

Technical Data

1.Manufacturer

CHANGZHOU SUN PLUS LAMINATE CO.,LTD.

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2.Product Description

Recommended Uses

Sun Plus Laminate is suitable for use on fine quality residential and contract furniture,fixtures and casework,and also for architectural application on columns,wainscating, valances,cornices,interior doors and divider systems.

- General Purpose Type is most frequently used for work surfaces on counters,islands,vanities,desks and tables.Typical vertical uses include surfacing for wall panels,teller cages and the front panels of workstations,such as those in hospitals,airports and restaurants.And this Type produced for both horizontal and vertical interior applications where the surface must be functional,durable and decorative.
- Vertical Surface Type is the usual choice to surface cabinet walls,doors and drawer panels.It often appears on the vertical surface of desks,restaurants booths and maitred stations,and as architectural cladding.And this Type intended for vertical applications where a functional,durable,decorative surface must absorb somewhat less impact than a comparable horizontal surface.
- Postforming Type adds the decorative capability of a soft edge of any typical laminate use.Common applications of postforming laminates are formed edges for counters,desktops,cabinet doors and drawer panels.And this Type is intended for use on vertical and horizontal interior surface where it is necessary or desirable to roll the laminate on a simple radius over the edge of the substrate.This eliminates seams and leaves an attractive surface.

Product Composition

Decorative surface papers impregnated with melamine resins are pressed over kraft paper core sheets impregnated with phenolic resin.These sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300°F(149°C).Finished sheets are trimmed,and the backs are sanded to facilitate bonding.

Basic Limitations

Sun Plus Laminate is for interior use only and is not recommended for direct application to plaster,concrete walls,or gypsum wallboard.It is not structural material and must be bonded to a suitable substrate.Widely used in the purpose of surface decoration on wooden based panels such as MDF,particle board,plywood,etc.

Patterns & Colors

Available in the full range of Sun Plus solid colors,stones,marbles,woodgrains,leathers and patterns.See all patterns and colors at www.sunplushpl-china.com Please see actual sample before specifying.

Finishes Confirm finish availability on individual designs by going to www.sunplushpl-china.com.

- Glossy

A mirror sheen finish,which gives a smooth,brilliant appearance.High Glossy finish also features AEON

Technology and can be used for horizontal applications such as countertops and light to medium commercial applications.Excellent for vertical applications and carries a premium upcharge.

Texture

A textured finish which reproduces the high sheen of waxed wood furniture.Recommended for horizontal and vertical applications.

- Matt

Matt is low glossy and smooth to the touch.Recommended for horizontal and vertical applications,

- Emboss

A woodgrain texture with a blend of grain variations ranging from linear to subtle movement with random,regular features.The overall low glossy surface is accented with higher sheen woodgrain ricking and random highlights.

Finish Availability:Not all finishes are available in all patterns and colors.Some finish options have limited size availability.please consult the pattern availability lookup on our website at

www.sunplushpl-china.com. verify size availability by finish type.

Size available(mm):

915*2200;

1220*1830;1220*2440;1220*3050;1220*3660;

1300*2800;1300*3050;1300*3660;

1530*1830;1530*3050;1530*3660;

1830*1830;1830*2200;1830*2440;1830*2700;

1830*3050;1830*3660;1830*4050;1830*4300

2000*3050;2000*4050;2000*4300

NOTE:Not all sizes are available from stock;And contact Sun Plus sales representative on local availability.Minimums apply to non-standard,please check with Sun Plus sales representative.

3.Physical Properties of General Purpose Laminates

Test conducted:EN438-2:2005 High-pressure decorative laminates(HPL)-Sheets based on thermosetting resins(Usually called Laminates)-part2:determination of properties EN438-7:2005 High-pressure decorative laminates(HPL)-Sheets based on thermosetting resins(Usually called laminates)Part 7:Compact laminate and HPL composite panels forinternal and external wall and ceiling finishes.

Test result:

Test Method	Bonding strength(MPa)		Client's requirement	Verdict
	Individul value	Average value		
ISO 13894-1:2000 Test method 9	4.2 3.9 4.2	4.1	≥3.5 MPa	Pass
Remark	Specimen dimension:50mm*50mm*0.8mm,3pcs Loading rate:15mm/min The gule-line failure occurred between the laminate face and the steel pad The specimens were glued on shaving board			

