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K-FLEX ST

K-FLEX



K-FLEX

L'ISOLANTE K-FLEX(SUZHOU) CO., LTD.
2728 North Linhu Avenue



K-FLEX ST

K-FLEX ST is closed-cell, flexible elastomeric foam use in thermal and acoustic applications. K-FLEX ST is an insulation with Factory Mutual Approved, Class "0" fire rating(based on BS476 Part 6 & 7), Anti-Microbial, Clean room approved eco-friendly, Formaldehyde-free, Green Guard Approved.

AMCO

제품소개 및 자재승인원



(주)엠코

AMCO

남양주공장_ 경기도 남양주시 오남읍 진건오남로 759번길 43
김해공장_ 경상남도 김해시 진례면 고모리 1579-7
평택공장_ 경기도 평택시 청북읍 삼계리 189-1
TEL_ 031)576-4904 / FAX_ 031)576-4903

(주)엠코

에어컨배관자재 선두 기업 - (주)엠코

일체형배관의 생산과 유통에 오랜 경험을 바탕으로
항상 최고의 품질을 고집해온 (주)엠코는

시공기간 단축과 시공비용 절감효과, 납기준수를 위한
적정재고 유지 등 고객의 다양한 요구에 대응한 주문생산으로
에어컨배관자재 생산기업으로 성장해 왔습니다.

일체형배관과 동관, 동접합알루미늄, 삼성전자 · LG전자전용
알루미늄, K-Flex 등 에어컨 배관에 필요한 모든 배관재를
생산 공급하는 기업으로 발전해 왔습니다.

고객 만족을 최우선으로 생각하고 품질에 최선을 다하여
고객의 성장과 함께하는 (주)엠코가 되겠습니다.

(주)엠코



" Make a clean tomorrow "

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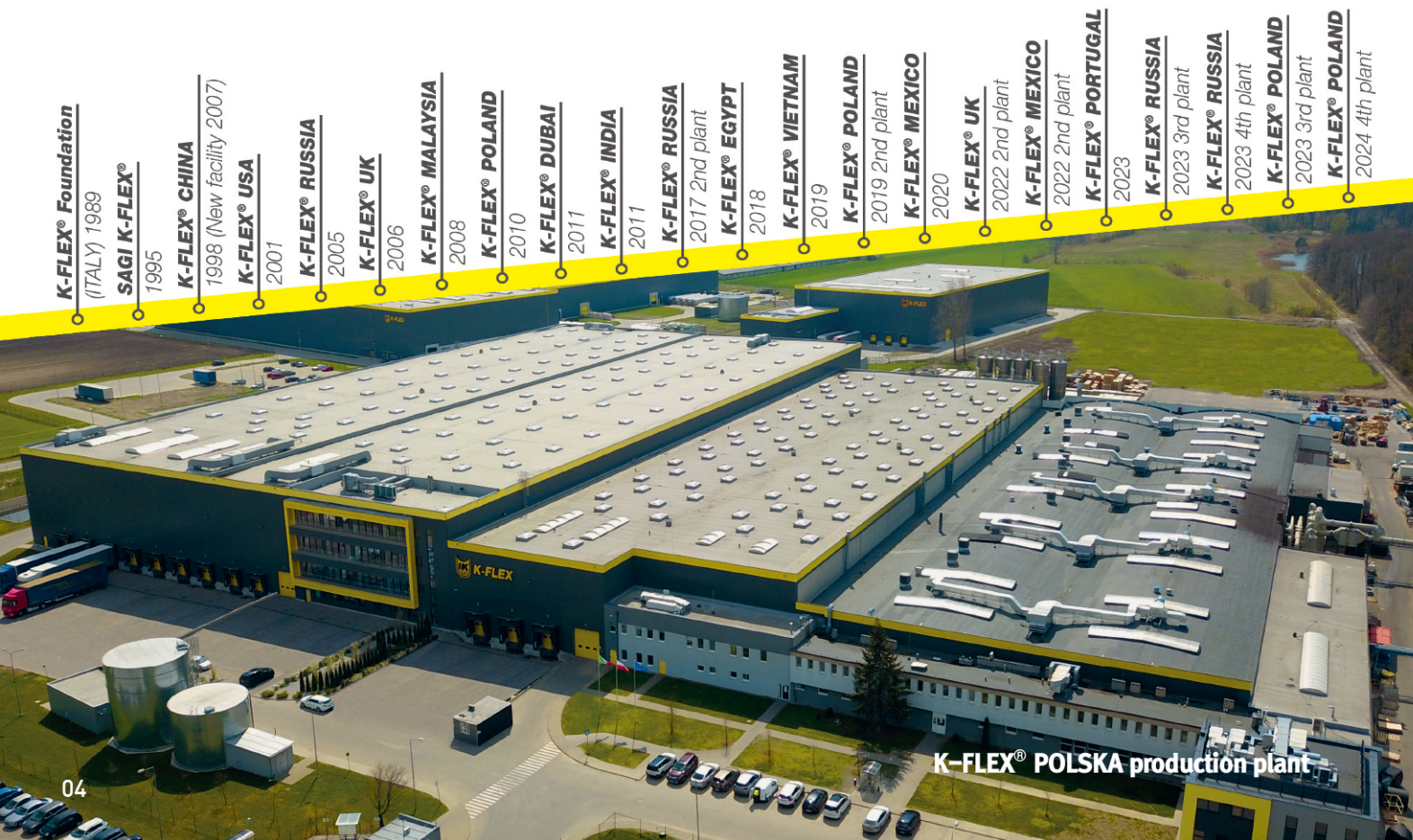
회사소개

K-FLEX®는 열 및 음향용 고무발포단열재 생산을 전문으로 하는 100% 이탈리아 회사입니다. K-FLEX®는 전 세계 고객들에게 제품을 공급하기 위해 글로벌 생산시설과 여러 자회사를 운영하고 있으며 다양한 제품군을 통해 건축, 운송, 석유화학, 신재생 에너지 등 여러 시장 부문에 솔루션을 제공하고 있습니다. K-FLEX®는 에너지 소비를 제어하고 온실가스 배출을 줄이는데 중요한 역할을 하며, 이를 통해 세계 시장에서 선도적인 위치를 차지하고 있습니다. K-FLEX®는 전 세계적으로 성공적인 이탈리아 기업의 대표적인 사례로, 63개국에 진출해 있으며 모든 대륙에 생산 시설과 3,000명 이상의 직원을 보유하고 있습니다. 또한, 효율적이고 효과적인 글로벌 제품 유통을 위해 전 세계에 상업적 유통지점을 운영하고 있습니다. 원래의 제조공장은 1989년에 설립된 이탈리아 밀라노 북부의 론첼로(Roncello)에 위치하고 있으며 UNI EN ISO 9001:2015 및 ISO 14001 인증을 받은 기업으로 품질, 신뢰성, 시장 표준 준수를 보장하는 다양한 제품군을 제공합니다. 또한, K-FLEX® 제품은 에너지 소비와 오염 물질 배출간의 관계를 개선하고, 에너지 소비를 제어하며 대기중 온실가스 배출을 줄임으로써 환경 보전에 매우 중요한 역할을 하고 있습니다.

" 30여년의 역사 _ 품질 및 전문성 그리고 열정의 대명사 "

역사

K-FLEX®는 1989년에 설립되어 30년 만에 세계에서 가장 주목할 만한 FEF 제조업체 중 하나로 자리 잡았습니다. 전 세계에 생산공장과 폭넓은 유통 네트워크를 보유한 K-FLEX®는 품질과 서비스 면에서 글로벌 명성을 쌓아왔으며, 모든 종류의 프로젝트 요구를 충족하기 위해 노력해 왔습니다. 역사적으로 K-FLEX®는 시장의 요구를 이해하며, 시장의 변화와 지역적 필요에 따라 제품군을 재구성해 왔습니다.



사업 영역

K-FLEX®는 절연재 시장에서 프로세스와 제품의 품질, 지속적인 혁신적 솔루션 탐구를 통해 탁월함의 기준점이 되고 있습니다. K-FLEX®는 다음과 같은 주요 시장의 요구를 충족하기 위해 폭넓은 제품군을 제공합니다.



