



**Allgemeine technische Informationen für alle
HOMAPAL®-Produkte |**

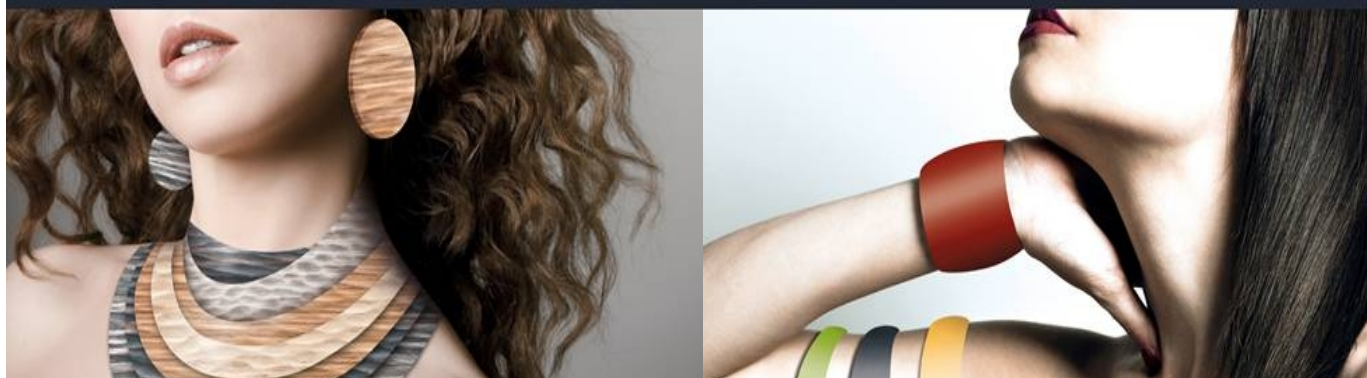
***General technical information for all
HOMAPAL® products |***

***Informations techniques générales pour tous les
produits HOMAPAL®***

(Stand: 05/2015 | Status as of 05/2015 | Edition 05/2015)

Für zusätzliche Beratung steht Ihnen unsere Technische Abteilung zur Verfügung. |
For any further guidance please contact our technical department. |
Pour tous renseignements techniques complémentaires veuillez contacter notre département technique.

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Dekor	Bezeichnung Decor Décor	Format Size Formats		Dicke Thickness Épaisseurs		Oberfläche Surface Material Matériaux	Finish Finition (P=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/n Please observe our Veuillez bien respecter notre/nos
		a=2440x1220mm b=3050x1220mm	[mm]	ca. [kg/m²]				■= möglich possible □= nicht möglich impossible						

HOMAPAL® Metall-Kollektion | HOMAPAL® Metal collection | Collection HOMAPAL® Métal

Aluminium | Aluminium

346/770		Rivet V Stahlton RIVET V Steeltone	a,b	1,0	2,0	Aluminium Aluminium	Epoxy, Eloxiert Epoxy, anodized Epoxy, anodisé	□	■	6	0,3	80	016	 Hinweis RIVET am Ende der Dekorübersicht. Remark RIVET at the end of list. Remarque RIVET au terme de cette liste.
346/970		RIVET FLORA RIVET FLORA	a	1,0	2,0	Aluminium Aluminium	Epoxy, Eloxiert Epoxy, anodized Epoxy, anodisé	□	■	6	0,3	80	016	 Hinweis RIVET am Ende der Dekorübersicht. Remark RIVET at the end of list. Remarque RIVET au terme de cette liste. - > Die Platte hat einen umlaufenden Rand von ca. 15 mm ohne Dekor. >The pattern starts 15 mm from the edge of the sheet and there is always one repeating of the pattern over the length and the width of the sheet. > Le dessin commence 15 mm du bord de panneau et il y a toujours un rapport du dessin par panneau.
425/000		LONGLINE Champagnerton LONGLINE Champagne	a,b	1,0	1,4	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
426/000		LONGLINE Stahlton LONGLINE Steeltone	a,b	1,0	1,4	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
431		Kreuzstrichmatt Natur Cross-Brushed Natural	a,b	1,0	1,4	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
434		Kreuzstrichmatt Goldton Cross-Brushed Goldtone	a,b	1,0	1,4	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
439		Kreuzstrichmatt Taupe Cross-Brushed Brownish Grey	a,b	1,0	1,4	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
441		Strichmatt Natur Brushed Natural	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
442		Strichmatt Goldton Brushed Goldtone	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
444		Gebürstet Natur Brushed Natural	a,b	1,0	1,5	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	

Dekor		Bezeichnung Decor Décor	Format Size Formats		Dicke Thickness Epaisseur		Oberfläche Surface Material Matériaux Finish/Finition (P*=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficillement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/-n Please observe our Veuillez bien respecter notre/nos
			(mm)	ca. [kg/m²]										
444/170		RIVET I RIVET I	a,b	1,0	2,0	Aluminium Aluminium	P* / Eloxiert P* / anodized P* / anodisé	□	■	6	0,3	80	016	 Hinweis RIVET am Ende der Dekorübersicht. Remark RIVET at the end of list. Remarque RIVET au terme de cette liste.
444/370		RIVET III RIVET III	a,b	1,0	2,0	Aluminium Aluminium	P* / Eloxiert P* / anodized P* / anodisé	□	■	6	0,3	80	016	 Hinweis RIVET am Ende der Dekorübersicht. Remark RIVET at the end of list. Remarque RIVET au terme de cette liste.
444/850		Gebürstet Natur DOTS Brushed Natural DOTS	a,b	1,3	1,8	Aluminium Aluminium	P*	■	■	3	0,3	80	002	
444/860		Gebürstet Natur FOOTPLATE Brushed Natural FOOTPLATE	a,b	1,3	1,8	Aluminium Aluminium	P*	■	■	3	0,3	80	002	
444/920		RIFFEL Horizontal Natur RIFFEL Horizontal Natural	a,b	0,9	1,4	Aluminium Aluminium	P*	■	■	4	0,3	80	001	 Hinweis RIFFEL am Ende der Dekorübersicht. Remark RIFFEL at the end of list. Remarque RIFFEL au terme de cette liste.
444/930		RIFFEL Vertikal Natur RIFFEL Vertical Natural	a,b	0,9	1,4	Aluminium Aluminium	P*	■	■	4	0,3	80	001	 Hinweis RIFFEL am Ende der Dekorübersicht. Remark RIFFEL at the end of list. Remarque RIFFEL au terme de cette liste.
445		Strichmatt Kupfertone dunkel Brushed Dark Coppertone	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
446		Strichmatt Stahlton Brushed Steeltone	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
446/920		RIFFEL Horizontal Stahlton Riffel Horizontal Steeltone	a,b	0,9	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	 Hinweis RIFFEL am Ende der Dekorübersicht. Remark RIFFEL at the end of list. Remarque RIFFEL au terme de cette liste.
447		Strichmatt Kupfertone Brushed Coppertone	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
447/966		Cella Kupfertone Cella Coppertone	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	□	■	4	0,3	80	002	
448		Strichmatt Schwarz Brushed Black	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	
448/966		Cella Schwarz Cella Black	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	□	■	4	0,3	80	002	

Dekor		Bezeichnung Decor Décor	Format Size Formats		Dicke Thickness Epaisseur		Gewicht Weight Poids		Oberfläche Surface Material Matériaux Finish/Finition (P=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/-n Please observe our Veuillez bien respecter notre/nos
			a=2440x1220mm b=3050x1220mm	(mm)	ca. [kg/m²]											
451		Strichmatt Bronzeton Brushed Bronzestone	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001			
451/100		MESH Bronzeton MESH Bronzestone	a+b	1,3	1,6	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002			
455/000		Strichmatt Dunkelgrau Brushed Graphite	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001			
456		Strichmatt Bronzeton medium Brushed Medium Bronzestone	a,b	1,0	1,3	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001			
459/100		MESH Anthrazit MESH Anthracite	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002			
459/965		MIKADO Anthrazit MIKADO Anthracite	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002	 Dekorrapport bei ca. 100 cm längs Pattern repeat at approx. 100 cm in the length Décor se répète lors d'environ 100 cm en direction longitudinale.		
469/370		RIVET III Anthrazit RIVET III Anthracite	a,b	1,0	2,0	Aluminium Aluminium	Epoxy, Eloxiert Epoxy, anodized Epoxy, anodisé	□	■	6	0,3	80	016	 Hinweis RIVET am Ende der Dekorübersicht. Remark RIVET at the end of list. Remarque RIVET au terme de cette liste.		
469/920		RIFFEL Horizontal Anthrazit RIFFEL Horizontal Anthracite	a,b	0,9	1,4	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	 Hinweis RIFFEL am Ende der Dekorübersicht. Remark RIFFEL at the end of list. Remarque RIFFEL au terme de cette liste.		
469/930		RIFFEL Vertikal Anthrazit RIFFEL Vertical Anthracite	a,b	0,9	1,4	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001	 Hinweis RIFFEL am Ende der Dekorübersicht. Remark RIFFEL at the end of list. Remarque RIFFEL au terme de cette liste.		
470		Spiegelglanz Superior Natur Polished Superior Natural	a,b	1,0	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	 Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.		
470/631		Spiegelglanz KREISE Natur Polished Circles Natural	a	1,3	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	3	0,1	80	005	 Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.		
470/635		Spiegelglanz VULCANO Natur Polished VULCANO Natural	a	1,3	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	 Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.		
471		Spiegelglanz Superior Goldton Polished Superior Goldtone	a,b	1,0	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	 Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.		

Dekor	Bezeichnung Decor Décor	Format Size Formats		Dicke Thickness Epaisseur		Gewicht Weight Poids		Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	Bitte beachten Sie unsere/-n Please observe our Veuillez bien respecter notre/nos
		a=2440x1220mm b=3050x1220mm												
		(mm)	ca. [kg/m²]	Oberfläche Surface Material Matériaux (P=Polyester Laque polyester)	Finish Finition (P=Polyester Laque polyester)									
471/636	 Spiegelglanz LAVA Goldton Polished LAVA Goldtone	a	1,3	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
473	 Spiegelglanz TEA Polished TEA	a,b	1,0	1,7	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
474	 Spiegelglanz SMOKEY GREY Polished Smokey Grey	a,b	1,0	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
474/636	 Spiegelglanz LAVA Smokey Grey Polished LAVA Smokey Grey	a	1,3	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
475	 Gunmetal matt Gunmetal matt	a,b	1,0	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
475/635	 VULCANO Gunmetal matt VULCANO Gunmetal matt	a	1,3	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
477	 Spiegelglanz Kupferton Polished Coppertone	a,b	1,0	1,7	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
480/000	 Spiegelglanz Normal Natur Polished Normal Natural	a,b	0,8	1,5	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
481/000	 Spiegelglanz Standard Goldton Polished Standard Goldtone	a,b	0,8	1,5	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
485/000	 Spiegelglanz Spezial Natur (auf Anfrage) Polished Special Natural (upon request)	a,b	1,0	1,8	Aluminium Aluminium	Eloxiert Anodized Anodisé	□	■	4	0,1	80	005	Hinweis SPIEGELGLANZ am Ende der Dekorübersicht. Remark POLISHED ALUMINIUM at the end of list. Remarque ALUMINIUM BRILLANCE MIROIR au terme de cette liste.	
682	 Alu Satiné Stahlton Alu Satiné Steeltone	a,b	1,0	1,6	Aluminium Aluminium	Epoxy	■	■	4	0,3	80	001		
704/966	 Cella Goldton Cella Goldtone	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	□	■	4	0,3	80	002		
741 R	 Alu Strichmatt Natur ROBUST Alu Brushed Natural ROBUST	a,b	0,8	1,3	Aluminium Aluminium	UV	■	■	4	0,3	80	001	Siehe Allgemeine technische Information Seite 20 See General Technical Information page 20 Voir Informations techniques générales page 20	

Dekor			Bezeichnung <i>Decor</i> <i>Décor</i>			Format Size Formats		Dicke Thickness Epaisseur		Gewicht Weight Poids		Oberfläche Surface		Postforming Qualität Post-forming quality <i>Qualité</i> postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality <i>Qualité</i> difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature <i>Usinage à</i> température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use <i>Température</i> max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/-n <i>Please observe our</i> <i>Veuillez bien respecter notre/nos</i>
						a=2440x1220mm b=3050x1220mm	(mm)	ca. [kg/m²]	Material <i>Matériaux</i>	Finish <i>Finition</i> (P=Polyester Laque polyester)										
791 N		Strichmatt Natur SPEZIAL (auf Anfrage) <i>Brushed Natural Special (upon request)</i>	a,b	0,8	1,3	Aluminium <i>Aluminium</i>	Epoxy	■	■	4	0,3	80	001							
794		Stichmatt Goldton SPEZIAL (auf Anfrage) <i>Brushed Goldtone Special (upon request)</i>	a,b	0,8	1,3	Aluminium <i>Aluminium</i>	Epoxy	■	■	4	0,3	80	001							
796 N		Strichmatt Stahlton SPEZIAL (auf Anfrage) <i>Brushed Steeltone Special (upon request)</i>	a,b	0,8	1,3	Aluminium <i>Aluminium</i>	Epoxy	■	■	4	0,3	80	001							
796 R		Alu Strichmatt Stahlton ROBUST <i>Alu Brushed Steeltone ROBUST</i>	a,b	0,8	1,3	Aluminium <i>Aluminium</i>	UV	■	■	4	0,3	80	001	 Siehe Allgemeine technische Information Seite 20 <i>See General Technical Information page 20</i> <i>Voir Informations techniques générales page 20</i>						
800/100		MESH Natur <i>MESH Natural</i>	a,b	1,3	1,5	Aluminium <i>Aluminium</i>	Epoxy	■	■	3	0,3	80	002	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. <i>Remark MANUAL DESIGNS at the end of list.</i> <i>Remarque DÉCORS FAITS À MAIN au terme de cette liste.</i>						
800/200		CRUSH <i>CRUSH</i>	a,b	1,0	1,6	Aluminium <i>Aluminium</i>	UV	■	■	3	0,3	80	001	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. <i>Remark MANUAL DESIGNS at the end of list.</i> <i>Remarque DÉCORS FAITS À MAIN au terme de cette liste.</i>						
800/210		CRUSH SOFT <i>CRUSH SOFT</i>	a,b	1,0	1,6	Aluminium <i>Aluminium</i>	UV	■	■	3	0,3	80	001	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. <i>Remark MANUAL DESIGNS at the end of list.</i> <i>Remarque DÉCORS FAITS À MAIN au terme de cette liste.</i>						
800/250		CRISP <i>CRISP</i>	a,b	1,0	1,5	Aluminium <i>Aluminium</i>	UV	□	■	4	0,3	80	001	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. <i>Remark MANUAL DESIGNS at the end of list.</i> <i>Remarque DÉCORS FAITS À MAIN au terme de cette liste.</i>						
800/852		BICO SMALL <i>BICO SMALL</i>	a	1,3	1,6	Aluminium <i>Aluminium</i>	UV	□	■	3	0,3	80	002	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. <i>Remark MANUAL DESIGNS at the end of list.</i> <i>Remarque DÉCORS FAITS À MAIN au terme de cette liste.</i>						
802/320		METRICA Goldton <i>METRICA Goldtone</i>	a,b	1,0	1,5	Aluminium <i>Aluminium</i>	Epoxy	■	■	3	0,3	80	002							
802/970		MARTELÉ Goldton <i>MARTELÉ Goldtone</i>	a,b	1,0	1,5	Aluminium <i>Aluminium</i>	Epoxy	■	■	3	0,3	80	002							
805/03		LOUNGE Bronzeton <i>LOUNGE Bronzetone</i>	a,b	1,3	1,5	Aluminium <i>Aluminium</i>	Epoxy	□	■	3	0,3	80	002							
805/240		CRUSH CATENA Bronzeton <i>CRUSH CATENA Bronzetone</i>	a,b	1,0	1,6	Aluminium <i>Aluminium</i>	UV	□	■	3	0,3	80	001	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. <i>Remark MANUAL DESIGNS at the end of list.</i> <i>Remarque DÉCORS FAITS À MAIN au terme de cette liste.</i>						

Dekor		Bezeichnung Decor Décor	Format Size Formats		Dicke Thickness Epaisseur		Gewicht Weight Poids		Oberfläche Surface Material Matériaux Finish/Finition (P=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/-n Please observe our Veuillez bien respecter notre/nos
			a=2440x1220mm b=3050x1220mm	[mm]	ca. [kg/m²]											
805/400		MATRIX Champagner MATRIX Champagne	a,b	1,3	1,5	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002			
		FLAME Champagner FLAME Champagne	a,b	1,0	1,5	Aluminium Aluminium	P*	■	■	4	0,3	80	001	 Dekorrapport bei ca. 40 cm längs und ca. 30 cm quer. Pattern repeat at approx. 40 cm in the length and approx. 30 cm in the width. Décor se répète lors d'environ 40 cm en direction longitudinale et lors d'environ 30 cm en direction transversale.		
		LOUNGE Stahlton LOUNGE Steeltone	a,b	1,3	1,5	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002			
		MATRIX Stahlton MATRIX Steeltone	a,b	1,3	1,5	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002			
		FLAME Stahlton FLAME Steeltone	a,b	1,0	1,5	Aluminium Aluminium	P*	■	■	4	0,3	80	001	 Dekorrapport bei ca. 40 cm längs und ca. 30 cm quer. Pattern repeat at approx. 40 cm in the length and approx. 30 cm in the width. Décor se répète lors d'environ 40 cm en direction longitudinale et lors d'environ 30 cm en direction transversale.		
		METRICA Bronzeton METRICA Bronzestone	a,b	1,0	1,5	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002			
		MARTELÉ Bronzeton MARTELÉ Bronzestone	a,b	1,0	1,5	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002			
		MATRIX Anthrazit MATRIX Anthracite	a,b	1,3	1,5	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002			
		METRICA Anthrazit METRICA Anthracite	a,b	1,0	1,5	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002			
		MARTELÉ Anthrazit MARTELÉ Anthracite	a,b	1,0	1,5	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002			
820/000		Gebürstet Softmatt Natur Spezial (auf Anfrage) Brushed Soft Matt Natural Special (upon request)	a,b	0,8	1,2	Aluminium Aluminium	P*	■	■	4	0,3	80	001			
		LOUNGE Champagner LOUNGE Champagne	a,b	1,3	1,5	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002			
825/100		MESH Champagner MESH Champagne	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002			

Dekor		Bezeichnung Decor Décor	Format Size Formats		Dicke Thickness Épaisseurs		Gewicht Weight Poids		Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent-flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommended balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/-n Please observe our Veuillez bien respecter notre/nos
			a=2440x1220mm b=3050x1220mm			ca.	Oberfläche Surface Material Matériaux Finish/Finition (P=Polyester Laque polyester)								
825/350		FROZEN Champagne FROZEN Champagne	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002		
825/965		MIKADO Champagne MIKADO Champagne	a,b	1,3	1,5	Aluminium Aluminium	Epoxy	□	■	3	0,3	80	002	 Dekorrapport bei ca. 100 cm längs Pattern repeat at approx. 100 cm in the length Décor se répète lors d'environ 100 cm en direction longitudinale.	
856		DOTS Stahlton DOTS Steeltone	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002		
866		FOOTPLATE Stahlton FOOTPLATE Steeltone	a,b	1,3	1,6	Aluminium Aluminium	Epoxy	■	■	3	0,3	80	002		
Edelstahl Stainless Steel Acier inoxydable															
600/600		Edelstahl WHEELS Stainless Steel WHEELS	a	1,0	1,6	Edelstahl Stainless steel Acier inoxydable	--	□	■	5	0,3	80	008	 Besonderen technischen Informationen für HOMAPAL EDELSTAHL. Special technical information for HOMAPAL STAINLESS STEEL. Informations techniques spéciales pour HOMAPAL Acier Inoxydable.	
641/000		Edelstahl Gebürstet Stainless Steel Brushed	a,b	0,8	1,8	Edelstahl Stainless steel Acier inoxydable	--	□	■	5	0,3	80	007	 Besonderen technischen Informationen für HOMAPAL EDELSTAHL. Special technical information for HOMAPAL STAINLESS STEEL. Informations techniques spéciales pour HOMAPAL Acier Inoxydable.	
644/000		Edelstahl Matt Stainless Steel Matt	a,b	0,8	1,8	Edelstahl Stainless steel Acier inoxydable	--	□	■	5	0,3	80	008	 Besonderen technischen Informationen für HOMAPAL EDELSTAHL. Special technical information for HOMAPAL STAINLESS STEEL. Informations techniques spéciales pour HOMAPAL Acier Inoxydable.	
Kupfer und Messing Copper and Brass Cuivre et Laiton															
401/200		Kupfer CRUSH Copper CRUSH	a,b	1,3	2,0	Kupfer Copper Cuivre	UV	□	■	2	0,3	80	009	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. Remark MANUAL DESIGNS at the end of list. Remarque DÉCORS FAITS À MAIN au terme de cette liste.	
401/229		Kupfer CRUSH Stipple Copper CRUSH Stipple	a,b	1,3	2,0	Kupfer Copper Cuivre	UV	□	■	2	0,3	80	009	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. Remark MANUAL DESIGNS at the end of list. Remarque DÉCORS FAITS À MAIN au terme de cette liste.	
490		Kupfer ANTIK Copper Antique	a,b	1,3	2,0	Kupfer Copper Cuivre	UV	□	■	2	0,3	80	009	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. Remark MANUAL DESIGNS at the end of list. Remarque DÉCORS FAITS À MAIN au terme de cette liste.	
493		LINEA HELL LINEA LIGHT	a,b	1,3	2,0	Kupfer Copper Cuivre	UV	□	■	2	0,3	80	009	 Hinweis HANDGESTALTUNG am Ende der Dekorübersicht. Remark MANUAL DESIGNS at the end of list. Remarque DÉCORS FAITS À MAIN au terme de cette liste.	

