

Color of Images could appear different on screen compared to physical product.

PET NEW COLLECTION

Hanwha new deco sheet collections
Creative environmental solutions

DEEP EMBOSS
METAL
NATURAL
HIGH GLOSS
SUPER MATT

What's Hanwha L&C PET DECO SHEET?



Create **original and various styles** with the expansion of patterns, from solid colors to metal, galaxy, embossed etc.



Healthy Deco sheets **free from additives, thermal stabilizers, and heavy metals**, harmful to the human body



Eco-Friendly Deco sheets that do not emit dioxins, only producing vapor and carbon-dioxide when ignited



Deco sheets free from 'Sick Building Syndrome', effectively cutting off harmful emissions such as formaldehyde, TVOCs etc.

| NEW | PATTERN | PAGE |
|-----|-----------|------|
| NEW | AQL81T | 14 |
| NEW | ARU84T | 14 |
| NEW | ARV87T | 14 |
| NEW | ASA1AT | 15 |
| NEW | ASA2BT | 15 |
| NEW | ASB11T | 15 |
| NEW | ASB12T | 15 |
| NEW | BK8AGX | 12 |
| NEW | BK8AGXMT | 13 |
| NEW | BL130 | 17 |
| NEW | BL130MT | 19 |
| | BR003 | 17 |
| NEW | BR003GXMT | 13 |
| | BR003MT | 19 |
| | BR026 | 17 |
| NEW | BR026E2 | 09 |
| | BR026MT | 19 |
| NEW | BR076 | 16 |
| NEW | BR076MT | 18 |
| | BR101A | 16 |
| NEW | BR115 | 17 |
| NEW | BR115MT | 19 |
| NEW | BR121MT | 19 |
| NEW | BR122E7 | 05 |
| NEW | BR122MT | 19 |
| | CR001 | 16 |
| | CR101A | 16 |
| | CR700 | 16 |
| NEW | GN131MT | 19 |
| NEW | GN141MT | 19 |

| NEW | PATTERN | PAGE |
|-----|----------|------|
| NEW | GY01DE3 | 07 |
| | GY01DMT | 18 |
| | GY069 | 17 |
| NEW | GY07DE3 | 08 |
| | GY07DMT | 19 |
| NEW | GY08D | 17 |
| NEW | GY08DE7 | 05 |
| | GY08DMT | 19 |
| | GY09DMT | 19 |
| | GY102A | 17 |
| | GY103DMT | 18 |
| NEW | GY103DE1 | 09 |
| NEW | GY113 | 16 |
| NEW | GY113E7 | 04 |
| NEW | GY113MT | 18 |
| NEW | GY114 | 17 |
| NEW | GY114MT | 19 |
| NEW | GY116 | 17 |
| NEW | GY116MT | 19 |
| NEW | GY118MT | 18 |
| NEW | GY123E2 | 09 |
| NEW | GY124 | 16 |
| NEW | GY124MT | 18 |
| NEW | GY125 | 17 |
| NEW | GY125GX | 12 |
| NEW | GY125MT | 18 |
| NEW | GY133 | 17 |
| NEW | GY133MT | 18 |
| NEW | GY139 | 17 |
| NEW | GY139MT | 19 |

| NEW | PATTERN | PAGE |
|-----|-----------|------|
| | GY203A | 17 |
| | GY510 | 16 |
| | GY610MT | 18 |
| NEW | GY710 | 17 |
| NEW | GY710GXMT | 13 |
| | GY710MT | 18 |
| | GY910 | 17 |
| NEW | GY910E7 | 03 |
| | GY910GX | 12 |
| NEW | GY910GXMT | 13 |
| | GY910MT | 19 |
| | IV067 | 16 |
| | IV068 | 16 |
| NEW | IV075 | 16 |
| NEW | IV075MT | 18 |
| NEW | IV126E3 | 06 |
| NEW | SSR474D | 11 |
| | WH002 | 16 |
| NEW | WH002E3 | 07 |
| | WH002MT | 18 |
| | WH058MT | 18 |
| | WH066GX | 12 |
| | WH088 | 16 |
| | WH228 | 16 |
| | WH240 | 16 |
| NEW | WH240E1 | 09 |
| | WH240MT | 18 |
| | WH270DMT | 18 |
| NEW | YMS8 | 11 |
| NEW | ZI1FF | 14 |



