



L & C

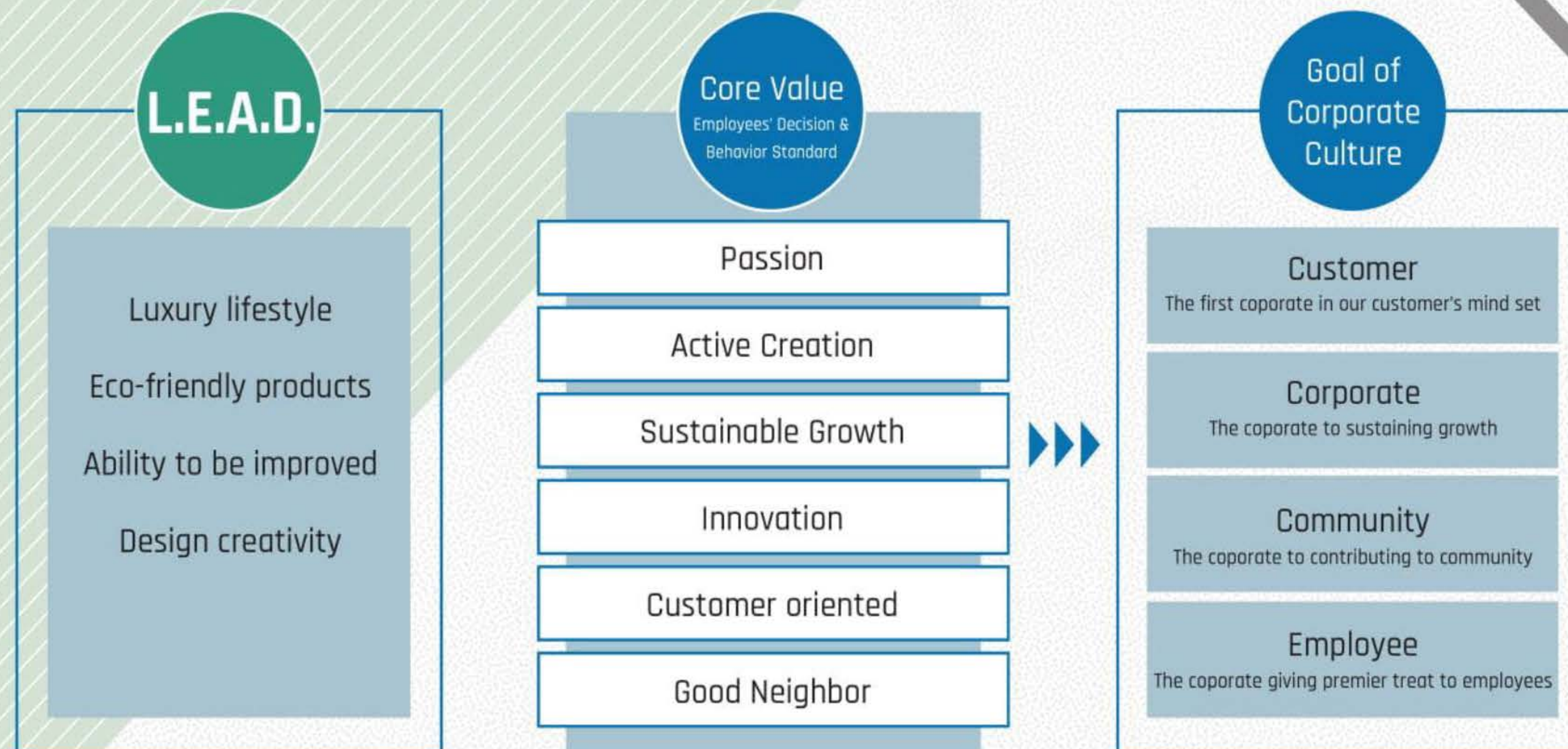
EXTERIOR
FOIL



We are innovating your world.
Discover the nature, Discover the diversity...

Corporate Culture

Focusing on the six core values of organizational culture based on 'Passion', every executive and staff member of Hyundai Department Store Group are working hard to create 'a company desired to work for'.



Exterior Foil

The lamination material which is intended for surfaces of

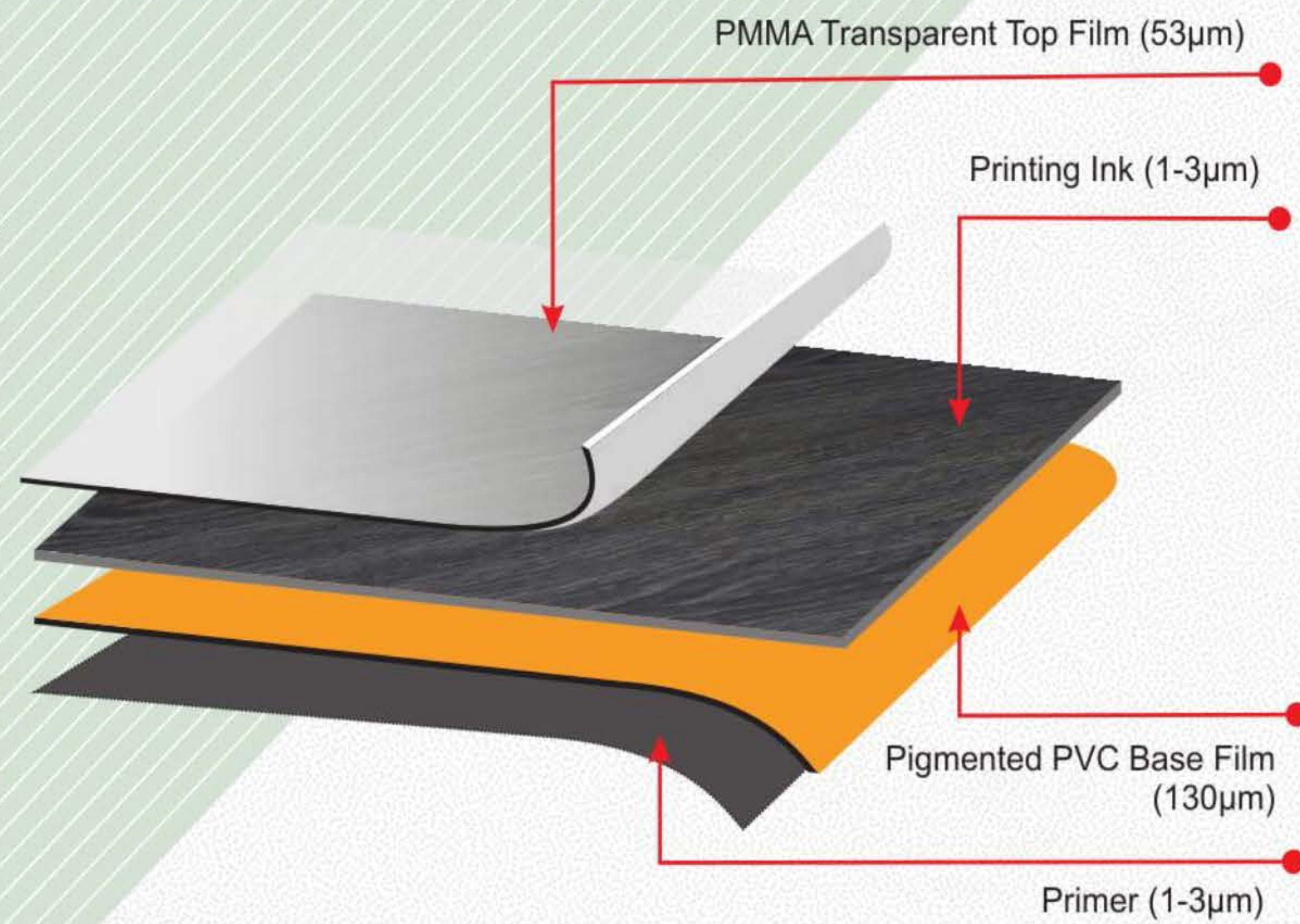
- 1 PVC window profiles
- 2 Panels
- 3 Garages
- 4 Doors and
- 5 Fences