Dekor		Bezeichnung <i>Decor</i> <i>Décor</i>	a=2440x1220mm b=3050x1220mm	Format Size Formats		Dicke Thickness Epaisseurs		Gewicht Weight Poids		Oberfläche Surface Material Matériaux Finish/Finition (P=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/-n <i>Please observe our</i> <i>Veuillez bien respecter notre/nos</i>
				(mm)	ca. [kg/m²]												
622G <																	

HOMAPAL® Magnethaftplatten-Kollektion | HOMAPAL® Magnetic Board collection | Collection HOMAPAL® Panneaux Magnétiques

8200		Magnethaftplatte für individuelle Gestaltung (Furnier, Tapete, Laminat, Lack, ...) Magnetic Board for individual finish (veneer, wallpaper, laminate, lacquer, ...)	a,b	1,0	2,8	--	--	□	□	8	0,3	40	8200	 Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.
8204		Schwarz Glänzend (Boardmarker) Black Glossy (Boardmarker)	a,b	1,0	2,8	Melamin Melamine Mélamine	--	□	□	8	0,3	40	011	 Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.
8205		Schwarz Matt (Kreide) Black Matt (Chalk)	a,b	1,0	2,8	Melamin Melamine Mélamine	--	□	□	8	0,3	40	011	 Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.
8206		Weiß Glänzend (Boardmarker) White Glossy (Boardmarker)	a,b	1,0	2,8	Melamin Melamine Mélamine	--	□	□	8	0,3	40	011	 Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.
8208		Hellgrau Glänzend (Boardmarker) Light Grey Glossy (Boardmarker)	a,b	1,0	2,8	Melamin Melamine Mélamine	--	□	□	8	0,3	40	011	 Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.

Dekor		Bezeichnung <i>Decor</i> <i>Décor</i>	a=2440x1220mm b=3050x1220mm	Format Size Formats		Dicke Thickness Epaisseur		Gewicht Weight Poids		Oberfläche Surface Material <i>Matériaux</i> Finish <i>Finition</i> (P*=Polyester Laque polyester)	Postforming Qualität <i>Post-forming</i> <i>quality</i> <i>Qualité</i> <i>postformable</i> ■= möglich <i>possible</i> □= nicht möglich <i>impossible</i>	Schwerent- flammbare Qualität <i>Flame</i> <i>retardant</i> <i>quality</i> <i>Qualité</i> <i>difficilement</i> <i>inflammable</i> ■= Standard □= nicht möglich <i>impossible</i>	Biegeradien Gruppe Nr. <i>Bending radii</i> <i>group</i> <i>Rayon de</i> <i>courbure n°</i> <i>de groupe</i> siehe Seite <i>see page</i> <i>voir page</i> 23	Verpressung bei max. <i>Processing at</i> <i>max.</i> <i>temperature</i> <i>Usinage à</i> <i>température</i> <i>max. de</i> 60 °C und max. Druck <i>and</i> <i>max.</i> <i>pressure</i> <i>et</i> <i>pression</i> <i>max.</i> [N/mm²]	max. Temperatur im Einsatz <i>Max.</i> <i>temperature</i> <i>in use</i> <i>Température</i> <i>max.</i> <i>pendant</i> <i>l'utilisation</i> [°C]	empfohlener Gegenzug (Best. Nr.) <i>Recommend</i> <i>ed balancing</i> <i>material</i> (<i>order no.</i>) <i>Contrebalan</i> <i>cement</i> <i>recommandé</i> (<i>No. de</i> <i>commande</i>)	 Bitte beachten Sie unsere/n <i>Please observe our</i> <i>Veillez bien respecter notre/nos</i>
				(mm)	ca. [kg/m²]												
8211		Grün Matt (Kreide) <i>Green Matt (Chalk)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8217		Weiß Matt (Als Projektionsfläche geeignet) <i>White Matt (Suitable for image projection)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8219		Hellgrau Matt (Als Projektionsfläche geeignet) <i>Light Grey Matt (Suitable for image projection)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8220		Chirazrot Glänzend (Boardmarker) <i>Chiraz Red Glossy (Boardmarker)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8221		Chirazrot Matt (Kreide) <i>Chiraz Red Matt (Chalk)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8222		Mangogelb Glänzend (Boardmarker) <i>Mango Yellow Glossy (Boardmarker)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8224		Steingrau Glänzend (Boardmarker) <i>Stone Grey Glossy (Boardmarker)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8225		Steingrau Matt (Kreide) <i>Stone Grey Matt (Chalk)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8231		Alu Kreuzstrichmatt Naturton <i>Alu Cross-Brushed Natural</i>	a,b	1,3	3,2	Alu	Epoxy	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8232		Apfelgrün Glänzend (Boardmarker) <i>Applegreen Glossy (Boardmarker)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8233		Macchiato Glänzend (Boardmarker) <i>Macchiato Glossy (Boardmarker)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8234		Macchiato Matt (Kreide) <i>Macchiato Matt (Chalk)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		
8259		Apfelgrün Matt (Kreide) <i>Applegreen Matt (Chalk)</i>	a,b	1,0	2,8	Melamin <i>Melamine</i> <i>Mélamine</i>	--	□	□	8	0,3	40	011		Besonderen technischen Informationen für HOMAPAL MAGNETHAFTPLATTEN Special technical informations for HOMAPAL MAGNETIC BOARDS Information techniques spéciales pour les PANNEAUX MAGNÉTIQUES HOMAPAL.		

Dekor		Bezeichnung Decor Décor	Format Size Formats		Dicke Thickness Épaisseurs		Gewicht Weight Poids	Oberfläche Surface Material Matériaux Finish/Finition (P=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/-n Please observe our Veuillez bien respecter notre/nos	
			a=2440x1220mm b=3050x1220mm	(mm)	ca.	[kg/m²]										
205		Schiefer Schwarz, ohne Magnetwirkung Slate Black, without magnetic effect	a,b	1,0	1,3	Melamin Melamine Mélamine		□	□	8	0,3	80	012	Auf Anfrage auch mit Magnethaftung lieferbar. Upon request also available with magnetic effect. Sur demande aussi disponible avec un effet magnétique ! [Anmerkung: Abdruck einer echten Schieferplatte aus dem Harz Remark: Mark of a genuine piece of slate from the Harz Mountains Remarque: La référence montre la structure d'un panneau de schiste véritable.]		

HOMAPAL® Holz-Kollektion | HOMAPAL® Holz collection | Collection HOMAPAL® Holz

H14/016		Nussbaum Versailles Matt Schindel Walnut Versailles Matt Shingle	a	1,4	2,0	HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	021	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H14/121		Nussbaum Versailles Matt Walnut Versailles Matt	a,b	1,0	1,2	HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H14/124		Nussbaum Versailles Matt Schnitzer lang Walnut Versailles Matt Long- Carved	a,b	1,0	1,2	HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H14/125		Nussbaum Versailles Matt Sägerau Walnut Versailles Matt Roughly-Cut	a,b	1,0	1,2	HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H28/011		Palisander Mahé Matt Rosewood Mahé Matt	a,b	1,0	1,2	HOLZ HOLZ [Blume Cathedral]	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H28/014		Palisander Mahé Matt Schnitzer Lang Rosewood Mahé Matt Long- Carved	a,b	1,0	1,2	HOLZ HOLZ [Blume Cathedral]	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H28/015		Palisander Mahé Matt Sägerau Rosewood Mahé Matt Roughly-Cut	a,b	1,0	1,2	HOLZ HOLZ [Blume Cathedral]	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H31/131		Wengé Manaus Matt Wengé Manaus Matt	a,b	1,0	1,2	HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H31/135		Wengé Manaus Matt Sägerau Wengé Manaus Matt Roughly Cut	a,b	1,0	1,2	HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H34/015		Larix Grey Matt Sägerau Larix Grey Matt Roughly-Cut	a,b	1,0	1,2	HOLZ HOLZ [Blume Cathedral]	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		
H34/016		Larix Grey Matt Schnitzer Kurz Larix Grey Matt Short-Carved	a,b	1,0	1,2	HOLZ HOLZ [Blume Cathedral]	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.		

Dekor		Bezeichnung <i>Decor</i> <i>Décor</i>	Format Size <i>Formats</i>		Dicke <i>Thickness</i> <i>Épaisseurs</i>		Gewicht <i>Weight</i> <i>Poids</i>		Oberfläche <i>Surface</i> Material <i>Matériaux</i> Finish/Finition (P=Polyester Laque polyester)	Postforming Qualität <i>Post-forming</i> <i>quality</i> <i>Qualité</i> <i>postformable</i> ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität <i>Flame</i> <i>retardant</i> <i>quality</i> <i>Qualité</i> <i>difficilement</i> <i>inflammable</i> ■= Standard □= nicht möglich <i>impossible</i>	Biegeradien Gruppe Nr. <i>Bending radii</i> <i>group</i> <i>Rayon de</i> <i>courbure n°</i> <i>de groupe</i> siehe Seite <i>see page</i> <i>voir page</i> 23	Verpressung bei max. <i>Processing at</i> <i>max.</i> <i>temperature</i> <i>Usinage à</i> <i>température</i> <i>max. de</i> 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz <i>Max.</i> <i>temperature</i> <i>in use</i> <i>Température</i> <i>max.</i> <i>pendant</i> <i>l'utilisation</i> [°C]	empfohlener Gegenzug (Best. Nr.) <i>Recommend</i> <i>ed balancing</i> <i>material</i> <i>(order no.)</i> <i>Contrebalan</i> <i>cement</i> <i>recommandé</i> <i>(No. de</i> <i>commande)</i>	 Bitte beachten Sie unsere/-n <i>Please observe our</i> <i>Veillez bien respecter notre/nos</i>	
			a=2440x1220mm b=3050x1220mm	[mm]	ca. [kg/m²]												
H42/161		Eiche Gekalkt Matt <i>Limed Oak Matt</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H42/165		Eiche Gekalkt Matt Sägerau <i>Limed Oak Matt Roughly-Cut</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H42/166		Eiche Gekalkt Matt Schnitzer Kurz <i>Limed Oak Matt Short-Carved</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H50/014		Rovere Matt Schnitzer lang <i>Rovere Matt Long-Carved</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H50/015		Rovere Matt Sägerau <i>Rovere Matt Roughly-Cut</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H50/017		Rovere Matt Gebürstet <i>Rovere Matt Brushed</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H51/016		Grigio Bora Matt Schindel <i>Grigio Bora Matt Shingle</i>	a		1,4	2,0			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	021	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H51/017		Grigio Bora Matt Gebürstet <i>Grigio Bora Matt Brushed</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H52/011		Faggio Matt <i>Faggio Matt</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H52/014		Faggio Matt Schnitzer lang <i>Faggio Matt Long-Carved</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H53/014		Teak Matt Schnitzer lang <i>Teak Matt Long-Carved</i>	a,b		1,0	1,2			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	020	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.
H53/016		Teak Matt Schindel <i>Teak Matt Shingle</i>	a		1,4	2,0			HOLZ HOLZ	Melamin Melamine Mélamine	□	auf Anfrage upon request sur demande	9	0,3	60	021	 Besonderen technischen Informationen für HOMAPAL HOLZ Special technical information for HOMAPAL HOLZ Informations techniques spéciales pour HOMAPAL HOLZ.

Neu | New

Dekor		Bezeichnung <i>Decor</i> <i>Décor</i>	a=2440x1220mm b=3050x1220mm	Format Size Formats		Dicke Thickness Epaisseur		Gewicht Weight Poids	Oberfläche Surface Material Matériaux Finish/Finition (P*=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable ■= möglich possible □= nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■= Standard □= nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	Bitte beachten Sie unsere/-n Please observe our Veuillez bien respecter notre/nos
				[mm]	ca. [kg/m²]											
1100/01		Elefantenhaut Chocolat <i>Elephant Skin Chocolat</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
5080/01		Elefantenhaut Pearl <i>Elephant Skin Pearl</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
5083/01		Elefantenhaut Steelblue <i>Elephant Skin Steelblue</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
5101/01		Elefantenhaut Slategray <i>Elephant Skin Slategray</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
6080/01		Elefantenhaut Cream <i>Elephant Skin Cream</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
1101/02		Quadrate Mokka <i>Squares Mokka</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
5083/02		Quadrate Steelblue <i>Squares Steelblue</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
6080/02		Quadrate Cream <i>Squares Cream</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
6081/02		Quadrate Sand <i>Squares Sand</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
1100/03		Lounge Chocolat <i>Lounge Chocolat</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
1101/03		Lounge Mokka <i>Lounge Mokka</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
5080/03		Lounge Pearl <i>Lounge Pearl</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		
5083/03		Lounge Steelblue <i>Lounge Steelblue</i>	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU	□	□	2	0,1	60	002	Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection		

Neu | New

Dekor		Bezeichnung Decor Décor	a=2440x1220mm b=3050x1220mm	Format Size Formats	Dicke Thickness Epaisseur	Gewicht Weight Poids	Oberfläche Surface Material Matériaux	Finish Finition (P=Polyester Laque polyester)	Postforming Qualität Post-forming quality Qualité postformable ■ = möglich possible □ = nicht möglich impossible	Schwerent- flammbare Qualität Flame retardant quality Qualité difficilement inflammable ■ = Standard □ = nicht möglich impossible	Biegeradien Gruppe Nr. Bending radii group Rayon de courbure n° de groupe siehe Seite see page voir page 23	Verpressung bei max. Processing at max. temperature Usinage à température max. de 60 °C und max. Druck and max. pressure et pression max. [N/mm²]	max. Temperatur im Einsatz Max. temperature in use Température max. pendant l'utilisation [°C]	empfohlener Gegenzug (Best. Nr.) Recommend ed balancing material (order no.) Contrebalan cement recommandé (No. de commande)	 Bitte beachten Sie unsere/n Please observe our Veuillez bien respecter notre/nos
				(mm)	ca. [kg/m²]										
6080/03		Lounge Cream Lounge Cream	a	1,4	1,5	Kunstleder artificial leather simili-cuir	PU		□	□	2	0,1	60	002	 Hinweis PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion Remark CARE/CLEANING HOMAPAL® Arti-Pelam Collection REMARQUE MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection

HINWEIS **HANDGESTALTUNG:**

Bei diesen Dekoren handelt es sich um HANDGESTALTETE DEKORE. Aufgrund des hohen Anteils an manueller Arbeit sollten nur Platten eines Fertigungsloses (Datum auf der Schutzfolie) zusammen verarbeitet werden, da sich leichte Unterschiede ergeben können. |

REMARK **MANUAL DESIGNS:**

The surfaces of these products are manufactured manually. Due to the high amount of manual labour only sheets of the same production lot (see date on the protective foil) should be used in the same application as slight differences might be possible. |

REMARQUE **DÉCORS FAITS À MAIN**

Il s'agit de décors faits à la main. Pour cela, veuillez seulement utiliser des panneaux de la même fabrication pour une réalisation (date indiquées sur la feuille de protection) car de faibles différences peuvent apparaître sur les surfaces.

HINWEIS **PFLEGE/REINIGUNG HOMAPAL® Arti-Pelam-Kollektion:**

HOMAPAL® Arti-Pelam-Laminate (Kunstlederoberflächen) sollten ausschließlich mit handelsüblichen Reinigungsmitteln für Kunstleder gereinigt werden. Dabei sind die Pflege- und Reinigungshinweise der Hersteller zu beachten. |

REMARK **CARE/CLEANING HOMAPAL® Arti-Pelam Collection:**

To clean HOMAPAL® Arti-Pelam laminates (artificial leather finish) solely use standard artificial leather care products. Absolutely observe the care and cleaning hints provided by the respective manufacturers. |

REMARQUE **MAINTENANCE/NETTOYAGE HOMAPAL® Arti-Pelam Collection:**

Les stratifiés HOMAPAL® Arti-Pelam (surfaces en similicuir) devraient être nettoyés seulement avec des nettoyeurs d'usage pour similicuir. Il est important de suivre les conseils d'entretien et les consignes de nettoyage du respectif fabricant.

HINWEIS **RIFFEL:**

Bitte beachten Sie, dass die KOMBINATION VERTIKALER und HORIZONTALER AUSPRÄGUNGEN aufgrund der Lage der Riffelung zur gebürsteten Laufrichtung nicht - bzw. nur, wenn ein unterschiedliches Erscheinungsbild gewünscht wird - möglich ist. Zum Beispiel: 444/920 = Bürstrichtung längs, Riffelung quer; 444/930 = Bürstrichtung längs, Riffelung längs. In beiden Fällen ist bei der Verarbeitung auf die gleiche Laufrichtung zu achten (Pfeile auf der Schutzfolie). |

REMARK **RIFFEL:**

Please note that a combination of the vertical and horizontal version is not possible due to the position of the corrugation against the brushing direction unless you wish a different appearance. e.g. 444/920 = Brushing direction lengthwise, corrugation crosswise; 444/930 = Brushing direction lengthwise, corrugation lengthwise. In both cases please pay attention to the same running direction (see arrows on the protective foil). |

REMARQUE **RIFFEL:**

Veuillez tenir compte du fait que la combinaison de la version verticale et horizontale n'est pas possible (à moins que vous ne désiriez créer un effet particulier) car l'emplacement des lignes en fonction du brossage de la feuille d'aluminium est différent selon le produit. Par ex. 444/920 = sens longitudinal du brossage, sens transversal des lignes; 444/930 = sens longitudinal du brossage, sens longitudinal des lignes. Dans les deux cas, il faut observer le même sens lors de l'usinage (voir flèches sur la feuille de protection).

HINWEIS **SPIEGELGLANZ:**

Bei Verklebung von HOMAPAL® Aluminium-Spiegelglanz-Laminaten auf entsprechende Trägerplatten ist auf peinlichste Sauberkeit zu achten. Insbesondere beim Einsatz einer Blockpresse ist darauf zu achten, dass an den Unter- bzw. Rückseiten der Verbundplatten keine Staubrückstände haften; sie können Markierungen auf die folgende Aluminium-Spiegelglanz-Oberfläche übertragen. Unsauberkeiten im Leim sind zu vermeiden. Unter bestimmten Lichtverhältnissen bzw. bestimmten Lichtquellen können bei hochglänzenden, eloxierten Aluminium-Oberflächen Interferenzfarben auftreten. HOMAPAL® Alu-Spiegelglanz-Laminate sollten daher vor Anwendung unter relevanten Lichtbedingungen betrachtet werden. Bei Biegeradien unter 200 mm können feine Haarrisse in der Oberfläche auftreten, die jedoch mit dem bloßen Auge kaum erkennbar sind. Es handelt sich hierbei aber nicht um eine Beschädigung, sondern um eine spezifische Eigenschaft eloxierter Oberflächen. Bei den strukturierten Spiegelglanzdekoren gehören Haarrisse zum Dekor und beeinflussen die Oberflächeneigenschaften nicht. |

REMARK **POLISHED ALUMINIUM:**

When bonding HOMAPAL® Polished Aluminium Laminates on suitable base material take care of absolute cleanliness. Particularly, when using a block press you must take care that no dust particles adhere to the lower side or back of the sandwich board; they can transfer marks to the next polished aluminium surface. Impurities in the adhesive must be avoided. In certain lighting conditions or certain light sources anodised polished aluminium surfaces may display slight interference colour variations. Therefore HOMAPAL® Polished Aluminium Laminates should be viewed under relevant lighting conditions prior to application. Bending radii of less than 200 mm can provoke fine hairline cracks in the surface barely detectable with the naked eye. These are a specific characteristic of anodised surfaces and do not indicate a defect. As regards the structured polished aluminium decors, hairline cracks are part of the decor and do not affect the surface properties. |

REMARQUE **ALUMINIUM BRILLANCE MIROIR**

Pour coller les stratifiés HOMAPAL® aluminium brillance miroir sur la panneau support correspondant, veillez à une stricte propreté. Particulièrement lorsque vous utilisez une presse, veillez à ce que le dos et le dessous des panneaux ne comportent aucune impureté. Sinon, il pourrait y avoir des marques sur la surface d'aluminium brillance miroir. Evitez les impuretés dans la colle. Dans certaines conditions lumineuses ou avec certaines sources de lumière, les surfaces d'aluminium anodisées de haute brillance peuvent présenter des couleurs d'interférence. Les stratifiés HOMAPAL® Aluminium brillance miroir devront donc être utilisés dans les conditions lumineuses spécifiques. Pour les rayons de courbure inférieurs à 200 mm, des fines fissures apparaissent sur la surface, n'étant cependant pas visibles à l'œil nu. Il s'agit ici de caractéristiques spécifiques aux surfaces anodisées, il ne s'agit donc pas de réels endommagements.

En ce qui concerne les décors aluminium brillance miroir structurés, des fissures font partie du décor est n'influent pas les propriétés superficielles.