Test item	Test method	Test result	Client's requirement	Verdict
Resistance to elevated temperature	ISO 13894-1:2000 Test method 12	No change detected	No change detected	Pass
Water resistance	ISO 13894-1;2000 Test method 12	Increase in Thickness(max):5.9%	≤7%	Pass
Density	EN ISO 1183-1:2004 Test method A	1.58g/cm ³	≥1.35g/cm ³	Pass
Resistance to immersion in boiling water: Mass increase(%) Thickness increase(%) Appearance	EN438-2:2005 Test method 12	7.9 5.2 No visible change	≤8.5 ≤7 ≥Slight change of gloss and/or colour, only visible at certain viewing angles.	Pass
Resistance to wet conditions: Mass increase(%) Appearance	EN438-2:2005 Test method 15	6.0 No visible change	≤7 ≥Slight change of gloss and/or colour, only visible at certain viewing angles	Pass
Resistance to cigarette burns	EN438-2:2005 Test method 20	Slight change of gloss only visible at certain viewing angles and/or slight brown stain	≥Moderate change of gloss and/or moderate brown stain	Pass
Resistance to cracking under stress(laminates≤2mm thick)	EN438-2:2005 Test method 23	Hairline cracks only visible under x6 magnification	≥Cracks visible with normal vision (corrected if necessary)from the edge of the hole,but not extending to either edge of the specimen	Pass
Dimension and tolerance: Length(mm) Width(mm) Thickness(mm) Edge straightness(mm) Edge squareness(mm)	EN438-2:2005 Test method 5,6,7,8	Ave.501 Ave.501 0.87,0.86,0.86,0.87 Max.0.07 Max.0.06	500±2 500±2 0.85±2 ≤0.1 ≤0.1	Pass
Resistance to surface wear	EN438-2:2005 Clause 10	Average wear resistance:1550 cycles		
Resistance to impact by large-diameter ball	EN438-2:2005 Clause 21	Max.Impact resistance height:600mm		
Resistance to scratching	EN438-2:2005 Clause 21	Slight change of gloss and/or colour, only visible at certain viewing angles		
Resistance to dry heat	EN438-2:2005 Clause 16	No visible change on the appearance		
Resistance to staining	EN438-2:2005 Clause 26	No visible change		

Resistance to water vapour	EN438-2:2005 Clause 14	No visible change on the appearance		
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2.Physical Properties of Vertical Surface Laminates

Test item	Test method	Test result	Client's requirement	Verdict
Resistance to elevated temperature	ISO 13894-1:2000 Test method 12	No change detected	No change detected	Pass
Water resistance	ISO 13894-1:2000 Test method 12	Increase in Thickness(max):5.9%	≤7%	Pass
Density	EN ISO 1183-1:2004 Test method A	1.58g/cm ³	≥1.35g/cm ³	Pass
Resistance to immersion in boiling water: Mass increase(%) Thickness increase(%) Appearance	EN438-2:2005 Test method 12	7.9 5.2 No visible change	≤8.5 ≤7 ≥Slight change of gloss and/or colour, only visible at certain viewing angles.	Pass
Resistance to wet conditions: Mass increase(%) Appearance	EN438-2:2005 Test method 15	6.0. No visible change	≤7 ≥Slight change of gloss and/or colour, only visible at certain viewing angles	Pass
Resistance to cigarette burns	EN438-2:2005 Test method 20	Slight change of gloss only visible at certain viewing angles and/or slight brown stain	≥Moderate change of gloss and/or moderate brown stain	Pass
Resistance to cracking under stress(laminates≤2mm thick)	EN438-2:2005 Test method 23	Hairline cracks only visible under x6 magnification	≥Cracks visible with normal vision (corrected if necessary)from the edge of the hole,but not extending to either edge of the specimen	Pass
Dimension and tolerance: Length(mm) Width(mm) Thickness(mm) Edge straightness(mm) Edge squareness(mm)	EN438-2:2005 Test method 5,6,7,8	Ave.501 Ave.501 0.87,0.86,0.86,0.87 Max.0.07 Max.0.06	500±2 500±2 0.85±2 ≤0.1 ≤0.1	Pass
Resistance to surface wear	EN438-2:2005 Clause 10	Average wear resistance:1550 cycles		
Resistance to impact by large-diameter ball	EN438-2:2005 Clause 21	Max.Impact resistance height:600mm		
Resistance to scratching	EN438-2:2005 Clause 21	Slight change of gloss and/or colour, only visible at certain		

		viewing angles		
Resistance to dry heat	EN438-2:2005 Clause 16	No visible change on the appearance		
Resistance to staining	EN438-2:2005 Clause 26	No visible change		
Resistance to water vapour	EN438-2:2005 Clause 14	No visible change on the appearance		