단열재 생산 시장의 리더가 되어 고객과 시장의 특정 요구를 효과적으로 충족시키고, 첨단 기술 솔루션과 혁신적인 단열 시스템을 제공하는 것이 우리의 목표입니다.

물류 및 유통

K-FLEX®의 유연한 생산구조는 판매 예측에 따라 재고를 업데이트할 수 있게 해줍니다. 고객의 요청에 철저히 대응하는 것이 K-FLEX®의 강점 중 하나입니다. K-FLEX® 창고는 약 4,000가지 제품을 빠르게 처리하며, 전용 출고 구역은 인체공학적이고 체계적으로 설계되었습니다. 이 구역은 다양한 층과 리프트를 갖추어 팔레트 취급을 용이하게 합니다. 이를 통해 폴란드 공장 창고의 출고 구역은 하루 60대 이상의 완성된 트럭을 준비하고 로드할 수 있으며, 연간 52,000대 이상의 트럭 물량을 처리할 수 있습니다. K-FLEX®는 추가적인 국가 물류 센터를 통해 유럽 대부분 지역에 24시간 이내 배송할 수 있습니다.



글로벌 활동

K-FLEX®는 63개국 이상에 제품을 유통하고 있습니다. 사업 전략의 일환으로 K-FLEX®는 특히 신흥 지역에서 판매와 시장 점유율을 확대하기 위해 노력하고 있습니다. K-FLEX®의 국제 생산 네트워크는 빠르게 성장하는 단열재 시장에 대응하기 위한 것입니다. K-FLEX®는 노동 비용 절감을 위한 글로벌화 전략을 추구하지 않으며, 대신 지역 시장에 더 효율적으로 접근하기 위해 확장하고 있습니다. 단열재는 부피가 큰 제품으로 배송 비용이 가격에 큰 영향을 미치기 때문에 고객 근처에 생산 시설을 유지하고 운송 비용을 줄이는 것이 이 업계에서 중요한 전략적 요소입니다. 고객과 가까운 거리에 위치함으로써 K-FLEX®는 끊임없이 변화하는 글로벌 시장에서 유연하게 적응할 수 있습니다.

앞으로의 미래

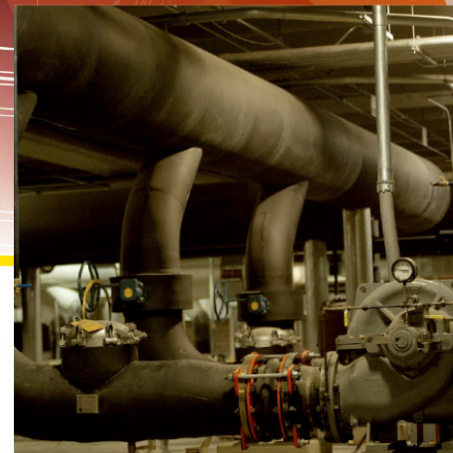
K-FLEX®는 아시아 태평양, 중동, 동유럽, 북미 등 고성장 신흥 시장에서 매력적인 성장 기회를 추구하며, 국제적인 입지를 활용해 시장 침투를 강화하는데 중점을 두고 있습니다. K-FLEX®는 주요 최종 시장에서 시장 점유율을 계속 확장하고, 이러한 시장에 맞춘 제품 제공을 개발하며, 전 세계 기존 및 신규 고객과의 관계를 강화하는 것을 목표로 삼았습니다.

- ▶ **1989** 이태리 창업 원년
- ▶ **63+** 세계 K-FLEX 자회사의 수
- ▶ **25** 영업사무소가 있는 나라의 수
- ▶ **21** 전세계 공장의 수
- ▶ **6,200+** 전세계 고용자의 수
- ▶ **50,000+** 전세계 사용자의 수

전세계적 유통을 위한 지역 센터



K-FLEX® ST



K-FLEX® ST

- ▶ 모든 건축 및 산업분야에 적합한 고무발포 단열재
- ▶ -165°C 에서 +110°C까지의 온도 범위에서 뛰어난 성능 제공
- ▶ 결로 위험을 방지하고 에너지 절약 효과 향상
- ▶ 화재반응 등급 : 유로클래스 B_L-s2, d0
- ▶ 매우 세밀한 밀폐된 셀 구조로 높은 기술적 성능 제공
- ▶ 곰팡이, 균류 및 박테리아에 대해 강함
- ▶ 가볍고 유연함

TECHNICAL DATA

K-FLEX® ST | 기술 데이터 (TECHNICAL DATA)

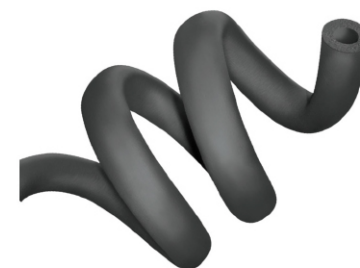
속성	값	시험방법
온도범위	K-FLEX® ST 튜브 : -165°C에서* 110°C까지 K-FLEX® ST 시트: -165°C에서* +85°C 까지	EN 14706
열전도율	두께 ≤ 25mm -20 °C = 0,031 0 °C = 0,033 +20 °C = 0,035 +40 °C = 0,037 두께 > 25mm -20 °C = 0,034 0 °C = 0,036 +20 °C = 0,038 +40 °C = 0,040	EN 12667 EN ISO 8497
부식방지	중성 pH(7)	EN 13468
투습저항성	K-FLEX® ST Tubes: 유럽등급B -s2, d0 K-FLEX® ST Sheets: 유럽등급B-s3, d0 Class 0	EN 13501-1 EN 13501-1 BS 476 Part 6/7
환경친화성	CFCs 및 HCFCs 무함유	
인증 및 승인	환경제품선언 (EPD) R1-HL2 ECO-BAU 및 MINERGIE-ECO 인증 CE-MARINE (Bureau Veritas) 인증 미국선급협회 (ABS) 인증 DNV 인증 Lloyd's Register 인증 UL94 인증 FM 승인	UNI ISO 14025 & EN 15804:2012+A2:2019 EN 45545-2: 2013

*산업용 적용 시, 제품은 최저 -198°C까지 사용 가능합니다. 단, -40°C 이하의 환경에서는 기술지원팀에게 문의하시기 바랍니다.
K-FLEX®는 사전 통보 없이 기술 데이터 및 제품 사양을 변경할 권리를 보유합니다.

K-FLEX® ST | 범위 (RANGE)

	길이	두께	직경
K-FLEX® ST - 튜브	2m	6-9-13-19-25-32-40-50-60 mm	6에서 210 mm 까지
	두께		높이
K-FLEX® ST - 시트	3-6-10-13-19-25-32-40-50-60 mm		1000/1500mm

제품 일반 정보



● K-FLEX® ST 튜브

K-FLEX® ST 제품은 건축 및 산업용 냉동·공조 시스템, 배관, 탱크 단열, 피팅, 수도관 및 기타 열 차단이 필요한 다양한 응용 분야의 요구 사항을 충족합니다.

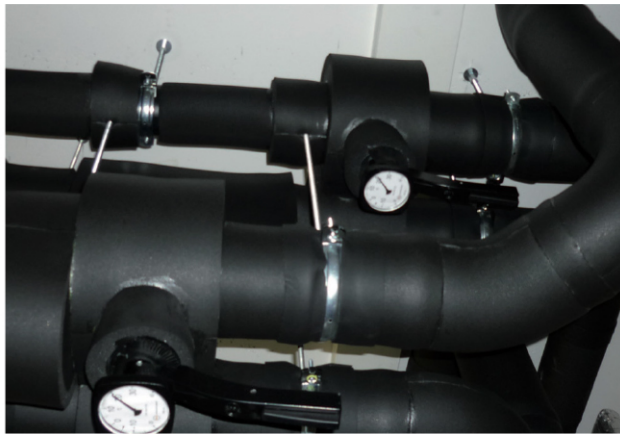


● K-FLEX® ST 시트

K-FLEX® ST 시트는 판금 덕트 및 대형 배관의 단열에 이상적입니다. 1,000mm 및 1,500mm 높이 옵션을 제공하여 코팅 분할을 최소화하고 설치를 간소화하며, 이를 통해 작업 시간과 인건비를 크게 절감할 수 있습니다. 표준형과 접착식 두 가지 옵션으로 제공됩니다.