- > High weatherability resistance against exposure
- > RAL(RAL-Gütegemeinschaft) certified
- > No color changed after 10.000 hours in the artificial weather-o-meter test
- > Various 25 designs and options
- > High-performance exterior film of Heat build-up

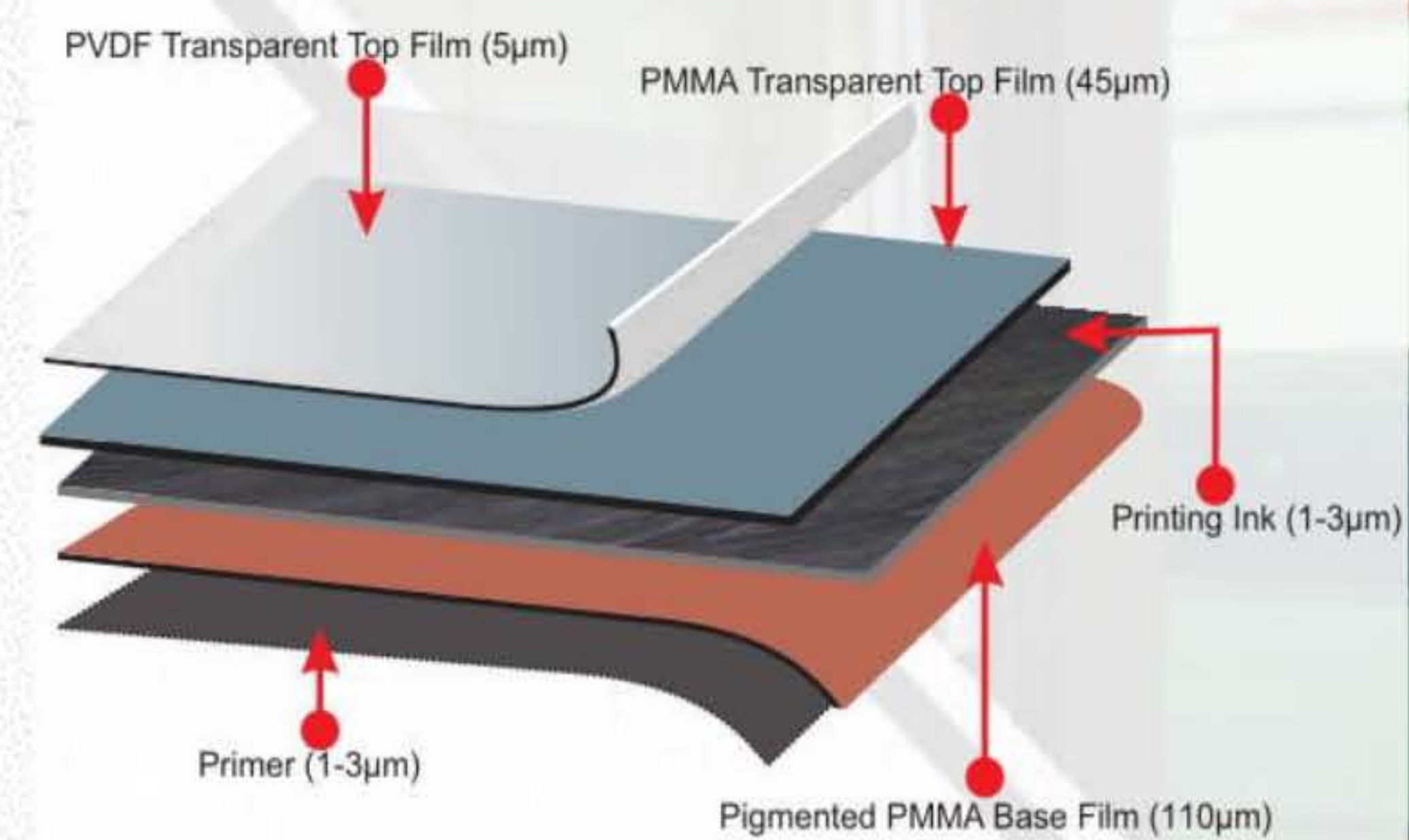


Product Structures

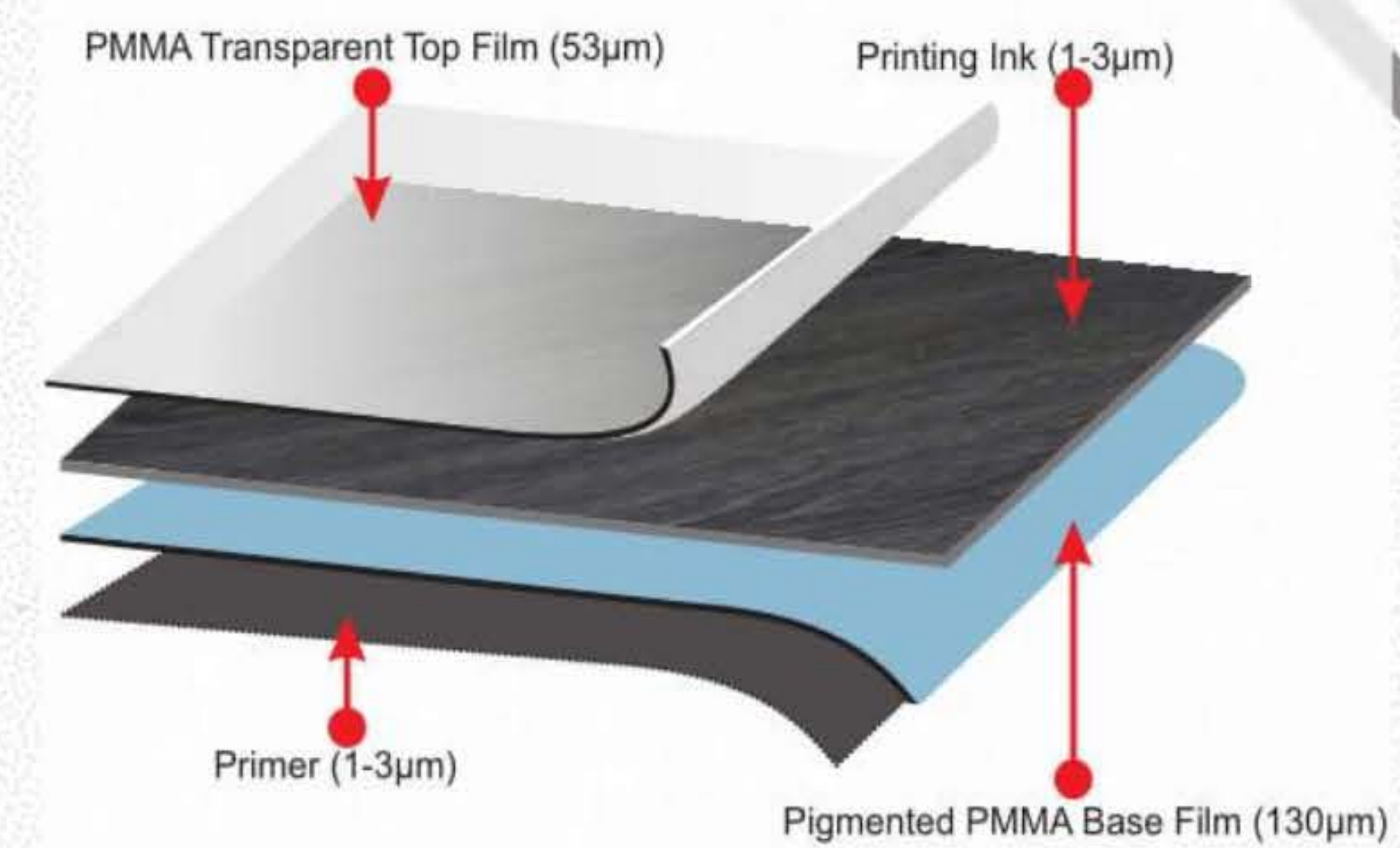
ME TYPE



XE TYPE

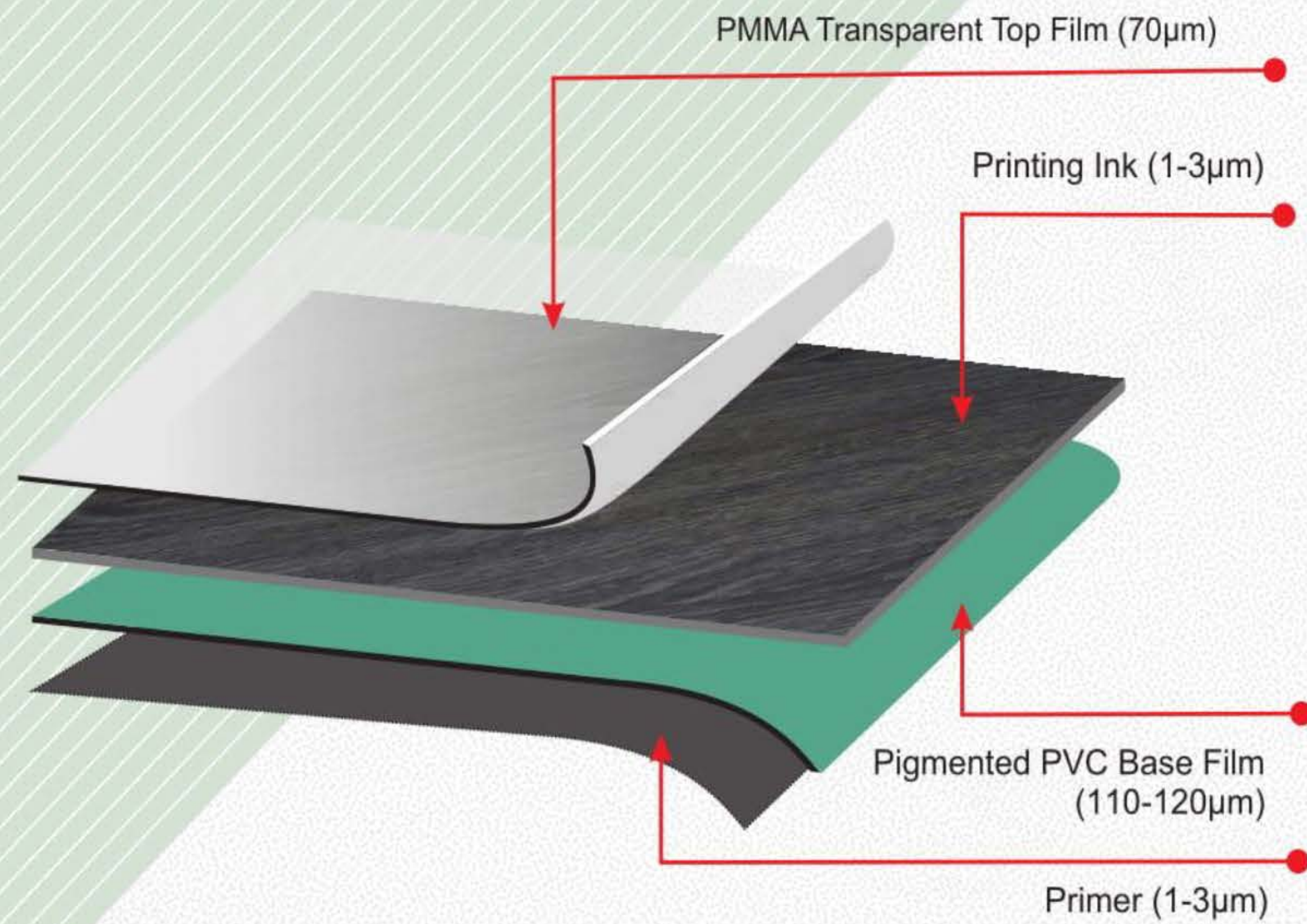


SE TYPE

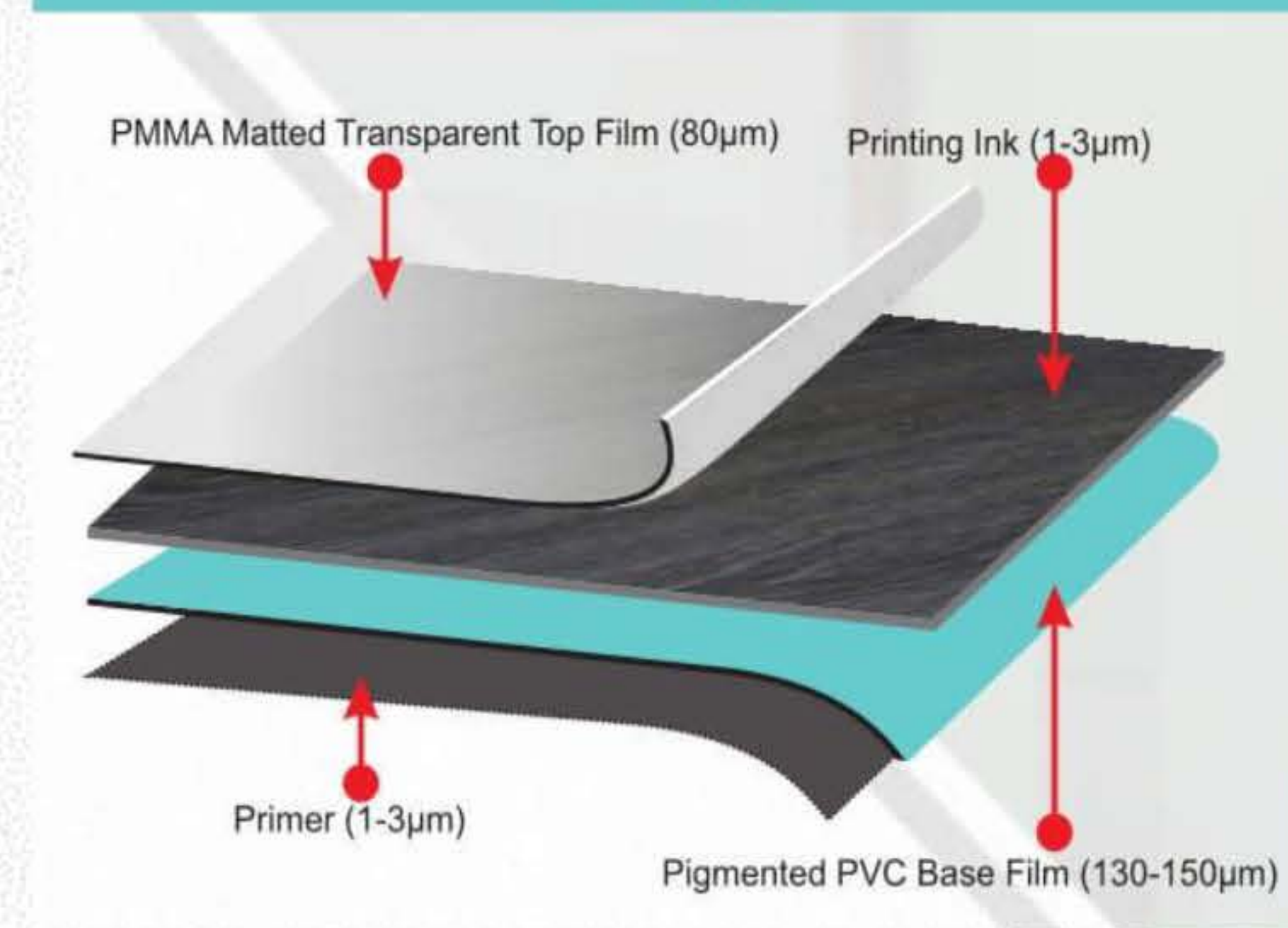


Product Structures

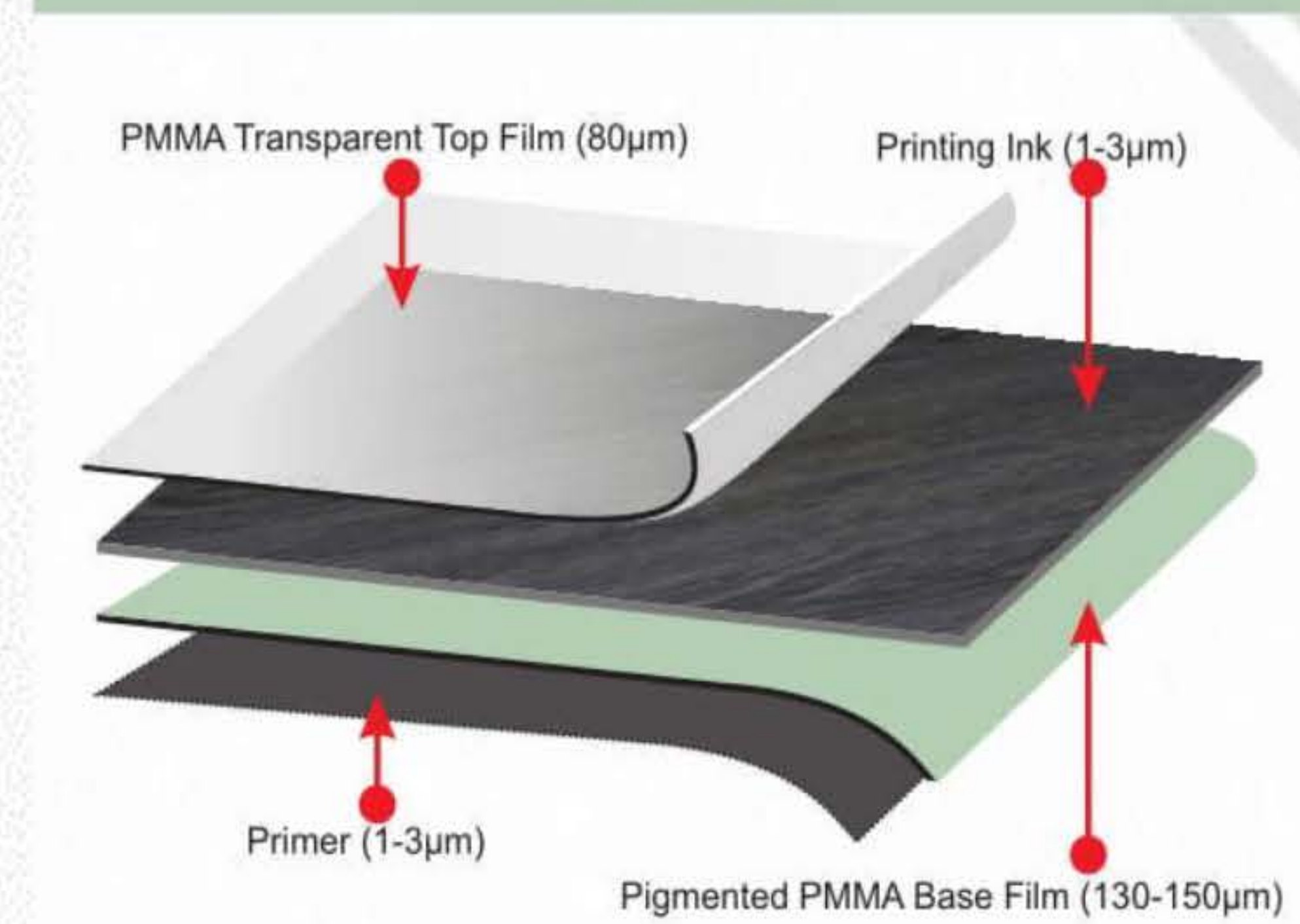
HE TYPE



MP TYPE