3.Physical Properties of Postforming Laminate

Test item	Test method	Test result	Client's requirement	Verdict
Resistance to elevated temperature	ISO 13894-1:2000 Test method 12	No change detected	No change detected	Pass
Water resistance	ISO 13894-1:2000 Test method 12	Increase in Thickness(max):5.9%	≤7%	Pass
Density	EN ISO 1183-1:2004 Test method A	1.58g/cm ³	≥1.35g/cm ³	Pass
Resistance to immersion in boiling water: Mass increase(%) Thickness increase(%) Appearance	EN438-2:2005 Test method 12	7.9 5.2 No visible change	≤8.5 ≤7 ≥Slight change of gloss and/or colour, only visible at certain viewing angles.	Pass
Resistance to wet conditions: Mass increase(%) Appearance	EN438-2:2005 Test method 15	6.0 No visible change	≤7 ≥Slight change of gloss and/or colour, only visible at certain viewing angles	Pass
Resistance to cigarette burns	EN438-2:2005 Test method 20	Slight change of gloss only visible at certain viewing angles and/or slight brown stain	≥Moderate change of gloss and/or moderate brown stain	Pass
Resistance to cracking under stress(laminates≤2mm thick)	EN438-2:2005 Test method 23	Hairline cracks only visible under x6 magnification	≥Cracks visible with normal vision (corrected if necessary)from the edge of the hole,but not extending to either edge of the specimen	Pass
Dimension and tolerance: Length(mm) Width(mm) Thickness(mm) Edge straightness(mm) Edge squareness(mm)	EN438-2:2005 Test method 5,6,7,8	Ave.501 Ave.501 0.87,0.86,0.86,0.87 Max.0.07 Max.0.06	500±2 500±2 0.85±2 ≤0.1 ≤0.1	Pass
Resistance to surface wear	EN438-2:2005 Clause 10	Average wear resistance:1550 cycles		
Resistance to impact bu	EN438-2;2005	Max.Impact resistance		

large-diameter ball	Clause 21	height:600mm		
Resistance to scratching	EN438-2:2005 Clause 21	Slight change of gloss and/or colour,only visible at certain viewing angles		
Resistance to dry heat	EN438-2:2005 Clause 16	No visible change on the appearance		
Resistance to staining	EN438-2:2005 Clause 26	No visible change		
Resistance to water vapour	EN438-2:2005 Clause 14	No visible change on the appearance		

***Radius for face is actually the radius of the form around which the laminate is postformed.**

The radius for back is actually the radius to which the decorative face is postformed

Typical Fire Test

High pressure laminate are subject to to cigarette burns.

Product Type	Test condition	Standard requirements	Test result	Item evaluate
General Purpose Type	Unbonded	No worse than level 3	Level 2	Qualified
Vertical Surface Type	Unbonded	No worse than level 3	Level 2	Qualified
Postforming	Unbonded	No worse than level 3	Level 2	Qualified

4.Installation:Fabrication and Assembly recommendations

Fabrication should follow approved methods.Assembled pieces should meet the specifications of KCMA(Kitchen Cabinetmakers Manufacturers Association),ANSIA -161--2-1998(revised),and "Architectural Woodwork Quality Standards,Guide Specifications and Quality Certification Program"guidelines of the Architectural Woodwork Institute where applicable.

Sun Plus laminates must be bonded to a substrate of reliable quality,such as particleboard,medium density fiberboard or plywood with one A-face.High pressure laminate,plaster,concrete and gypsum board should not be considered suitable substrates.Basic Types laminate may not be used as structure members.

Bond with adhesives and follow the techniques recommended by the adhesive manufacturer.Recommended adhesives are permanent types,such as urea and polyvinyl acetate(PVA),and contact types.Wilsonart adhesives are recommended for most bonding conditions.

To avoid stress cracking,do not use square-cut inside corners,All inside corners should have a minimum of 1/8"(3,175mm)adius and all edges should be routed smooth.

Drill oversized holes for screws or bolts. Screws or bolts should be slightly countersunk into the face side of a laminate-ciad substrate.

Take care to ensure an appropriate acclimation between the laminate and substrate prior to fabrication. The face and backing laminates and the substrate should be conditioned in the same environment for 48hours before fabrication.

Recommended conditioning temperature is about 75°F(24 °C).Laminates should be conditioned at 45% to 55% relative humidity.

With postforming machinery, will postform at a nominal sheet temperature range of 325°F to 338°F(163 °Cto 170 °C)in 20.5 seconds.

Carbide-tipped saw and router blades should be used for cutting. High tool speed and low feed speed are advisable. Cutting blades should be kept sharp. Use a hold-down to prevent any vibration.

5.Warranty

6.Maintenance

7.Technical Services

For samples,questions or technical assistance,welcome to visit and contact with us anytime as bellow;

CHANGZHOU SUN PLUS LAMINATE-FLOORING CO.,LTD.

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