PROJECTS

Germany



부자재

특징

고무발포 단열재 전용 본드는 시공이 간편하고 보관이 용이하며 테이프 제품은 접착력이 장기간 지속되어 내구성이 우수합니다.

규격

제품명	규격
본드	1kg / 통
난연 테이프	폭 30mm x 길이 50m
	폭 50mm x 길이 50m
	폭 75mm x 길이 50m
고무발포 테이프	폭 50mm x 두께 5m x 길이 10m
후렌지용 단열재	폭 200mm x 두께 6m x 길이 20m
	폭 250mm x 두께 6m x 길이 20m
	폭 200mm x 두께 9m x 길이 30m
	폭 250mm x 두께 9m x 길이 30m

* 비규격 제품과 색상은 영업사원과 합의하여 주시기 바랍니다.



PACKING

● 튜브 (2미터 박스당 길이) / 컬러 : 검은색, 파란색, 빨간색, 흰색, 녹색

호칭경(I.D.)		강관		등관	9mm		13mm		19mm		25mm		32mm		38mm		50mm	
mm	inch	A	inch	A	품명		품명	m	품명	m	품명	m	품명	m	품명	m	품명	m
6	1/4			6	09006	352	13006	180	19006	96	25006	60						
10	3/8			8	09010	266	13010	144	19010	84	25010	54						
12	1/2			10	09012	234	13012	128	19012	72	25012	50						
15	5/8			15	09015	192	13015	112	19015	72	25015	46						
18	3/4	10	3/8	18	09019	156	13019	98	19019	66	25019	44	32018	32	38018	18	50015	16
22	7/8	15	1/2	20	09022	136	13022	84	19022	60	25022	40	32022	24	38022	18	50022	12
25	1				09025	108	13025	80	19025	46	25025	32	32025	24	38025	16	50025	12
28	1-1/8	20	3/4	25	09028	100	13028	72	19028	46	25028	32	32028	24	38028	16	50028	12
32	1-1/4				09032	90	13032	60	19032	40	25032	30	32032	20	38032	12	50032	10
35	1-3/8	25	1	32	09035	76	13035	60	19035	36	25035	30	32035	20	38035	12	50035	10
38	1-1/2				09038	60	13038	56	19038	32	25038	30	32038	18	38038	12	50038	10
42	1-5/8	32	1-1/4	40	09042	60	13042	50	19042	32	25042	24	32042	18	38042	12	50042	10
45	1-3/4				09045	60	13045	46	19045	32	25045	24	32045	16	38045	12	50045	10
48	1-7/8	40	1-1/2		09048	50	13048	44	19048	30	25048	22	32048	16	38048	12	50048	8
50	2				09051	50	13051	40	19051	30	25051	20	32051	12	38051	12	50051	8
54	2-1/8			50	09054	46	13054	40	19054	30	25054	18	32054	12	38054	12	50054	8
60	2-3/8	50	2		09060	46	13060	36	19060	24	25060	16	32060	12	38060	12	50060	8
64	2-1/2				09064	46	13064	36	19064	24	25064	16	32064	12	38064	12	50064	8
67	2-5/8			65	09067	46	13067	36	19067	22	25067	16	32067	12	38067	12	50067	8
76	3	65	2-1/2		09076	40	13076	32	19076	22	25076	14	32076	12	38076	8	50076	6
80	3-1/8			80	09080	36	13080	30	19080	20	25080	12	32080	12	38080	8	50080	6
89	3-1/2	80	3		09089	36	13089	30	19089	19	25089	12	32089	12	38089	8	50089	6
105	4-1/8			100			13105	16	19105	16	25105	12	32105	8	38105	6	50105	4
114	4-1/2	100	4				13114	16	19114	14	25114	10	32114	8	38114	6	50114	4
133	5-1/8			125			13133	12	19133	12	25133	8	32133	8	38133	6	50133	4
140	5-1/2	125	5				13140	12	19140	12	25140	8	32140	8	38140	6	50140	4
160	6-1/8			150			13160	12	19160	10	25160	6	32160	4	38160	4	50160	4
168	6-1/2	150	6				13168	12	19168	10	25168	6	32168	4	38168	4	50168	4

Note : 길이 방향으로 배를 갈라서 공급하는 제품은 주문시 별도 협의 바랍니다. 168mm 이상 210mm는 주문 생산

● 롤쉬트 (1, 1.2, 1.4미터당 폭, 롤) / 컬러 : 검은색, 파란색, 빨간색, 녹색, 회색, 흰색

Code	Size	
	Thickness	Length
03	3 mm	60 m
06	6 mm	30 m
10	10 mm	20 m
13	13 mm	14 m
19	19 mm	10 m
25	25 mm	8 m
32	32 mm	6 m
38	38 mm	6 m
50	50 mm	4 m



Tube : W390 x H325 x L2,100 (0.27m³)



Sheet : W550 x H550 x L1,050 (0.32m³)

● 에어컨용 (10미터 박스당 수량) / 컬러 : 검은색, 파란색, 빨간색, 흰색, 녹색

Code	규격 mm	포장단위 EA/Box	수량 m/Box
09006 CTRS	6.35	8	80
09010 CTRS	9.52	6	60
09012 CTRS	12.70	5	50
09015 CTRS	15.88	4	40
09019 CTRS	19.05	4	40
13006 CTRS	6.35	5	50
13010 CTRS	9.52	4	40
13012 CTRS	12.70	4	40
13015 CTRS	15.88	3	30
13019 CTRS	19.05	3	30

Note : 에어컨 제품은 튜브 내부에 파우더가 흡착되어 있습니다.



CTR : W570 x H510 x L340 (0.10m³)

고무발포단열재 (K-FLEX) 보온공사 시방서

● 일반사항

본 시방은 배관, 덕트, 냉난방겸용 및 기기류의 결로방지, 동파방지 보온 및 보냉공사에 적용하며, 탄성계 합성고무 재질 (NBR)을 발포한 독립기포구조(Closed Cell Structure)로 단열성을 위해 질기지 않은 검은 색상의 부드러운 연질의 제품으로 한국산업표준 규격에 의한 KS인증 및 친환경표지 인 증을 득한 K-FLEX로 시공한다.

● 단열재와 보조재

1. 단열재의 사양

- 2.1.1. KS M 6962 : 2012에 의거 겉보기밀도 0.040g/cm³이상
- 2.1.2. KS M 6962 : 2012에 의거 열전도율 0.035W/m·K at 20°C이하
- 2.1.3. KS M 6962 : 2012에 의거 수증기 투습계수 6ng/m²·s·Pa이하
- 2.1.4. KS M 6962 : 2012에 의거 포름알데히드방산량 0.3 HCHO(mg/L)이하
- 2.1.5. KS M 6962 : 2012에 의거 치수안정성(길이변형율) 가로,세로 각 7% 이하
- 2.1.6. KS M 6962 : 2012에 의거 흡수량 1.0g / 100cm²이하
- 2.1.7. KS M 6962 : 2012에 의거 압축변형률[압축 50%,22hr,23 °C]30%이하
- 2.1.7. KS M 6962 : 2012에 의거 산소지수 28LOI 이상

2. 단열재의 검사

상기 조건들을 만족하는 고무발포단열재를 사용해야 한다.

3. 단열재에 사용되는 외장재,보강재는 반드시 난연성 재료를 선정하고, 단열재는 다음 사항을 표시해야 한다.

