No.531(1/4)

CERTIFICATE OF ACCREDITATION

Name of Laboratory : DOOSAN E&C

Representative : Choi, Jong Il

Address of Headquarters : Doosan Bldg, 105-7, Nonhyun-dong, Gangnam-Gu, Seoul, Korea

Address of Laboratory : 174-3, Dogok-dong, Gangnam-Gu, Seoul, Korea

Duration : August 14, 2012 ~ August 13, 2016

Scope of Accreditation
(Scope of Accreditation is described in the accompanying Annex)

This testing laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025 : 2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated 8 January 2009).

August 14, 2012

Seo Kwang Kyun

Administrator,
Korea Laboratory Accreditation Scheme(KOLAS)

2. Chemical Test

2.025 Other environment

Test method	Standard designation	Test range or Detection limit
KS I ISO 16000-3 : 2008	Indoor air-Part3 : Determination of formaldehyde and other carbonyl compounds-Active sampling method	1 μg/m³ ~ 1 mg/m³
KS I ISO 16000-6 : 2004	Indoor air-Part6 : 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/FID	1 μg/m³ or more
MOE Official Notice No. 2010-24	ES 02130 indoor air sampling and evaluation method	-
	ES 02601.1 determination of formaldehyde in indoor and emitted from building materials by 2,4-DNPH cartridge and high performance liquid chromatograph	1 μg/m³ ~ 1 mg/m³
	ES 02602.1 determination of volatile organic compounds in indoor and emitted from building materials by sorbent tube and gas chromatograph using MS/FID	1 μg/m³ or more

6. Sound and vibration test

6.001 Sound property

Test method	Standard designation	Test range or Detection limit
KS F 2809 : 2011	Field measurements of airborne sound insulation of buildings	(20~20 000) Hz
KS F 2810-1 : 2001	Field measurements of impact sound insulation of floors-Part 1 : Method using standard light impact source	(20~20 000) Hz
KS F 2810-2 : 2001	Field measurements of impact sound insulation of floors-Part 2 : Method using standard heavy impact sources	(20~20 000) Hz
KS F 2862 : 2002	Rating of airborne sound insulation in buildings and of building elements	(0~120) dB
KS F 2863-1 : 2002	Rating of floor impact sound insulation for impact source in buildings and building elements - Part 1 : Floor impact sound insulation against standard light impact source	(0~120) dB
KS F 2863-2 : 2007	Rating of floor impact sound insulation for impact source in buildings and building elements - Part 1 : Floor impact sound insulation against standard heavy impact source	(0~120) dB
ISO 140-4 : 1998	Acoustics-Measurement of sound insulation in buildings and of building elements- Part4 : Field measurements of airborne sound insulation between rooms	(20~20 000) Hz
ISO 140-5 : 1998	Acoustics-Measurement of sound insulation in buildings and of building elements- Part5 : Field measurements of airborne sound insulation of facade elements and facades	(20~20 000) Hz
ISO 140-7 : 1998	Acoustics-Measurement of sound insulation in buildings and of building elements- Part7 : Field measurements of impact sound insulation of floors	(20~20 000) Hz

6.001 Sound property(continuously)

Test method	Standard designation	Test range or Detection limit
ISO 717-2 : 1996	Acoustics-Rating of sound insulation in buildings and of building elements- Part2 : Impact sound insulation	(0~120) dB
JIS A 1418-1 : 2000	Acoustics-Measurement of floor impact sound insulation of buildings- Part 1 : Method using standard light impact source	(20~20 000) Hz
JIS A 1418-2 : 2000	Acoustics-Measurement of floor impact sound insulation of buildings- Part 2 : Method using standard heavy impact sources	(20~20 000) Hz

End.