Allgemeine technische Informationen für alle HOMAPAL®-Produkte | General Technical Information for all HOMAPAL® products | Informations techniques générales pour tous les produits HOMAPAL®



HOMAPAL-Platten sind mit einer Schutzfolie versehen. Es wird empfohlen, diese während der Verarbeitung auf der Oberfläche zu lassen. Dies befreit jedoch nicht von einer vorherigen Kontrolle von Farbe, Farbgleichheit und sonstigen Qualitätsmerkmalen der Platten. Aufgrund der für Naturprodukte spezifischen Schwankungen, zeigen Metall- bzw. HOLZ- Lamine eine größere Farbton-Bandbreite als normale HPL. Bedingt durch technische Prozesse sind geringe Abweichungen im Erscheinungsbild einiger Produkte unvermeidbar. Bitte beachten Sie, dass grundsätzlich nur Produkte einer Charge (Fertigungsdatum und zusätzlicher Hinweis auf der Schutzfolie) direkt zusammen eingesetzt werden sollten. <u>Wichtig:</u> Die mit der abziehbaren Schutzfolie geschützte Oberfläche sollte nicht längere Zeit dem Licht ausgesetzt werden. Es besteht die Gefahr des erschwerten Abziehens. (Abdeckplatte benutzen!) Die Schutzfolie ist nicht diffusionsdicht gegen Flüssigkeiten.	HOMAPAL sheets are covered with a protective foil. It is recommended to leave this foil on the surface of the laminates during processing. Nevertheless, colour, colour uniformity and other quality checks of the sheets must be carried out beforehand. Due to the deviations which are specific for natural products metal laminates or HOLZ laminates respectively display marginally wider colour variations than normal high pressure laminates. As a result of the processes involved in the production of metals, slight differences in the appearance of some products are inevitable. Please observe that only products of one production lot (see manufacturing date and additional advice on the protective foil) should be used in one application. <u>Important:</u> The surface which is protected with a removable foil should not be exposed to light for long periods of time. This could cause problems in removing the protective foil. (Use a cover sheet!) The protective foil is not diffusion tight towards liquids.	Les panneaux HOMAPAL sont revêtus d'une feuille de protection. Il est recommandé de laisser cette feuille sur la surface, même pendant l'usinage. Ceci n'empêche pas de faire un contrôle préalable du coloris, de la similitude du coloris ou d'autres contrôles de qualité. En raison des variations caractéristiques spécifiques aux produits naturels les stratifiés métalliques ou bien les stratifiés HOLZ montrent plus de variations de coloris que les stratifiés mélaminés (HPL). Il est conseillé de n'utiliser que des produits de la même fabrication pour une application (date indiquée sur la feuille de protection). <u>Important:</u> Ne pas exposer la surface des panneaux à la lumière pendant une longue période avant d'enlever la feuille de protection. Ceci pourrait entraîner des problèmes pour enlever la feuille de protection. (Utiliser un panneau de protection!) La feuille de protection n'est pas étanche à la diffusion des liquides.
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Einsatz Applications Applications		
Anwendungsgebiete  Nur im Innenbereich verwenden. Vertikal verwenden. Da der horizontale Einsatz sowie der Einsatz in Feuchträumen nur bedingt möglich ist, kann er von uns nicht empfohlen werden. Nähere Einzelheiten erfahren Sie von unserer Anwendungstechnik auf Anfrage.	Application fields  Only for interior and vertical use. As the horizontal use as well as the use in humid environment is limited, we do not recommend it. More detailed information is available from our technical department upon request.	Utilisations  Seulement pour l'application intérieure et verticale. Comme l'utilisation horizontale ainsi que l'utilisation en milieu humide est limitée nous ne pouvons pas la recommander. Contacter notre département technique pour plus de détails.
Brandverhalten  HOMAPAL®-Laminat sind – soweit in der Dekorübersicht angegeben – schwerentflammbar gemäß dem FTP-Code Anlage 1, Teil 5 Nr. 2.1 (IMO-Res. A 653 (16)) und Teil 6 Nr. 2.1 (IMO-Res. A 687 (17)). Die Rauch- und Toxizitätskriterien nach FTP-Code Teil 2 werden erfüllt. Die Produkte tragen das „Steuerrad-Symbol“  0736 sowie die US Coast Guard Approval no. 164.112/EC0736/118.083 (Metall) 164.112/EC0739/118.173 (HOLZ) und sind durch die BG Verkehr – Dienststelle Schiffssicherheit – Hamburg und von Lloyds Register zertifiziert. Klassifizierung des Brandverhaltens gemäß DIN EN 13501-1:2010-01: HOMAPAL® Metall-Laminat: B –s1 –d0 HOMAPAL® Holz-Laminat: C –s2 – d0 Ergänzend zu den allgemeinen Verarbeitungsrichtlinien gilt: Das Brandverhalten wird nicht nur durch das Laminat, sondern auch vom Verbund mit anderen Stoffen, den Verbindungsmitteln sowie der Verarbeitungstechnik beeinflusst! Klebstoffe, die in Trennflächen vom Typ B und in Verbindung mit der Isolierung von Kalt-Systemen im Schiffsbau verwendet werden, müssen gemäß FTP-Code Anlage 1 Teil 3 Nr. 3.1 und Teil 5 Nr. 3.4 ebenfalls schwerentflammbar sein.	Resistance to fire  HOMAPAL® laminates are flame retardant according to the indications in the list of decors as to the FTP-Code annex 1 part 5, no. 2.1 (IMO-Res. A 653 (16)) and part 6 no. 2.1 (IMO-Res. A 687 (17)). They comply with the FTP-Code part 2 for smoke-density- and toxicity criteria. The products carry the Mark of Conformity ("steering wheel-logo")  0736 as well as the US Coast Guard Approval no. 164.112/EC0736/118.083 (Metal) 164.112/EC0739/118.173 (HOLZ) and are certified by BG-Verkehr – Dienststelle Schiffssicherheit – Hamburg and by Lloyd's Register. Classification of resistance to fire as per DIN EN 13501-1:2010-01: HOMAPAL® Metal laminates: B –s1 –d0 HOMAPAL® Holz laminates: C –s2 – d0 In addition to the general processing guidelines the following is valid: The fire reaction is affected not only by the laminate but also by the connection with other materials, the means of connections as well as the processing technology. Adhesives which are used in areas of type B and in connection with the isolation of cold-systems in shipbuilding have to be flame-retardant according FTP-Code annex 1 part 3 no. 3.1 and part 5 no.3.4 as well.	Comportement au feu  Les stratifiés HOMAPAL® sont - conformément au tableau des décors - selon le Code FTP annexe 1, partie 5 n° 2.1 (IMO-Res. A 653 (16) et partie 6, n° 2.1 (IMO-Res. A 687 (17)) difficilement inflammables. Les critères de densité de fumée et de toxicité sont remplis selon le Code FTP, partie 2. Les produits sont affectés du symbole de la roue du gouvernail  0736 et du US Coast Guard Approval no. 164.112/EC0736/118.083 (Métal) 164.112/EC0739/118.173 (HOLZ) et sont certifiés par BG-Verkehr – Dienststelle Schiffssicherheit – Hambourg et par Lloyds Register. Classification de comportement au feu selon DIN EN 13501-1:2010-01: HOMAPAL® stratifiés en métal: B –s1 –d0 HOMAPAL® Holz: C –s2 – d0 Pour compléter les consignes générales d'usage, veuillez observer les remarques suivantes: Le comportement au feu n'est pas uniquement influencé par le stratifié lui-même mais également par l'association de différentes substances, de matériaux adhérents ainsi que par la technique d'usinage! Les colles, utilisées dans des panneaux de séparation du type B et en relation avec les procédés d'isolation de systèmes réfrigérants dans la construction navale, doivent également être "difficilement inflammables" selon le Code FTP,

		annexe 1, partie 3 n° 3.1 et partie 5, n° 3.4.
Formaldehyd Die HOMAPAL® Kollektionen Metall, HOLZ und Magnethaftplatten wurden nach DIN EN 717-1 auf die Abgabe von Formaldehyd untersucht und unterschreiten, sofern überhaupt nachweisbar, den Grenzwert der deutschen Chemikalienverbotsverordnung und den Richtwert des BGA für Innenräume deutlich.	Formaldehyde The HOMAPAL® Metal, HOLZ and Magnetic Board collections were tested for the emission of formaldehyde in accordance with DIN EN 717-1. The results were significantly below the limit value – if detectable at all – stipulated by the German Chemicals Prohibition Ordinance and the German Health Authority for interior spaces.	Formaldéhyde Les collections HOMAPAL® Métal, HOLZ et Panneaux Magnétiques étaient examinées selon DIN EN 717-1 en vue de l'émission de formaldéhyde et sont distinctement – si une émission pouvant être détectée du tout - inférieures à la valeur limite selon le règlement allemand sur l'interdiction de certains produits chimiques (« Chemikalienverbotsordnung ») et la valeur indicative du « BGA » (Office fédéral d'hygiène publique) pour des intérieurs.
FSC® Auf Anfrage sind alle HOMAPAL Produkte auch in FSC®-Mix-Qualität lieferbar.	FSC® All HOMAPAL products can be delivered with the FSC® mix quality mark on request.	FSC® Tous les produits HOMAPAL sont disponibles en qualité FSC®-Mix sur demande.
Hygienische Kriterien Unbedenklich im Umgang mit Lebensmitteln.	Hygiene criteria Harmless when handling with foodstuff.	Critères hygiéniques Contact alimentaire sans inconvénient.

Verarbeitungshinweise How to process Consignes d'usage		
Sägen:  HOMAPAL® - Lamine – <u>außer Magnethaftplatten und Edelstahl-Lamine</u> (siehe besondere Hinweise) - lassen sich wie alle normalen Schichtpressstoffplatten (HPL) sägen, bohren und fräsen. Zu empfehlen ist der Einsatz hartmetallbestückter Schneidwerkzeuge. Beim Zuschneiden sollte die <u>Dekorfläche stets oben</u> liegen. Zugeschnittene oder gefräste Kanten lassen sich mit einer feinen Feile oder Schleifpapier nachbehandeln.	Sawing:  HOMAPAL® laminates – <u>except Magnetic boards and stainless steel laminates</u> (see special instructions) – can be sawn, drilled and milled like all standard high pressure laminates (HPL). It is advisable to use carbide-tipped cutting tools. When cutting, the <u>decorative surface should always face upwards</u> . Burrs can be removed with a fine file or abrasive paper.	Sciage:  Les stratifiés HOMAPAL® – <u>sauf les Panneaux magnétiques et aciers inoxydables</u> (voir informations spécifiques) – peuvent être sciés, percés et fraisés comme tous les autres panneaux stratifiés (HPL). Nous recommandons l'usage d'outils de découpe en métal dur. Pendant la découpe, <u>la surface décor devra toujours être orientée vers le haut</u> . Les arêtes découpées ou fraisées peuvent être rectifiées avec une lime fine ou du papier de verre.
Trägermaterial:  Alle üblichen, für Lamine verwendbaren Trägermaterialien sind auch für HOMAPAL®-Lamine geeignet. Es ist darauf zu achten, dass der Feuchtegehalt der Trägerplatte nicht höher als der des HOMAPAL®-Laminates (siehe Konditionierung) liegt. Eine zu hohe Feuchte des Trägermaterials kann infolge einsetzenden Feuchteausgleichs zu Oxidation und Blasenbildung zwischen der Metallfolie und dem Laminatkern führen.	Base material:  All standard base materials used for laminates are also suitable for HOMAPAL® laminates. Particular care should be taken to ensure that the moisture content of the base material never exceeds that of the HOMAPAL® laminate (see conditioning). If the base material contains too much moisture, this can lead to oxidation and blistering, especially between the metal foil and the laminate core due to moisture exchange.	Matériau support:  Tous les supports utilisés pour les stratifiés traditionnels conviennent également pour les stratifiés HOMAPAL®. Veillez à ce que la teneur en humidité du support ne soit pas plus élevée que celle du stratifié HOMAPAL® (voir conditionnement). Si cela est le cas, il y aura oxydation et constitution de bulles entre la feuille en métal et le cœur du stratifié par suite de compensation d'humidité.

Verkleben:  Handelsübliche Kleber und Leime wie z.B. Weißleime, Reaktionskleber (Epoxid) oder Neopren-Kontaktkleber. Ausnahme: Harnstoffkleber sind nicht geeignet. Beachten Sie in jedem Fall die Verarbeitungshinweise des Klebstoff-Herstellers.	Bonding:  Conventional glues and adhesives, e.g. white glue, two-component epoxide adhesive or neoprene contact adhesives. Exception: Urea adhesives are not suitable. In any case, please observe the processing instruction specified by the glue - / adhesive manufacturer.	Colle:  Colles courantes et comme, par exemple, la colle blanche, la colle à réaction (Epoxy) ou les colles Néoprène. Exception: Les colles au carbamide ne conviennent pas. En tout cas les consignes d'usage spécifiées du fabricant de produits colles / adhésifs sont à respecter.
Bei der Verarbeitung immer auf die gleiche Laufrichtung achten, da sich ansonsten Änderungen im Erscheinungsbild ergeben! Beim Verpressen von Relief-Dekoren auf Trägerplatten ist es vorteilhaft, durch geeignete Polsterzulagen für Druckausgleich zu sorgen, da beim Pressen direkt gegen die Heizplatte der für die Gesamtfläche ausgelegte Druck nur auf den erhabenen Stellen wirksam wird und somit erheblich höher ist (Ausnahme bei Verklebung auf Rahmen: Hier können sich bei zu starker Polsterung Abzeichnungen des Rahmens ergeben). Achtung: Bei geometrischen Reliefdekoren bzw. bei RIVET-Dekoren kann es notwendig sein, einen Parallelschnitt vor Weiterverarbeitung durchführen zu müssen.	When processing always make sure that the running direction is the same as variations in the appearance might occur if ignored! When bonding embossed laminates to base materials, it is recommendable to achieve uniform pressure by means of padding, as, when pressing directly against the heat plate, the pressure designed for the entire area will only be effective at the raised points of the embossed surface and, therefore, considerably higher (exception when bonding to frames: Here too much padding can result in frame- marks on the surface). Please note: When using geometrical embossed laminates and our RIVET decors respectively, it can be necessary to run a parallel section before further processing.	Veuillez toujours respecter le même sens d'usage, sinon vous obtiendrez des modifications de rendu! En cas de collage de décors en relief sur des plaques de support dans une presse, il est préférable de compenser la pression avec des cales en mousse du fait qu'en pressant directement contre la plaque chauffante, la pression prévue pour toute la surface de la plaque ne s'applique que sur les parties relevées du relief et y est donc plus importante (exception pour les encollages sur cadre : ici les éléments de compensation peuvent laisser des marques du cadre). <u>Veuillez bien noter:</u> En ce qui concerne des motifs décors en relief géométriques ou bien des décors RIVET, il peut être nécessaire d'avoir à exécuter une section parallèle avant tout autre traitement.

Pflege / Reinigung Care/Cleaning Maintenance/Nettoyage		
 Die Platten sollten mit einem weichen, nicht fuselnden Tuch und einem milden Reinigungsmittel, das keine schleifenden Bestandteile enthalten darf, gesäubert werden. Nur für Metall-Laminate und Magnethaftplatten dürfen Lösungsmittel sehr vorsichtig und <u>keinesfalls</u> bei Oberflächen mit der Kennzeichnung Polyester- und UV-Lack lt. Produktübersicht verwendet werden. Hartnäckige Flecken (z.B. Kleberrückstände) können vorsichtig mit Reinigungsbenzin entfernt werden. Längere Einwirkzeiten von Flüssigkeiten auf der Oberfläche vermeiden. HOMAPAL® Arti-Pelam-Laminate (Kunstlederoberflächen) sollten ausschließlich mit handelsüblichen Reinigungsmitteln für Kunstleder	 To clean the surface use a soft, non-pilling cloth and a mild cleaning agent which must not contain any abrasive substances. Solvents are to be used very carefully only for metal laminates and Magnetic boards, but never on surfaces marked with polyester- and UV- lacquer according to the product survey. Stubborn stains, e.g. glues residues, can be carefully removed by using cleaning petrol. Avoid allowing liquids to react on the surface for a longer period of time. To clean HOMAPAL® Arti-Pelam laminates (artificial leather finish) solely use standard artificial leather care products. Absolutely observe	 Le nettoyage de la surface devra se faire avec un chiffon doux qui ne peluche et un produit de nettoyage courant, sans composants abrasifs. N'utiliser des solvants qu'avec précaution et seulement pour des stratifiés en métal et des Panneaux Magnétiques, mais ne jamais utiliser de solvants pour des surfaces marquées laque polyester et laque UV (voir gamme de produits). Des taches résistantes, par ex. résidus de colle, peuvent être enlevées en utilisant précautionneusement du benzène de nettoyage. Eviter de laisser agir des liquides sur la surface pendant une longue période. Les stratifiés HOMAPAL® Arti-Pelam (surfaces en similicuir) devraient être nettoyés seulement avec des nettoyeurs

gereinigt werden. Dabei sind die Pflege- und Reinigungshinweise der Hersteller zu beachten.	the care and cleaning hints provided by the respective manufacturers.	d'usage pour similitude. Il est important de suivre les conseils d'entretien et les consignes de nettoyage du respectif fabricant).
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Entsorgung Waste disposal Traitement des déchets		
 HOMAPAL®-Laminat stellen keinen gefährlichen Stoff im Sinne der Gefahrstoffverordnung dar. Abfälle können in behördlich genehmigten Industrie- und Hausmüllverbrennungsanlagen verbrannt bzw. unter Berücksichtigung der örtlichen Abfallvorschriften auf kontrollierten Deponien abgelagert werden. HPL-Reste werden als „sonstiger ausgehärteter Kunststoff“ eingestuft. Somit ist das Material als hausmüllähnlich anzusehen.	 HOMAPAL® laminates are not classed as hazardous substances or dangerous goods. Wastes can be incinerated and then disposed of in sanitary landfills, according to local regulations. High pressure laminate waste is classified as "other hardened plastics" i.e., it is similar to domestic waste.	 Suite aux directives sur les substances dangereuses, les panneaux stratifiés HOMAPAL® ne sont pas considérés comme étant des produits dangereux. Nos panneaux peuvent être brûlés dans des incinérateurs officiels suite aux réglementations locales en vigueur. Les déchets des panneaux stratifiés sont classifiés comme « Autre plastique durci ». Par conséquent la matière des panneaux HOMAPAL® peut se comparer avec les déchets domestiques.

Postforming-Qualität Postforming quality Qualité postformable		
 Maximale Erwärmung: 120°C Erreichbarer Radius: Bei einer Laminatdicke von 0,8 mm ist ein Radius von 6 mm realisierbar. Die Oberfläche ist mit einer für diesen Prozess ausreichend temperaturbeständigen Polyesterfolie geschützt. Auf der Schutzfolie befindet sich zusätzlich der Hinweis, dass es sich um diese Sonderausführung handelt. Die Kennzeichnung besteht aus den beiden Buchstaben "PF". Aufgrund der häufig geringeren Dicke der Laminat mit PF-Qualität im Vergleich zu der Standard-Qualität treten Unterschiede in der Reliefausprägung auf. Zur Beachtung: Die Angaben basieren auf unseren derzeitigen Kenntnissen und Erfahrungen. Aufgrund der breiten Palette von Postforminganlagen befreien sie den Verarbeiter nicht von eigenen Prüfungen und Versuchen.	 Max. heating: 120°C Obtainable radius: Laminate thickness of 0.8 mm allows a radius of 6 mm. For the postforming process the surface is protected by a heat-resistant polyester foil. There is an additional mark on the protective foil to identify them as a special quality. This mark consists of two letters "PF". Due to the smaller thickness of laminates in PF quality in comparison to the standard quality differences in the depth of the relief occur. Please note: This information is based on our current knowledge and experience. However, the user has to carry out own tests and examinations because of the wide variety of postforming machines.	 Résistance max. à la chaleur: 120°C Rayon minimum réalisable: On peut réaliser un rayon de 6 mm pour une épaisseur de 0,8 mm. La surface des stratifiés est protégée par une feuille en polyester suffisamment résistante aux changements de température qui ont lieu pendant l'usinage. Sur cette feuille de protection on trouve en outre une marque distinctive supplémentaire indiquant qu'il s'agit d'un modèle particulier. Cette marque comporte les deux lettres "PF". Compte tenu de l'épaisseur des stratifiés en qualité postformable comparé à la qualité standard des différences apparaissent concernant la profondeur du relief. Attention: Les indications se basent sur nos connaissances et expériences actuelles. Compte tenu de la variété des usages possibles liés au postformage, elles ne dégagent pas l'utilisateur de faire ses propres essais et tests au préalable.