- ① **단열통 및 단열판** 상기 단열재의 검사조건에 만족하는 것으로 제품명(K-FLEX ST)이 반드시 표시되어 있는 튜브 (150A이하), 매트형 제품.
- ② **접착제** 819K 흑색접착제를 사용한다.
- ③ **외부마감재** 외부마감재가 필요없으며 배관종류별로 식별을 위해 2M간격으로 점착처리 되어진 50mm폭 해당 색상 따로 각각 마감한다. 옥외 시공시 직사광선 및 악천후에 의한 변질을 고려하여 UV차단 커버나 UV차단 페인트 칠로 마감한다.



옥외탱크



급탕탱크

시공방법

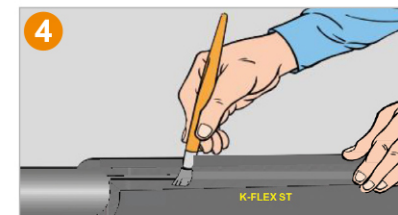
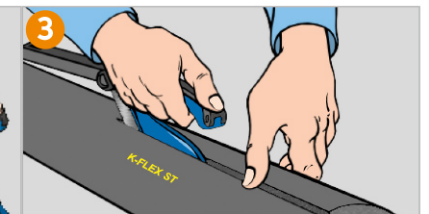
● FITTED PIPES



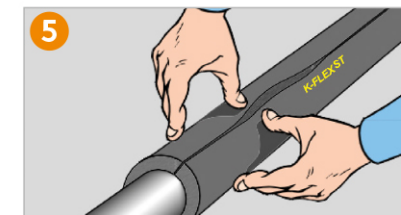
절단을 위해 날카로운 칼을 사용하여 다음 접착을 훨씬 쉽게 합니다. 세로 절단에 이상적인 K-FLEX 커터를 사용할 것을 추천합니다.



커터 사용은 이 두가지 도식으로 표시됩니다. 깔끔하고 정돈된 면을 얻기 위해 톨의 터칭없이 튜브를 따라서 절단합니다.

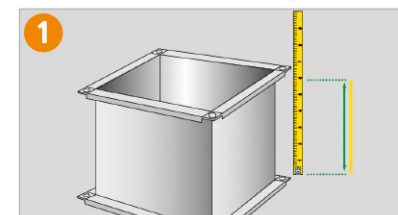


가장자리가 분리되게 튜브를 위치 시키고 본드를 평평한 면에 적용합니다.



본드가 건조되면 튜브를 융합하여 가장자리에 힘을 주어 단단하게 고정합니다.

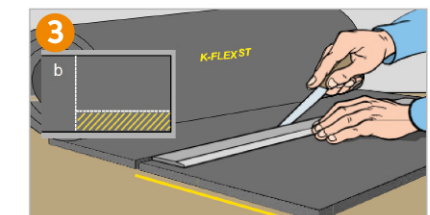
● INSULATION DUCTINGS



K-FLEX ST ROLL SHEET를 덕트에 사용함에 있어 중요한 장점은 시트와 같은 높이라는 것입니다. 둘러쌀 배관 덕트 부위 치수를 측정합니다.



시공할 면을 철저히 깨끗하게 하기 위해 K-FLEX 희석제를 사용하십시오. 이물질이나 기타 다른 흠이 있는 곳에는 시트의 완벽한 접착을 방해할 수 있으니 추천드리지 않습니다.



롤에서 재단을 원하는 부분 만큼 절단하세요.



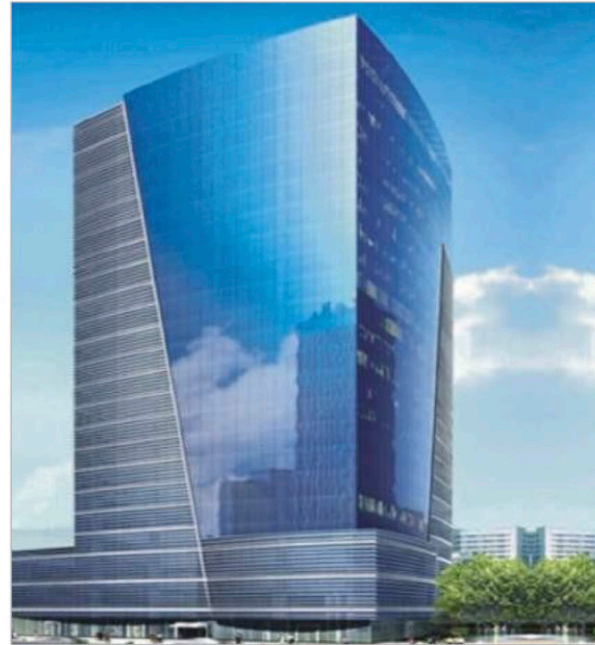
배관에 접착할 시트에 본드를 칠하고 배관면에도 접착합니다. 그리고 나서 시트를 코너에 팽팽하게 당겨 고정합니다.



가장 자리에 접착 보온 테이프로 덮습니다.



● 롯데월드타워



● S-OIL 마포사옥



● 판교테크노밸리 산학연 R&D 센터



● 수원 CJ Onlyone R&D 센터



● 판교 현대백화점



● 오송생명과학단지

판매시설

- 판교 현대백화점
- 일산 킨텍스 이마트
- 김포 현대프리미엄아울렛
- 포항 롯데마트
- 김천 롯데마트
- 의정부 이마트
- 남양주 별내 아파트

산업연구시설

- 판교테크노밸리 산학연 R&D 센터
- 수원 CJ Onlyone R&D 센터
- 현대자동차 남양주연구소
- 판교 SK 케미컬 연구소
- 안성일동제약
- 제천보람제약
- 충주동화약품

복합건물

- 강릉 경포대 현대호텔
- 동부산 복합쇼핑몰
- 서울 마포 도화동비즈니스호텔
- 마산 메트로시티
- 울산 롯데호텔
- 신도림 디큐브시티
- 서울 광화문 D타워



● 부산선급사옥



● 서울시청사



● 정부청사 1단계 2구역

공공시설

- 과천C지역 군부대 병영시설
- 대통령기록관
- 부산 과학관 신축
- 백두대간 현장
- 인천 한국은행 인재개발원
- 서울 동대문 디자인센터
- 서울 시청사
- 성남 미군부대 청계산 현장
- 제주 항공우주박물관
- 서울시 역사박물관
- 서울 전경련 회관
- 서울 세종문화회관 예술동
- 세종시 국무총리공관
- 서울검찰청 신관 증축

기타

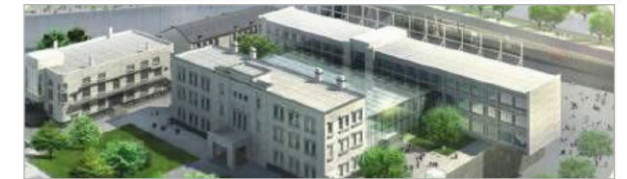
- 연세대 암센터
- 여수 YNCC#3 공장
- 강릉 아산병원
- 판교 SK가스 사옥
- 인천 교보생명 사옥
- 상암동 YTN 사옥
- 분당 NHN 사옥



● 동대문 디자인플라자



● 동남권유통단지



● 국립아시아문화전당



● 신도림 디큐브시티

공장등록증 / 영업 허가서



营业执照

(副本)

统一社会信用代码
91320509664940003L (1/1)

编号 320584000202310170004



扫描二维码登录“国家企业信用信息公示系统”了解更多登记、备案、许可、监管信息。

名称 力索兰特(苏州)绝热材料有限公司

类型 有限责任公司(外国法人独资)

法定代表人 卡洛·史宾内利 (Carlo Spinelli)

经营范围 新型建筑材料(高效保温材料)的生产,本公司自产品的销售;从事建筑装饰材料、化工材料、塑料五金制品的佣金代理服务(不含拍卖);自营和代理各类商品及技术的进出口业务(国家限定企业经营或禁止进出口的商品和技术除外)。(依法须经批准的项目,经相关部门批准后方可开展经营活动)

一般项目:保温材料销售;建筑装饰材料销售;化工产品销售(不含许可类化工产品);塑料制品销售;五金产品零售;橡胶加工专用设备销售;塑料加工专用设备销售(除依法须经批准的项目外,凭营业执照依法自主开展经营活动)