GY910E7





NEW GY113E7



NEW BR122E7



NEW GY08DE7



NEW IV126E3



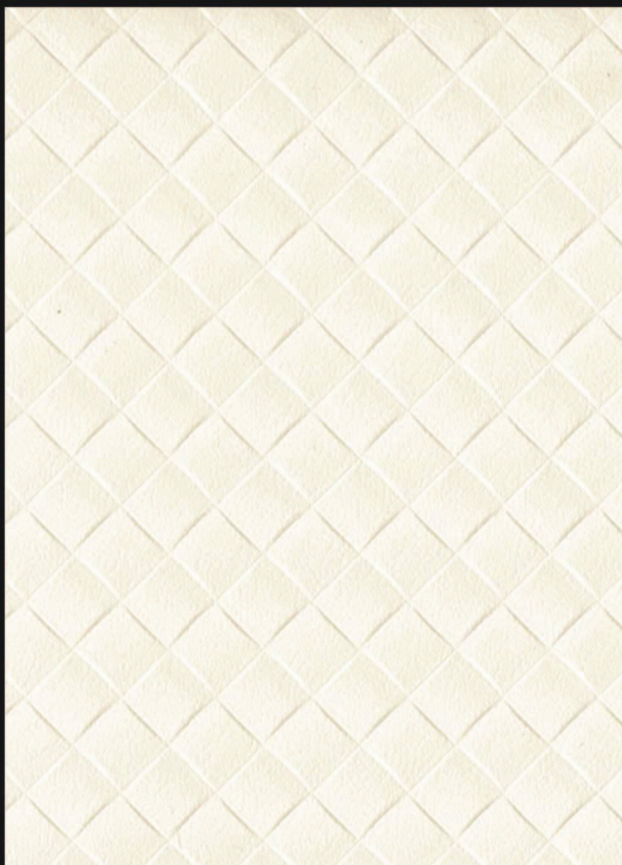
NEW WH002E3



NEW GY01DE3



NEW GY07DE3



NEW WH240E1



NEW GY103DE1



NEW GY123E2



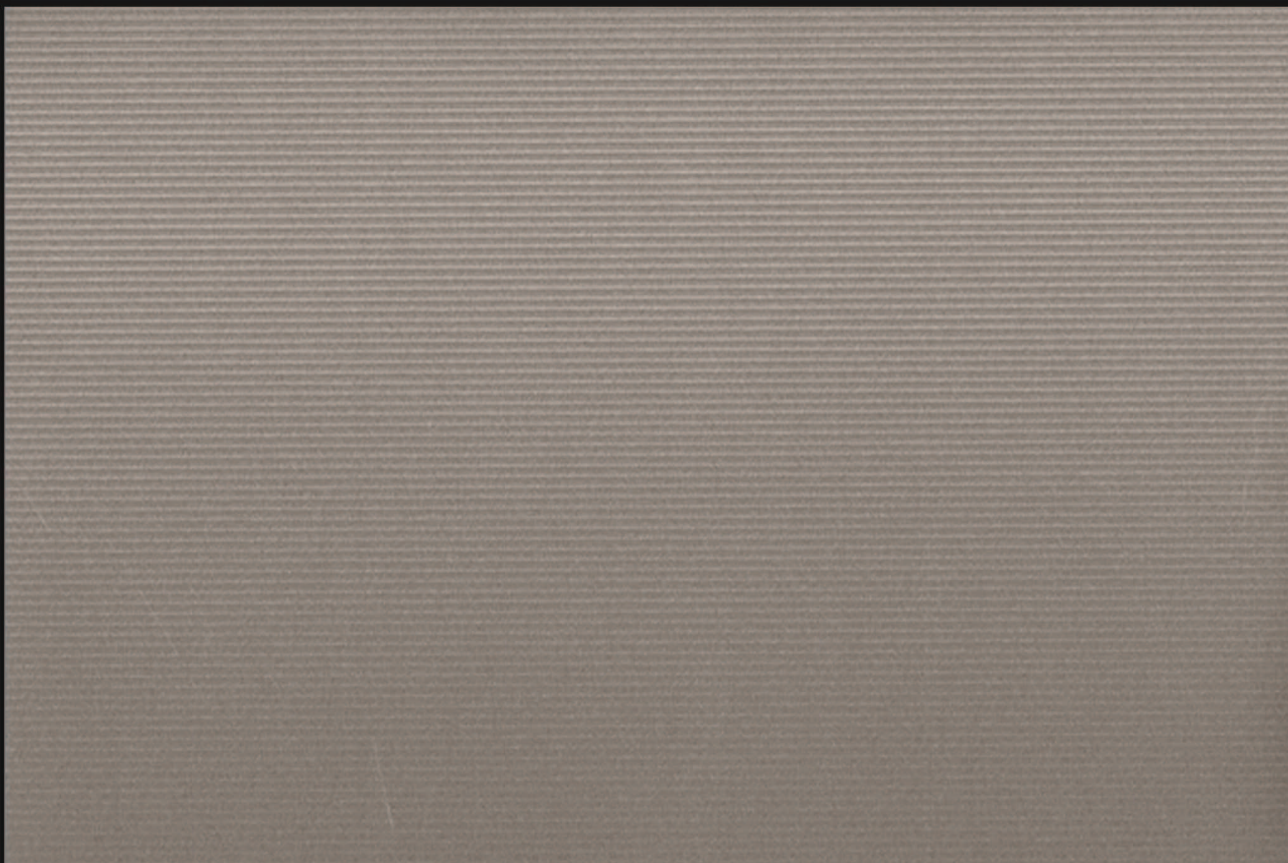
NEW BR026E2



SSR474D



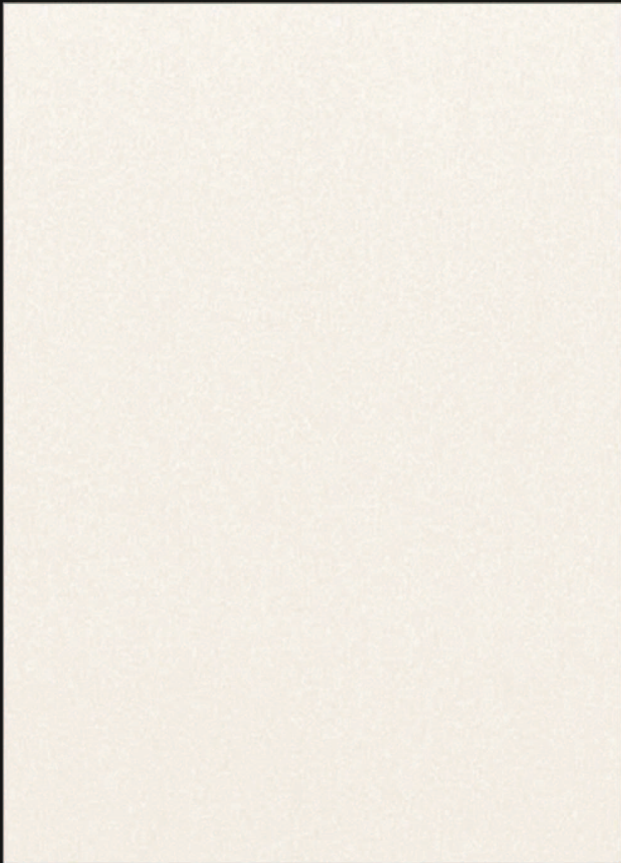
GY125GX



NEW YMS8



NEW SSR474D



WH066GX



NEW GY125GX



GY910GX



NEW BK8AGX



NEW GY710GXMT



NEW BR003GXMT



NEW GY910GXMT



NEW BK8AGXMT



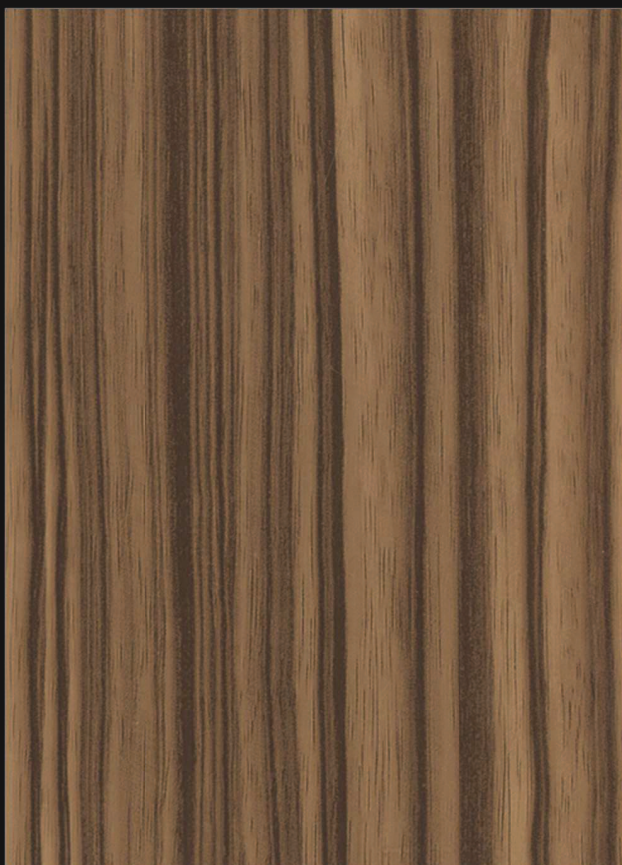
NEW ARU84T



NEW AQL81T



NEW ARV87T



NEW Z11FF



NEW ASB11T



NEW ASB12T



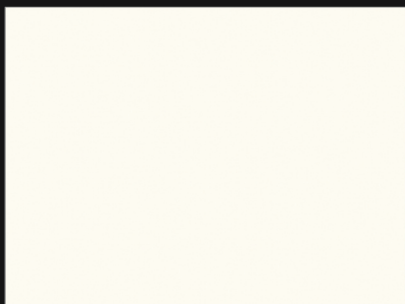
NEW ASA1AT



NEW ASA2BT



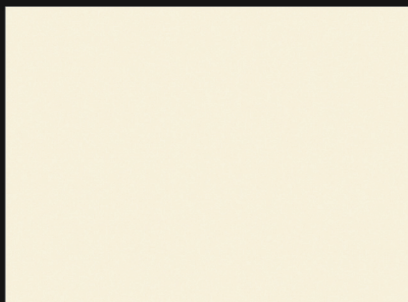
WH002



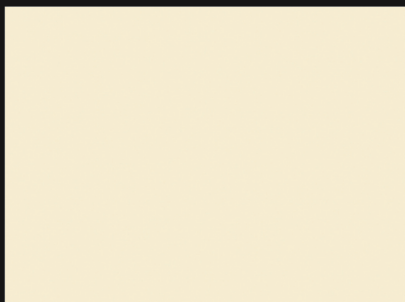
WH228



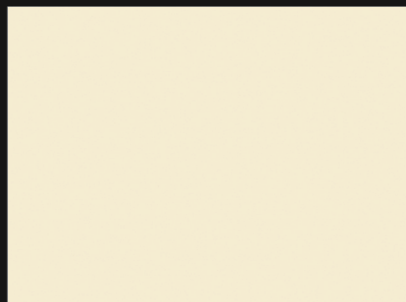
WH088



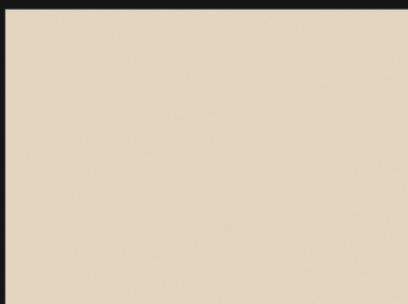
IV067



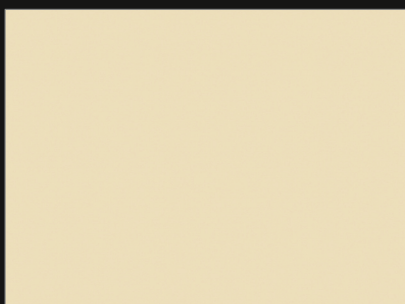
WH240



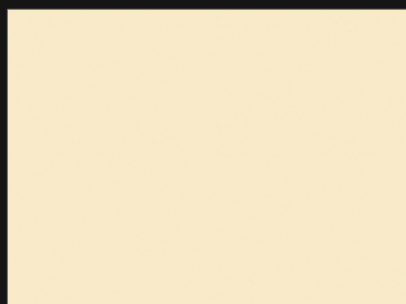
IV068



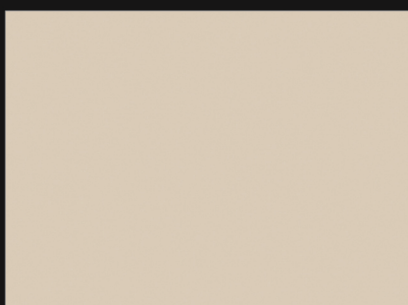