ROBUST – Qualität | ROBUST quality | Qualité ROBUST

Dekor-Nummern: | Decor Numbers: | Références:

741 R – Aluminium Strichmatt Natur ROBUST | Alu Brushed Natural ROBUST | Aluminium brossé incolore ROBUST

796 R – Alu Strichmatt Stahlton ROBUST | Alu Brushed Steeltone ROBUST | Aluminium brossé teinté acier ROBUST

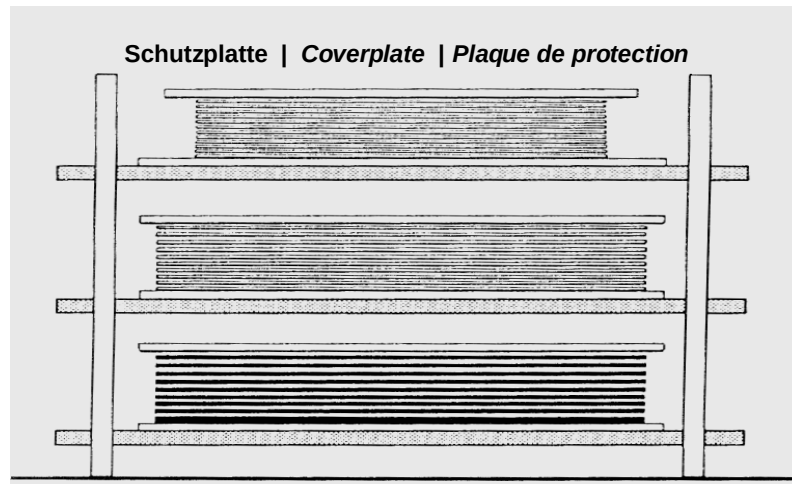
 Die mit der Zusatzbezeichnung ROBUST versehenen Produkte weisen durch einen speziellen UV-Lack eine deutlich höhere Resistenz gegenüber mechanischen Beschädigungen der Oberfläche auf. Ein Vergleichstest mit handelsüblicher Stahlwolle (z. B. Rakso mittel) ergab bei einer Belastung mit 1 kg auf 1,5cm² Fläche (dies entspricht etwa einer Fläche eines Spielwürfels) folgendes Ergebnis: <u>In Richtung der Bürstung:</u> Die Ausführung ROBUST zeigt nach 600 Bewegungen über die Oberfläche keine Kratzspuren. Die Standardausführung weist nach 50 Bewegungen deutliche Kratzer auf. <u>Quer zur Bürstichtung:</u> Die Ausführung ROBUST zeigt nach 200 Bewegungen über die Oberfläche leichte Kratzspuren. Auf der Oberfläche der Standardausführung sieht man nach 2 Bewegungen über die Oberfläche deutliche Kratzer. Der Einsatz der ROBUST Produkte ist nur bei leichter bis mittlerer mechanischer Beanspruchung (siehe obige Testergebnisse) auch horizontal möglich. Bitte beachten Sie, dass bei Punktbelastungen sehr viel geringere Kräfte ausreichen, um Beschädigungen hervorzurufen. Die Produkte sind auf der Schutzfolie mit dem Zusatz R gekennzeichnet.	 The products marked in addition ROBUST show a much better resistance against mechanical wear of the surface because of a special UV lacquer treatment. A test with commercial steel wool (brand RAKSO mittel) under a strain of 1 kg on an area of 1.5 cm² (this corresponds approximately to one side of a dice) led to the following result: <u>In the brushing direction:</u> Products with the ROBUST finish show no scratch traces after 600 movements over the surface. The standard finish shows after 50 movements clear scratches. <u>Crosswise to the brushing direction:</u> The product ROBUST shows slight scratch traces after 200 movements over the surface. On the surface of the standard finish clear scratches are visible after only 2 movements over the surface. Horizontal use of the ROBUST products is only possible in case of light up to medium mechanical wear (see to the above test results). Please note that when strain is concentrated on tiny areas (concentrated load) even little force might cause damages to the surface. The products are marked with the addition R on the protective peel.	 Les produits qui sont marqués avec l'addition ROBUST montrent une plus grande résistance aux endommagements mécaniques des surfaces car ils ont traités avec un vernis UV spécifique. Un test avec de la laine d'acier usuelle (marque RAKSO mittel) acquis le résultat suivant en cas de chargement avec 1 kg sur une face de 1,5 cm² (ca corresponds environ à la face d'un dé) : <u>En direction du brossage :</u> La surface de la finition ROBUST ne montre pas des rayures après 600 mouvements. La finition standard montre des rayures claires après 50 mouvements. <u>En travers à la direction du brossage :</u> La surface de la finition ROBUST montre des rayures légères après 200 mouvements. Sur la surface en finition standard on voit après 2 mouvements des rayures claires. L'utilisation des produits ROBUST en horizontal est seulement possible en cas de petit jusqu'à moyenne stress mécaniques (voir les résultats du test ci-dessus mentionnés). Veuillez respecter qu'un cas de pression haute concentré sur un point provoque des endommagements sur la surface. Les produits sont marqués avec l'addition R sur la pellicule de protection.
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LAGERUNG und KONDITIONIERUNG von HOMAPAL® - Laminaten | *STORAGE and ADAPTION to Climate of HOMAPAL® laminates |* **STOCKAGE et CONDITIONNEMENT des stratifiés HOMAPAL®**

OPTIMALE LAGERUNG |

OPTIMAL STORAGE |

OPTIMAL STOCKAGE



HOMAPAL® - Lamine müssen ebenso wie herkömmliche HPL in einem geschlossenen Lagerraum, vor Nässe und UV-Strahlung geschützt, gelagert werden. Die Lagerung sollte bei Normklima, d. h. ca. 18-25°C und 50-60% relativer Luftfeuchte erfolgen.

Die Oberflächen der HOMAPAL® Lamine sind mit einer Schutzfolie versehen, die erst nach Verarbeitung der Platten entfernt werden soll. Um eine Veränderung der Klebkraft der Schutzfolie auf der Plattenoberfläche auszuschließen, sollte bei längerer Lagerung die Lagertemperatur um nicht mehr als $\pm 10^{\circ}\text{C}$ von der oben angegebenen abweichen.

Achtung: Vor dem Entfernen der Schutzfolie Platte nicht längere Zeit dem Licht aussetzen (Schutzplatte!).



HOMAPAL® laminates should be stored in a close wareroom, protected against humidity and UV radiation and maintained at normal temperatures like standard HPL. The storage should take place within a standard climate i.e. approx. 18-25 °C and 50-60 % relative air humidity.

The surfaces of HOMAPAL® laminates are covered with a protective foil. It is recommended to remove this foil only when all work on the laminates is completed. In order to avoid changes concerning the adhesive power of the protective foil on the laminate surface, the temperature should not deviate more than $\pm 10^{\circ}\text{C}$ of the one mentioned below by a longer-term storage.

Attention: Before removing the protective foil do not expose the laminates to light for a longer period of time (cover plate)!



Les stratifiés HOMAPAL® doivent être entreposés comme les panneaux normaux (HPL) dans un dépôt fermé, protégé contre l'humidité et rayonnement UV (ultra-violet). Le stockage devrait être effectué dans des conditions de température normales c'est à dire de l'ordre de 18 à 25° C et avec une humidité relative de l'air ambiant de 50 à 60 %.

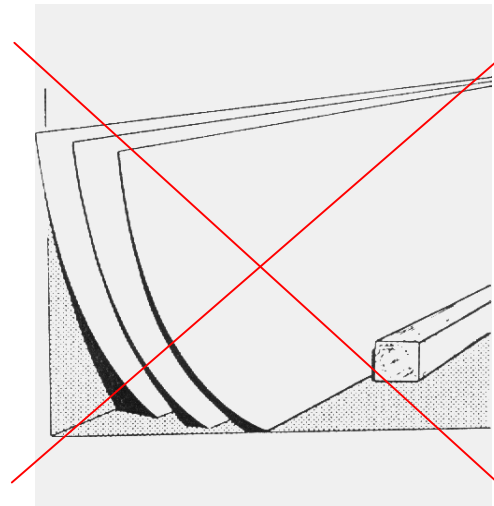
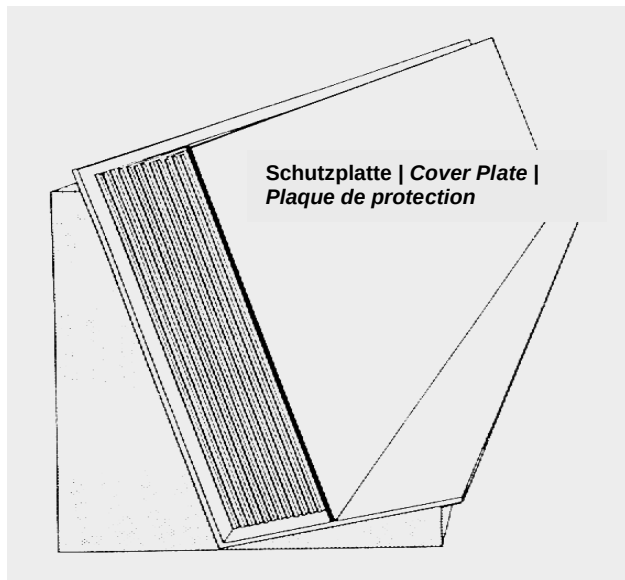
Les surfaces des panneaux stratifiés métalliques HOMAPAL® sont pourvues d'une feuille de protection qui doit être enlevée seulement après usinage. Afin d'éviter un changement d'adhérence entre la feuille de protection et la surface du panneau, il faudra garantir des températures entre + et -10° C en cas de stockage prolongé.

Attention: Ne pas exposer le panneau à la lumière pendant une longue période avant d'enlever la feuille de protection. (Utiliser une plaque de protection!)

Die Lagerung von Plattenstapeln erfolgt vollflächig und horizontal. Wo dieses nicht möglich ist, empfiehlt sich eine Schrägstellung im Winkel von ca. 80° bei ganzflächiger Abstützung und einem Gegenlager auf dem Boden, um ein Abrutschen zu verhindern (s. Skizze auf der Folgeseite).

Laminates should be stored horizontally. In case horizontal storage is not possible, it is recommended to place the sheets in an angled frame work and propped up at an angle of about 80°. A counter support prevents the sheets from slipping down. (see sketch next page).

Le stockage des panneaux s'effectue en les empilant les uns sur les autres horizontalement. Si cela s'avère impossible, nous vous recommandons de les déposer sous un angle oblique d'environ 80° avec appui sur l'ensemble de la surface et en employant des cales pour éviter qu'ils ne glissent (cf. schémas prochaine page).



**FALSCHER LAGERUNG |
WRONG STORAGE|
MAUVAIS ENTREPOSAGE**

Die beste **Konditionierung** wird in dem Raumklima des späteren Einsatzbereiches erreicht. Diese Konditionierung wird empfohlen, da Materialien, die in zu feuchtem Zustand verarbeitet werden, im Laufe der Zeit zur Schrumpfung neigen bzw. zu trockene Materialien sich später ausdehnen, so dass ein Verwerfen nicht ausgeschlossen werden kann. Alle Materialien sollten mindestens 48 Stunden zusammen konditioniert werden.

The best **conditioning** will be achieved in the room climate of the later application field. This conditioning is recommended as materials which will be used in a damp condition have a tendency to shrink and materials which are too dry will stretch so that a warping cannot be excluded. All materials should be conditioned together for at least 48 hours.

On obtiendra le meilleur conditionnement en observant la même température ambiante que celle existant plus tard dans le lieu d'emploi des panneaux. Ce conditionnement est recommandé car traités à l'état trop humide les matériaux ont tendance à se contracter tandis qu'à l'état sec ils se dilatent à tel point qu'ils deviennent inutilisables. Tous les matériaux doivent être conditionnés dans le même milieu pendant au moins 48 heures.

BIEGERADIEN | BENDING RADII | RAYONS DE COURBURE

Prüfstreifenbreite 50 mm | Width of the test strips: 50 mm | Largeur des échantillons: 50 mm

Produktgruppe Product group Groupe de produits	Biegung – zur Plattenrichtung [Angabe in mm] Bending – towards the laminate direction [dimensions in mm] Courbure – au sens du panneau [en mm]			1,4	1,3	1,0	0,8
							
1	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal		130	90	55
					130	90	55
					180	120	100
					180	120	100
2	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal	120	105	80	40
				120	105	60	30
				200	180	105	70
				170	150	100	55
3	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal		130	75	55
					100	75	55
					150	105	70
					130	105	70
4	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal		90	60	40
					85	55	30
					180	90	60
					135	90	60
5	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal			80	40
						80	30
						130	80
						130	60
6	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal			40	
						35	
						90	
						80	
7	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal			80	
						80	
						105	
						105	
8	konvex – längs konvex – quer konkav – längs konkav – quer	convex – lengthwise convex – crosswise concave – lengthwise concave – crosswise	convexe – longitudinal convexe – transversal concave – longitudinal concave – transversal			130	
						130	
						140	
						140	
9	längs quer	Lengthwise Crosswise	Longitudinal Transversal	270		90	
				300		100	

... Fortsetzung s. nächste Seite | ... continue next page | ... continuation voir prochaine page



Die aufgezeigten **Biegeradien** stellen Messwerte dar, die unter normalen Bedingungen bei gleichbleibender und gleichmäßig über die gesamte Fläche verteilter Krafteinwirkung erreicht werden können.

Faktoren wie Feuchtigkeitsgehalt des Laminats, Temperatur sowie Art und Weise des Biegens beeinflussen die Radien und können zu abweichenden Ergebnissen führen.

Hinweis:

Kupfer- und Aluminium-Relief-Laminate wurden von 1,3 mm auf die entsprechenden Prüfdicken zurückgeschliffen.

Bezüglich Aluminium-Spiegelglanz weisen wir darauf hin, dass bei Biegeradien unter 200 mm feine Haarrisse in der Oberfläche auftreten, die mit dem bloßen Auge kaum erkennbar sind. Es handelt sich hierbei nicht um eine Beschädigung, sondern um eine spezifische Eigenschaft eloxierter Oberflächen.



The **bending radii** indicated in the table represent radii which can be achieved under normal conditions where constant force is distributed uniformly over the entire surface. Factors as the degree of moisture in the laminate, temperature, as well as the method of bending have an effect on the radii and can lead to deviations in the results.

Please note:

Embossed copper and aluminium laminates had been grinded from 1.3 mm to the appropriate thickness for testing.

With reference to polished aluminium we have to point out that bending radii of less than 200 mm (7.9") might create fine hairline cracks in the surface – although barely visible with the naked eye. These are a specific characteristic of anodised surfaces and therefore do not indicate a defect.



Les rayons de courbure indiqués dans le tableau ci-dessus représentent les rayons qui peuvent être obtenus dans des conditions normales avec une répartition régulière des forces sur toute la surface. Certains facteurs comme par exemple l'humidité contenue dans le stratifié, la température ainsi que le type de flexion influencent les rayons et peuvent conduire à des résultats différents.

Veuillez noter:

Stratifiés en cuivre et aluminium relief ont été mesurés avec un matériau rapporté à l'épaisseur correspondante de 1,3 mm.

En ce qui concerne l'aluminium poli nous aimerions faire remarquer que pour un rayon de courbure inférieur à 200 mm, de fines fissures apparaissent sur la surface, n'étant cependant pas visibles à l'œil nu. Il s'agit ici de caractéristiques spécifiques aux surfaces anodisées, il ne s'agit donc pas de réels endommagements.

Gegenzug | Balancing | Contrebalancement



Zwischen zwei miteinander verbundenen, verschiedenartigen Materialien treten stets Spannungen auf. Daher muss ein Träger beidseitig mit Materialien belegt werden, die den gleichen Maßänderungen bei Wärme- und Feuchtigkeitseinfluß unterliegen (Konditionierung aller Materialien). Dies gilt vor allem dann, wenn die fertige Verbundplatte freitragend sein soll und nicht durch eine starre Konstruktion gehalten wird.

Je größer die zu belegenden Flächen, desto größerer Augenmerk ist auf die Wahl des Gegenzugtyps, einen symmetrischen Aufbau und die Dichte sowie Steifheit des Trägers zu legen.

Nach unseren Erfahrungen sind Trägerplatten mit einer Dicke von ≤ 13 mm kritisch hinsichtlich der Planlage des Verbundelementes. Grundsätzlich haben Faktoren wie z. B. Steifheit und symmetrischer Aufbau der Trägerplatte, gleichmäßiger Kleberauftrag und Presstemperatur sowie Größe und Grad der Fixierung des Objektes hier einen überproportionalen Einfluss.

Die besten Ergebnisse werden immer durch Verwendung des gleichen Laminates desselben Herstellers auf Vorder- und Rückseite erzielt. Beide



Stresses always occur between two different types of material bonded together. Consequently, a base material should be surfaced on each side with materials which are subject to the same dimensional changes resulting from variations in temperature and relative humidity (adaptation to climate). This is particularly important if the finished sheet is to be self-supporting and not directly retained by a rigid structure.

The larger the area to be covered, the more important is the right choice of the balancing material, symmetrical structure, density and rigidity of the base material.

According to our experience base material with a thickness of ≤ 13 mm is critical with regard to the flatness of the compound element. Generally factors like for example stiffness and symmetric structure of the base material, the even application of the adhesive and the pressing temperature as well as the size and degree of fixing of the object do have a disproportionate high influence.

Best results are obtained by using the same laminate from the same manufacturer on both sides. Both must always be bonded simultaneously from



Entre deux matériaux différents reliés, il existe des tensions. Pour cette raison, le support doit être recouvert des deux côtés par des matériaux qui sont soumis aux mêmes déformations sous la chaleur et l'humidité (conditionnement du matériel). Ceci est surtout valable lorsque la plaque composite finie doit être en porte à faux et qu'elle n'est pas directement tenue par une construction rigide.

Plus les surfaces devant être recouvertes sont grandes, plus il faut être attentif au choix du type de contrebalancement, à la constitution symétrique et à l'épaisseur ainsi qu'à la rigidité du support.

Selon nos expériences des panneaux support avec une épaisseur ≤ 13 mm sont de façon critique par rapport à la planéité d'élément composite. En principe, ici des facteurs, comme par ex. la rigidité et la constitution symétrique du panneau support, l'application égale du colle et la température de pressage ainsi que la taille et le degré de la fixation d'objet ont une influence très grande.

Les meilleurs résultats sont toujours obtenus en utilisant le même stratifié venant du même fabricant sur les deux faces. Les deux doivent toujours être

müssen immer mit gleicher Lauf- bzw. Schleifrichtung gleichzeitig von beiden Seiten auf den Träger aufgeklebt werden (niemals rechtwinklig zueinander). Um die Kosten niedrig zu halten, bietet sich als Gegenzug der Einsatz II.-Wahl-Platten desselben Materials oder spezielles Gegenzugmaterial ohne Oberflächenanspruch gemäß der Übersicht an. Der Einsatz anderer Materialien als Gegenzug kann - selbst dann, wenn dessen physikalische Eigenschaften denen der HOMAPAL®-Metalllamine so ähnlich wie möglich sind - nicht empfohlen werden, da die Resultate nie mit Sicherheit voraussagen sind.	both sides to the base material in the same direction of grain or grinding respectively (never at right angles to each other). In order to keep costs low use second choice laminates of the same type as balancing material or special balancing material without any demand on the surface according to the range of products. The use of other kinds of material as balancing material is not recommended – even when physical properties are as similar as possible to those of HOMAPAL® metal laminates – as the results can never be predicted with certainty.	collés en même temps sur le support, dans le même sens de ponçage (jamais à angle droit). Pour réduire le plus possible les frais il est préférable d'utiliser comme contrebalancement des panneaux de deuxième choix et du même type ou des panneaux spéciaux de contrebalancement invisible, voir gamme de produits. L'utilisation d'autres matériaux de contrebalancement peut – même si les caractéristiques physiques sont identiques à celles de panneaux métalliques HOMAPAL® – ne pas être recommandée du fait que les résultats ne peuvent pas être évalués avec certitude.
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Hinweis Remark Remarques		
 Diese Angaben basieren auf unseren derzeitigen Kenntnissen und Erfahrungen. Sie befreien den Verarbeiter jedoch nicht von eigenen Versuchen und Prüfungen. Eine rechtlich verbindliche Zusicherung der Eigenschaften oder der Eignung für einen konkreten Einsatzzweck kann aus unseren Angaben nicht abgeleitet werden. Wir empfehlen im Zweifelsfall die Inanspruchnahme unserer technischen Beratung. Etwaige Schutzrechte sowie bestehende Gesetze und Bestimmungen sind vom Verarbeiter unserer Produkte in eigener Verantwortung zu beachten.	 This information is based on our current knowledge and experience. However, the user must satisfy himself as to the suitability of the product for its intended use. No legally binding guarantee of features or suitability of the product for a specific purpose can be derived from this information. In case of doubt, we recommend consulting our technical advisers. The user of our products is responsible for observing all applicable patent rights as well as current laws and regulations.	 Ces indications se basent sur nos connaissances et expériences actuelles. Cependant elles ne dégagent pas l'utilisateur de faire ses propres essais et tests. A partir de nos indications, il n'est pas possible d'en déduire une assurance contractuelle des caractéristiques et de l'adaptabilité pour une utilisation précise. En cas de doute, nous recommandons de faire appel à nos conseillers techniques. Tous droits de protection ainsi que les lois existantes et les dispositions devront être respectées par l'utilisateur de nos produits sous sa propre responsabilité.
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HOMAPAL GmbH Postfach 14 53, 37404 Herzberg/Harz ☎ + 49 (0) 5521 - 856-0, ☎ + 49 (0) 05521 - 856-20, ✉ techinfo@homapal.de, www.homapal.de

FENIX NTA[®] is a material produced by simultaneous application of heat and pressure, in order to obtain a homogeneous non-porous high density product. The core structure is composed of paper, impregnated with thermosetting resins. The outer surface is made of a real metal structure substrate treated with next generation acrylic resins applied to the substrate as a multilayer coating and subsequently, cured via an electron beam process.

