Korea Laboratory Accreditation Scheme

CERTIFICATE OF ACCREDITATION

HANSSEM R&D Institute

Accreditation No. : KT905

Corporation Registration No. : 134111-0003595

Address of Laboratory : (Branch site)179, Seongam-ro, Mapo-gu, Seoul, Republic of Korea

Date of Initial Accreditation : July 30, 2020

Validity of Accreditation : August 14, 2024 ~ August 13, 2028

Scope of Accreditation : Attached Annex

Date of issue : August 14, 2024

This testing laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to Joint ISO-ILAC-IAF Communiqué).

CHIN CHONGWOOK

Head
Korea Laboratory Accreditation Scheme

No. KT905

01. Mechanical Testing

01.005 Timber and Related Products

Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS F 3101:2021	Timber and related products	Ordinary plywood 7.2 Glue shear strength 7.3 Moisture content	7.3 Shear strength: (0 ~ 20) kN 7.4 Moisture content: (0 ~ 99) %	BS	N
KS F 3104:2022	Timber and related products	Particleboard 6.3 Density 6.4 Moisture content 6.5 Modulus of rupture 6.7 Water absorption and thickness swelling 6.8 Internal bond strength 6.9 Screw holding power	6.3 - 6.4 Moisture content: (0 ~ 99) % 6.5 Modulus of rupture: (0 ~ 20) kN 6.7 Thickness: (0 ~ 25) mm 6.8 Bonding strength: (0 ~ 20) kN 6.9 Screw holding power: (0 ~ 20) kN	BS	N
KS F 3200:2022	Timber and related products	Fiberboards 6.3 Density 6.4 Moisture content 6.6 Modulus of rupture 6.9 Water absorption and thickness swelling 6.11 Internal bond strength 6.12 Screw holding power	6.3 - 6.4 Moisture content: (0 ~ 99) % 6.6 Modulus of rupture: (0 ~ 20) kN 6.9 Thickness: (0 ~ 25) mm 6.11 Bonding strength: (0 ~ 20) kN 6.12 Screw holding power: (0 ~ 20) Kn	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS G 2020:2019	Timber and related products	Storage furniture 5. Measurements 10.1 Stability tests 10.2.1 Shelves 10.2.1.1 Strength of shelf supports 10.2.1.2 Deflection of shelves 10.2.2 Clothes rail 10.2.2.1 Strength of clothes-rail supports 10.2.2.2 Dislodgement of clothes rails 10.2.3 Test for tops and bottoms 10.2.4 Pivoted doors 10.2.4.1 Vertical load on pivoted doors 10.2.4.2 Horizontal load on pivoted doors 10.2.4.3 Durability of pivoted doors 10.2.8 Extension elements 10.2.8.1 Strength of extension elements 10.2.8.2 Durability of extension elements 10.2.8.3 Slam shut/open test of extension elements 10.2.8.4 Displacement of extension element bottoms 10.2.9 Structure and underframe 10.2.9.1 Test for structure and underframe 10.2.9.2 Strength of wall attachments	5. Length: (0 ~ 3 000) mm 10.1 - 10.2.1 - 10.2.1.1 - 10.2.1.2 Displacement: (0 ~ 12.0) mm 10.2.2 - 10.2.2.1 - 10.2.2.2 Displacement: (0 ~ 12.0) mm 10.2.3 - 10.2.4 - 10.2.4.1 - 10.2.4.2 Horizontal load: (0 ~ 300) N 10.2.4.3 Angle: (0 ~ 135)° 10.2.8 - 10.2.8.1 Vertical load: (0 ~ 1 700) N 10.2.8.2 - 10.2.8.3 - 10.2.8.4 - 10.2.9 - 10.2.9.1 Displacement: (0 ~ 80) mm 10.2.9.2 -	