

Peelable/Strippable/Temporary Coatings





Peelable Coatings

Provide general protection from damage such as mechanical, physical and chemical attack. Films are easily removed from substrates after completion of service.

Performance Attributes

- Adhesion to substrate during lifespan, but easy pull off
- Flexibility (must peel off as continuous sheet)
- Abrasion resistance
- Block resistance
- Acid/alkali/corrosion resistance





Peelable Coatings

Substrates

- Metal, glass, ceramic, concrete, plastic, painted surfaces (wood)

Application

- Roller, brush, spraying or dipping techniques
- Resin Technologies
- Vinyl
- Acrylics
- Polyurethanes
- Cellulose and derivatives
- Polyethylene





Resin Types and Applications

Vinyl
(PVAc, PVA, PVB, PVC)

- Pressure sensitive peelable films
- Corrosion protection
- Organogels for decontamination

Acrylic
(emulsions, alkali-soluble, UV curable)

- Automotive
- Construction
- Electrical insulation
- Protection of sensitive electronics

Polyurethanes

- Floor Coatings
- Automotive
- Ventilation fan coatings

Cellulosics

- Food-grade Coatings
- Medical applications
- Optical applications



APU 1053 Product Specification

Solids content [%]	41 - 43
Viscosity [cps]	500 - 2500
pH	7.5 - 8.5
MFFT [°C]	0
Resin type	Polyether PU-acrylic
Self-Crosslinking	no