fenixforinteriors.com
Rev03-E-30-04-2020

				0.7 mm STANDARD ¹	1.2 mm MATCHED COLOUR CORE ¹
PROPERTIES	TEST METHOD	PROPERTY OR ATTRIBUTE	UNIT	VALUES	
GENERAL PROPERTIES					
Surface quality	EN 438-2:2019 cl.4	Spots, dirt and similar surface defects	mm ² /m ²	≤ 1	
		Fibres, hair and scratches	mm/m ²	≤ 10	
Dimensional tolerances	EN 438-2:2019 cl.5	Thickness tolerance	mm	0.7 ± 0.15	1.2 ± 0.18
	EN 438-2:2019 cl.6	Length and width	mm	+ 10 / - 0	
	EN 438-2:2019 cl.7	Straightness of edges	mm/m	≤ 1.5	
	EN 438-2:2019 cl.8	Squareness	mm/m	≤ 1.5	
	EN 438-2:2019 cl.9	Flatness (measured on full-size sheet)	mm/m	≤ 100	
SURFACE PROPERTIES					
Resistance to surface wear	EN 438-2:2019 cl.10	Initial Point	Revolutions	≥ 200	
Resistance to water vapour	EN 438-2:2019 cl.14	Appearance	Rating	5	
Resistance to dry heat (160 °C/20')	EN 438-2:2019 cl.16	Appearance	Rating	5	
Resistance to wet heat (100 °C/20')	EN 438-2:2019 cl.18	Appearance	Rating	5	n.a.
Resistance to scratching	EN 438-2:2019 cl.25	Appearance	Rating	≥ 4	
Resistance to staining	EN 438-2:2019 cl.26	Appearance - Groups 1 and 2	Rating	5	
		Appearance - Group 3	Rating	≥ 4	
Light fastness (Xenon-arc)	EN 438-2:2019 cl.27	Contrast	Grey scale rating	≥ 4	
Surface specular reflectance	ISO 2813	Surface specular reflectance	Gloss unit	8 + 16 at 85°	
Acids resistance	SEFA 8-PL-2010 Method 8.1	Chemical Spot Test	Suitability	Compliant	
PHYSICAL PROPERTIES					
Density	EN ISO 1183	Density	g/cm ³	≥ 1.35	
Resistance to immersion in boiling water	EN 438-2:2019 cl.12	Appearance	Core delamination Pass or fail	Pass	
Dimensional stability at high temperatures	EN 438-2:2019 cl.17	Cumulative dimensional change	Longitudinal %	≤ 0.75	
		Cumulative dimensional change	Transversal %	≤ 1.25	
Resistance to cracking	EN 438-2:2019 cl.23	Appearance	Rating	≥ 4	
OTHER PROPERTIES					
ENVIRONMENTAL PROPERTIES					
Formaldehyde emission	EN 13986	Formaldehyde emissions	Rating	E1	
Volatile Organic Chemical emissions	Greenguard Gold Certification Low Chemical Emission UL 2818	Volatile Organic Chemical emissions	Suitability	Greenguard Gold certified	
FOOD AND HYGIENE PROPERTIES					
Hygiene	NSF/ANSI 35	Suitability for use as work and nonwork surfaces of food service equipment on which direct food contact during normal preparation or holding operations is not intended, expected, or reasonable	Suitability	NSF certified	
Food contact	Regulation EU n° 10/2011 and following amendments	Food Contact Materials performance	Suitability	Compliant - conditions of use reported in the Declaration of conformity	

¹ For the current and up to date FENIX[®] delivery program in North America, visit www.fenixforinteriors-na.com. For the delivery program in the rest of the world, visit www.fenixforinteriors.com. Please contact your sales representative for more information.

Note to FENIX sheets with adhesive protective film

The protective film is designed to temporary protect the surface from dust, scratches and marks left by handling equipment; it does not protect from corrosion, dampness or chemical agents. Sheets covered with protective film should be stored in a clean dry atmosphere at room temperature (ideally 20 °C), avoiding exposure to atmospheric agents and UVA rays. The protective film should be removed from the sheets surface after application and before the final item. In case of thick sheets with protective film on both sides, the film should always be removed from both sides at the same time. In any case, the removal should take place within 6 months from the date of shipping by the Manufacturer(s) of the FENIX sheets. The Manufacturer(s) of the FENIX sheets shall not accept liability for improper use of sheets covered with a protective film, nor for any consequences of an incorrect application.

Disclaimer

The Material Properties Data Sheet provides technical information relevant to the performance of the product as tested by the Manufacturer(s) of FENIX sheets or certified testing body. Any information contained within this document must be verified and tested for suitability by the user for his or her particular purpose or specific application. Consideration needs to be given to local or specific circumstances. The content of this document reflects our knowledge and experience at the time of publication. The newest version of the document replaces all previous versions. We advise that the newest version may contain technical changes that must be taken into account when using the products. The latest version of the document may be consulted on our website www.fenixforinteriors.com. Customers should always check whether an updated version of the document is available. We have made every effort to ensure the accuracy of the information in this document, but it cannot be held liable for any oversights, inaccuracies or typographical errors. The Manufacturer(s) of FENIX sheets will not assume any liability if the end-user or customer refer to any other technical information of the products.

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Rev09 -E-30-04-2020

				0.7 mm BLOOM BLACK CORE ¹	0.8 mm STANDARD ¹	0.9 mm STANDARD ¹	1.2 mm MATCHED COLOUR CORE ¹
PROPERTIES	TEST METHOD	PROPERTY OR ATTRIBUTE	UNIT	VALUES			
GENERAL PROPERTIES							
Surface quality	EN 438-2:2019 cl.4	Spots, dirt and similar surface defects	mm ² /m ²	≤ 1			
		Fibres, hair and scratches	mm/m ²	≤ 10			
Dimensional tolerances	EN 438-2:2019 cl.5	Thickness tolerance	mm	0.7 ± 0.10	0.8 ± 0.10	0.9 ± 0.10	1.2 ± 0.18
	EN 438-2:2019 cl.6	Length and width	mm	+ 10 / - 0			
	EN 438-2:2019 cl.7	Straightness of edges	mm/m	≤ 1.5			
	EN 438-2:2019 cl.8	Squareness	mm/m	≤ 1.5			
	EN 438-2:2019 cl.9	Flatness (measured on full-size sheet)	mm/m	≤ 60			
SURFACE PROPERTIES							
Resistance to surface wear	EN 438-2:2019 cl.10	Initial Point	Revolutions	≥ 200			
Resistance to water vapour	EN 438-2:2019 cl.14	Appearance	Rating	5			
Resistance to dry heat (160 °C/20')	EN 438-2:2019 cl.16	Appearance	Rating	5			
Resistance to wet heat (100 °C/20')	EN 438-2:2019 cl.18	Appearance	Rating	5			n.a
Resistance to scratching	EN 438-2:2019 cl.25	Appearance	Rating	≥ 4			
Resistance to staining	EN 438-2:2019 cl.26	Appearance - Groups 1 and 2	Rating	5			
		Appearance - Group 3	Rating	≥ 4			
Light fastness (Xenon-arc)	EN 438-2:2019 cl.27	Contrast	Grey scale rating	≥ 4			
Surface specular reflectance	ISO 2813	Surface specular reflectance	Gloss unit	8 + 16 at 85°			
Acids resistance	SEFA 8-PL-2010 method 8.1	Chemical Spot Test	Suitability	Compliant			
PHYSICAL PROPERTIES							
Density	EN ISO 1183	Density	g/cm ³	≥ 1.35			
Resistance to immersion in boiling water	EN 438-2:2019 cl.12	Appearance	Rating	5			
Dimensional stability at high temperatures	EN 438-2:2019 cl.17	Cumulative dimensional change	Longitudinal %	≤ 0.55			≤ 0.8
		Cumulative dimensional change	Transversal %	≤ 1.05			≤ 1.4
Resistance to impact with small diameter ball	EN 438-2:2019 cl.20	Spring force	N	≥ 20			n.a.
Resistance to cracking	EN 438-2:2019 cl.23	Appearance	Rating	≥ 4			
Electrostatic property	EN 61340-4-1	Point to point resistance	Ω	1 x 10 ¹⁰ ÷ 1 x 10 ¹²			
		Vertical resistance	Ω	1 x 10 ¹⁰ ÷ 1 x 10 ¹²			
OTHER PROPERTIES							
ENVIRONMENTAL PROPERTIES							
Formaldehyde emission	EN 13986	Formaldehyde emissions	Rating	E1			
Volatile Organic Chemical Emissions	Greenguard Gold Certification Low Chemical Emission UL 2818	Volatile Organic Chemical emissions	Suitability	Greenguard Gold certified			
FOOD AND HYGIENE PROPERTIES							
Hygiene	NSF/ANSI 35	Suitability for use as work and nonwork surfaces of food service equipment on which direct food contact during normal preparation or holding operations is not intended, expected, or reasonable	Suitability	NSF certified			
Food contact	Regulation EU n° 10/2011 and following amendments	Food Contact Materials performance	Suitability	Compliant - conditions of use reported in the Declaration of conformity			
¹ For the current and up to date FENIX® delivery program in North America, visit www.fenixforinteriors-na.com . For the delivery program in the rest of the world, visit www.fenixforinteriors.com . Please contact your sales representative for more information.							
Note to FENIX sheets with adhesive protective film The protective film is designed to temporary protect the surface from dust, scratches and marks left by handling equipment; it does not protect from corrosion, dampness or chemical agents. Sheets covered with protective film should be stored in a clean dry atmosphere at room temperature (ideally 20 °C), avoiding exposure to atmospheric agents and UVA rays. The protective film should be removed from the sheets surface after application and before the final item. In case of thick sheets with protective film on both sides, the film should always be removed from both sides at the same time. In any case, the removal should take place within 6 months from the date of shipping by the Manufacturer(s) of the FENIX sheets. The Manufacturer(s) of the FENIX sheets shall not accept liability for improper use of sheets covered with a protective film, nor for any consequences of an incorrect application.							
Disclaimer The Material Properties Data Sheet provides technical information relevant to the performance of the product as tested by the Manufacturer(s) of FENIX sheets or certified testing body. Any information contained within this document must be verified and tested for suitability by the user for his or her particular purpose or specific application. Consideration needs to be given to local or specific circumstances. The content of this document reflects our knowledge and experience at the time of publication. The newest version of the document replaces all previous versions. We advise that the newest version may contain technical changes that must be taken into account when using the products. The latest version of the document may be consulted on our website www.fenixforinteriors.com . Customers should always check whether an updated version of the document is available. We have made every effort to ensure the accuracy of the information in this document, but it cannot be held liable for any oversights, inaccuracies or typographical errors. The Manufacturer(s) of FENIX sheets will not assume any liability if the end-user or customer refer to any other technical information of the products.							

FENIX®



STORAGE, HANDLING
AND PROCESSING GUIDELINES.

FOREWORD

FENIX is an innovative material created for interior design, suitable for both vertical and horizontal application.

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The guidelines are intended to provide a general understanding of FENIX products and general recommendations on the processing, installation and use of these products.

Technical data sheets and other relevant guidelines for FENIX are available for download from the website www.fenixforinteriors.com. Before use, customers and end users of the product are required to check for updated technical information regarding product performance from the website www.fenixforinteriors.com.

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STORAGE AND TRANSPORTATION

Transportation and handling of the sheet material should only be carried out using suitable equipment. Sheets must always be handled with care to prevent damage to the external surface. FENIX is not an inflammable material; therefore fire prevention and protection measures must be adopted as per wood based products.

STORAGE

The sheets must be stored in a proper environment as for example a dry, clean and frost-free room. Place pallets and sheets on a flat surface that provides full support. Keep sheets in the original packaging whenever possible. Remove straps if sheets are to be stored for a long period of time. Prevent moisture forming between sheets. Do not place moisture-sensitive (paper) layers between sheets.

Partial (on one side only) exposure to moisture or heat can be prevented by:

- stacking the sheets one on the top of the other;
- avoiding gaps between sheets, e.g. when sheets have been machined;
- removing protective films from both sides at the same time;
- removing protective film within 24 hours after packaging removal.

TRANSPORT

FENIX sheets should be handled and transported only by a moving or other professional with proper equipment with great care to avoid breakage and damage. If the sheets should be loaded or unloaded, they should be lifted and not slid during loading and unloading operations, unless they are back to back, in pairs. One sheet rubbing against another can cause surface scratches or abrasions.

Single sheets should be carried with the pigmented part facing the carrier's body. Two people are needed to handle large sheets, and we further recommend bending the sheets lengthwise.

Prevent dust from depositing on and between sheets. Use adhesive, easy to peel off stickers for marking / coding and remove immediately after installation.

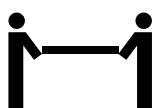
Transport of FENIX Thin Sheets

In case of thin sheets (less than 0.9 mm thickness), individual sheets may be rolled up for handling with the pigmented side facing inward, forming a cylinder about 600 mm in diameter or at least large enough not to damage the sheet. When transporting stacks of sheets, use a platform of suitable size and stability, securing the sheets with straps or stretch film in order to avoid dangerous slipping.

If the sheets have to be transported, secure the sheets using straps and place corner protection under the metal straps.



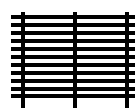
During transportation, the panel pigmented side should be facing the carrier's body



Two persons are always required to handle large sheets.



Fork length >1.5m with load capacity > 2500Kg



6m max height for stacking pallets



Panel should be stored in sheltered rooms



Correct panel positioning



Panel handling should be carried out by two people

Transport of FENIX Solid Panels

Secure the panels using straps during transportation. Place corner protection under the straps.

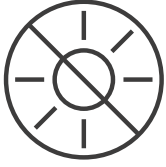
Sheets with adhesive protective film

The protective film is designed to temporarily protect the surface from dust, scratches and marks left by handling equipment; it does not protect from corrosion, dampness or chemical agents.

Sheets covered with protective film should be stored in a clean dry atmosphere at room temperature (ideally 20 °C), avoiding exposure to atmospheric agents and UVA rays.

The protective film should be removed from the sheet surface after application and before the final item. In case of thick sheets with protective film on both sides, the film should always be removed from both sides at the same time. In any case, the removal should take place within 6 months from the date of shipping by Arpa. Arpa shall not accept liability for improper use of sheets covered with a protective film, nor for any consequences of an incorrect application.

Protective film symbols:



The protective film used is photosensitive; therefore storing sheets under direct sun light is to be avoided.



The product has a slight directionality, which is only visible under some light conditions. Direction is indicated on product packaging for extra precaution.

FENIX PROCESSING

FENIX sheets are composed of over 60% cellulose fibre. They are sensitive to temperature variations and, above all, to humidity variations, which can cause dimensional changes.

Dimensional changes of FENIX sheets can be different from those of the support and so cause warping of the finished composite sheet.

This issue can be solved by:

- pre-conditioning of both support and sheet before gluing;
- balancing the composite sheet so that both sides are made of sheets with identical properties;
- ventilation and humidity control of the room where the composite sheet is installed;
- installing the sheet so as to allow for dimensional changes, if any.

PRE-CONDITIONING

In order for FENIX sheets and its support to reach a balanced and constant level of humidity, both the sheet and support need to be pre-conditioned at the same time before gluing.

This operation makes it possible to reduce any differences in the materials to a minimum, particularly in case of changing environmental conditions that generate tensions.

Solutions include either "cold" or "hot" techniques as described below.

Cold pre-conditioning

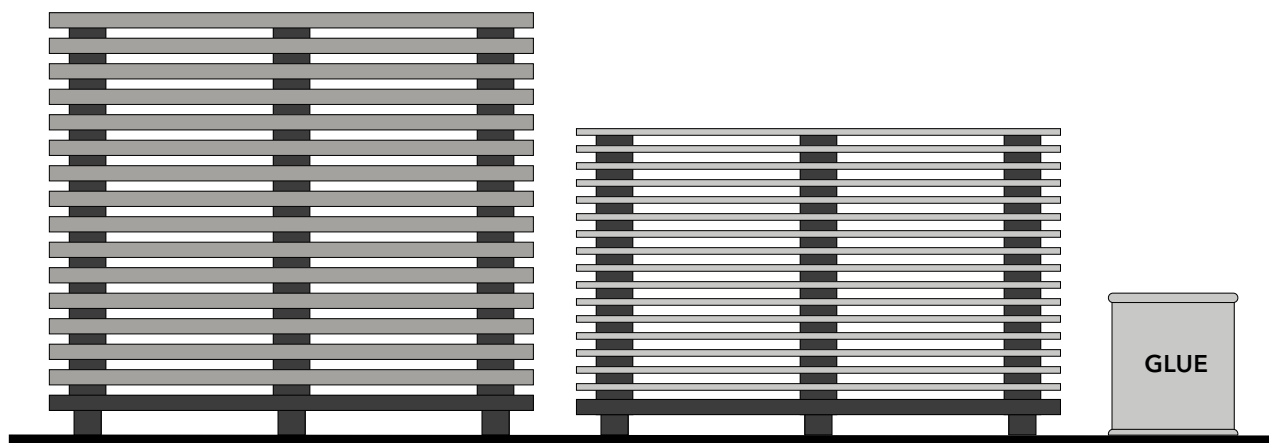
Method A

Sheets and supports are stacked together for at least three days in a room where humidity and temperature conditions are similar to those of the place where finished sheets will be installed.

If these sheets are installed in a warm place with constant low humidity, their components should be conditioned in a warm and dry atmosphere to avoid subsequent shrinking.

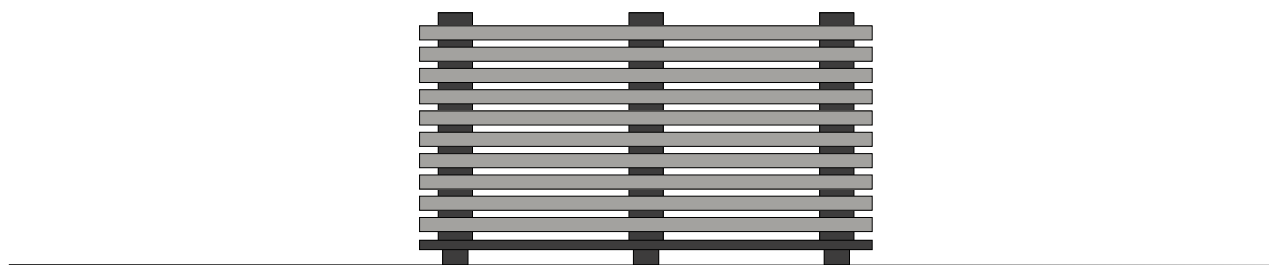
Method B

Sheets, supports and glue should be placed for about ten days in a room with a temperature ranging between 18 °C and 20 °C, with a humidity percentage of 50% and good air circulation.



Method C

FENIX sheets that constitute the opposite sides of the same sheet are stacked back to back, in pairs, for at least three days in a dry room, until they reach a similar degree of humidity. After gluing, each movement caused by humidity variations will be similar in size and direction on each side of the sheet, thus reducing the risk of warping. With this method, conditioning of the support in the same location is not required.

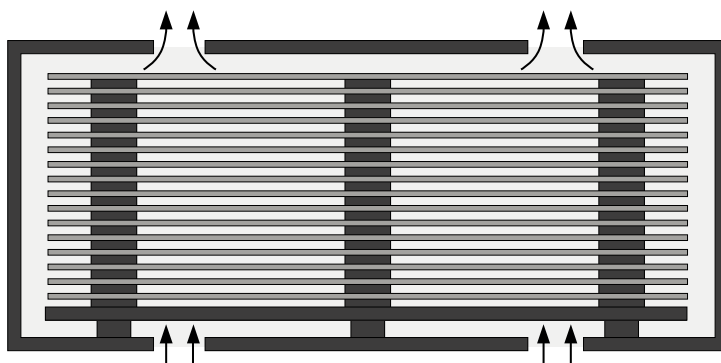


Hot pre-conditioning

FENIX sheets are arranged in pairs, spaced apart, in order to allow hot air to circulate.

Duration and temperatures will vary depending on the type of glue used (e.g. for about 10 hours at 40 °C or 6 hours at 50 °C). If the operation needs to be speeded up, the sheets can undergo an accelerated partial drying process by placing them, separated by battens, in a small heated room (e.g. for about 3 hours at a temperature of 40 °C or for 2 hours at a temperature of 50 °C). To speed up the operation even further, a heat press can be used, whereby sheets are processed two at a time (face to face) (e.g. for about ten minutes). Gluing should be carried out a few hours later. The above guidelines can be applied when weather conditions at the sheet's intended location are temperate.

If the composite sheet's final destination is one with low relative humidity, it is advisable to pre-condition both the support and the sheet at a similar relative humidity and at room temperature, or at a higher temperature for a shorter period (e.g. 20 hours at 40 °C or 10 hours at 50 °C). It is never advisable to exceed 50 °C. Gluing should be carried out immediately after pre-conditioning, strictly in accordance with the manufacturers' recommendations.



Please note that the mentioned durations and temperatures are a general guide to good practice only and constitute no form of warranty or representation as to fitness for purpose in respect of the process. The user is required to verify and test for specific suitability.