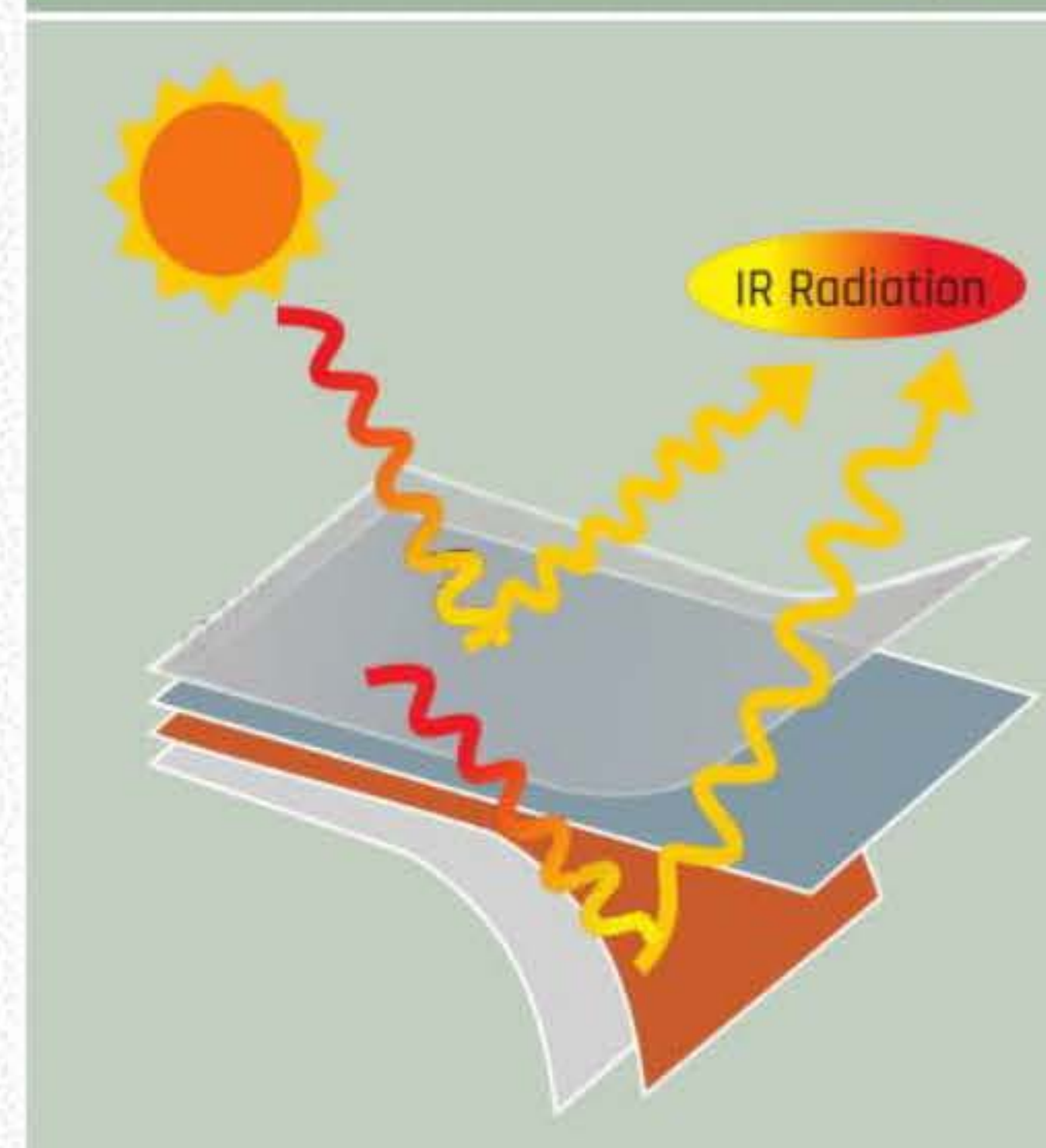
SP TYPE



Technical data sheet

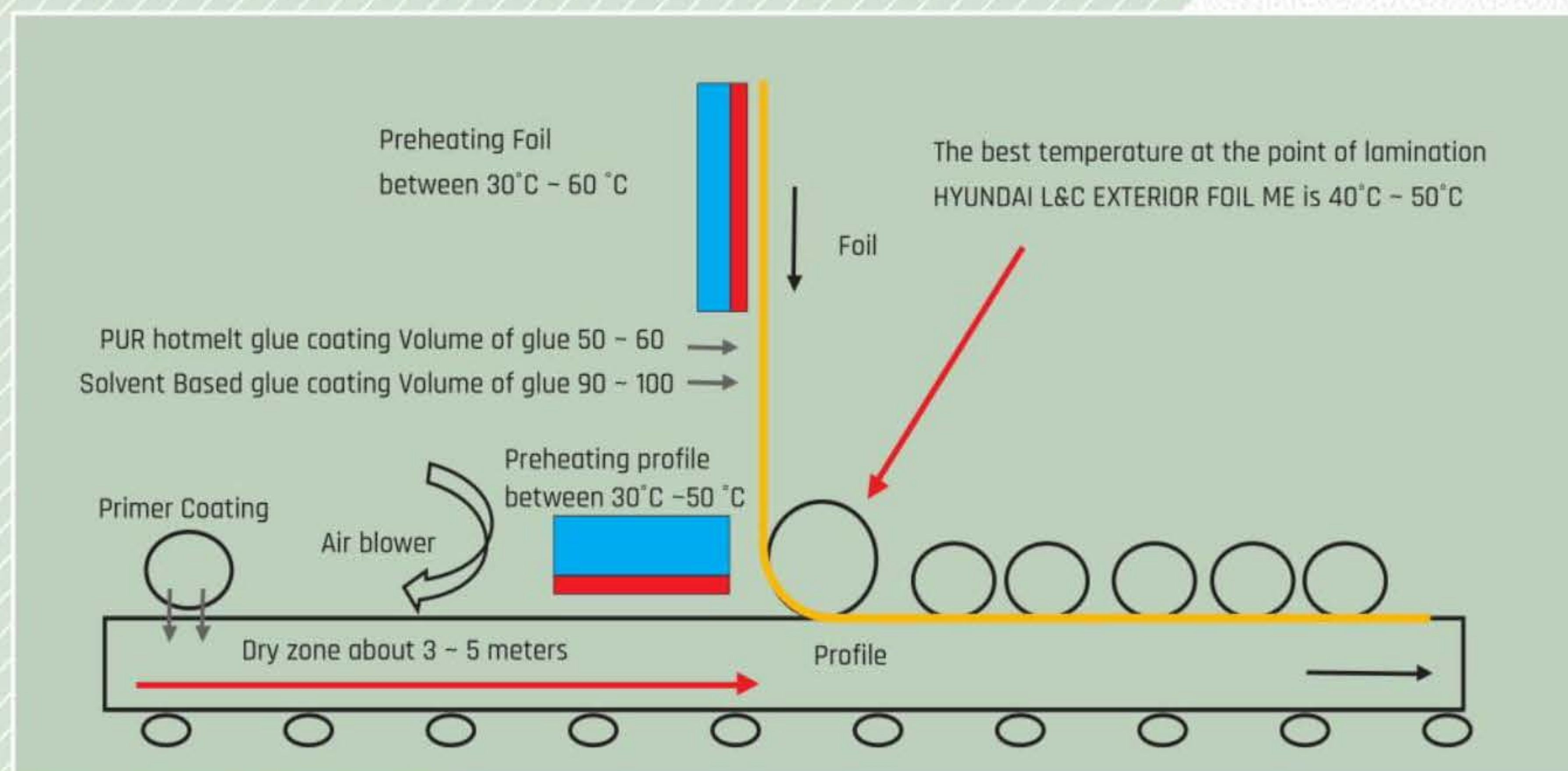
NO.	ITEM		SPEC.	REMARK
1	Appearance	Defect Type	At a distance of 60cm, by the naked eyes under the proper light, shall observe the defects such as visible dots, dents, pimples, line, dirt infusion, and gloss irregularity.	
2	Product		Multi-layered film with acrylic top layer and PVC base-film. Acrylic top layer has strong weathering resistance against UV ray Special PVC base film & printing pigment improve HBU & stability	RAL-GZ 716