注册资本 1600万欧元

成立日期 2007年08月16日

住所 江苏省汾湖高新技术产业开发区临沪大道北侧

登记机关




2023年10月17日

国家企业信用信息公示系统网址: <http://www.gsxt.gov.cn>


市场主体应当于每年1月1日至6月30日通过国家企业信用信息公示系统报送公示年度报告。

国家市场监督管理总局监制

<p>Unified Social Credit Code: 91320509664940003L (1/1)</p>	<p>Business License (Duplicate)</p>	<p>License No: 320584000202310170004</p>  <p style="font-size: 8px;">Scan QR code to log in Website of Corporate Credit Information Notice System to learn more information of registration, record, licensing and supervision</p>
<p>Company Name: L'ISOLANTE K-FLEX (SUZHOU) Co., Ltd</p> <p>Type of Company: Limited Liability Company (wholly owned by foreign legal person)</p> <p>Legal Representative: Carlo Spinelli</p> <p>Scope of Business: Production of new building materials (high efficiency insulation materials), sales of our company's self-produced products; Engaged in commission agency services for building decoration materials, chemical materials, plastic hardware products (excluding auction); Import and export business of various commodities and technologies through self operation and agency (except commodities and technologies whose import and export are restricted or prohibited by the State). (Projects subject to approval according to law can only be carried out after approval by relevant departments.)</p> <p>General items: Sales of thermal insulation materials; Sales of building decoration materials; Sales of chemical products (excluding licensed chemical products); Sales of plastic products; Retail of hardware products; Sales of special equipment for rubber processing; Sales of special equipment for plastic processing (except for items subject to approval according to law, independently carry out business activities according to law with business licenses)</p> <p>National enterprise credit information publication system website: http://www.gsxt.gov.cn</p>	<p>Registered Capital: Euro 16,000,000</p> <p>Date of Establishment: August 16, 2007</p> <p>Address: North Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Jiangsu Province</p>	<p>Registration Authority:</p> <div style="border: 1px solid red; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <p style="color: red; font-size: 10px;">Suzhou Wujiang District Market Supervision and Administration Bureau</p> </div> <p style="text-align: right;">Date: October 17, 2023</p> <p style="text-align: center;">Made under the supervision of State Administration for Market Regulation</p>


Market entities shall submit their annual reports for public disclosure through the National Enterprise Credit Information Publication System from January 1st to June 30th each year.

제품인증서



Certificate

인증번호 : 제 12-1435 호



제품인증서

1. 제조업체명 : 역색난특(소주)절연재료유한공사
2. 대표자명 : 구찰스
3. 공장소재지 : 중국 강소성 오강분호경제개발구 임호대로 북측
4. 인증제품 :

가. 표준명 : 고무 발포 단열재

나. 표준번호 : KS M 6962

다. 종류·등급·호칭 또는 모델 : 1종 '골'.

「산업표준화법」 제17조 제1항에 따른 인증심사를 실시한 결과 한국 산업표준(KS)과 인증심사기준에 적합하므로, 「산업표준화법」 제15조 및 같은 법 시행규칙 제10조 제1항에 따라 위와 같이 한국산업표준(KS)에 적합함을 인증합니다.

2024년 09월 11일



한국표준협회장

원본대조필



1. 최초 인증일 : 2012-08-08
2. 차기심사 완료기한 : 2027-09-18
3. 최종 변경일 : 2024-09-11 정기 심사 합격

환경인증서

제 31973 호

환경표지 인증서

- 상 호 : L'ISOLANTE K-FLEX (SUZHOU) CO., LTD
- 사 업 자 등 록 번 호 : 913-32-05096
- 소 재 지 : North Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Wujiang District, Jiangsu Province, P.R. China
- 공 장 · 사 업 장 소 재 지 : North Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Wujiang District, Jiangsu Province, P.R. China
- 대 표 자 성 명 : Carlo Spinelli
- 대 상 제 품 : EL243. 보온·단열재
- 상표명/용도·제공서비스 : 별첨이기
- 인 증 기 간 : 2024.11.11 부터 2027.11.10 까지
- 인 증 사 유 : "자원순환성 향상, 에너지 절약, 지구 환경오염 감소, 유해물질 감소"

「환경기술 및 환경산업 지원법」 제17조제3항, 같은 법 시행령 제23조제2항 및 같은 법 시행규칙 제34조제2항에 따라 환경표지대상제품의 인증기준에 적합하므로 환경표지의 사용을 인증합니다.

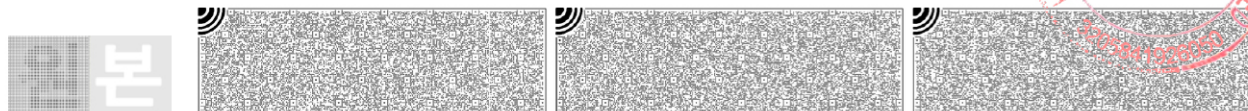
※ 최초 교부 : 2024.11.11

2024년 11월 12일

한국환경산업기술원장

※ 한국환경산업기술원은 「환경기술 및 환경산업 지원법」 제31조제2항 및 같은 법 시행령 제33조제8항에 따라 환경부장관으로부터 환경표지 인증에 관한 업무를 위탁받은 기관입니다.

원본대조필



UL Certificate

UL Product iQ®



Note: In the process of enhancing our systems, we are transitioning data to a new PiQ data view. This data is being verified with the "Historical" view for accuracy. Once the data is confirmed, the "Historical" view will be discontinued. During this transition, you may encounter duplicate entries or missing/outdated data. For queries during this interim period, please visit our [Historical View FAQs](#) or contact our [Customer Service](#).

Miscellaneous Insulating, Ceramic, Metallic and Conducting Materials - Component

COMPANY

L'Isolante K-Flex SpA
Via Don Locatelli, 35
RONCELLO, MB 20877 Italy

E186565

Mtl Dsg	Color	Min Thk (mm)	Overall Thk (mm)	Metal Thk (mm)	No. Conductors	No. Layers	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	GWIT	GWFI	CTI
Nitrile Rubber (NBR) "K-Fonik" furnished as sheets															
K-FLEX K-FONIK OPEN CELL 240	BK	3.0	-	-	-	-	V-0, 5VA	-	-	50	50	50	-	-	-
Nitrile Rubber (NBR) foam "K-Flex" furnished as sheets, tubes															
EC, ST, FRIGO	BK	2.4	-	-	-	-	V-0, 5VA	-	-	50	50	50	-	-	-
		12.2	-	-	-	-	V-0, 5VA	-	-	50	50	50	-	-	-

Mtl Dsg	Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	GWIT	GWFI	CTI
ECO [density range: 56-72 kg/m³]	GN	9.0-9.9	V-0, 5VA	-	-	50	50	50	-	-	-
	BK	9.0-9.9	V-0, 5VB	-	-	50	50	50	-	-	-

원본대조필

Marking: Company name, material designation On container, wrapper Or finished part.

Last Updated on 2022-07-22

FM APPROVED




Certificate of Compliance

This certificate is issued for the following:

K-Flex ST, K-Flex ST SA, K-Flex Class 1 and K-Flex Class 1 SA Pipe and Duct Insulation

Prepared for:

L'Isolante K-Flex (Suzhou) Co Ltd
North Linhu Ave, FOHO Economic Devel Zone
Wujiang, Jiangsu 215211
China

FM Approvals Class: 4924

Approval Identification: PR448930 Approval Granted: 22 February 2018

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.



Richard P. Ferron
VP - Manager of Testing and
Certification Services
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



원본대조필

ISO 14001

Certificate CN14/30178

The management system of

L'ISOLANTE K-FLEX (Suzhou) Co., Ltd.