CR001



CR700



CR101A



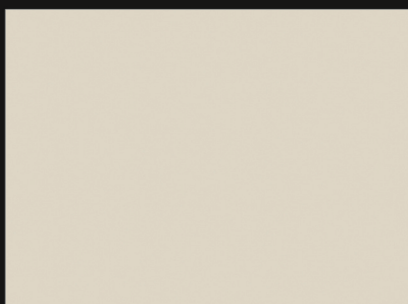
NEW IV075



NEW BR076



BR101A



GY510



NEW GY113



NEW GY124



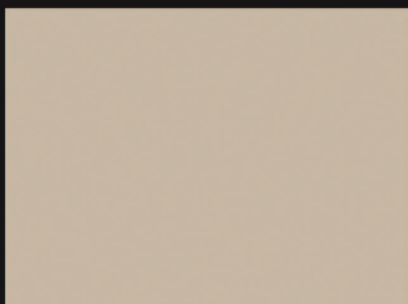
NEW GY710



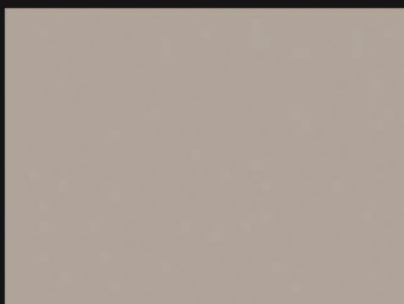
GY069



GY102A



NEW GY125



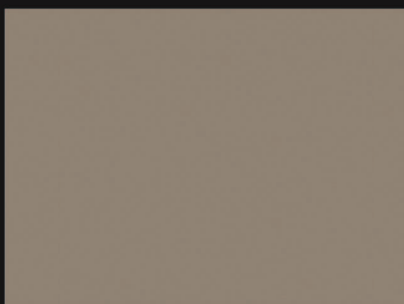
GY203A



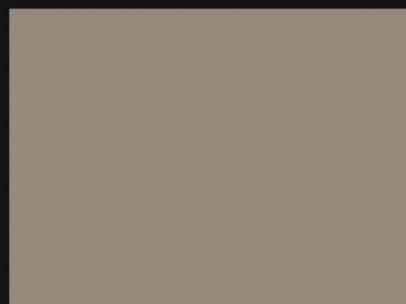
NEW GY133



BR003



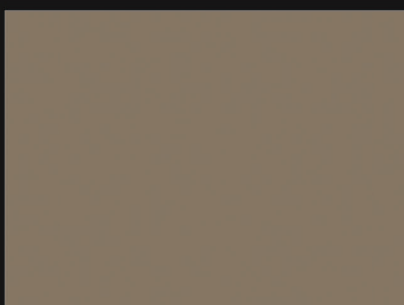
NEW GY114



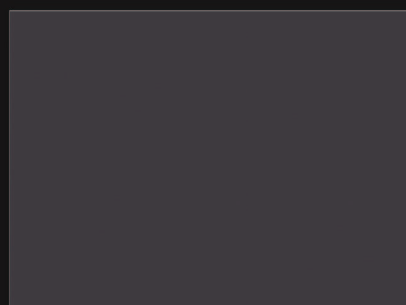
NEW GY08D



NEW BR115



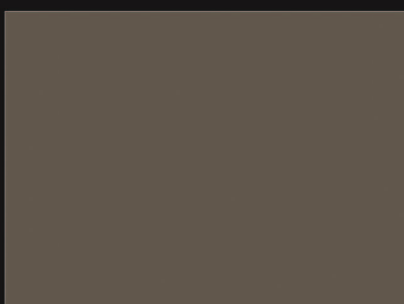
NEW GY116



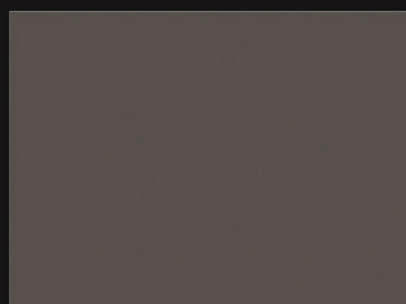
NEW BL130



BR026



GY910



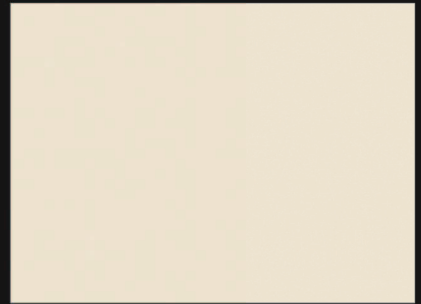
NEW GY139



WH058MT



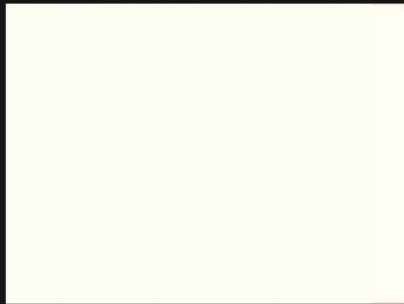
WH002MT



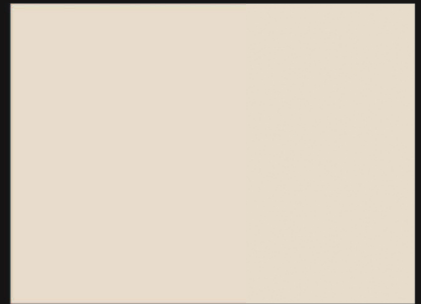
GY01DMT



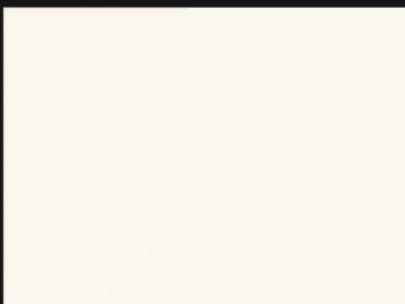
WH270DMT



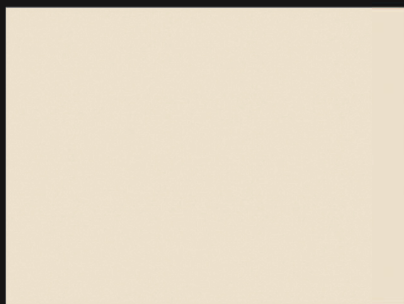
WH240MT



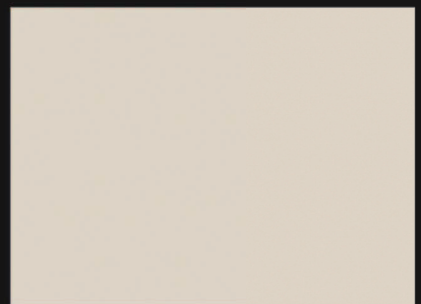
NEW BR076MT



