:

- ***** outstanding
- **** excellent
- *** very good
- ** good
- * satisfactory

How can erfal support you when you have questions concerning LEED, BREEAM and DGNB?

Many fabrics that are given in erfal's "Objecta" catalogue are rated positively by the evaluation system. The use of recycled materials, regional manufacture and reduction of harmful substances in the indoor air are criteria that can be evaluated. The requirements refer to the total evaluation in the project and not to individual products. Please, contact us and ask us what the privacy and glare shield requirements for your projects are. Your erfal Objecta consultant will make proposals with regard to technology and fabrics that suit your shading requirements and that have a positive effect on sustainability in accordance with LEED, BREEAM and DGNB.



DGNB

GERMAN SEAL OF APPROVAL FOR SUSTAINABLE BUILDING

In January 2009 the German seal of approval for the sustainability of buildings was introduced. It is a joint project of the German Federal Ministry for Transport, Building and Urban Development (BMVBS) and the German Sustainable Building Council (DGNB) established in 2007.

The aim of Germany in developing a national certificate was to close the gaps of existing systems and to introduce further quality criteria that also take into consideration German standards and regulations. The system is based on the life cycle concept and includes, besides the ecological aspects, also economic and sociocultural aspects - all three columns of sustainability - and this sets it apart from most of the existing evaluation methods. The certificate also takes into consideration regional characteristics and building materials. In order to even reach the lowest level buildings have to meet clearly more than the legal standards.

Evaluation categories:

- Ecology
- Economy
- Social and functional aspects
- Technology
- Processes
- Location

The six criteria consisted, e.g. in the field of office and administration, of total 49 indicators, so called profiles. While the first five topic areas are treated equally, the location factor is given a special value.

Scope of application: The certificate is designed for building constructions of any kind, from office tower through single-family houses to infrastructure buildings such as tunnels and bridges.

Evaluation:

- Bronze
- Silver
- Gold

The parameters of a building are evaluated for every single category, i.e. deficiencies in one segment cannot be compensated with the special capabilities in another segment. To be eligible for the certificate, a good mark must be reached in every segment.

The certification process

Principals determine jointly with the certification bodies in advance what quality levels they wish to attain. First a planner must be hired who received an additional training for certification. This training shall be offered at universities, chambers or other education institutions. The planners have to submit the objectives for the planned building in a specifications document when they file the application for the certificate. If all criteria are fulfilled, the principal is issued a pre-certificate as an advertising possibility for his building. Work will be monitored continuously during the construction phase. Deviations will be recorded and must be eliminated if they jeopardize the sought certificate level. If in the final examination by DGNB it is found that the entire procedure has been carried out properly, the certificate will be awarded together with a badge.

Available colours

Venetian blinds

Price group	Colour number				
	Basic Line Flexx Line	Basic Line Flexx Line Sky Line	Top/bottom profile 16 / 25 mm	Plastic parts 25 mm	Ladder braid
2	09.140	09.140	09.140	020	010
2		07.001	02.212	213	210
2		09.350	01.001	001	210
1		02.000	01.001	001	210
0	01.001	01.001	01.001	001	210
2		08.213	00.213	213	210
3		06.212	02.212	213	210
2		31.001	01.001	001	210
2		09.130	05.210	213	210
2		02.211	00.213	213	210
2		00.211	00.213	213	210
1		01.210	00.213	213	210
1		00.212	00.213	213	210
2		02.212	02.212	213	210
0	00.213	00.213	00.213	213	210
2		10.213	00.213	213	210
0	01.190	01.190	01.190	190	190
2		09.120	01.220	181	210
2		08.220	01.220	181	210
0	01.220	01.220	01.220	181	210
2		09.351	01.220	181	210
2		02.220	01.220	181	210
2		07.190	00.181	181	190
1		01.121	01.121	150	120
3		09.360	00.181	181	190
0		00.201	00.201	181	210
2		05.210	05.210	213	210
2		31.220	01.220	181	210
1		01.180	00.181	181	120
0	00.181	00.181	00.181	181	120
2		09.141	09.141	181	120
1	01.122	01.122	01.122	140	120