3	Weatherability		Meets the demands of RAL-GZ 716 Part -a-3 A Total Irradiation of above 20GJ with Grade 3 on the grey scale (DIN EN 20105-A03,DIN EN 20105-A02)	EN513 Method I
4	Thickness		Norminal -0.0 ~ +5.0mm	DIN EN ISO 2286-1
5	Width		Total Thickness : 200±20µm (Acrylic Top Layer : above 50µm)	DIN EN ISO 2286-3
6	Tensile strength	length-way	Above 15N/mm ²	DIN EN ISO 527-3
		width-way		
7	Shrinkage		Within ±1.0%(60°C, 10min)	DIN 53377
8	Emboss Stability		Gloss Change rate is Under 10% after Shrinkage Test Extruding and wrapping is possible without any change of properti in the proper process conditions	DIN 53377
9	Unit Mass		200±20g/m ²	DIN EN ISO 2286-2
10	Heat Build Up		Above class 3 according to standard climate 23/50	DIN EN ISO 291:2008-08
11	Surface Gloss		Standard±2.5(60° Gloss) It may be different for each pattern.	DIN 67530
12	Scratch Resistance		Above HB(Load 200g, 45°); (Pencil Strength : B<HB<F<H)	ASTM D 3363
13	Chemical Resistance		Not resistant to organic solvents, including paint-thinners and varnish-removers	
14	Maintenance		Appropriate cleaning with standard household cleaning agents	