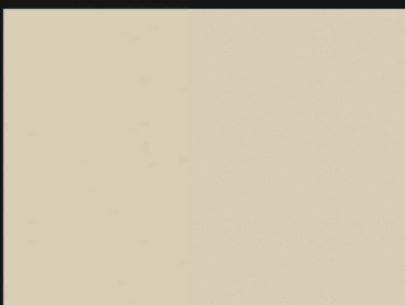
NEW IV075MT



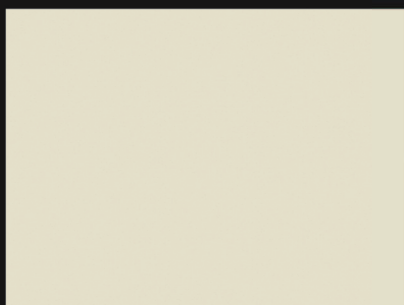
NEW GY124MT



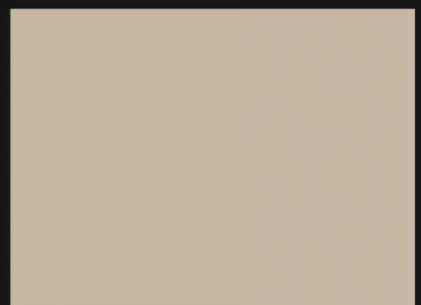
NEW GY113MT



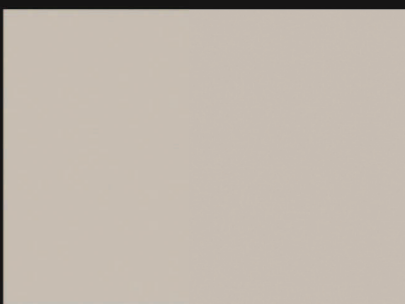
GY610MT



NEW GY118MT



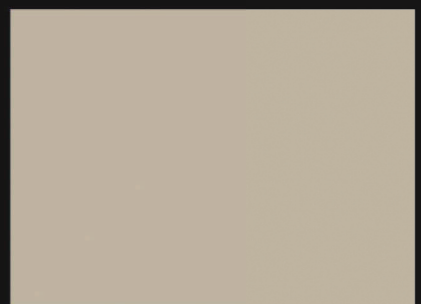
NEW GY125MT



NEW GY133MT



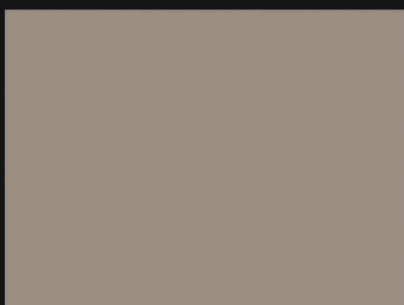
GY710MT



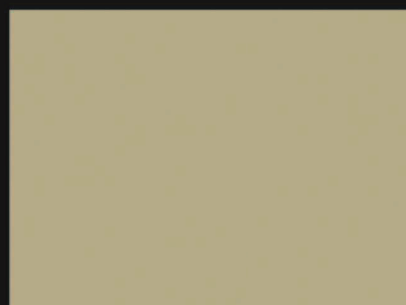
GY103DMT



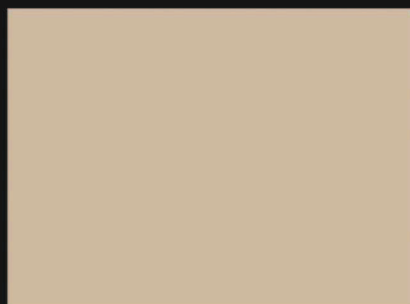
BR003MT



GY08DMT



NEW GN131MT



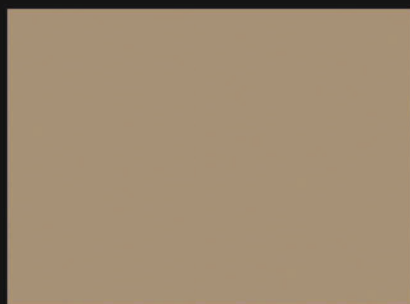
NEW BR122MT



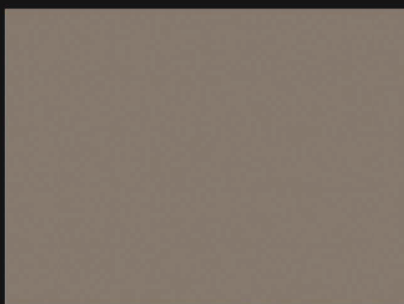
NEW GY114 MT



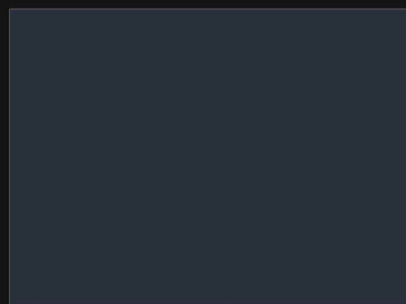
NEW GN141MT



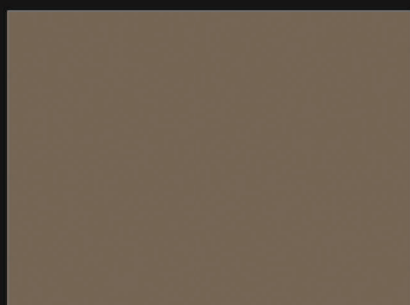
NEW BR115MT



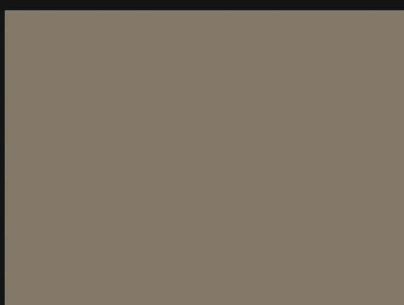
GY07DMT



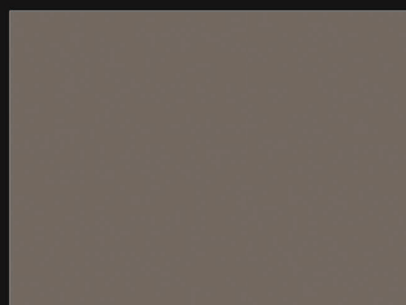
NEW BL130MT



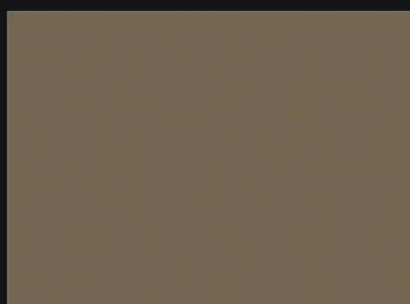
NEW BR121MT



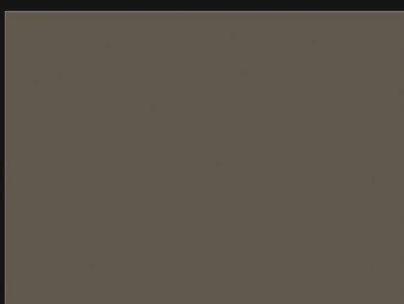
NEW GY116MT



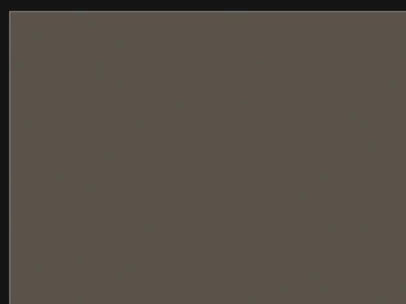
NEW GY139MT