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS G ISO 7170:2009	Timber and related products	Furniture — Storage units — Determination of strength and durability 6.1 Shelves 6.1.3 Deflection of shelves 6.1.4 Strength of shelf supports 6.2 Tops and bottoms 6.2.1 Sustained load test for tops and bottoms 6.2.2 Static load test for tops and bottoms 6.3 Strength of clothes rails and their supports 6.3.1 Strength of clothes-rail supports 6.3.2 Dislodgement of clothes rails 6.4 Strength of the structure 6.4.1 Test for structure and underframe 7.1.2 Strength of pivoted doors 7.1.2.1 Vertical load on pivoted doors 7.1.2.2 Horizontal load on pivoted doors 7.1.4 Durability of pivoted doors 7.5.2 Strength of extension elements 7.5.3 Durability of extension elements 7.5.4 Slam shut/open test of extension elements 7.5.5 Displacement of extension element bottoms	6.1 Displacement: (0 ~ 12.0) mm 6.1.3 - 6.1.4 - 6.2 - 6.2.1 - 6.2.2 - 6.3 - 6.3.1 - 6.3.2 Displacement: (0 ~ 12.0) mm 6.4 - 6.4.1 Displacement: (0 ~ 80) mm 7.1.2 - 7.1.2.1 - 7.1.2.2 Horizontal load: (0 ~ 300) N 7.1.4 Angle: (0 ~ 135)° 7.5.2 Vertical load: (0 ~ 1 700) N 7.5.3 - 7.5.4 - 7.5.5 -	BS	N
KS G ISO 7171:1988	Timber and related products	Furniture-Storage units-Determination of stability	-	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
SPS-G-KHFC-0007-7262:2018	Timber and related products	Bathroom furniture 11. Tests 11.1 Strength and durability tests 11.1.1 Shelves test 11.1.1.1 Strength of shelf supports 11.1.1.2 Deflection of shelves 11.1.3 Horizontal load on pivoted doors 11.1.4 Durability of pivoted doors 11.1.6 Connecting strength of the structure	11. - 11.1 - 11.1.1 - 11.1.1.1 - 11.1.1.2 Displacement: (0 ~ 12.0) mm 11.1.3 Horizontal load: (0 ~ 300) N 11.1.4 angle: (0 ~ 135)° 11.1.6 -	BS	N
SPS-KHFC 001-0438:2022	Timber and related products	Sinks for home use 6. Measurements 14.1 Stability tests 14.2.1 Shelves test 14.2.2.1 Strength of shelf supports 14.2.2.2 Deflection of shelves 14.2.3 Strength of tops and bottoms 14.2.4 Pivoted doors 14.2.4.2 Vertical load on pivoted doors 14.2.4.3 Horizontal load on pivoted doors 14.2.4.4 Durability of pivoted doors 14.2.5 Extension elements test 14.2.5.2 Strength of extension elements 14.2.5.3 Durability of extension elements 14.2.5.4 Slam shut/open test of extension elements 14.2.5.5 Displacement of extension element bottoms 14.2.6 Strength of the structure 14.2.7 Strength of wall hanging attachment 14.2.8 Strength of kitchen sink assembly 14.2.9 Connecting strength of the structure 14.2.10 Durability of flaps	6. Length: (0 ~ 3 000) mm 14.1 - 14.2.1 - 14.2.2.1 - 14.2.2.2 Displacement: (0 ~ 12.0) mm 14.2.3 - 14.2.4 - 14.2.4.2 14.2.4.3 Horizontal load: (0 ~ 300) N 14.2.4.4 Angle: (0 ~ 135)° 14.2.5 - 14.2.5.2 Vertical load: (0 ~ 1 700) N 14.2.5.3 - 14.2.5.4 - 14.2.5.5 - 14.2.6 Displacement: (0 ~ 80) mm 14.2.7 - 14.2.8 - 14.2.9 - 14.2.10 -	BS	N