Unified Social Credit Code: 91320509664940003L
Business Registration Address: North Linhu Avenue, FoHo Hi-Tech Industrial Development Zone, Jiangsu Province, P.R. China
Business Operation Address: North Linhu Avenue, FoHo Hi-Tech Industrial Development Zone, Jiangsu Province, P.R. China


has been assessed and certified as meeting the requirements of

ISO 14001:2015

For the following activities


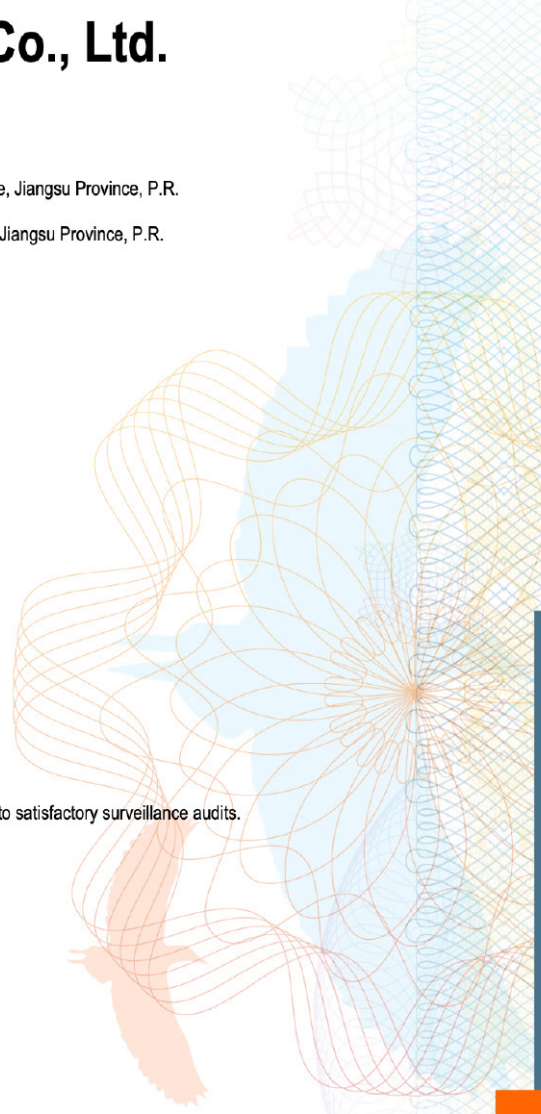
Manufacture of performed flexible elastomeric cellular thermal insulation



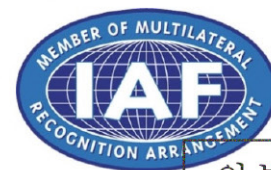
This certificate is valid from 15 February 2023 until 14 February 2026 and remains valid subject to satisfactory surveillance audits.
Issue 5. Certified since 14 February 2014




Authorised by
Jonathan Hall
Global Head - Certification Services

SGS United Kingdom Ltd
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
t +44 (0)151 350-6666 - www.sgs.com

원본대조필



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Page 1 of 1

ISO 45001

ISO 9001



CERTIFICATE OF REGISTRATION

This is to certify that the management system of:

L'ISOLANTE K-FLEX (SUZHOU) CO., LTD.

Registered Address: North Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Jiangsu Province, P. R. China
Production Address: 2728 Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Wujiang District, Suzhou City, Jiangsu Province, P. R. China

has been registered by Intertek as conforming to the requirements of:

ISO 45001:2018

The management system is applicable to:

Manufacturing of flexible foam rubber insulation products.

Unified Social Credit Identifier:
91320509664940003L

Certificate Number:
05131912018

Initial Certification Date:
12 February 2020

Date of Certification Decision:
17 January 2023

Issuing Date:
17 January 2023

Valid Until:
11 February 2026



Calin Moldovean

Calin Moldovean
President, Business Assurance

Intertek Certification Limited, 10A Victory
Park, Victory Road, Derby DE24 8ZF, United
Kingdom

Intertek Certification Limited is a
UKAS accredited body under
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The annual validity of the certificate can also be checked through the website <http://www.cnca.gov.cn> of CNCA in China.



Certificate CN10/30122

The management system of

L'ISOLANTE K-FLEX (Suzhou) Co., Ltd.

Unified Social Credit Code: 91320509664940003L
Business Registration Address: North Linhu Avenue, FoHo Hi-Tech Industrial Development Zone, Jiangsu Province, P.R. China
Business Operation Address: North Linhu Avenue, FoHo Hi-Tech Industrial Development Zone, Jiangsu Province, P.R. China

has been assessed and certified as meeting the requirements of
ISO 9001:2015

For the following activities

Manufacture of performed flexible elastomeric cellular thermal insulation; Sales and technical services for Glass wool

This certificate is valid from 09 January 2024 until 03 February 2025 and remains valid subject to satisfactory surveillance audits.
Issue 7. Certified since 04 February 2010

Jonathan M. Hall

Authorised by
Jonathan Hall
Global Head - Certification Services

SGS United Kingdom Ltd
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
t +44 (0)151 350-6666 - www.sgs.com

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Page 1 of 1

GREENGUARD Certification K-FLEX ST 50891-410

GREENGUARD Gold Certification K-FLEX ST 50891-420

CERTIFICATE
OF COMPLIANCE

CERTIFICATE
OF COMPLIANCE



PRODUCT CERTIFIED FOR
LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

L'isolante K-Flex(
Suzhou) Co. Ltd.

K-Flex® ST Sheet S2S

50891-410
Certificate Number

24 Sep 2007 - 24 Sep 2025
Certificate Period

Certified
Status

50891-420
Certificate Number

24 Sep 2007 - 24 Sep 2025
Certificate Period

Certified
Status

UL 2818 - 2022 Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

UL 2818 - 2022 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Building materials are determined compliant in accordance with an Office environment with an air change of 0.68 hr⁻¹ and a loading of 1.00 Unit.
Products tested in accordance with UL 2821 test method to show compliance to emission limits in UL 2818, Section 7.1.

Building products and interior finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.2-2017 using an Office Environment.
Product tested in accordance with UL 2821 test method to show compliance to emission limits on UL 2818, Section 7.1 and 7.2.



UL Investigated representative samples of the identified Product(s) to the identified Standard(s) or other requirements in accordance with the agreements and any applicable program service terms in place between UL and the Certificate Holder (collectively "Agreement"). The Certificate Holder is authorized to use the UL Mark for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. This Certificate is valid for the identified dates unless there is non-compliance with the Agreement.



UL Investigated representative samples of the identified Product(s) to the identified Standard(s) or other requirements in accordance with the agreements and any applicable program service terms in place between UL and the Certificate Holder (collectively "Agreement"). The Certificate Holder is authorized to use the UL Mark for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. This Certificate is valid for the identified dates unless there is non-compliance with the Agreement.

GREENGUARD Certification Criteria for Building Products and Interior Finishes

GREENGUARD Gold Certification Criteria for Building Products and Interior Finishes

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC ^(A)	-	0.50	mg/m ³
Formaldehyde	50-00-0	61.3 (50 ppb)	µg/m ³
Total Aldehydes ^(B)	-	0.10	ppm
Particle Matter less than 10 µm ^(C)	-	50	µg/m ³
4-Phenylcyclohexene	4994-16-5	6.5	µg/m ³
Individual VOCs ^(D)	-	1/10th TLV	-

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC ^(A)	-	0.22	mg/m ³
Formaldehyde	50-00-0	9 (7.3 ppb)	µg/m ³
Total Aldehydes ^(B)	-	0.043	ppm
4-Phenylcyclohexene	4994-16-5	6.5	µg/m ³
Particle Matter less than 10 µm ^(C)	-	20	µg/m ³
1-Methyl-2-pyrrolidinone ^(D)	872-50-4	160	µg/m ³
Individual VOCs ^(E)	-	1/2 CREL or 1/100th TLV	-

- (A) Defined to be the total response of measured VOCs falling within the C₆-C₁₆ range, with responses calibrated to a toluene surrogate. Maximum allowable predicted TVOC concentrations for GREENGUARD (0.50 mg/m³) fall in the range of 0.5 mg/m³ or less, as specified in CDPH Standard Method v1.2.
- (B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.
- (C) Particle emission requirement only applicable to HVAC Duct Products with exposed surface area in air streams (a forced air test with specific test method) and for wood finishing (sanding) systems.
- (D) Allowable levels for chemicals not listed are derived from 1/10th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).
- (A) Defined to be the total response of measured VOCs falling within the C₆-C₁₆ range, with responses calibrated to a toluene surrogate. Maximum allowable predicted TVOC concentrations for GREENGUARD Gold (0.22 mg/m³) fall in the range of 0.5 mg/m³ or less, as specified in CDPH Standard Method v1.2.
- (B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.
- (C) Particle emission requirement only applicable to HVAC Duct Products with exposed surface area in air streams (a forced air test with specific test method) and for wood finishing (sanding) systems.
- (D) Based on the CA Prop 65 Maximum Allowable Dose Level for inhalation of 3,200 µg/day and an inhalation rate of 20 m³/day
- (E) Allowable levels for chemicals not listed are derived from the lower of 1/2 the California Office of Environmental Health Hazard Assessment (OEHA) Chronic Reference Exposure Level (CREL) as required per the CDPH/EHLB/Standard Method v1.2 and BIFMA level credit 7.6.2 and 1/100th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).



