Architectural Vinyl

# Product Specifications

FOOTPRINT CREATIVE

## Product Specifications

Roll Specs:
Weight: 29.5 kg
Width: 1220 mm
Length: 50 m
Film Thickness: 0.2 mm
Composition: PVC (Polyvinyl Chloride)

Architectural Vinyls are self-adhesive decorative wraps, designed for interior use. They're lightweight, durable, and stretchable, making them ideal for updating a wide range of surfaces.

Each film is backed with an acrylic adhesive featuring micro-grooved channels, allowing air to escape during installation. This makes it easy to apply on large or complex surfaces, delivering a smooth, professional finish.

## Product Structure

A

**Transparent Film**
The top of the vinyl is as a clear, protective layer, helping to guard against scratches and wear.

B

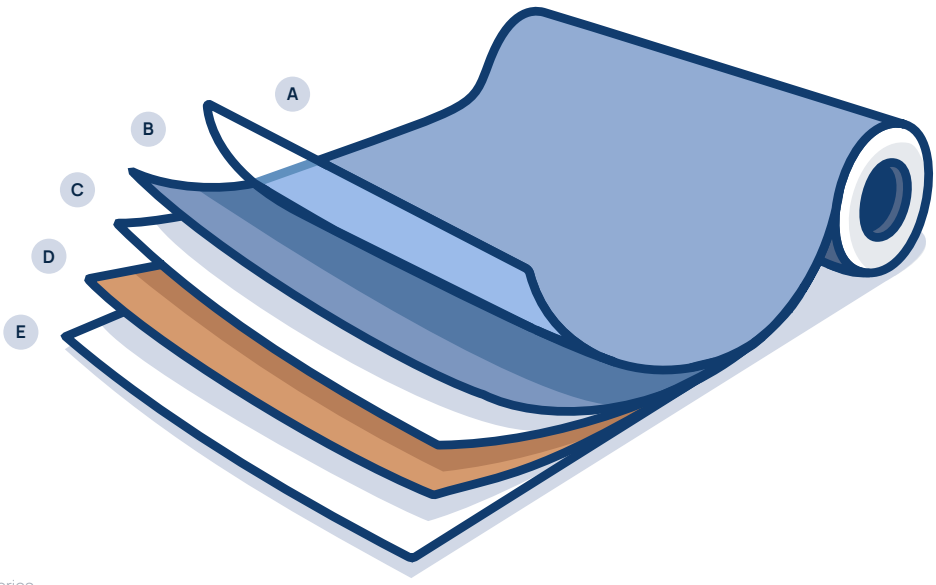
**Printed Pattern Layer**
This layer is designed to replicate materials such as timber, marble, concrete, brick, painted finishes, metals, or fabric textures.

C

**Base Sheet**
Provides structural stability and supports the printed design.

D

**Air-Channeled Adhesive**
Made from PMMA (acrylic), this layer includes micro-channels for a bubble-free, easy installation. It's lightweight, strong, and BPA-free.




E

**Backing Paper**
Protects the adhesive until it's ready to be installed, keeping the film clean and in perfect condition.

Note: The structure and materials may vary slightly between series.

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## Application Environment

**Recommended Application Temperature**
Between 12°C to 38°C (54°F to 100°F)

**Cold Conditions**
Installing in colder conditions, may lead to adhesive failure or film cracking. Avoid cutting the film when cold, as it may split.

**Hot Conditions**
Installing in warmer conditions, the vinyl may soften and may become harder to handle during installation.

**Adhesive Activation**
The adhesive continues to strengthen after installation, reaching full bond within 3 to 7 days.

## Storage & Delivery Guidline

Stack vinyl boxed with labels facing the same direction. Do not stack more than 7 cartons high or more than one pallet in height.

Handle with care to avoid edge damage or cracking. Store indoors in a clean, dry area, away from sunlight, moisture, and temperatures above 38°C.

Not suitable for outdoor storage or application. For best results, use within 12 months.