HRT (Heat Reflection Technology)



Above's Technical data sheet is based on exterior foil for moderate climate zone. If you have any request for other application, then please feel free to contact us.

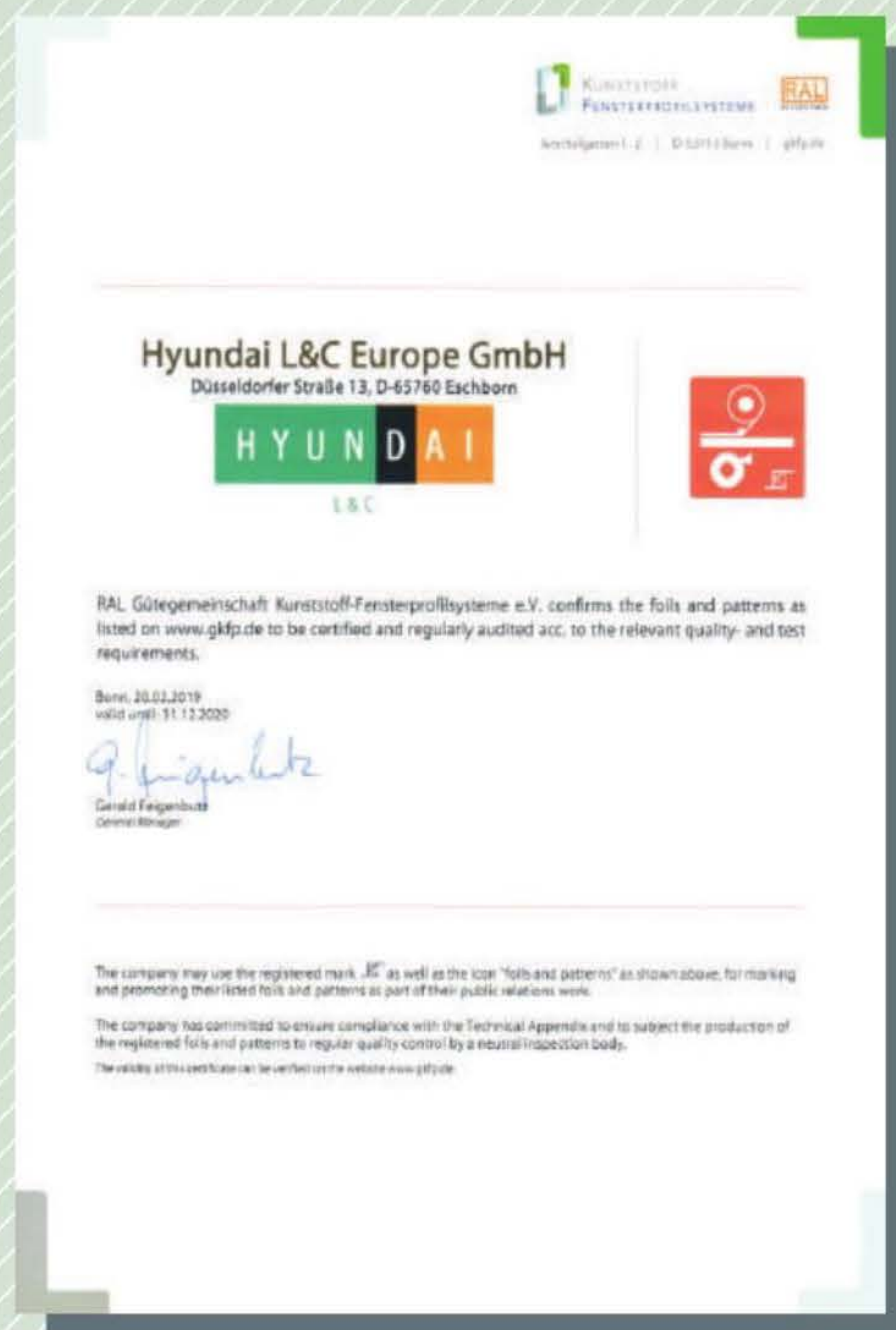
Lamination Process



The lamination speed is related to the length of the drying zone and the installed drying machine. Our suggestion is a drying zone of between 3-5 meters.

HYUNDAI L&C EXTERIOR FOIL ME should be stored at a minimum of 18°C for a minimum of 24 hours in advance lamination. Laminated profiles should be stored for minimum of 72 hours at a minimum of 18°C and 50% humidity.

RAL certificate & SKZ certificate



Admitted foils and patterns according RAL-GZ 716

M30 = Climate M checked to 30 GJ/m² Heat build-up 1: ≤ 57°C
 M20 = Climate M checked to 20 GJ/m² Heat build-up 2: ≤ 62°C
 S12 = Climate M checked to 12 GJ/m² Heat build-up 3: ≤ 66°C
 M8/M12 = Climate M checked to 8 GJ/m² * determined value out of RAL tolerance
 partially checked to 12 GJ/m²

HE TYPE									
PATTERN	ARTICLE NO.	DESCRIPTION	EMBOSSING	M30	M20	S12	M8	HBU WHITE	HBU BLACK
	HE-G001H	Golden Oak			●			2	3
	HE-N003H	Natural Oak			●			1	2
ME TYPE									
PATTERN	ARTICLE NO.	DESCRIPTION	EMBOSSING	M30	M20	S12	M8	HBU WHITE	HBU BLACK
	ME-HM2DWP	Dark Walnut		●				2	3
	ME-HM2GOP	Golden Oak		●				2	3
	ME-HM2MGP	Mahogany			●			2	3

MP TYPE									
PATTERN	ARTICLE NO.	DESCRIPTION	EMBOSSING	M30	M20	S12	M8	HBU WHITE	HBU BLACK
	MP-HM2GOP	Golden Oak			●			2	3

SE TYPE									
PATTERN	ARTICLE NO.	DESCRIPTION	EMBOSSING	M30	M20	S12	M8	HBU WHITE	HBU BLACK
	SE-HM2GOL	Golden Oak		●				3	3

XE TYPE									
PATTERN	ARTICLE NO.	DESCRIPTION	EMBOSSING	M30	M20	S12	M8	HBU WHITE	HBU BLACK
	XE-HF2GOL	Golden Oak		●				3	3

World Solar Map

Warranty Group, Country Group (The guarantee period is based on moderate climate zone.)