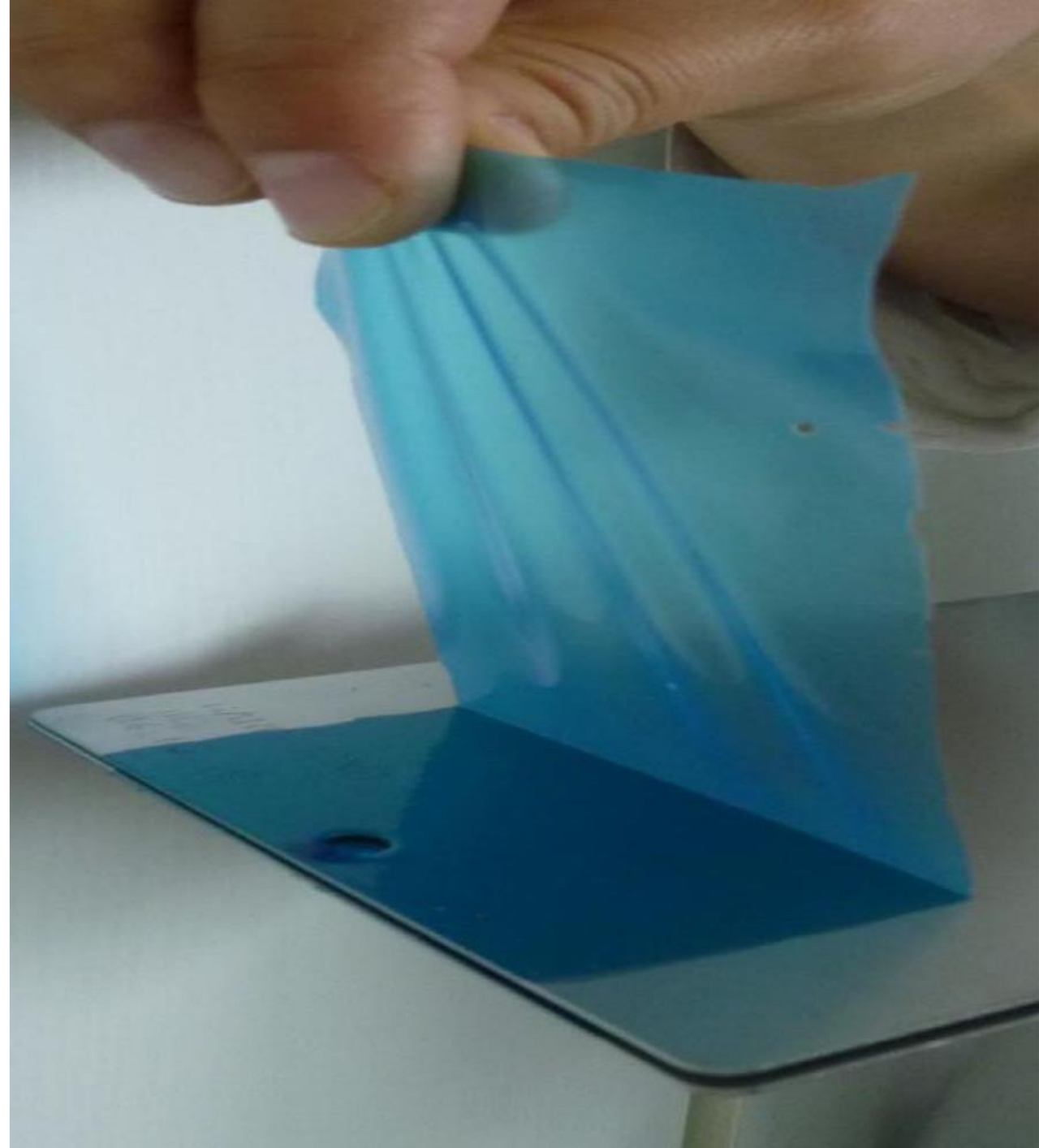


Test Method

The coating was applied to various substrates at a DFT of ~ 4 mils.

Coated panels were dried overnight at ambient, then for 1 hr at 50°C before evaluating peel performance.

The side of the panel was scratched with a sharp edge to lift the coating and pull away from the surface.





Formulation (FP-US APU 1053)

Pos.	Raw Material	weight	volume	Product	Supplier
1	Alberdingk®USA APU 1053	99.0	11.45	Polyurethane Dispersion	Alberdingk Boley
2	896-7201 Phthalo Blue Dispersion	1.0	0.12	Pigment Dispersion	Chroma Chem
Total		100.0	11.57		

Physical Properties

Wt / Gal (lb / gal)	8.64
VOC (lb / gal)	0.24
VOC (g / l)	29.2
% solids by weight	42.2
% solids by volume	39.7



Testing results

Substrate	Peelability
Aluminum (untreated)	5
Cold rolled steel	5
Glass	5
ABS	5
PVC	5
TPO	5
Glazed tile	5

- For all substrates, the coating peeled from the panel without tearing or breaking and showed excellent film strength.
- **Rating:**
1 = worst performance
5 = best performance





Additional Properties

Test

Surface Tension (dynes/cm)	34
Impact Resistance (direct/indirect)	160+
Water Resistance – 1h spot test	5*

Block Resistance (1/3/7 day dry)

Room temperature, 1lb/in ² , overnight	6/8/9**
50°C, 1000g/in ² , 30 minutes	8/9/9



*Scale: 1-5 (no blistering/swelling)

**Scale: 1-10 (no blocking)



2K Peelable Coatings

PVC

CRS

ABS

Aluminum



Carbodiimide cure:

- 6% Carbodilite E-05
- After 24h cure at room temperature



Influence of hot and cold temperatures on peelable film

Heat cycles:

- 1h @ 50C
- 30 min. RT
- 300g measured pull to stretch film

Cold exposure:

- 96h in freezer
- 300g measured pull to stretch film



Peel performance on coated substrates



→ A topcoat is required for good peelability over wood



Peelable Coatings - Masonry

Unsealed concrete



Quarry tile



Polished concrete



Peelable Booth Coating (FP-US APU 1053)





Automotive (FP-US APU 1053)

Overnight dry



Peelable Coatings for Glass





Exterior Durability (FP US 1053-01)

Three month exterior exposure



1500h QUV/condensation (FP US 1053-02)





Exterior Durability (FP US 1053-01)

Three month exterior exposure



1500h QUV/condensation (FP US 1053-02)



Film strength maintained integrity



Summary

- A peelable coating has been developed based on a urethane-acrylic resin that's easy to apply and remove.
- The peel performance was found to be excellent on multiple substrates (with and without topcoat) with high tensile strength. No residue or surface damage remains after the film is peeled
- Studies underway to investigate application parameters, variables affecting peel performance and exterior durability.

Disclaimer:

The aforesaid information is based on our present state of knowledge and shall inform about our products and their application possibilities. It is not intended to assure certain characteristics of the products and their suitability for precise application fields. Products including "VP" in their label are trial products during test stage. For these products Alberdingk Boley is only able to provide preliminary characteristics without obligation. Please consider possible industrial property rights. Subject to change without prior notice. ALBERDINGK® and ALBODUR® are registered trademarks of ALBERDINGK BOLEY GmbH or an affiliate thereof in one or more, but not all, countries. Possible trademark rights of third-party products mentioned have to be observed.

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