Price group	Colour number				
	Basic Line Flexx Line	Basic Line Flexx Line Sky Line	Top/bottom profile 16 / 25 mm	Plastic parts 25 mm	Ladder braid
2		02.140	02.140	260	120
2		04.141	02.140	260	190
2		02.231	02.231	260	250
2		09.142	09.142	260	250
1	01.250	01.250	01.250	260	250
1	01.260	01.260	01.260	260	250
2		00.265	01.260	260	270
2		00.271	00.271	271	270
2		07.380	01.160	150	160
1		01.160	01.160	150	160
1	01.170	01.170	01.170	170	160
2	02.191	02.191	02.191	190	190
2		02.160	01.160	150	160
2	01.280	01.280	01.280	280	270
1		01.110	01.280	280	270
2		02.071	02.071	150	980
2		02.321	01.290	290	370
3		06.322	01.290	290	370
2		04.391	04.391	290	370
3		02.292	02.291	290	300
2		09.340	01.301	300	300
2		02.291	02.291	290	300
2	00.301	00.301	01.301	300	300
2	01.320	01.320	01.320	290	340
2		09.352	02.350	360	540
2		01.350	02.350	360	540
2		02.420	01.360	360	380
2		07.440	01.370	360	380
2	02.350	02.350	02.350	360	540
2		01.330	01.330	330	340
2		06.341	01.320	330	340
2		01.340	01.051	051	340

Available colours

Venetian blinds

Price group	Basic Line Flexx Line Slat width 16 mm	Basic Line Flexx Line Sky Line Colour number			
		Slat width 25 mm	Top/bot- tom profile 16 / 25 mm	Plastic parts 25 mm	Ladder braid
2		07.450	01.450	360	210
2		09.341	01.450	360	210
2	01.450	01.450	01.450	360	210
2		02.480	01.360	360	210
2		01.540	01.520	520	540
2	02.500	02.500	02.500	520	540
2		01.530	01.520	520	540
3		02.520	02.040	040	040
1		01.640	01.640	580	590
2		07.630	01.620	620	620
3		06.622	01.620	620	620
2		02.631	01.000	001	210
2	02.620	02.620	02.620	620	720
2	02.650	02.650	01.650	650	590
2		00.592	01.580	580	590
1	01.580	01.580	01.580	580	580
2		07.770	01.700	710	720
2		09.143	01.750	750	920
1		01.760	01.750	750	920
2		02.720	01.700	710	720
2	01.710	01.710	01.700	710	720
1	01.690	01.690	01.690	690	720
2		00.690	02.690	690	590
2		02.690	02.690	690	590
2		06.880	01.050	870	870
2	01.890	01.890	01.890	890	870
3		02.900	02.900	890	900
2		00.951	02.900	890	900
1	01.930	01.930	01.930	750	900
2		07.930	01.930	750	920
3		02.860	02.860	890	870
1	01.870	01.870	01.870	870	870

Price group	Basic Line Flexx Line Slat width 16 mm	Basic Line Flexx Line Sky Line Colour number			
		Slat width 25 mm	Top/bot- tom profile 16 / 25 mm	Plastic parts 25 mm	Ladder braid
2		02.050	01.051	051	050
2		07.050	01.051	051	050
2		04.380	04.380	150	250
2		02.110	02.110	150	160
1		01.070	01.051	051	050
1		01.060	01.060	051	050
2		09.144	01.051	051	050
1	01.050	01.050	01.050	040	040
3		06.042	01.040	040	040
2	02.040	02.040	02.040	040	040
2		02.030	02.030	060	040
1	00.031	00.031	00.031	031	040
3		09.362	02.040	040	040
2		31.040	01.040	040	040
2		08.040	01.040	040	040
0	01.040	01.040	01.040	040	040
2		02.031	00.031	031	020
2		02.021	02.021	031	020
1		01.021	02.021	031	010
2	02.011	02.011	02.011	020	010
2		31.020	01.020	020	010
0	01.020	01.020	01.020	020	010
3		09.361	01.020	020	010
1	01.030	01.030	01.030	060	020
0	04.011	04.011	04.011	020	010
2		34.011	04.011	020	010
1		03.010	04.011	020	010
1	04.020	04.020	01.030	060	020
2	05.031	05.031	02.030	060	020
3		06.032	00.031	031	040
3		06.012	06.011	020	010
2		09.353	04.011	020	010
1		06.011	06.011	020	010
2		14.011	04.011	020	010
2		08.011	04.011	020	010
2		07.010	04.011	020	010
2		09.342	04.011	020	010
2	05.030	05.030	00.031	031	040

New room experiences – www.erfal.de