[Group 1]

Iceland, Sweden, Finland, Norway, Denmark, Estonia, Ireland, Latvia, Lithuania, Belarus(White Russia), Belgium, Czech, Great-Britain, Luxembourg, Netherlands, Poland, Germany.

[Group 2]

Slovakia, Austria, Lichtenstein, Slovenia, Switzerland.

[Group 3]

Moldavia, Canada, Hungary, Romania, Ukraine, France(except for overseas territories and Corsica), Russ. Federation, Serbia.

[Group 4]

Georgia, Bosnia/Herzegovina, Croatia, Korea, Montenegro, San Marino, Vatican, Albania, Andorra, Armenia, Azerbaijan, Bulgaria, Corsica, Macedonia, Monaco, EU part of Turkey(incl. Istanbul), Italy, Portugal(continent), Spain(continent, Balears), Greece(continent).

[Group 5]

Kazakhstan, Kyrgyzstan, Mongolia, Portugal(Azores and Madeira), Tadjikistan, Turkmenistan, Uzbekistan, China(continent), AS part of Turkey, New Zealand, Japan, Uruguay, Malta, Tunisia, Israel, Lebanon, Algeria, Morocco, Oman, Greek Islands.

[Group 6]

- All African states except for those in country group 5
- All South-American states except for those in country group 5
Bangladesh, Myanmar, Afghanistan, Brunei, Cambodia, Costa Rica, Cyprus, Democratic People's Republic of Laos, Malaysia, Maldives, Nicaragua, Palau, Papua-New Guinea, Philippines, Singapore, Solomon Islands, Sri Lanka, Thailand, Vietnam, Bahamas, Belize, Cuba, Darussalam, Guatemala, Mexico, Micronesia, Nauru, Nepal, Spain(Canary Islands), Syria, Tuvalu, Bahrain, Antigua and Barbuda, Barbados, Dominica, Dominican Republic, Dubai, El Salvador, Fiji, French overseas territories, Grenada, Haiti, Honduras, India, Indonesia, Iran, Iraq, Jamaica, Jordan, Kiribati, Kuwait, Marshall Islands, Mauritius, Pakistan, Qatar, Samoa, Seychelles, St.Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Timor-Leste, United Arab Emirates, Vanuatu, Australia, Saudi Arabia, Yemen, Bhutan, Taiwan, USA.

SOLAR RESOURCE MAP

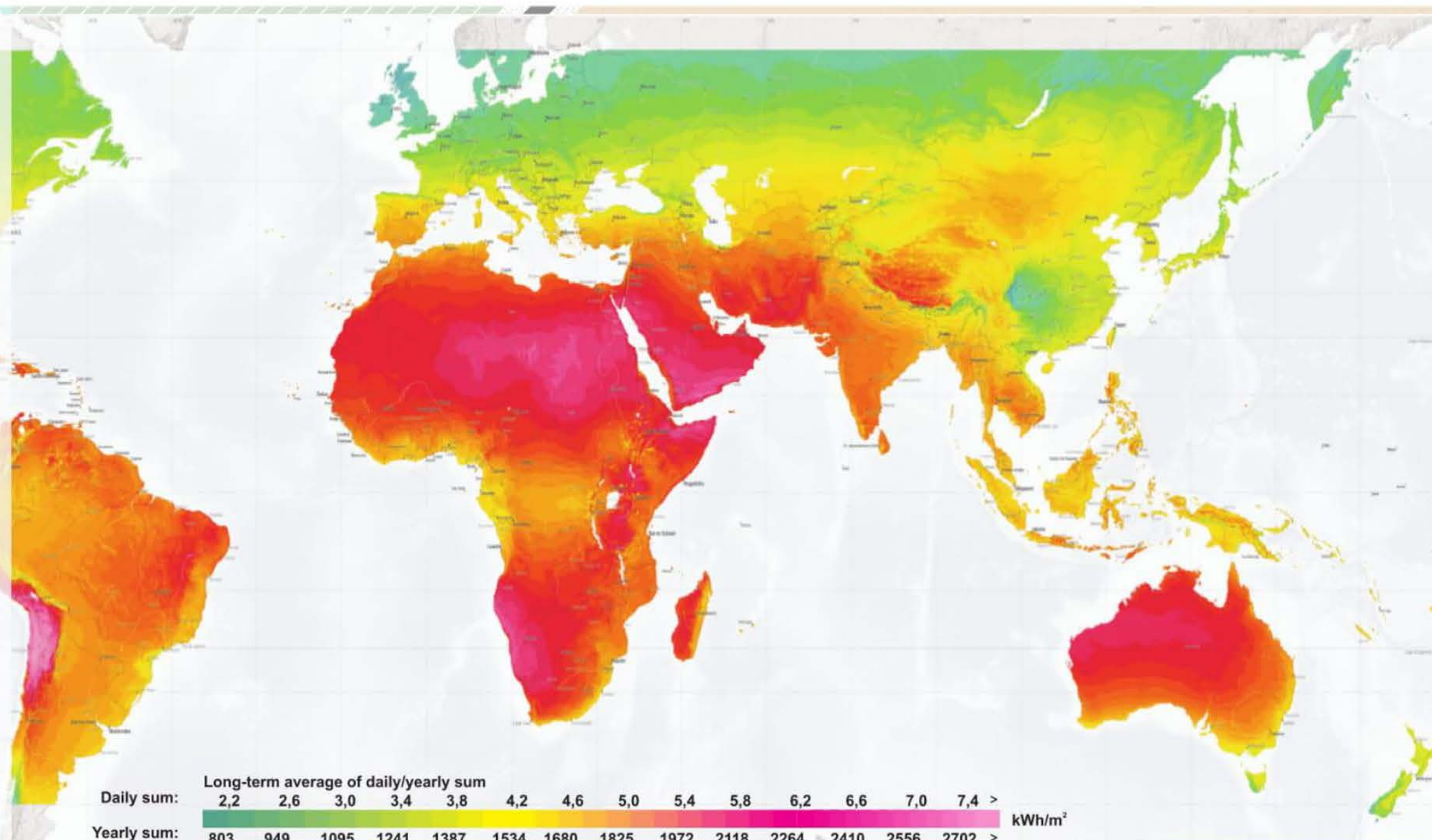
GLOBAL HORIZONTAL IRRADIATION



WORLD BANK GROUP
THE WORLD BANK IFC International Finance Corporation

ESMAP
Energy Sector Management Assistance Program

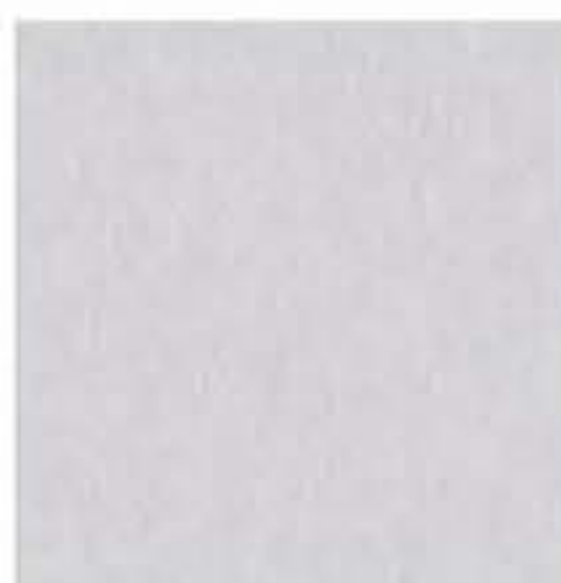
SOLARGIS



WARRANTY (yrs)	Group					
	1	2	3	4	5	6
Exterior Foil HE	10	10	7.5	5	-	-
Exterior Foil ME	10	10	7.5	5	-	-
Exterior Foil SE	15	15	10	10	10	10
Exterior Foil XE	20	20	20	20	20	20