UL Investigated representative samples of the identified Product(s) to the identified Standard(s) or other requirements in accordance with the agreements and any applicable program service terms in place between UL and the Certificate Holder (collectively "Agreement"). The Certificate Holder is authorized to use the UL Mark for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. This Certificate is valid for the identified dates unless there is non-compliance with the Agreement.



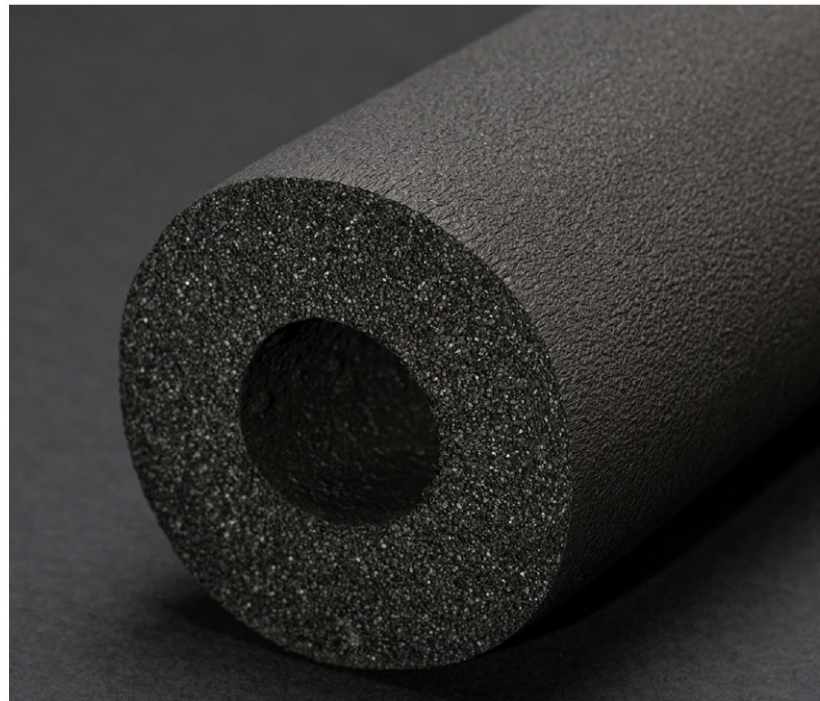
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EPD K-FLEX Pipe Insulation

ENVIRONMENTAL PRODUCT DECLARATION

K-FLEX ST, K-FLEX EC, K-FLEX SOLAR HT,
K-FLEX TITAN, M-FLEX, K-FLEX K-PROTECT,
INSULSHEET / INSULTUBE, K-FLEX CLASS 1,
FRIGO, K-FLEX ECO

K-FLEX PIPE INSULATION FOR PRODUCTS INDUSTRIAL AND BUILDING INSTALLATION



원본대조필



Environmental protection is one of the main pillars of corporate philosophy in K-FLEX. It is an integral part of the business strategy and ranks equally with other company objectives.

K-FLEX practices active environmental protection throughout the company. To efficiently utilize resources, we are constantly searching for ways to reduce raw material use, energy consumption and waste.

The environmental policy obliges all K-FLEX employees worldwide to aim to protect the environment and conserve natural resources.

For more information visit:
<https://corporate.kflex.com>
www.kflex.cn
<https://kflex.com.my>
<https://kflex.com.vn>



ENVIRONMENTAL PRODUCT DECLARATION



K-FLEX ST, K-FLEX EC, K-FLEX SOLAR HT, K-FLEX TITAN, M-FLEX, K-FLEX
K-PROTECT, INSULSHEET / INSULTUBE, K-FLEX CLASS 1, FRIGO, K-FLEX ECO



According to ISO 14025,
EN 15804 and ISO 21930:2017

1.2.2 Product Specification

Table 1 presents technical data of pipe insulation products from gross density to fire resistance rate while the Figure 2 illustrates involving stages of products life cycle through a flow diagram.

Table 1: Technical data of K-FLEX pipe insulation products

PARAMETER	UNIT	K-FLEX ST	K-FLEX EC	K-FLEX SOLAR HT	K-FLEX TITAN	M-FLEX	K-FLEX K-PROTECT	INSULSHEET / INSULTUBE	K-FLEX CLASS 1	FRIGO	K-FLEX ECO
Gross density	kg/m ³	45~90	45~90	45~90	45~90	45~90	30 (Foam only)	45~90	45~90	45~90	45~90
Water vapor diffusion resistance factor	-	m>10,000	m>7,000	Water absorption: <0.1%	m>10,000	m>7,000	m>20,000	m>10,000	m>10,000	m>7,500	m>3,000
Thermal conductivity @ 0 °C	W/(m.k)	0.032	0.034	0.04	0.032	0.036	0.032 (20C)	0.032	0.035	0.034	0.038
Minimum service temperature	°C	-200	-45	-40	-57	-45	-40	-200	-50	-40	-200
Maximum service temperature	°C	116	116	150	104	105	115	116	105	105	150
Fire resistance rating		1) BS476 CLASS 0 2) FM Approved 3) ASTM E84: 25/30 4) GB8624 Class B1 5) DNV IMO Certified	1) BS476 CLASS 1 2) UL94: V0, 5VA 3) BOMBA CLASS 0	1) Euro Class E 2) BS476 CLASS 0	1) BS476 CLASS 0 2) ASTM E84: 25/50 3) UL 94: HF-1, V-0, 5VA	1) BS476 CLASS 0 2) UL 94 HF-1, V-0, 5VA	1) FM Approved 2) BS476 CLASS 0 3) ASTM E84: 25/50	1) FM Approved 2) BS476 CLASS 0	1) GB8624 Class 1	1) CB8624 Not lower than Class C	1) BS476 CLASS 1 2) Euro Class E