BR026MT



GY910MT



GY09DMT

Product Introduction

As High gloss finishing material used for furniture,
HANWHA Deco sheets conforms to ***REACH** (EU's Environmental Regulations)
Outstanding surface material considers both workability and design.

| Material | Designs | Coating | Thickness | Width | Use |
|----------|--|-------------------|-----------------|-------------|-----------------|
| PET | Solid, Wooden Pattern, Galaxy, metallic, Embossed | H/G, SUPERMATT | 0.20mm - 0.40mm | 1210~1410mm | Wrapping |
| | | | 0.40mm - 0.78mm | | Flat lamination |

* What is REACH regulation?

The official name REACH is the Regulation of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals.
Being one of the most strict eco-friendly regulations in the EU, these regulations have been registered to protect health and environment of human in high levels by evaluating harmfulness in materials manufactured and distributed in the EU, and guarantee the free distribution of those materials.
Especially, HANWHA L&C's PET HIGH GLOSS products are free from harmful substances listed in the Annex 17, as well as substance of very high concern (SVHC) that need a separate permit listed in Annex 14, which leads to the continuous supply in many European furniture companies.

Product Features

High Gloss quality

- Deco sheets having a high gloss level higher than 85, and matt level less than 10, can be a substitute for lacquered surface.
- With its rigidity property harder than PVC sheets, it is excellent in concealing bumps on the covering surface.

Eco-friendly Materials

- Not only satisfies with eco-friendly furniture standards, but also suitable for healthy building material standard required for housing constructions.
In global market, it's chosen at numerous furniture companies in Europe that use only 100% Eco-friendly products.
- Use of fundamentally green raw materials: No other additives are used when producing sheets, only PET Resin and pigments.