When storing unused rolls, re-roll and tape them securely by hand to prevent unravelling. If the roll loosens, the release liner may separate from the film.

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## Sustainability Certifications

Our Architectural vinyls are an eco-conscious solution, offering the following benefits:

**Free from Harmful Heavy Metals**
Contains no lead, cadmium, mercury, hexavalent chromium, or other toxic metals.

**Low VOC Emissions**
Minimised release of volatile organic compounds (TVOC, toluene, etc.), ensuring better indoor air quality.

**Child-Safe Standards**
Meets safety regulations for hazardous chemicals in accordance with the Common Safety Standards for Children's Products.

**Atopy Safety Mark**
Certified by the Korea Atopic Association, Architectural Vinyls are free from harmful emissions such as formaldehyde, toluene, benzene, and styrene, making it suitable for sensitive environments and those prone to atopic conditions.

**Healthy Building Material Certificate**
Recognised by the Korea Air Cleaning Association, our vinyls meet the Group Standard Certification Criteria for interior building materials used in safe, clean air spaces.

**Formaldehyde-Free**
Does not release formaldehyde (HCHO), a known contributor to sick building syndrome.

**Antimicrobial Protection**
Features excellent resistance to mould and microbial growth.

**Eco-Friendly Certification**
Architectural vinyls meet strict eco-friendly standards, ensuring minimal release of volatile organic compounds (VOCs) to support healthier indoor environments.

**Carbon Footprint Mark**
This certification reflects the total $CO_2$ emissions across the full product lifecycle, manufacture, transport, use, and disposal. Architectural vinyl has a Global Warming Potential (GWP) rating of 1.96 kg $CO_2$ eq./$m^2$, as verified under the Environmental Product Declaration.

**Eco-Label**
Awarded by the Korea Environmental Industry and Technology Institute, this certification confirms that Architectural vinyls use fewer raw materials and less energy in production, resulting in reduced environmental impact compared to similar products.

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## Fire Safety

Architectural Vinyls meet high-level Class A (Class I) fire and smoke safety ratings, indicating minimal flame spread and low smoke emission. This makes it suitable for use in high-risk or regulated environments such as airports, hospitals, lifts, hotels, and public transport.

**Test Method 1**
ASTM E-84 – Standard Test Method for Surface Burning Characteristics of Building Materials (equivalent to UL723).
Result: Rated Class A / Class I

**Test Method 2**
KS F 2271:2016 – Korean Standard test method for incombustibility of interior building finishes. Result: Incapacitation time: 14.9 minutes
Test conditions: Sub heater: 3 min I Main heater: 3 min
Environment: 20.0 ± 1.0°C, 52 ± 1% RH

**Test Method 3**
DIN 4102-1 – German standard for flame retardancy of building materials. Result: Classified as B1 – Not easily flammable. Our Vinyl Series passed testing with the 'Brandschacht' apparatus as defined in DIN 4102-16 and DIN 4102-15.

## Adhesive Strength

**Test Method**
KS T 1028:2018 – Standard test method for pressure-sensitive adhesive tapes and sheets

**Results**
General adhesive strength: 10.72 N/mm
180° peel strength (after 30 minutes): 7.83 N/mm
180° peel strength (after 24 hours): 10.29 N/mm
180° peel strength (after accelerated ageing): 6.71 N/mm

Note: A section of our Architectural Vinyls was applied to a steel surface and peeled at a rate of 5 mm/s at a 180° angle for testing.

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## Antimicrobial Activity & Efficacy

**Test Method**

JIS Z 2801:2010 – Test for Antimicrobial Activity of Plastics, assessing a material's ability to inhibit or eliminate microorganisms.
Adopted internationally as ISO 22196.

**Results**

Antimicrobial activity value: 1.0 – 1.1 log
A product is considered effective if its antimicrobial activity value is less than 2.0 log.