Design

Solid/Metal

										
Cream White CR02H	Matt Cream CRM6H	Grey Mink GM06H	Grey - 1 GY02H	Grey - 2 GY12H	Coal Grey AG46H	Painted Coal Grey AG49H	Anthracite Grey-1 AG31H	Anthracite Grey-2 AG32H	Chocolate Brown-1 CB02H	Chocolate Brown-2 CB12H
										
Black BK02H	Carbon Black AB06H	Metal Light Silver ML08H	Metal Silver MS08H	Metal Black MB08H	Aluminum Grey AL02H	Royal Blue RB02H	Dark Green DG02H	Forest Green FG02H	Crystal White CW1NH	White Sand WH16H

Wood

										
Natural Oak NO03H	Mountain Pine MP02M	Golden Oak-1 GO11H	Golden Oak-2 GOH2H	Golden Oak-3 GOR2H	Golden Oak-4 GOS2H	Golden Oak-5 GOZ2M	Dark Walnut-1 DW11H	Dark Walnut-2 DWZ2H	Matt Dark Walnut-2 DWM2H	Vintage Oak RO02H
										
Dark Oak-1 DOR2H	Dark Oak-2 DO11H	Mahogany-1 MG11H	Mahogany-2 MG12H	Sapeli SP02M	Silk Grove SG04H	Silk Woodland SW04H	Silk Forest SF04H	Burgundy Cherry BC02H	Anteak ATOAH	

"Product images are simulated. Please check our color chart for the exact design and color."

Packaging

Product	Cntr	Spec.	Packing unit (Standing Wooden)		Stuff per 20' CNTR			
			Roll length (lm)	Roll	Pallet	Roll	L.M	S.Q.M
EXTERIOR FOIL	20'	0.2 x 660	500	6 / pallet	24	144	72.000	47.520

Product	Cntr	Spec.	Packing unit (Standing Wooden)		Stuff per 40' CNTR			
			Roll length (lm)	Roll	Pallet	Roll	L.M	S.Q.M
EXTERIOR FOIL	40'	0.2 x 660	500	6 / pallet	48	288	144.000	95.040

* Packaging method and quantity can be modified depend on customer's request.





R&D Tech Center

**A Foundation for mid to long-term growth engine
with New Research Centers for specialized R&D functions**

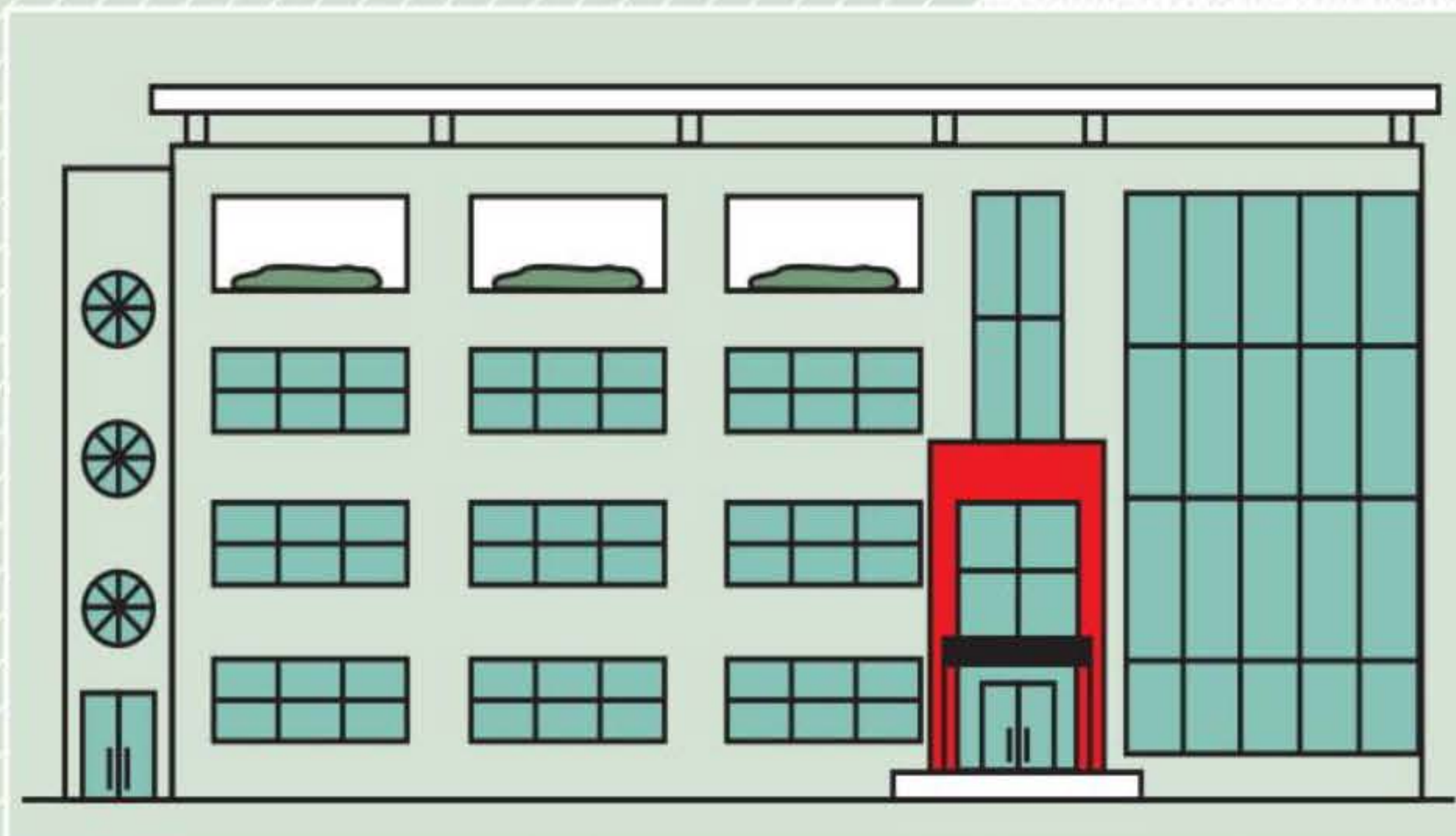
-Development of original technology by new pilot test room

PLACE AND AREA:

-In Front of Parking lot behind main building (4F) / 23307 ft2

STAFF : 126

COMPLETION DATE : July 2016



4F: Resting area / Product Warehouse / Laboratory

3F: Office/ Meeting room

2F: Laboratory, Analytical & Measuring room

1F: Interior exhibition room / Processing Laboratory, etc.





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