Resistant to Chemicals and Pollutant

- Highly resistant to acid, alkali, and alcohol etc.
- Highly resistant to pollutants such as coffee, oil and other daily contaminants.

Color-fastness

- Superior than lacquering surface in yellowing effects and Light resistance.

[Level of UV-resistance test] Test Sample : PET WHITE High Gloss

| Exposure | Scale | Value |
|----------|------------|-------|
| 100Hrs | Grey scale | 4-5 |
| 200Hrs | | 4-5 |
| 300Hrs | | 4-5 |
| 400Hrs | | 4-5 |

※ Value Rating 1-5, the higher the number, the better it is in light resistance.

[Experimental Conditions]

1. Test Method : UNI EN ISO 4892-2:2013
2. Light Source : Weather-o-meter, Xenon arch UV Light, 1.1W/m²(420nm)
3. Exposure time : 400Hrs
4. Temperature Conditions : (63± 3)°C Black Panel Temperature
5. Humidity Conditions : (30±5)°C Relative Humidity

Non-Scratch Surface

- Special UV Coating protects the surface from living scratches.

Design and outstanding processability.

- Available in various design options. Not only do we produce HIGH GLOSS coating, also manufacture SUPERMATT (SATIN), which has a luminosity less than 10, GALAXY PEARL, and various coating designs and textures.
→ 60 Solid colors + 8 Printed + 8 Galaxy + 12 Embossed + 2 UV Metallic = Total of 90 types [Available in custom colors]
- Thorough management of discoloration between and within batches : Set to be maintained below dE 0.5 (In standard of white color)

CERTIFICATIONS

CATAS S.p.A.
Via della Repubblica 110/112
00144 Roma, Italy
Tel: +39 06 57351111
Fax: +39 06 57351112
Email: info@catas.com

Accredia

LAB 01022

TEST REPORT
213374 / 1

Date received: 26/04/16
Date of test: 06/05/16
Date of issue: 11/05/16
Sample name: 723P66000 PET (V0) 0.25 mm FLX HG E type suppl. HANWHA LSC Corp. PET HG film batch 5180122 date of prod. 22.04.2016 delivered on 26.04.2016

HANWHA LSC
8F, CENTERIL26, DULJI-RO, S-GIL, JUNG-GU
SEOUL
Korea

Surface resistance to cold liquids. UNI EN 12720:2013

Test results:

| Staining agents | Contact time | Rating | |
|---------------------|--------------|--------|--------|
| | | spot 1 | spot 2 |
| Water | 24 h | 5 | 5 |
| Paraffin oil | 24 h | 5 | 5 |
| Coffee | 1 h | 3 | 3 |
| Ethanol (sol. 48 %) | 1 h | 5 | 5 |

Rating:
5 = no change
4 = minor change (only visible under reflected light)
3 = moderate change (visible from several viewing directions)
2 = significant change in colour or gloss; slight change of structure (swelling, fibre raising, cracking, blistering)
1 = strong change

Notes:
- Staining agents and contact times were as required for class R2 of the IEC-MAT 0006, version AA-183038-10.
- Tests with rating 2-4 on the scale 1-5.
- Chemical analysis of the tested material has not been carried out.
- Conditioning period: from 26/04/16 to 06/05/16.

This document is valid only if signed by the operator and the checker in accordance with the rules and the regulations. Changes and/or alterations are not permitted. This test report must always be reproduced in its entirety. Unless otherwise stated, everything has been carried out by the operator.

Page: 1/1

CATAS S.p.A.
Via della Repubblica 110/112
00144 Roma, Italy
Tel: +39 06 57351111
Fax: +39 06 57351112
Email: info@catas.com

Accredia

LAB 01022

TEST REPORT
224622 / 3

Date received: 28/11/16
Date of test: 12/12/16
Date of issue: 09/01/17
Sample name: PET Super matt GY710 0.25mm X 1340mm batch nr. 161016 021.

HANWHA LSC
8F, CENTERIL26, DULJI-RO, S-GIL, JUNG-GU
SEOUL
Korea

Resistance to xenon arc light UNI EN ISO 4892-2:2013

Method used: Met. B cycle n. 2
Apparatus: Atlas C.I. 3000
Lamp used: Xenon arc
Irradiance at 420 nm: 1.10 W/mq
Relative humidity: 50 ± 10%
Black panel mean temperature: 65 ± 3 °C (BST)
Measurement of light emission: by blue wool scale (ISO 105)

Test results:

| Exposure (hours) | DE* | DL* | Da* | Dt* | Grey scale |
|------------------|------|------|-------|------|------------|
| 50 | 0.12 | 0.09 | -0.07 | 0.05 | 5 |
| 100 | 0.14 | 0.05 | -0.09 | 0.06 | 5 |
| 200 | 0.30 | 0.14 | -0.21 | 0.17 | 5 |
| 300 | 0.40 | 0.11 | -0.29 | 0.26 | 4/5 |
| 400 | 0.58 | 0.14 | -0.37 | 0.42 | 4/5 |

Blue wool standard N.

> 6

This document is valid only if signed by the operator and the checker in accordance with the rules and the regulations. Changes and/or alterations are not permitted. This test report must always be reproduced in its entirety. Unless otherwise stated, everything has been carried out by the operator.