FENIX SHEET BALANCING

For correct sheet balancing, the same type of FENIX sheet should be used on both sides (thickness 0.7, 0.9 mm or 1.2 mm and if possible from the same production batch). Stresses may occur between two different materials bonded together. To avoid subsequent distortion in the resulting sheet, it is therefore desirable to use materials with identical properties on both sides, subject to the same dimensional changes in relation to environmental variations. This is an essential strategy, especially if the sheet is self-supporting or not directly supported by a rigid structure.

The larger the area to be clad, the more essential it is to consider the following factors: choice of the most appropriate sheets for balancing the composite sheet, density, symmetry, and rigidity of the support. Ideally the sheets to be used for both sides of the finished composite sheet should be taken from the same sheet or from sheets from the same manufacturer and of the same type, thickness, colour, and production batch. It is important that the two sheet sides are cut in the same direction, i.e. in the direction of the paper, which is the same as the direction of sanding. Any dimensional changes to the sheet will then be minimal compared with what would occur if the sides were cut in the opposite direction.

Although not recommended as the risk of warping can then not be totally ruled out, it is possible, in standard and non-critical applications, to use materials other than FENIX on one side of a composite sheet provided, subject to correct balancing (e.g. HPL Arpa in 1.0 mm thickness for FENIX NTM in 0.9 mm, HPL Arpa > 1.2 mm thickness for FENIX NTM 1.2 mm, and a "dedicated" HPL Arpa in 1.0 mm for FENIX NTA in 0.7 mm).

Of course, it is important to choose materials with physical properties similar to those of FENIX, as the more these differ from those of FENIX, the more likely it is that stresses will be created due to the lack of symmetry.

VENTILATION AND HUMIDITY CONTROL

Both FENIX Thin and Solid sheets supplied by Arpa are always covered with protective film. In the case of Solid sheets, both sides are covered with protective film. To store them properly, the protective film should never be removed from just one side. It is also important to remember that FENIX sheets and wood fibre support are materials that are sensitive to humidity variations in the air. FENIX for example, expands by about 1.5 mm per linear metre in both length and width directions. Adequate space for expansion should therefore be allowed for between one sheet and the next.

FENIX THIN SHEETS: PROCESSING

Processing FENIX Thin sheets should be done by a professional using proper equipment. The entire process is explained in more detail in the following chapters on cutting, milling, drilling, edging and gluing.

CUTTING

FENIX NTM thin should preferably be cut with saws using blades with tungsten carbide inserts or diamond ones in case of FENIX NTA.

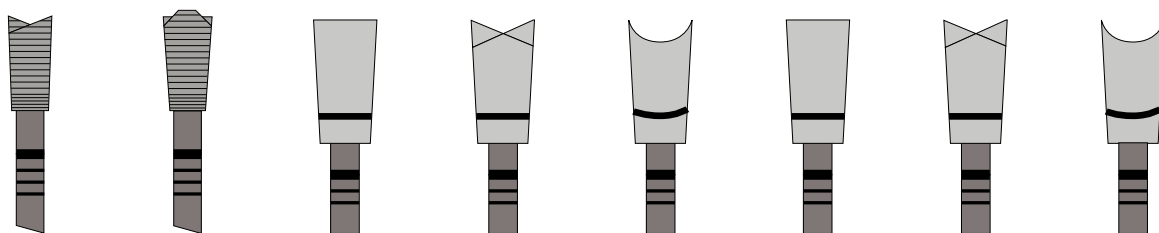
The tungsten carbide ones are in fact long-lasting but must be handled with care as they can easily be damaged if they come into contact with metal surfaces.

During the cutting process, the material can produce inert powder. Staff performing the cutting process have to be adequately trained, and equipment used to cut the materials to size has to be adequate for the purpose and well maintained and calibrated.

Every fabrication company working with the panels needs to make sure that proper risk assessments have been performed.

Cutting by hand

If on-site work is required, hand-held circular saws are used. The tool must be well sharpened so that great pressure is not required, thus reducing the risk of chipping and/or cracking the material. The operation should always be carried out in compliance with codes of practice and safety regulations.



Profile of tungsten or diamond inserts fitted to the saw discs currently available

Cutting with bench machinery

This paragraph deals with circular saws. To get good results with bench circular saws it is essential to do the following.

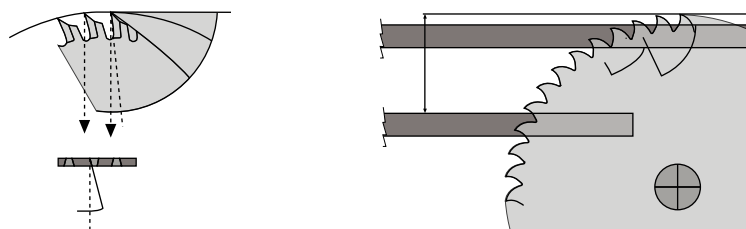
- Place the FENIX sheet with the pigmented side in the opposite direction to the rotation of the blade. In addition, the sheet must be well supported and secured with an adjustable height pressure tool to prevent movement and vibration.
- Use an accurate guide.
- Make sure that the saw blade is aligned with the worktop and has the right protrusion. It is also possible to cut several sheets together. In the case of sheets with pigment on one side only, all sheets should be placed with their pigmented sides facing upwards. Alternatively, the stack of sheets should be placed on a "sacrificial sheet" that has the same or superior hardness and texture as those being cut to shape.

Recommended specification for circular saws:

- tooth pitch: 10 to 15 mm;
- cutting speed: 3,000 to 4,000 rpm;
- tip speed: 60 to 100 m/s;
- forward speed: 15 to 30 m/min.

The blades should not be too thin. If they are less than 2 mm thick, they lose rigidity and vibrate, making the cut less precise.

Blade forward outlined



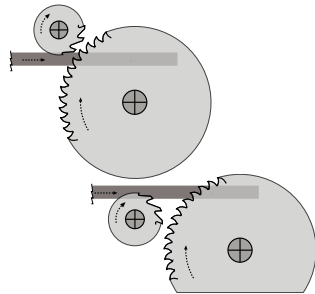
Cutting composite sheets

Everything mentioned so far also applies to the cutting of composite sheets with the pigmented part glued onto one or both sides of the support. In this case too, band saws are not recommended. Best results are achieved using fixed circular saws fitted with scribes and by carefully adjusting the blade height. The quality of the cut also depends on the profile and the number of teeth, the tip speed, the forward speed, and the blade's angle of entry and exit.

For cutting composite sheets, we recommend:

- choosing the most suitable blade;
- using a low forward speed and not "attacking" the material;
- operating a dust suction unit during processing.

Operations should be carried out in compliance with codes of practice and safety regulations.



Circular saws with a scoring blade

MILLING

Depending on the circumstances, milling can be carried out in various ways using hand-held tools or fixed equipment.

Milling with hand-held tools

For an accurate job, it is always essential to use machining centres. Hand-held cutters as well as belt sanders or grinding wheels are used especially to trim the projecting edges of sheets already glued onto a support.

In such cases, the base of the cutter must be covered with felt to protect the pigmented side during the work. The laminate surface should be cleaned of any dust and grit. It is also essential to remove the chips by suction during the operation.

A rotation speed of at least 20,000 rpm is required for the machined part to be properly finished.

Cutters with two blades, one straight and one tilted, are suitable both for a square cut and for chamfering.

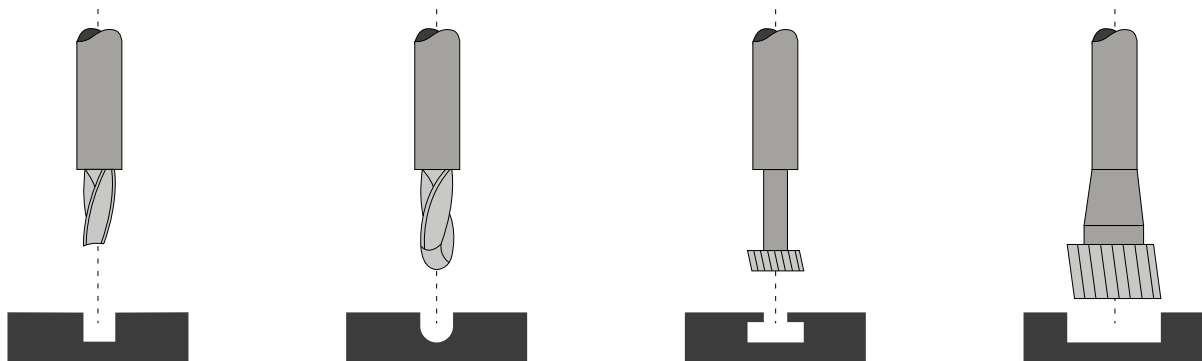
To avoid damaging the tools, the section of sheet to be milled should not project beyond the support by more than 2 to 3 mm. For continuous operations or for major jobs, the use of power tools with parallel blades is recommended.

Milling with fixed equipment

Milling machines or wood machining centres with spindles with interchangeable blades can be used.

The recommended tool attachments are cutters, discs or bits in solid tungsten carbide or in steel with tungsten carbide or diamond inserts, and with one or more vertical or angled teeth.

In the case of curved edges, it is better to cut out the rough shape required first, leaving a 1 mm surplus. The next step is then milling to the finished shape required.



Smoothing by hand

Various tools such as files or sandpaper can be used to finish the edges or chamfer the corners by hand.

Square (rather than milled) files are used to trim the edges or chamfer the sharp corners, making sure to use the files in a direction away from the pigmented side towards the core. It is also possible to use fine files or abrasive

paper and dual speed scrapers. To avoid scratching the surface, it is important to proceed gently and possibly in two stages: first with a coarser and then with a finer sandpaper.

DRILLING

The techniques shown apply both for drilling individual FENIX sheets and for drilling sheets that are already glued to a support. These operations should also be carried out in compliance with codes of practice and safety regulations.

For best results and to avoid the risk of future splits or cracks, it is important to bear in mind the following:

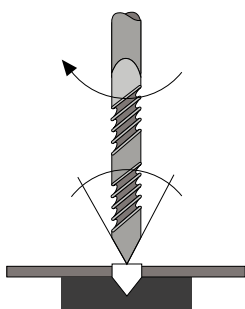
- Holes for screws should have a diameter at least 0.5 mm greater than the diameter of the screw itself. This is because the screw must have some clearance in all directions without touching the edges of the hole, to allow for slight dimensional movements in the sheet caused by changes in environmental conditions and to avoid cracks appearing around the hole itself.
- The drill speed should never be such as to overheat the surface of the pigmented sheet and damage it.
- To avoid splintering the material around the drill bit exit hole, we recommend placing the sheet on a hardwood board.
- To prevent roundhead screws from "gripping" too tightly, plastic or rubber washers can be used.
- After drilling, it is advisable to check that the edge of the hole is clean and smooth. If this is not the case, carefully rectify it as any micro-spalling can lead to cracking in the future.

Drilling tools

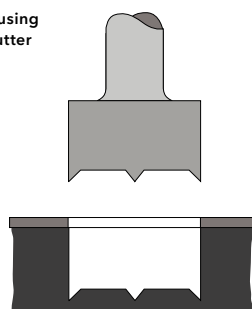
The choice of tools depends on the size of the hole that has to be made. Basically it involves hand tools, pillar tools, or a machining centre that can mill as well as drill.

- Twist drill bits: the most suitable bits for drilling FENIX sheets are special steel twist drills bits for plastics, with a tip angle of 60° to 80° (rather than the 120° of normal metal bits), a sharp helix angle, and a wide flute for rapid chip removal. The recommended rake angle is 7° with an 8° angle of attack.
- Hole cutters are recommended for larger holes.

Drilling using
a twist drill bit



Drilling using
a hole cutter



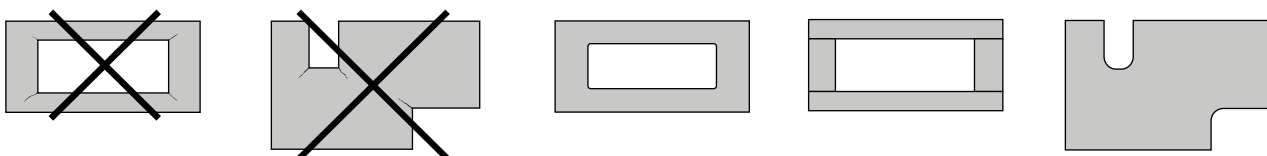
How to make internal cuts

The following refers both to FENIX sheets and to composite sheets with FENIX sheets applied to one or both sides. When carrying out internal fretwork, it is important to know that rightangled cuts may cause breakage or cracking of the material. In order to prevent this, all the corners of the internal cut-outs should be evenly rounded, polished, and brushed to remove any chips.

The inner radius of the rounded corner must be as large as possible. For internal cut-outs with side dimensions of up to 250 mm, the rounding of the corners should create a radius of at least 5 mm. If the length of the cut is greater, the radius of the corners should be greater too.

Before cutting the side of the opening, it is better to form the interior angles directly with the milling machine or drill, rounded to the required radius. If the design requires interior right angles, this should be achieved by assembling FENIX sheets together at each corner with butt joints.

**Right angle cut-outs can cause breaking or cracking in the panel.
Interior trim corners should be rounded.**



EDGING

FENIX sheets in the thin version can be edge-banded using the same colour with 1.2 mm thickness (matched colour core) or using ABS or PP edge-banding strip developed in partnership with manufacturers of edge-banding material (e.g. Ostermann, Rehau and Döllken, BVR, GIPLAST, etc).

For FENIX NTM, a polyurethane glue should be used for edge-banding 1.2 mm thick FENIX NTM sheets. ABS or polymer edge-banding strips can be glued using hot-melt glues, with new laser systems or with air systems.

For FENIX NTA, we recommend using ABS edge-banding directly on FENIX NTA sheet in 1 mm thickness and exclusively hot melt glue.

FENIX NTM and FENIX NTA edge banding examples are available for download from our website fenixforinteriors.com

BENDING

0.9 mm FENIX NTM can be cold bent with external radius not below 15 cm using "form-counter form"/"mould counter mould" systems.

0.7 mm FENIX NTA can be cold bent with external radius not below 20 cm using "form-counter form"/"mould counter mould" systems.

We do not recommend hot bending, using dynamic post forming machinery, as the acrylic surface of FENIX sheets processed in this way can be subject to superficial micro-cracking on the pigmented part.

PRODUCTION OF COMPOSITE SHEETS

FENIX Thin is a semi-finished product that requires gluing onto a support in almost all its applications.

Supports

The support upholds the sheet and must resist distortion. The support should therefore be selected according to the characteristics of the application, the intended use of the composite sheet, and the installation environment, according to the following characteristics:

- stability
- planarity
- rigidity
- mechanical properties
- uniformity of thickness
- resistance to water and humidity
- fire performance properties

For the surface of FENIX sheets to appear perfectly smooth and uniform, the surface of the support should also be of similar characteristics. Imperfections on the support, in fact, tend to be transferred to the sheet surface, especially if the sheet is very thin. Plywood, chipboard and MDF sheets are generally excellent supports because they experience dimensional changes similar to FENIX sheets as they are themselves also made of cellulose. Metal or mineral-based, kraft paper, and foam plastic supports are also sometimes used.

Adaptability of supports

The table below contains a list of support materials that can be combined with FENIX sheets and their degree of adaptability.

Recommended supports

Support	Degree of adaptability
Panel of particle Board (Chipboard)	Fixing methods depend on the thickness of the composite panel. The structure of chipboard (chip shape, resin content, density etc.) greatly influences its surface quality and characteristics. The most appropriate chipboards for bonding to decorative laminates are multilayer chipboards. P3 EN 312-3 type chipboards are an ideal backing for FENIX in dry climate areas and can be produced also with fire-repellent properties. P5 EN 312-5 type panels are more resistant to moisture and can be installed in areas of greater humidity. To avoid damage due to shrinkage and distortion, the panels should be sanded evenly on both sides. Panels must meet the minimum requirements of the standards. The nominal density should be no less than 650kg/m ³ .
Medium or high density fibre board (MDF - HD)	They should be sanded before bonding (usually carried out by the manufacturer). They are made using a dry process and use synthetic resins for bonding the wood fibres together; they have a uniform structure and a fine texture that enables well-shaped finishes to be achieved with smooth edges. They can be treated to increase fire and moisture resistance. Their nominal density should be no less than 800kg/m ³ .
Plywood panels	Thin panels are not self-supporting. Fixing techniques depend on the thickness of the composite panel. Low density plywoods in hardwood such as poplar are particularly suitable for bonding to FENIX sheets.
Laminboard panels	Laminboard panels are suitable only if formed of narrow enough strips. Otherwise, surface undulations may appear in low humidity conditions.
Honeycomb Structure supports	These can be used as internal components of a support or combined with a frame. They can be made of wood, metal, impregnated paper, cardboard (recycled or otherwise), polycarbonate or polypropylene. In aluminum, they are ideal for creating panels that are both rigid and lightweight, with FENIX panel coating on both sides. They come in different thicknesses and various cell sizes and are bonded with epoxy resin-based adhesives. In non-impregnated Kraft paper, they are generally used as a core in plywood sandwich panels or panel doors; they are also used with direct lamination in applications where weight restrictions or impact resistance are more important. Impregnated Kraft paper resists moisture better when impregnated and is normally used in small cell formats. Plastics such as polycarbonate and polypropylene are durable, light and not sensitive to moisture.
Tempered Glass	A likely support onto which FENIX can be applied is tempered glass; to obtain uniform colors, also on the edge of the glass panel, it is suggested to use specific polyurethane glues in combination with the paint on the balancing side of the support.

Non-recommended supports

Support	Degree of adaptability
Mineral-based supports	Concrete, calcium silicate or vermiculite panels. There are several non-combustible supports, mostly calcium silicate-based. FENIX sheets must only be used on supports made of a unique block because these are more resistant to delamination.
Metal supports	Metals have different dimensional movement compared with FENIX sheets. Aluminum and steel are suitable supports if their surface is prepared carefully before bonding the FENIX sheets onto (with PUR or epoxy glue).
Foam plastics (polystyrene, PVC, polyurethane, Phenol based, etc)	Rigid foams are self-supporting substrates with good thermal insulation; they are suitable supports for direct lamination. Phenolic foams have good fire resisting properties. They can also be found as the "core" in timber frames.
Plaster or concrete Surface	The uneven surfaces of these supports do not normally lend themselves to the direct application of panels. In addition, the dimensional movements of the materials are mostly incompatible.
Simple plaster or wallpaper surfaces	The dimensional movement of the panel on the paper could result in breakage.
Solid Wood	This is unsuitable. The irregular dimensional movements cause surface undulations. As a support for panels, it can only be used in small areas.

How to bond FENIX sheets to supports

Firstly, prior to bonding, the sheet surface and support should be thoroughly cleaned of any dust, grease or other particles that could cause defects or stains.

Bonding temperature

Normally, bonding is best carried out at room temperature but never below 15 °C. At higher temperatures the setting time of the glue is reduced.

It is advisable to carry out tests to check how the glue reacts and to follow the glue manufacturer's guidelines, which can differ for different glue types or environmental conditions.

Adhesives

The choice of glue, from among the many types available, should be determined by the type of support and the purpose of the finished product.

Classification of adhesives

1. Based on their reaction to heat:

- Thermoplastic adhesives soften with heat. This group includes chloroprene and neoprene-based glues and those based on PVAc (polyvinyl acetate), silicones, acrylics, thermo-melting (hot melt), and special glues.
- Thermosetting adhesives harden when heated, after initially softening. These include glues based on urea and formaldehyde, melamine and formaldehyde, resorcinol and formaldehyde, phenolic and polyurethane (one or two-component PUR) glues, and polyester and epoxy resins.

2. Based on method of application:

- High-pressure adhesives:
 - High pressure and long duration. Pressure is exerted at a set temperature by a mechanical or hydraulic press on the sheet and support, which are in full contact. This group includes PVAc, acrylic, urea and phenolic-based glues, and resorcinol and formaldehyde-based glues.
 - High pressure and short duration. Pressure is exerted for a short time (static pressure contact adhesive) and distributed evenly by hammering or using a rubber roller, in other words placing a load on the sheet being built. This group includes neoprene, chloroprene, and PVAc B2-B2.
- Low-pressure adhesives:
 - Low pressure and long duration. Polyester-based glues, PUR polyurethane glues, and epoxy glues.
 - Low pressure and short duration. Thermo-melting (hot melt) glues, to be applied with special equipment.

Hardeners

Neoprene-based adhesives are used with a hardening agent, which increases the heat resistance of the glue. Thermosetting adhesives are used with accelerators and catalysts, which ensure a good hold thus reducing the temperature and the period of application.

Bonding method

There are different types of bonding methods:

- Thermo-melting (hot melt) glues (to be applied with special equipment);
- Bonding using presses:
 - Cold presses. These can be used with steel sheets and limited pressure;
 - Hot presses. These can be used with stainless steel sheets, by placing a sheet in every empty compartment.

Types of Adhesives

Thermoplastic adhesives

Neoprene/ Chloroprene	Polychloroprene based, available in solvent or in aqueous solution; with or without hardener.
PVAc	Polyvinyl acetate-based emulsion. Available as one or two-component glue: the latter shows greater resistance to heat and humidity. If the support is compact and uniform, this ensures a good bond, being easy to use and fast setting. Being liquid, it should be distributed carefully over the surface to prevent fibers or chips from lifting at a later stage.
Acrylic Compounds	
Silicone	
Hot melt (Thermo-melting)	Almost exclusively used for bonding edges and assembling pieces. They must not to be used near a hot surface.

