

Hyundai L&C

TEST REPORT

SCOPE OF WORK

Hanex

REPORT NUMBER

201209008SHF-001

TEST DATE(S)

2020-12-09 - 2020-12-21

ISSUE DATE

2020-12-21

PAGES

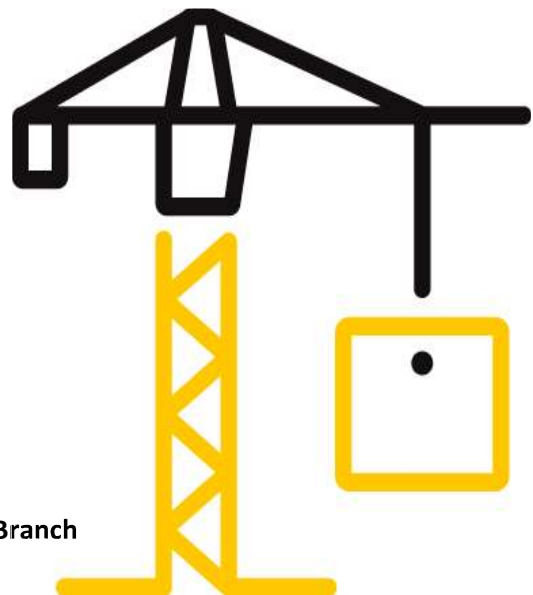
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DOCUMENT CONTROL NUMBER

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Test Report

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Test Report

Issue Date: 2020-12-21 Intertek Report No. 201209008SHF-001
Applicant: Hyundai L&C
Address: 1077, Cheonho-daero, Gangdong-gu, Seoul, Republic of Korea
Attn: Oh Jong-wook
Test Type : Performance test, samples provided by the applicant.

Product Information

| | | | |
|---------------------------|----------------|----------------------|------------|
| Product Name | Hanex | Brand | / |
| Sample Description | Good Condition | Sample Amount | 1 package |
| | | Received Date | 2020-12-01 |
| Sample ID | Model | Specification | |
| S201209008SHF.001 | / | / | |
| | | | |


Test Methods And Standards

| | |
|-------------------------------|--|
| Test Standard | ISO 19712-3:2007 Section 8.1 Procedure A |
| Specification Standard | / |
| Test Conclusion | The samples were tested according to the above standards, and the results are shown in the following page. |

Note:

1. This report relates specifically to the sample(s) that were drawn and provided by the applicant or their nominated third party. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment and only relate to the sample(s) as received and tested.

Report Authorized


Name: Flora Fan Name: Milo Liu
Title: Reviewer Title: Project Engineer

Test Report

Issue Date: 2020-12-21

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Test Items, Method and Results:

Test Item: Stain/chemical-resistance test

Test Method: ISO 19712-3:2007 Section 8.1 Procedure A

Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h

Test Result:

| Group | Staining agent | Duration of contact | Result of visual changes |
|-------|--|---------------------|--------------------------|
| 1 | Toothpaste | 16h to 24h | 5 |
| 1 | Hand Cream | 16h to 24h | 5 |
| 1 | Alcoholic beverages | 16h to 24h | 5 |
| 1 | Natural fruit and vegetable juices | 16h to 24h | 5 |
| 1 | Lemonade and fruit drinks | 16h to 24h | 5 |
| 1 | Meats and sausages | 16h to 24h | 5 |
| 1 | Animal and vegetable fats and oils | 16h to 24h | 5 |
| 1 | Water | 16h to 24h | 5 |
| 1 | Yeast suspension in water | 16h to 24h | 5 |
| 1 | Salt (NaCl) solutions | 16h to 24h | 5 |
| 1 | Mustard | 16h to 24h | 5 |
| 1 | Lyes, soap solutions | 16h to 24h | 5 |
| 1 | Phenol and chloramine-T disinfectants | 16h to 24h | 5 |
| 1 | Citric acid | 16h to 24h | 5 |
| 2 | Coffee (approximately 80°C) | 16h | 5 |
| 2 | Black tea (approximately 80°C) | 16h | 5 |
| 2 | Milk (approximately 80°C) | 16h | 5 |
| 2 | Cola beverages | 16h | 5 |
| 2 | Wine vinegar | 16h | 5 |
| 2 | Alkaline-based cleaning agents diluted to 10% concentration with water | 16h | 5 |
| 2 | Ammonia (10% solution of commercial concentrate) | 16h | 5 |
| 2 | Lipstick | 16h | 4 |
| 2 | Water colours | 16h | 5 |
| 2 | Laundry marking inks | 16h | 5 |
| 2 | Ball point inks | 16h | 4 |

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| | | | |
|---|--|--------|---|
| 3 | Sodium hydroxide(25% solution) | 10 min | 5 |
| 3 | Hydrogen peroxide (30% solution) | 10 min | 5 |
| 3 | Acetone | 10 min | 5 |
| 3 | Trichlorethane | 10 min | 5 |
| 3 | Concentrated vinegar (30% acetic acid) | 10 min | 5 |
| 3 | Hydrochloric acid based cleaning agents ($\leq 3\% \text{HCl}$) | 10 min | 5 |
| 3 | Acid-based metal cleaners | 10 min | 5 |
| 3 | Mercurochrome (2,7-dibromo-4-hydroxymercurifluorescein, disodium salt) | 10 min | 5 |
| 3 | Shoe polish | 10 min | 5 |
| 3 | Hair colouring and bleaching agents | 10 min | 5 |
| 3 | Tincture of iodine | 10 min | 5 |
| 3 | Boric acid | 10 min | 5 |
| 3 | Lacquers and adhesives (except fast-curing materials) | 10 min | 5 |
| 3 | Amidosulfonic acid descaling agents (<10% solution) | 10 min | 5 |
| 3 | Nail varnish | 10 min | 5 |
| 3 | Nail varnish remover | 10 min | 5 |
| 3 | Stain or paint remover based on organic solvents | 10 min | 5 |

Remark:

1. The test reagents were specified by the applicant

2. Rating scale:

Rating 5: No visible change

Rating 4: Slight change in gloss and/or colour, only visible at certain viewing angles

Rating 3: Moderate change in gloss and/or colour

Rating 2: Marked change in gloss and/or colour

Rating1: Surface distortion and/or blistering



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Appendix A: Sample Received Photo



Revision:

| NO. | Date | Changes | Author | Reviewer |
|------------------|------------|-------------|----------|-----------|
| 201209008SHF-001 | 2020-12-21 | First issue | Milo Liu | Flora Fan |