Page: 1/1

Specification Sheet

Rev No 1

Date : 2017.01

ITEM : EXPET-H/G 0.25mm

| Item | | Unit | Spec | Data | Test Method |
|-----------------------------|---|---------------------|-------------------------------|-------|--------------------|
| Thickness | | mm | Center (tolerance $\pm 5\%$) | 0.260 | |
| Tensile Strength | (MD) | Kgf/mm ² | 3.0 ↑ | 6.15 | JIS-K-6734 |
| | (CD) | | 3.0 ↑ | 6.06 | |
| Tear Strength | (MD) | Kgf/mm | 5.0 ↑ | 5.88 | JIS-K-6732 |
| | (CD) | | 5.0 ↑ | 6.69 | |
| Elongation | (MD) | % | 1.0 ↑ | 5.88 | JIS-K-6734 |
| | (CD) | | 1.0 ↑ | 6.69 | |
| Gloss | | 60° | 85 ↑ | 90 | ASTM 2457 |
| Abrasion resistance | | mg | 10 ↓ | OK | cf1. HCJ-D-204-3 |
| Heat & Cold repetition test | | - | Not Greatly Changed | OK | cf2. HCJ-D-204-4 |
| Chemical resistance | 1%NaCO ₃ | - | Not Greatly Changed | OK | cf3. HCJ-D-204-5 |
| | 5%CH ₃ COOH | - | Not Greatly Changed | OK | |
| | 1%HCl | - | Not Greatly Changed | OK | |
| | Petroleum Benzene | - | Not Greatly Changed | OK | |
| Stain resistance (1) | Coffee | - | Not Greatly Changed | OK | cf4. HCJ-D-204-6 |
| | Soy Sauce | - | Not Greatly Changed | OK | |
| | Worcestershire Sauce | - | Not Greatly Changed | OK | |
| Stain resistance (2) | Black Marker | - | Not Greatly Changed | OK | cf5. HCJ-D-204-6 |
| | Red Crayon | - | Not Greatly Changed | OK | |
| Solvent resistance | Petroleum Benzene | - | Not Greatly Changed | OK | cf6. HCJ-D-204-7 |
| | Laquer | - | Not Greatly Changed | OK | |
| | 95% Ethanol | - | Not Greatly Changed | OK | |
| Heat resistance | | - | Not Greatly Changed | OK | cf7. HCJ-D-204-8 |
| Whitening by folding | | - | Not Greatly Changed | OK | cf8. HCJ-D-204-9 |
| Water resistance | | - | Not Greatly Changed | OK | cf9. HCJ-D-204-10 |
| Heat & Humidity resistance | | - | Not Greatly Changed | OK | cf10. HCJ-D-204-11 |
| Layer Adhesive property | | - | Not Delaminated | OK | cf11. HCJ-D-204-13 |
| Surface hardness(pencil) | | - | B ↑ | HB | JIS-K-5400 |
| Remark | <p>cf1. Abrasion resistance : The sample is observed after 100 cycling with the load of 1000g.</p> <p>cf2. Heat & Cold repetition test : The sample of 150mm X150mm is placed in an oven at 60 °C for 2hrs, and then put into the cold bath of -20°C. After 2 cycling, observe the defects of sample.</p> <p>cf3. Chemical resistance : Each solvent of 1% NaCO₃, 5% CH₃OOH, 1% HCl, petroleum benzene is dropped on the sample, After 6 hrs, the sample is washed with water and dried.</p> <p>cf4. Stain resistance (1) : Each solvent of coffee and soy sauce is dropped on the sample. After 6 hrs, the sample is washed with water and dried.</p> <p>cf5. Stain resistance (2) : Based on JAS B for the contamination. Draw a line of 10mm wide on the sample. After 4 hrs, wiped it with a solvent or detergent.</p> <p>cf6. Solvent resistance : The sample is rubbed 10times with cotton wool soaked in petroleum benzene, lacquer, 95% ethanol each. Not Greatly Changed.</p> <p>cf7. Heat resistance : The sample is placed in an oven 60 °C for 24hrs. After cooling to normal temperature, observe the surface of sample. Not Greatly Changed.</p> <p>cf8. Whitening by folding : The sample is placed in a thermostat at 25 °C for 30mins, and then fold at an angle of 180 degrees and observe the whitening.</p> <p>cf9. Water resistance : The sample is dipped in water at normal temperature for 48hrs and dried.</p> <p>cf10. Heat & Humidity resistance : The sample is thermo hygroatat keeping 40 °C & 35% RH for 48hrs.</p> <p>cf11. Layer Adhesive property : After adhering 24mm-width Nichibang tape on surface, peel it off strongly from the surface.</p> <p>※ This test data can be different by its product specification type.</p> | | | | |



| Precautions while Handling | |
|----------------------------|--|
| Storage / Transport | Store upright in a cool and dry indoor environment Product is fragile. Do not throw. |
| Maintenance / Management | Do not poke with sharp objects such as drills, knives etc. Discoloration may occur when exposed to direct sunlight. |
| Application | The colors from the sample book and actual products may slightly differ due to different production lots. The samples are partial, make sure to check the whole product before applying. Apply and manufacture in room temperature. Strong impact may cause disfiguration of the product. |

PET NEW COLLECTION

Hanwha new deco sheet collections
Creative environmental solutions

DEEP EMBOSS
METAL
NATURAL
HIGH GLOSS
SUPER MATT



HEADQUARTERS : Décor Sales Team, HANWHA L&C, 8F, CENTER1 Bldg, 26, Uljiro 5-gil, Jung-gu, Seoul, 04539, Republic of Korea
TEL : 02.6364.7714 / 7716 FAX : 02.6364.7709 E-mail : milonga@hanwha.com

PLANT : L-Tech, #801 Bukang-Li, Bukang-Myun, SejongSi, 30074 , Republic of Korea