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02. Chemical Testing

02.025 Indoor and other environments

Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS F 3021:2022	Indoor and other environments	Structural glued laminated timber 7.10 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3024:2022	Indoor and other environments	Medium Density Fiberboard(MDF) door frames 6.12 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3101:2021	Indoor and other environments	Ordinary plywood 7.5 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3104:2022	Indoor and other environments	Particleboard 6.10 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3106:2021	Indoor and other environments	Surface processed plywood 6.3 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3107:2021	Indoor and other environments	Sliced veneer overlaid plywood 6.4 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3111:2021	Indoor and other environments	Natural wood veneer decorated wood-based flooring 8.17 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3126:2021	Indoor and other environments	Decorative wood-based flooring board 8.20 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3200:2022	Indoor and other environments	Particleboard 6.14 Formaldehyde contents	0.1 mg/L and more	BS	N
KS F 3230:2023	Indoor and other environments	WPC(Wood Plastic Composite) deck board 7.14 Formaldehyde contents	0.1 mg/L and more	BS	N
KS G 2020:2019	Indoor and other environments	Storage furniture 10.6 Formaldehyde contents	0.1 mg/L and more	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS I ISO 16000-3:2011	Indoor and other environments	Indoor Air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air — Active sampling method	Formaldehyde: 1 μg/㎥ and more	BS	N
KS I ISO 16000-6:2011	Indoor and other environments	Indoor air — Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA sorbent, thermal desorption and gas chromatography using MS or MS-FID	TVOC: 4 μg/㎥ and more Benzene: 4 μg/㎥ and more Toluene: 4 μg/㎥ and more Ethylbenzene: 4 μg/㎥ and more Xylene: 4 μg/㎥ and more Styrene: 4 μg/㎥ and more	BS	N
KS I ISO 16000-9:2006	Indoor and other environments	Indoor air — Part 9: Determination of the emission of volatile organic compounds from building products and furnishing — Emission test chamber method	TVOC: 0.001 mg/㎡·h and more Benzene: 0.001 mg/㎡·h and more Toluene: 0.001 mg/㎡·h and more Ethylbenzene: 0.001 mg/㎡·h and more Xylene: 0.001 mg/㎡·h and more Styrene: 0.001 mg/㎡·h and more Formaldehyde: 0.001 mg/㎡·h and more	BS	N
KS M 1998:2022	Indoor and other environments	Determination of the emission rate of formaldehyde and volatile organic compounds in building interior products 7. Test Method - small-scale emission test chamber method 8. Test Method - small-scale emission test chamber method(Funiture component material) 10. Test Method - desicator method	7. Small-Chamber 8. Small-Chamber TVOC: 0.001 mg/㎡·h and more Benzene: 0.001 mg/㎡·h and more Toluene: 0.001 mg/㎡·h and more Ethylbenzene: 0.001 mg/㎡·h and more Xylene: 0.001 mg/㎡·h and more Styrene: 0.001 mg/㎡·h and more Formaldehyde: 0.001 mg/㎡·h and more 10. Desicator Formaldehyde: 0.1 mg/L and more	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
NIER Notice No.2023-1(01.05.2023.)	Indoor and other environments	Indoor air quality testing method - ES 02131.1g Determination of emission of volatile organic compounds and formaldehyde from building materials by small-scale emission test chamber method	TVOC: 0.001 mg/㎥·h and more Benzene: 0.001 mg/㎥·h and more Toluene: 0.001 mg/㎥·h and more Ethylbenzene: 0.001 mg/㎥·h and more Xylene: 0.001 mg/㎥·h and more Styrene: 0.001 mg/㎥·h and more Formaldehyde: 0.001 mg/㎥·h and more	BS	N
NIER Notice No.2023-1(01.05.2023.)	Indoor and other environments	Indoor air quality testing method - ES 02601.1e Determination of formaldehyde in indoor and emitted from building materials by 2,4-DNPH cartridge and high performance liquid chromatograph	1 μg/㎥ and more	BS	N
NIER Notice No.2023-1(01.05.2023.)	Indoor and other environments	Indoor air quality testing method - ES 02602.1f Determination of volatile organic compounds in indoor and emitted from building materials by sorbent tube and gas chromatograph using MS or FID	TVOC: 4 μg/㎥ and more Benzene: 4 μg/㎥ and more Toluene: 4 μg/㎥ and more Ethylbenzene: 4 μg/㎥ and more Xylene: 4 μg/㎥ and more Styrene: 4 μg/㎥ and more	BS	N

End.