Thermosetting adhesives

Urea Glues (UF)	Urea and formaldehyde-based. Durable and resistant to high temperatures but with poor water resistance. Applied with a press at high temperature.
Melamine glues	Synthetic resins obtained by polycondensation of formaldehyde with melamine. Water, abrasion and heat resistant with considerable transparency to light radiation.
Resorcinol and formaldehyde-based glues	Use with hot or cold pressure for bonding the panel to moisture-resistant and some fire-resistant supports. Good weathering resistance.
Phenolic glues	Resistant to water, weathering and high temperatures. They reduce considerably in volume while setting.
Polyurethane glues	These are strong and flexible and adhere well to smooth or porous surfaces; they withstand low temperatures better than other glues, while not tolerating high temperatures well. They have good cavity-filling properties. One or two-component, they are excellent for bonding panels to difficult supports such as polystyrene, metal, plastics, etc.
Polyester	This type is more sensitive to heat than other adhesives.
Epoxy resins	They bond well to many materials and require only a light pressure. The wide range of hardeners available for epoxy glues allows setting times that range from a few seconds (if the temperature is high) to many minutes or hours (at room temperature). They are resistant and durable, have good cavity-filling properties, and shrink very little in volume after drying.

Gluing

The following precautions can help achieve optimum results and reduce the risk of undulations, surface distortions (or blisters) and cracking.

- Pre-condition the sheet in temperature and humidity conditions similar to those where it will be installed.
- Avoid the use of contact adhesives, in particular when applied by hand, if the sheet is to be installed in rather damp areas.
- Use contact adhesives only if the sheet is no more than 60 cm wide, applying the adhesive evenly to both surfaces in not too thick a layer.
- Cut the longer side of the composite sheet lengthwise, parallel to the direction of sanding. FENIX dimensional changes are in fact smaller lengthwise than crosswise.

Glues and supports

Supports	Thermoplastic Adhesives				
	Neoprene Chloroprene	PVAc	Silicone Acrylic compounds	Hot melt Acrylic compounds	Special Glues
Wood Based	• Treatment cold	• Treatment hot		•	
Paper Based with honeycomb structure	• Treatment cold	• Treatment hot			
Plastic foam based or honeycomb Materials Polystyrene			•		
PVC	•		•		
Phenol- Formaldehyde	•	•			
Polyurethane	•				
Metal based sheet or honeycomb structure	•			•	
Mineral supports in sheets or plaster based foams		•			
Concrete	•	•			
Concrete foam	•	•			
Glass foam	•	•			

Glues that can be used depending on the type of support

Supports	Thermosetting adhesives						
	Urea Glues UF	Melamine Glues	Resorcinol and formaldehyde based glues	Phenolic Glues	Polyurethane Glues	Polyester	Epoxies
Wood	•	•	•	•	•	•	•
Paper with honeycomb structure	•	•	•	•	•	•	•
Plastic foam or honeycomb materials Polystyrene					•		•
PVC					•		•
Phenol Formaldehyde	•	•	•	•	•	•	•
Polyurethane					•	•	•
Metal in sheet or honeycomb structure			•		•	•	•
Mineral supports in sheets or plaster-based	•						
Concrete					•	•	•
Concrete foam					•	•	•
Glass foam					•	•	•

FENIX SOLID PANELS: PROCESSING

Due to their composition, FENIX Solid panels can expand and shrink.

Temperature and humidity on front and rear sides should not differ over long periods of time.

The lower side of horizontal worktops and the rear side of vertical wall should therefore be well ventilated.

Panel edges should not remain wet for long periods of time.

If the panels are secured via profiles, these should be provided with draining elements. When fixing panels, it is important to allow for a maximum movement of 2.5 mm/m².

Drill holes and joints should be dimensioned accordingly. Do not tighten screws too much in order to allow the panels a minimum clearance.

FENIX Solid panels should be conditioned before processing and installation so that they can reach a balanced condition in their environment.

The homogeneous composition of the material makes it possible to machine both sides and the surface. FENIX panel machining is similar to that of high-quality hardwood.

The hardness of the panels makes greater demands on tools than when machining materials composed of softwood.

The use of hard metal tools is recommended. Diamond-tipped tools are recommended for large sized elements.

This ensures a very good finish and a long tool life.

CUTTING

FENIX NTM should preferably be cut with saws using blades with tungsten carbide inserts and diamond ones for FENIX NTA.

If the cutting perimeter is not well defined, FENIX NTA should preferably be processed using blades and tools dedicated to aluminium and general alloy.

During the cutting process, the material can produce inert powder. Staff performing the cutting process have to be adequately trained, and equipment used to cut the materials to size has to be adequate for the purpose at hand and well maintained and calibrated.

Every fabrication company working with the panels needs to make sure that proper risk assessments have been performed.

The following general guidelines apply to cuts made on FENIX panels using circular saws.

- Feed: 7 - 22 m/min (23 - 72 ft/min).
- Teeth: alternate or flat-top V-shaped teeth.

Positioning

Always position the teeth on the pigmented side of the panel.

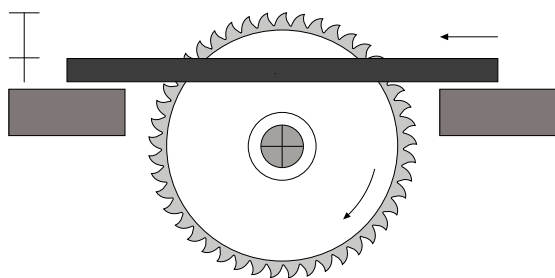
Edge cutting: best results are obtained using bench machinery.

Sharp edges can be rounded by means of sandpaper or a milling machine.

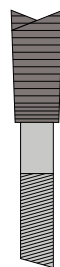
Rake angle: best performance is obtained with a 45° rake angle.

Use rubber shims to prevent the panels from sliding if the machine is not equipped with a mobile work top.

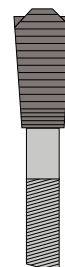
Saw blade height adjustment



Alternate teeth



Flat top V-shaped teeth



Cutting with bench circular saw

Keep pigmented side facing upwards when saw cutting, drilling and milling.

When a pigmented side must be slid over the machine's worktop while machining, we recommend placing a protective panel, for example of hardwood, on the worktop:

Diameter		Teeth	Rpm	Thickness of the blade		Blade height adjustment	
mm	inch			mm	inch	mm	inch
300	~12	72	~ 6.000/min	3,4	~ 1/8	30	~ 1
350	~14	84	~ 5.000/min	4,0	~ 3/16	35	~ 1
400	~16	96	~ 4.000/min	4,8	~ 3/16	40	~ 1

Cutting with hand-held circular saw

When using a hand-held circular saw, the panel side with no pigment should be facing upwards.

Diameter		Teeth	Rpm	Thickness of the blade		Blade height adjustment	
mm	inch			mm	inch	mm	inch
150	~ 6	36	~ 4.000/min	2,5	~ 1/8	15	~ 5/8
200	~ 6	36	~ 4.000/min	3,0	~ 1/8	20	~ 3/4

Jig saw

Jig saw (carbide-tipped): interior corners of cut-outs should be drilled first with 8 - 10 mm ($\approx$ 5/16 - 3/8 in) hole diameter. Consider the use of a specific jig saw blade for pigmented surfaces.

MILLING

Milling shapes:

- straight and slanted bits for cutting edges and bevelling
- hollow or round ground bits for rounded edges
- diamond circular saw blades for grooves

Material:

Hard metal or diamond cutters, manually operated milling cutter, or spindle moulder:

Diameter		Rpm		Speed		Feed	
mm	inch			m/s	ft/s	m/min	ft/min
20-25	~ 1	~ 18.000	~ 24.000/min	20 - 30	~ 65-100	5	~ 16
125	~ 5	~ 6.000	~ 9.000/min	40 - 60	~ 130-200	5-15	~ 16 - 50

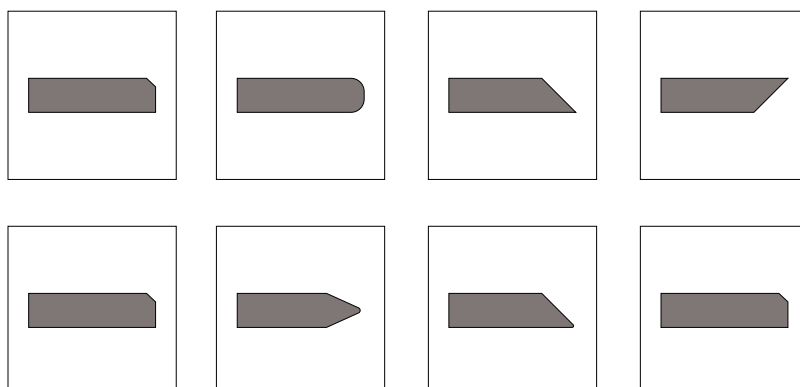
Edging/milling templates

Edges should be safe, free from saw marks and jagged edges.

For better appearance it is advised polishing edges.

Several edge treatments can be considered for functional and aesthetic reasons.

Some examples follow:



DRILLING

The use of carbide-tipped HSS-drill bits or diamond ones with a 60-80° angle is recommended. FENIX panels should be drilled using support sheets.



Large holes, e.g. for suspension and locking equipment, should be drilled using combination drill bits. The exit speed of the drill bit must be carefully selected so as not to damage the product surface. The feed rate must be reduced by 50% shortly before the drill bit exits the work piece. During drilling operations, the counter-pressure should be increased using hardwood or equivalent material in order to prevent the surface from breaking.

GLUING

FENIX Solid panels can be glued to each other and onto many materials using one or two-component adhesives, such as epoxy or polyurethane adhesive systems. Gluing is often carried out together with a mechanical joint to provide sufficient pressure during drying.

Thickening the edges of panels with FENIX Solid strips:

- make sure panels and strips have the same "grain direction";
- pre-condition panels, strips and adhesive in the same way (temperature and humidity preferably adjusted in line with future conditions of use);
- remove grease from surfaces to be glued, roughen them slightly, and ensure they are dust-free;
- strictly follow the instructions provided by the adhesive manufacturer.

Type of glue	Application	Open time	Pressure	Set time
Epoxy adhesives	100-250 g/m ²	Depending on the type	0,2 N/mm ²	4-8 hrs at 20°C
Polyurethane	100-250 g/m ²	Depending on the type	0,2 N/mm ²	4-8 hrs at 20°C

It is advisable to carry out tests to check how the glue reacts and to follow the glue manufacturer's guidelines, which can differ for different glue types or environmental conditions.

INSTALLATION GUIDELINES

There are two major installation systems for FENIX Solid panels:

- mechanical (screws and rivets)
- chemical (glue)

Vertical application

FENIX Solid can be used as so-called suspended cladding elements. This means that the material is assembled on a supporting sub frame. The panel can be fixed visibly or invisibly.

When determining the sub frame, it is important to take the following points into account:

- the load-bearing requirements;
- maximum fixing distances for the panels;
- the necessary ventilation or moisture regulating measures;
- the tolerance for panels to move;
- the available panel sizes;
- the thickness of any insulating layer;
- the anchoring options in the building (wall) construction;
- the legal requirements.

Corner solutions

When joining two panels in a corner, it is important to take the panel movement into account. To avoid tension at the joint, it is advisable to keep the leg length of the corner element as small as possible (max 400 mm).

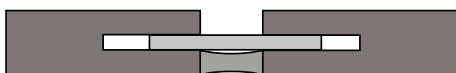
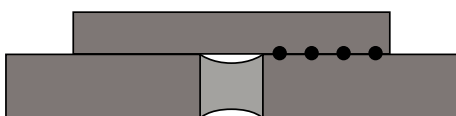
Compact panels can be joined together in corners in various ways:

- glued aluminium or plastic corner profile
- glued aluminium or plastic strip
- built-in strip and groove joint with support

Joints and connections

Solutions for vertical joints include:

- expansion joint
- built-in groove
- rebated joint



To allow for dimensional changes as a result of moisture and temperature fluctuations, joints should be left free both for vertical and horizontal connections such that the panel can move by a maximum of 2.5 mm/m.

Thanks to the excellent workability of the material, it is possible to accurately seal vertical and horizontal joints without auxiliary profiles.

For panel thicknesses from 8 mm or more, it is possible to make connections in the form of rebated joints or as built-in groove connections.

Horizontal joints: either built-in groove or rebated joint connections can be used for horizontal joints. Joints must be made in such a way that the panels can move by 2.5 mm/m maximum. The recess in the rebated joint must measure at least twice the width of the joint itself.

Vertical joints: built-in groove connections can be used for vertical joints. Panel thickness on each side of the groove must be at least 2.9 mm. If aluminium grooves are used, a panel thickness of 8 mm is sufficient.

Joint sealing using mastic

When FENIX panels are used for interior applications where high standards of hygiene are required, wall constructions with airtight seals are often preferred.

The joints are then sealed with an elastic mastic. This sealing material must be mould repellent according to ISO 846 and resistant to disinfectants if it is used in the aforementioned applications.

Furthermore, for maximum bonding between the sealing material and the panel, it is necessary to avoid draughts, damp, dust and dirt.

We recommend using FENIX Solid panels in combination with silicone or polyurethane mastic.

Important guidelines for applying elastic sealing material:

- The joint must be absolutely clean, dry and free of grease.
- If necessary, a primer should be applied to facilitate bonding.
- The sealing material must on no account adhere to the reverse side (bonding on three x sides) as this can cause breakage of the panel. It is advisable to use a separating film or a polyethylene tongue.
- To ensure that the sealing material is not under excessive strain, grout joints should be wide enough and their depth should not be greater than their width.

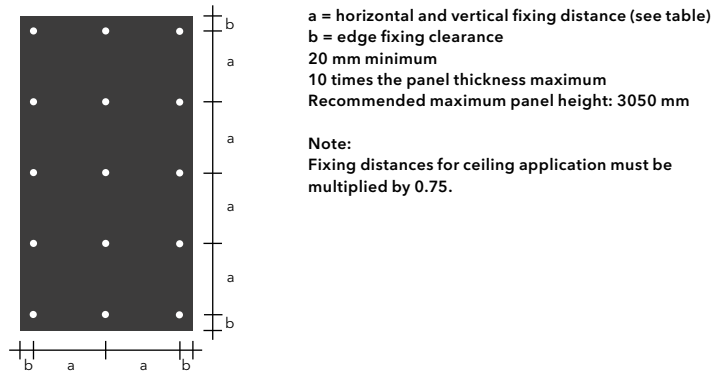
Visible fixing with screws or rivets

FENIX Solid panels can be fixed to a timber sub-frame structure using fast fix screws, or they can be fixed to a metal sub-frame structure using aluminium rivets.

The sub-frame structure must be assembled in such a way that the area behind the panel is ventilated. This ensures that the temperature and humidity will be the same on both sides of the panel.

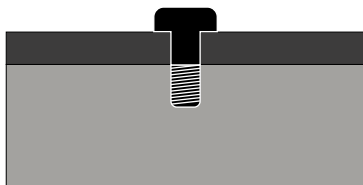
When fixing panels with screws or rivets, it is important to ensure that panels can move freely and evenly.

- The diameter of all pre-drilled holes in the panels must be 8 mm when using fast fix screws that have a diameter of 4 mm.
- When using rivets with a 5 mm diameter, one hole - centrally positioned in the panel - must be pre-drilled with a 5.1 mm diameter, and all other holes must be pre-drilled with a 10 mm diameter. A special nosepiece must be used on the riveting tool to keep the head of the rivet 0.3 mm away from the panel surface.
- All joints must be at least 8 mm wide.
- Panel thickness: minimum of 6 mm (for efficiency and performance purposes, a minimum thickness of 8 mm is recommended).

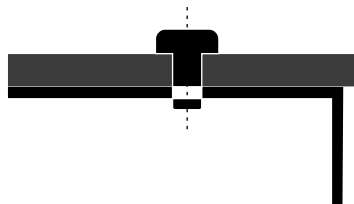


Maximum fixing centres (mm)	Panel thickness (mm)		
	6	8	10
2 fixings in one direction	450	600	750
3 or more fixings in one direction	550	750	900

Visible fixing on screws on wooden support



Visible fixing on screws on metal support



Invisible fixing with adhesive

FENIX panels can be fixed on to a timber or metal support using special adhesive systems that enable dimensional variation of both coating and support. The guidelines of qualified glue manufacturers must be followed in order to achieve high-quality connections.

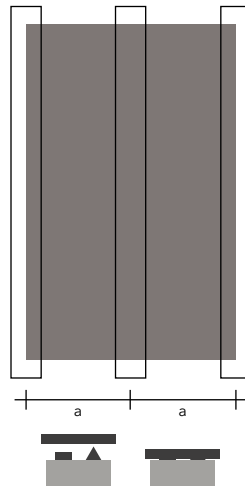
Arpa is not responsible for the selection or use of adhesives in fixing systems.

The sub-frame structure must be assembled in such a way that the area behind the panel is ventilated. This ensures that the temperature and humidity will be the same on both sides of the panel.

The adhesive must be applied only in a vertical direction and always over the full height of the panel. All joints must be at least 8 mm wide.

The maximum installation size of the panel is 3050 mm x 1300 mm. For efficiency and performance purposes, thicknesses under 8 mm are not recommended.

Adhesive system including double sided tape for temporary fastening while the adhesive sets:



Maximum horizontal fixing distances (a):

Maximum fixing distances (mm)	Panel thickness (mm)	
	8	10
2 fixings in one direction	600	650
3 or more fixings in one direction	650	650

Horizontal Worktops

FENIX Solid panels can be used as worktops or as table tops.

Thickness

Minimum thickness: 10 mm.

Panel thickness and fixing distances as well as expected load capacity are directly linked and must be calculated correspondingly.

Fixing

Assemble using inserts or threaded screws.

Maximum drill hole depth equals panel thickness minus 3 mm. Drill hole diameter in panels should comply with the instructions of the supplier of the fixing means and be capable of withstanding the shank of the screw.

Drill holes in the support construction must allow for the panels to move: either drill slotted holes or make sure that the diameter of the drill holes equals screw diameter plus 3 mm. If more than two panels are joined together (e.g. for long wall benches), slotted holes of sufficient length should always be made in the support construction.

Support

Steel or aluminium supports should be sturdy and rigid enough to prevent panel warping as a result of the load applied on the upper surface. If any other elements are fitted under the panel (drawers, boxes, pipes), then the support must be dimensioned accordingly.

The distance between the support and the processed panel edge should be lower than 25 cm.

MATCHED COLOUR CORE PANELS INSTALLATION

Processing FENIX Solid matched colour core panels is the same as processing FENIX Solid black core panels. Although these products are compatible with most of the tools and techniques used for the processing of normal panels, additional techniques are necessary in order to take advantage of their full potential.

Handling and storage

The composition of FENIX Solid matched colour core panels makes them slightly more fragile than FENIX Solid black core panels, and they should therefore be handled with extra care.

They should always be stored horizontally. Vertical storage is not recommended given the risk of damaging the edges. Edges and corners are particularly exposed and could be damaged as a result of impacts. Storage conditions are the same as those recommended for normal compact panels.

Machining operations

All traditional tools and machinery used for FENIX Solid black core panels can be used for FENIX Solid matched colour core panels, and we recommend following all the general recommendations regarding machining.

How to cut the panels

Use the same standard equipment as used for other FENIX Solid panels.

Cutting tools and saw blades should always be kept sharp to avoid chipping. As FENIX Solid matched colour core panels are more brittle, to avoid chipping on the lower side during cutting operations with circular saws, precautions should be taken such as:

- lowering the saw in the bench;
- reducing the throat of the saw by placing a piece of hardboard under the cut; changing the saw blade for one with negative angle teeth;
- simply allowing an extra amount for edge trimming.

Large sheets may be cut by scoring but extra care must be taken to prevent shattering.

Gluing

The use of non-pigmented or transparent quick drying adhesives are recommended to achieve a visually satisfactory end result.

Assembly

To obtain a good result when joining two panels of FENIX Solid matched colour core, it is advisable to use a mechanical fixing system.

Loss of structure

Various machining and scoring operations can be carried out on FENIX Solid matched colour core panels. However, please note that the scoring will alter the FENIX surface structure and lead to the loss of all specific characteristics of the product.

ARPA INDUSTRIALE S.p.A. GENERAL TERMS AND CONDITIONS OF SALES

1. Definitions and interpretation

In these GTC (unless the context otherwise requires), the following words and phrases shall have the following meanings: "GTC" means these general terms and conditions of sale.

"Contract" means a contract for the sale of goods made by or on behalf of Arpa Industriale S.p.A. (The "seller") with the party to whom the seller supplies goods (the "buyer") which arises upon the acceptance of an order and/or the signing of an agreement by the authorized representative(s) of the seller.

"Goods" means all products of any kind manufactured by the seller and all equipment, product and services supplied by the seller.

"Order" means an order for the goods received by the seller from the buyer, containing the following items: (a) order number and order date; (b) month to which the order applies; (c) quantities and product codes of the goods ordered; (d) date of delivery of each good, being at least 30 days after the date of receipt by the seller of the order; (e) prices calculated pursuant to art. 3. On the basis of the quantities and features of the goods.