**Test conditions**

35 ± 1°C, 90% RH for 24 hours. Bacteria tested:
Staphylococcus aureus (ATCC 6538P),
Escherichia coli (ATCC 8739)

## Abrasion Resistance

**Test Method**

KS M ISO 9352:2013 – Resistance to wear from abrasive wheels (equivalent to ISO 9352:2012 [R2017]).

**Result**

Weight loss: 15.1 mg after 1000 abrasion cycles

**Test parameters**

Abradant type: CS-10
Applied weight: 1000 g
Cycles: 1000

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## Stain Resistance

Architectural Vinyls showed no visible change or surface damage after 24 hours of exposure to the following substances:

5% Acetic Acid, Acetone, 5% Ammonia solution, coffee, 0.5% detergent, ethanol, milk, olive oil, water, soy sauce, cola, wine vinegar, 100% Hydrochloric Acid, 5% Sodium Carbonate, and 5% Sodium Chloride.

## Scratch Resistance

**Test Method**
ASTM D3363-05 (2011)e2 – Standard Pencil Hardness Test (Comparable to ISO 15184)

**Result**
Hardness rating: 3H (measured using a Mitsubishi pencil, 750g force)

This test assesses surface hardness by determining the hardest pencil grade that does not leave a permanent mark.

## Stretching Capabilities

**Test Method**
KS T 1028:2009 – Standard method for pressure-sensitive adhesive tapes and sheets

**Results**
Tensile elongation (width/transverse direction): 220%
Tensile elongation (length/machine direction): 80%

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## Tear Resistance

**Test Method 1**
KS M 3505:2010 – Polyvinyl chloride films for agricultural use

**Results**
Right-angle tear load (machine/grain direction): 18.8 N
Right-angle tear load (transverse/width direction): 21.0 N

**Test Method 2**
KS T 1028:2018 – Pressure-sensitive adhesive tapes and sheets

**Results**
Tensile strength (width direction): 42.9 N / 10 mm
Tensile strength (grain direction): 60.2 N / 10 mm

## Phthalates Content

**Test Method**
KS M 1991 – Standard method for measuring phthalate levels in polymer materials

**Result**
All tested phthalates — including DBP, BBP, DEHP, DNOP, DINP, and DIDP, were detected at levels below 50 mg/kg, meeting safety limits. (Detection limit: 50 mg/kg)

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## Heavy Metals Content

**Test Method 1**
IEC 62321-5:2013 – Determination of cadmium (Cd) and lead (Pb) via ICP-OES (Inductively Coupled Plasma Optical Emission Spectrometry.

**Result**
Cadmium (Cd): Not detected
Lead (Pb): Not detected

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**Test Method 2**
IEC 62321-4:2013 – Determination of mercury (Hg) by ICP-OES

**Result**
Mercury (Hg): Not detected

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**Test Method 3**
IEC 62321:2008 – Determination of hexavalent chromium (Cr VI) by colourimetric UV-Vis spot test

**Result**
Hexavalent Chromium (Cr VI): Not detected

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**Test Method 4**
National Institute of Environmental Research (Notice No. 2019-32) – Test method for environmental hazards

**Result**
Lead (Pb), Cadmium (Cd), Chromium ($Cr^{6}$ ), and Mercury (Hg): Not detected (Detection limit: 5 mg/kg)

## PBBs & PBDEs Content

Polybrominated Biphenyls and Polybrominated Diphenyl Ethers

**Test Method**
IEC 62321-6:2015 – Determination of PBBs and PBDEs in polymers using gas chromatography-mass spectrometry (GC-MS)

**Result**
All substances listed below were detected at less than 5 mg/kg, within the accepted safety limits:
Mono, Di-, Tri-, Tetra-, Penta-, Hexa-, Hepta-, Octa-, Nona-, and Deca-Brominated Phenyl compounds
Mono, Di-, Tri-, Tetra-, Penta-, Hexa-, Hepta-, Octa-, Nona-, and Deca-Brominated Diphenyl Ether compounds

Detection limit: 5 mg/kg