2. Scope

2.1 These GTC shall govern every contract made by the seller in connection with the supply or sale by the seller of the goods. Once these GTC have been signed by the buyer, in default of a written agreement expressly overriding any or all of these GTC, no other terms or conditions whatsoever arising whether express or implied, or whether contained in any order or otherwise implied by custom, practice or course of dealing, shall govern or affect any contract with the same buyer. Any quotations issued by the seller do not constitute an offer and the seller reserves the right to withdraw or revise a quotation at any time before the seller accepts an order.

2.2 The seller's acceptance of an order shall be effective only where such acceptance is in writing (including by e-mail) and signed by the authorized representative(s) of the seller. The seller undertakes to provide only the quantities of good set forth in the relevant contract.

3. Price calculation

3.1 The price payable by the buyer for the goods will be the price quoted in a valid quotation issued by the seller or, in the absence of a valid quotation, the current list price of the seller for the goods, less any discount if agreed in writing by and between the buyer and the seller. The seller's quotations are valid for a period of 30 days from the date thereon unless otherwise agreed by the seller in writing. Copies of the current price list of the seller are available on request.

3.2 The seller reserves the right to change the prices at any time. In the event of a price increase, the buyer will be entitled to withdraw from the contract within 20 days from the date of receipt by the buyer of the written notification of such price increase. This right to withdraw from the contract does not apply in the event of price increases that directly result from increases of the production costs of the relevant goods not attributable to the seller, including, without limitation, increases in applicable value added-tax or freight or customs rates and/or general increases of the price of the relevant raw materials.

4. Delivery

4.1 Terms of delivery shall not be deemed as time of the essence [termine essenziale], unless otherwise agreed in writing. Delivery by the seller as agreed upon between the parties will take place only if the agreed-upon place of destination can be reached by and is accessible to a vehicle weighing up to 40 tons. If this is not the case, the goods will be delivered by means of lighter vehicles, with any additional costs, including those of transshipping and wages, being borne by the buyer. The buyer must ensure that a properly functioning forklift truck is present at the destination agreed upon, with a loading capacity of at least 2,500 kilograms and a fork of at least 1.5 Meters in length.

5. Payment

5.1 Payment must be made to the seller within 30 days from the date of the relevant invoice, unless otherwise agreed in writing. Term of payment shall be deemed as a term of essence [termine essenziale] for the seller, pursuant to art. 1457 Of the Italian civil code ("I.C.C.").

5.2. Payment-related costs, including without limitation fees charged by banks and the costs incurred in offering shipping documents, must be borne by the buyer.

5.3 Notwithstanding the provisions of art. 1243 of the I.C.C. To the contrary, the set-off is possible only if its counter-claim is acknowledged in writing by the seller or in a final and binding decision of a competent court.

6. Late payment

6.1 If payment is not made by the buyer within the terms set forth pursuant to art. 5.1 Above (a) the buyer will be deemed as being in default by operation of law, and default interests calculated pursuant to the provisions of legislative decree no. 231 of 2002 shall apply; (b) without prejudice to the seller's other rights, the seller reserves the right to discontinue forthwith the provision to the buyer of any further goods whatsoever under any contracts then existing between the seller and the buyer without any liability whatsoever upon the seller.

7. Complaints

7.1 A "complaint" shall mean any complaint of the buyer with respect to the quality of the goods, exclusively due to defects in material and workmanship in the manufacturing process. Promptly upon receipt of goods, the buyer is obliged to verify whether the goods supplied are in compliance with the contract and do not have any defects.

7.2 The buyer shall present a complaint by giving written notice to the seller of any defects of the goods supplied, providing all reasonable particulars, within 8 days from the date of delivery (in case of visible defects) and, in case of hidden defects, promptly upon their discovery by the buyer. Complaints must be submitted in writing, stating order details, charge number(s), as well as invoice and bill of landing numbers and any reasonable details relating to the alleged defect.

7.3 Goods about which a complaint has been submitted shall not be returned by the buyer to the seller, unless the seller's express written consent has been obtained. Without prejudice to the provisions of art. 10 Below, if the seller recognizes as founded a complaint the seller shall have the option - at its discretion, and taking the buyer interests and the nature of the complaint into account - to: (a) deliver any missing part or parts; and/or (b) give a price reduction; and/or (c) repair the goods supplied; and/or (d) replace the goods supplied; and/or (e) refund the purchase price in exchange for the goods supplied being returned at the buyer's costs.

7.4 For the avoidance of doubt, it is understood that no complaint for defects not attributable to the materials used by the seller and/or lack of the seller's workmanship in manufacturing the goods will be accepted by the seller. Except as set out in this art. 7 Of these GTC as to complaints, all conditions, warranties and representations express or implied by statute, law or otherwise in relation to the supply or delay in supplying the goods are excluded to the fullest extent permitted by law.

8. Instructions And Advice

8.1 The seller may provide the buyer with written instructions, regulations and guidelines for the storage, working or processing, use or application of the goods to be delivered or already delivered. To the extent that the buyer resells or otherwise transfer the goods supplied to any third party, whether or not after working or processing such goods, it shall make said instructions, regulations and guidelines, to the extent applicable, available to said third party. The seller shall not be liable for any damage suffered by the buyer or its buyers/agents/contractors due to the non-compliance or improper compliance with instructions, regulations and guidelines provided by the seller. The seller shall not be liable in any manner whatsoever for the contents of any advice or consultancy provided without a specific, separately agreed, consideration to the buyer.

9. Force Majeure

9.1. "Force majeure" means any circumstance beyond the seller's control that temporarily or permanently prevents fulfilment of the contract, such as war or war risk, riots, whole or partial mobilization, strikes, lack of raw materials, a delay in the supply of goods and/or raw material by suppliers, unforeseen circumstances within the company, transport difficulties, import and/or export restrictions, frost, fire, epidemics, acts of god and any other unforeseen impediments that make the manufacture or transport of the goods fully or partially impossible. The provisions laid down in this article will also apply in the event that the circumstances referred to occur in respect of plants, suppliers or other traders from which or whom the seller purchases goods or services.

10. Liability

10.1 Without prejudice to the provisions of art. 7 above, the seller's liability pursuant to a contract, including liability for any non-delivery or late delivery of or any defects in the goods supplied, will be limited to the net amount invoiced for the relevant goods. The seller will not be liable for any damage against which the buyer is insured. The same limitations set forth under this art. 10.1 will apply in the event that the seller is held liable by the buyer on grounds other than breach of the contract.

10.2. The sending of messages to the seller by any electronic means, unless the seller and the buyer have concluded a specific written agreement for that purpose, will be at the buyer's risk. The seller will not be responsible or liable for the non-arrival, incomplete arrival or incorrect arrival of any message sent by electronic means.

10.3 The limitations of liability referred to above will not apply in case of fraud or gross negligence on the part of the seller. Notwithstanding the provisions of art. 1460 of the I.C.C. to the contrary and pursuant to art. 1462 of the I.C.C., the buyer shall not be entitled for any reason whatsoever (including, without limitation, any failure of the seller to duly perform any of its obligation under a contract) to withhold or delay performance of its obligations - in particular the payment of the price within the terms set forth pursuant to art. 5.1 above - arising under a contract.

11. Retention of title and transfer of risk

11.1. Goods supplied by the seller shall be at the buyers risk immediately upon delivery to the buyer or into custody on behalf of the buyer. Title to the goods supplied shall not pass to the buyer until the buyer has paid, satisfied or undertaken any and all obligations arising on the buyer under any contracts. The buyer (i) shall render its co-operation in all reasonable measures the seller wishes to take to protect the goods supplied and/or its title to such goods and (ii) is obliged to observe due care in keeping and properly insure the goods supplied subject to a retention of title.

11.2 In the event that any third parties levy an attachment (sequestro and/or pignoramento) with respect to the goods supplied that are subject to a retention of title, or in the event that third parties wish to set forth or enforce any rights with respect to such goods, the buyer shall promptly notify the seller thereof in writing. The buyer may not pledge or otherwise encumber the goods subject to the retention of title. After working or processing said goods, the seller will be the (co-) owner of the goods so created, and the buyer will automatically start holding these goods also on the seller's behalf.

11.3 In the event that the buyer fails to fulfil its payment under the contract, or fails to fulfil such obligations on time, or in the event that there are good grounds to fear that this will be the case, in addition to any other rights and remedies of the seller, also pursuant to the provisions of these GTC, the seller will be entitled to repossess any goods supplied that are subject to a retention of title as referred to in this article, and to remove the goods from the buyer or third parties holding the goods on the buyer's behalf, or to have such goods repossessed. The buyer shall render any and all co-operation required in this respect.

12. Intellectual Property Rights

12.1. The buyer is not entitled to any rights in any patent, copyright, registered or unregistered design, trade names, trademarks or logos, owned or used by the seller (the "seller's IP rights") and the buyer shall inform the seller as soon as it becomes aware of any potential, threatened, alleged or actual infringement of any of the seller's IP rights and shall provide all assistance and information reasonably required by the seller in connection with any such infringement and shall, if the seller so requests, at the expense of the seller, join in any court or other proceedings relating to such infringement.

13. Packaging

13.1 In the event that the goods are delivered to the buyer in packaging borrowed by the seller to the buyer, the buyer must return to the seller such packaging carriage paid, in proper condition and without product residue within three months of delivery, at the latest. In the event that the packaging is not returned within the time period set forth above, or if it is damaged and/or contains product residue, the costs of replacing or repairing and/or cleaning or disposal of such packaging will be charged by the seller to the buyer.

14. Failure on the buyer's part

14.1. In the event that the buyer is in default and/or the seller has good grounds to fear that the buyer will fail to fulfil its payment obligations or fail to fulfil such obligations on time, the seller will be entitled, without being obliged to pay any damages and without prejudice to all rights to which the seller is further entitled to: (a) demand advance payment or to demand adequate guarantee and security; (b) suspend the performance, in whole or in part, of all contracts with the buyer; (c) revoke agreed-upon terms of payment, so that all outstanding claims will be immediately due and payable; or (d) suspend performance of its obligations, also those arising under other agreements with the buyer.

15. Termination rights

15.1 Without prejudice to the provisions of these GTC and any other rights and remedies of the seller, the seller shall be entitled to terminate any contract with the buyer pursuant to art. 1456 of the I.C.C., suspend further deliveries to the buyer and stop goods in transit forthwith upon the happening of any of the following events: (a) buyer's failure to pay any sums due to the seller on the due date in respect of any contract as total consideration, advance payment or balance; (b) buyer's breach of the provisions of art. 5, 6, 8, 11, 12, 16.2 of these GTC.

15.2. In the event of early termination, without prejudice to any other rights and remedies of the seller, the seller shall be entitled: (a) to enter into premises in the buyer's possession, occupation or control or to which the buyer has any right of access and to repossess any goods owned by the seller, it being understood that no good can be sold or otherwise delivered by the buyer to any third party after six months from the date of the termination of a contract; (b) to be paid all sums then due to the seller by the buyer in respect of all goods provided by the seller to the buyer; and (c) to be paid forthwith on invoice an amount equal to the loss of profit and the actual cost of work, service and materials of partially completed goods and to be paid forthwith on invoice the contract price due in respect of completed goods whether delivered or not.

16. Confidentiality - assignment of the contract

16.1 The buyer shall treat all products, business information, drawings, designs and specifications and any other information and data submitted by the seller as confidential and shall not disclose them to any third party without the seller's prior written consent or use them for any purpose except where authorized to do so by the seller. Upon the seller's request and, in any case, upon termination of a contract, the buyer shall return to the seller all documents, files and correspondence submitted by the seller as confidential or otherwise covered by any of the seller's IP rights.

16.2 The buyer may not assign any of its rights, interests or obligations under any contract without the prior written consent of the seller and any attempt to assign any contract without such consent shall be of no effect towards the seller.

17. Language - applicable law and competent court

17.1 These GTC, in English language also, are available in the last updated version on the web-site www.arpaindustriale.com. The Italian version of these GTC prevails at all times in case of disputes with regard to the interpretation thereof.

17.2. Italian law will apply to any contracts. The "incoterms" issued by the international chamber of commerce in paris shall apply, always in the newest version applicable, upon conclusion of the relevant contract.

17.3 All disputes arising out of or in connection with any contract are subject to the exclusive jurisdiction of any competent court in Cuneo (Italy).

ARPA USA INC. GENERAL TERMS AND CONDITIONS OF SALES

The following are the General Terms & Conditions (T&CS.) that dictate the transaction between the Parties to the Invoice located on the reverse of this document. By accepting goods from Arpa USA Incorporated (Arpa USA), Buyer hereby agrees to each and every one of the T&CS.

1. Authority of Arpa USA's agents

No agent, employee or representative of Arpa USA has any authority to bind Arpa USA to any representation or warranty concerning the goods or materials comprising the System or Panels (collectively, Goods.), or concerning the services or other Deliverables, including without limitation, the Arpa USA Shop Drawings, sold pursuant to the Invoice. Unless a representation or warranty made by an agent, employee or representative of Arpa USA is specifically included in writing in the Invoice, it is no part of the basis of the sale and shall not be enforceable against Arpa USA. Buyer represents that no representations other than those specifically contained in writing in the Invoice have been made or relied upon.

2. Transportation and claims

All Goods received by Buyer from Arpa USA shall be deemed to be accepted and received in good and marketable conditions unless Buyer indicates otherwise on the carrier's Bill of Lading upon receipt of product. Risk of damage shall be on the Buyer when Goods are delivered to a common carrier F.O.B. shipping point.

3. Title to system and deliverables

Title to the Goods remains with Arpa USA until the System Price is paid in full. Title to each Deliverable remains with Arpa USA until such time as the price of such Deliverable is paid in full. Arpa USA reserves a security interest in the Goods until the System Price is paid in full and reserves a security interest in each Deliverable until the price of such Deliverable has been paid in full.

4. Time for bringing action

Any legal action brought by Buyer pertaining to the Invoice must be commenced within one (1) year after the cause of action has accrued.

5. Delay and non-delivery

This Invoice is subject to and Arpa USA shall not be responsible or liable for delay and/or non-delivery directly or indirectly resulting from and/or contributed to by any foreign or domestic embargoes, seizure, acts of God, insurrections, terrorist acts, war or the adoption or enactment of any law, ordinance, regulation, ruling or order directly or indirectly interfering with or rendering more burdensome the production or delivery hereunder, the lack of the usual means of transportation, fires, water damage, floods, explosions, strikes or other accidents, events or contingencies beyond Arpa USA's control, either of the foregoing nature or of any other kind, nature or description.

6. Applicable law & venue

The Invoice and the transaction to which it pertains shall be interpreted in accordance with laws of the State of Florida, without regard to the principles and applications of choice of law provisions. In event that any dispute should arise between Arpa USA and Buyer pertaining to the Invoice and the transaction to which it pertains, Buyer agrees and consents to having exclusive jurisdiction over it and the subject matter of the transaction established in the courts of Duval County, State of Florida.

7. Limitation of liability

Arpa USA shall in no event have any obligation or liability to buyer or any other person or entity (including buyers customers or contractors) for any loss or injury to earnings, profits, goodwill, or loss of use, or incidental, special or consequential damages (even if Arpa USA has been advised of the possibility thereof) arising out of or in connection with the sale, delivery, use, repair or performance of any of Arpa USA's Goods or Deliverables pursuant to the invoice.

8. Indemnification

Buyer agrees to indemnify and hold Arpa USA, its parent and affiliated companies, and their employees, officers, board members, agents, successors and assigns (collectively, Indemnified Parties.) harmless from any and all claims or obligations (including but not limited to any claims for cost, damage, expense or liability of any kind) arising out of or related to acts or omissions in connection with the System and/or the Deliverables done by Buyer and/or any one claiming by, through or under Buyer, including, but not limited to, any unauthorized representation and/or warranty with regard to the System or the Deliverables.

9. Maximum liability

Arpa USA's liability arising out of the invoice, including without limitation any and all claims combined, will not exceed the system purchase price. In no event will Arpa USA be liable for the cost of substitute Goods by buyer, buyers contractors, customers, or any other person or entity.

10. Liability

In the event that any provision or provisions of the Invoice shall be construed to be invalid or unenforceable for any reason, such invalidity or unenforceability shall not be deemed to affect the remaining provisions thereof, and the Invoice shall be construed and enforced as if such invalid or unenforceable provision or provisions had never been included therein.

11. Waiver

The failure of either party to enforce, at any time or for any period of time, the provisions of the Invoice will not be interpreted to be a waiver of such provisions or of the right of such party to thereafter enforce each and every provision. Commencement of performance and/or delivery under the Invoice will not be considered to be acceptance of the Buyers different terms and conditions, which will be of no further force and effect what so ever in respect to Buyers purchases under the Invoice.

12. Disclaimer of agency

The relationship between Arpa USA and Buyer established under the Invoice is that of seller and purchaser. Buyer shall in no way be construed as acting as agent or representative of Arpa USA in any dealings which Buyer may have with any other person, firm or corporation, and Buyer shall have no power to act for or to legally bind Arpa USA in any such transaction or transactions. Buyer agrees that it will not in any way conduct its affairs to convey or suggest to third parties a status or identify inconsistent therewith.

13. Assignment

Buyer shall not assign this Invoice or any rights hereunder without Arpa USA's prior written consent. Any purported assignment without the prior written consent of Arpa USA shall be void. For purposes of this paragraph, the transfer by Buyer of a controlling stock interest in Buyer without Arpa USA prior written consent shall constitute a prohibited assignment under the Invoice. Arpa USA may assign the Invoice to any person, firm, corporation or other entity without Buyers consent, prior, written or otherwise. Subject to the terms of this paragraph, the terms and conditions of the Invoice shall be binding upon and inure to the benefit of the respective parties here to, and their successors, representatives and assigns.

14. Notice

Any notice, request, demand or other communication required or permitted hereunder shall be deemed to be properly given provided such notice, request, demand or other communication is transmitted to the address (and facsimile number) of recipient last known to sender in by first class U.S. mail, postage prepaid and by facsimile.

15. Attorneys fees

In the event suit is brought by either party to the Invoice to enforce the terms or to collect money damages for breach thereof, the prevailing party shall be entitled to reasonable attorneys fees, expert or consulting fees, court costs, costs of investigation, and other related expenses incurred in connection with such suit.

16. Past due sums

Any sums not paid when due shall bear a late charge percent rate of one and one half (1.5%) per month, annual percentage rate of 18%, until paid provided that if such rate of late charge is not permitted by law, the highest legal rate shall be charged. In the event payment is not made as provided herein, Arpa USA shall have the right to withhold further Goods or Deliverables until payment is made, or to terminate the Invoice and receive damages until paid.

17. Bankruptcy

In the event Buyer is adjudicated bankrupt or files a voluntary petition in bankruptcy, makes an assignment for the benefit of creditors or applies for or consents to the appointment of a trustee or receiver over a substantial part of Buyers property, Arpa USA shall have the right to terminate the Invoice and collect for all work performed thereunder.

18. Credit acceptance

Arpa USA reserves the right to secure full or partial payment in advance if, in Arpa USA's opinion, the financial condition of Buyer does not justify credit extension.

CONTACTS

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www.formica.com

TECHNICAL DATA SHEET Formica Decorative Laminate

Sr. No.	Characteristic	Method	Unit of Measure	HGS	Formica Test Result
1	Normal Thickness		mm	1.0	Complies
2	Surface Defects	EN438-2016-2-4			
		Dirt/Spot	mm ² / m ²	≤ 1	Complies
		Fibers/Hairs/Scratches	mm ² / m ²	≤ 10	Complies
3	Thickness	EN438-2016-2-5	mm	±0.1	Complies
4	Length & Width	EN438-2016-2-6	mm	-0/+10	Complies
5	Squareness	EN438-2016-2-7	mm/m	≤ 1.5	Complies
6	Edge Straightness	EN438-2016-2-8	mm/m	≤ 1.5	Complies
7	Flatness	EN438-2016-2-9	mm/m	≤ 60	Complies
8	Surface Wear Resistance	EN438-2016-2-10	Revolution	≥ 150	Complies
9	Immersion in Boiling Water	EN438-2016-2-12	Class		
		Gloss		3	Complies
		Other		4	Complies
10	Resistance to water vapor	EN438-2016-2-14	Class		
		Gloss		3	Complies
		Other		4	Complies
11	Resistance to Dry Heat (160 °c)	EN438-2016-2-16	Class		
		Gloss		3	Complies
		Other		4	Complies
12	Dimensional Stability	EN438-2016-2-17	%		
		Longitudinal		≤ 0.55	Complies
		Transverse		≤ 1.05	Complies
13	Impact Resistance (small ball)	EN438-2016-2-20	N	≥ 20	Complies
14	Resistance to cracking	EN438-2016-2-23	Class	4	Complies
15	Scratch resistance	EN438-2016-2-25	Class		
		Smooth		2	Complies
		Textured		3	Complies
16	Stain Resistance	EN438-2016-2-26	Class		
		Group 1&2		5	Complies
		Group 3		4	Complies
17	Light fastness	EN438-2016-2-27		4 to 5	Complies
18	Density		g/cm3	≥ 1.35	Complies

EN 438 Class Definitions – Class 5 No visible change. Class 4 Slight loss of gloss and or color. Class 3 Moderate loss of gloss and or color. Class 2 Marked loss of gloss and or color. Class 1 Blisters and or delamination.