Environment

| 2 |

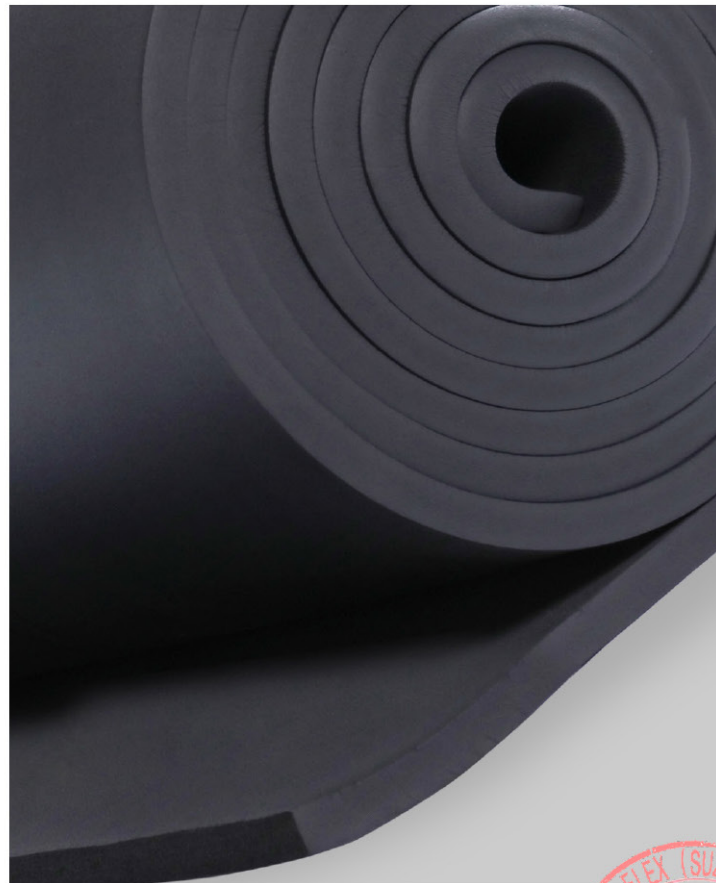


EPD K-FLEX Sheet Insulation

ENVIRONMENTAL PRODUCT DECLARATION

K-FLEX ST, K-FLEX EC, K-FLEX K-FONIK OPEN CELL 240, K-FLEX SOLAR HT, M-FLEX, K-FLEX K-PROTECT, INSULSHEET / INSULTUBE, K-FLEX CLASS 1, FRIGO, K-FLEX ECO

K-FLEX SHEET INSULATION FOR PRODUCTS INDUSTRIAL AND BUILDING INSTALLATION



Environmental protection is one of the main pillars of corporate philosophy in K-FLEX. It is an integral part of the business strategy and ranks equally with other company objectives.

K-FLEX practices active environmental protection throughout the company. To efficiently utilize resources, we are constantly searching for ways to reduce raw material use, energy consumption and waste.

The environmental policy obliges all K-FLEX employees worldwide to aim to protect the environment and conserve natural resources.

For more information visit:
<https://corporate.kflex.com>
www.kflex.cn
<https://kflex.com.my>
<https://kflex.com.vn>



원본대조필



ENVIRONMENTAL PRODUCT DECLARATION



K-FLEX ST, K-FLEX EC, K-FLEX K-FONIK OPEN CELL 240, K-FLEX SOLAR HT, M-FLEX, K-FLEX K-PROTECT, INSULSHEET / INSULTUBE, K-FLEX CLASS 1, FRIGO, K-FLEX ECO



According to ISO 14025,
EN 15804 and ISO 21930:2017

1.2.2 Product Specification

Table 1 presents technical data of non-pipe insulation products from gross density to fire resistance rate while the Figure 2 illustrates involving stages of products life cycle through a flow diagram.

Table 1: Technical data of K-FLEX non-pipe insulation products

PARAMETER	UNIT	K-FLEX ST	K-FLEX EC	K-FLEX K-FONIK OPEN CELL 240	K-FLEX SOLAR HT	M-FLEX	K-FLEX K-PROTECT	INSULSHEET / INSULTUBE	K-FLEX CLASS 1	FRIGO	K-FLEX ECO
Gross density	kg/m ³	45~90	45~90	240	45~90	45~90	30 (Foam only)	45~90	45~90	45~90	45~90
Water vapor diffusion resistance factor	-	m>10,000	m>7,000	m>20,000	Water absorption: <0.1%	m>7,000	m>20,000	m>10,000	m>10,000	m>7,500	m>3,000
Thermal conductivity @ 0 °C	W/(m.k)	0.032	0.034	0.058	0.04	0.036	0.032 (20C)	0.032	0.035	0.034	0.038
Minimum service temperature	°C	-200	-45	-40	-40	-45	-40	-200	-50	-40	-200
Maximum service temperature	°C	116	116	85	150	105	115	116	105	105	150
Fire resistance rating		1) BS476 CLASS 0 2) FM Approved 3) ASTM E84: 25/30 4) GB8624 Class B1 5) DNV IMO Certified	1) BS476 CLASS 1 2) UL94: V0, 5VA 3) BOMBA CLASS 0	1) BS476 CLASS 1 2) EN13501-1: C, s3, d0	1) Euro Class E 2) BS476 CLASS 0	1) BS476 CLASS 0 2) UL 94 HF-1, V-0, 5VA	1) FM Approved 2) BS476 CLASS 0 3) ASTM E84: 25/50	1) FM Approved 2) BS476 CLASS 0	1) GB8624 Class 1	1) CB8624 Not lower than Class C	1) BS476 CLASS 1 2) Euro Class E

원본대조필



Environment

| 2 |



K-FLEX KS M 6962 25mm



시험성적서



- 성 적 서 번 호 : CT24-037824K
- 의뢰자
 - 업체명 : L'ISOLANTE K-FLEX(SUZHOU)CO.,LTD
 - 주소 : 2728 NORTH LIN HU AVENUE, FOHO HI-TECH INDUSTRIAL DEVELOPMENT ZONE, WUJIANG, JIANGSU PROVINCE, P.R.CHINA 215211
- 시험기간 : 2024년 04월 16일 ~ 2024년 06월 25일
- 시험성적서의 용도 : 품질관리용
- 시료명 : RUBBER SHEET INSULATION(25 mmTK SHEET)
- 시험방법
 - (1) KS M 6962:2012

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2024년 06월 25일

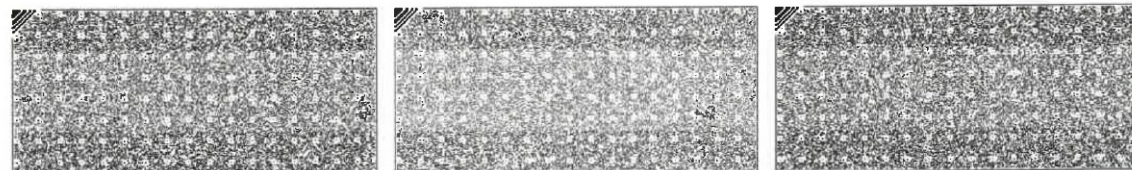
한국인정기구 인정 한국건설생활환경시험연구원장



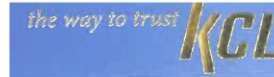
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총 2페이지 중 1페이지

양식TOP-12-01-01(1)



K-FLEX KS M 6962 25mm



시험성적서



성적서번호 : CT24-037824K

7. 시험결과

1) RUBBER SHEET INSULATION(25 mmTK SHEET)

시험항목	단위	시험방법	시험결과	비고	시험장소
치수(두께)	mm	(1)	26.9	-	A
겉보기 밀도	g/cm³	(1)	0.042		
열전도율[평균온도 : 20 °C]	W/(m·K)	(1)	0.033		
흡수량	g/100cm²	(1)	0.1		
치수안정성(길이변화율)가로방향[70 °C, 48시간]	%	(1)	1.40		
치수안정성(길이변화율)세로방향[70 °C, 48시간]	%	(1)	1.00		
압축 변형률[압축 50 %, 22 hr, 23 °C]	%	(1)	15		
√폼알데하이드 방출량 - 평균값	mg/L	(1)	불검출(정량한계 0.05)	(23 ± 2) °C (50 ± 5) % R.H.	B
산소지수	%	(1)	40.0		A

"√" 표시항목은 당 시험연구원의 KOLAS 인정범위 밖의 항목입니다.

※ 시험장소

A : 충청북도 청주시 청원구 오창읍 양청3길 73

B : 인천광역시 남동구 당항로 85

— 끝 —

원본대조필



총 2페이지 중 2페이지

양식TOP-12-01-01(1)



K-FLEX KS M 6962 19mm



시험성적서



- 성적서 번호 : CT24-038213K
- 의뢰자
 - 업체명 : L'ISOLANTE K-FLEX(SUZHOU)CO.,LTD
 - 주소 : 2728 NORTH LIN HU AVENUE,FOHO HI-TECH INDUSTRIAL DEVELOPMENT ZONE,WUJIANG, JIANGSU PROVINCE,P.R.CHINA 215211
- 시험기간 : 2024년 04월 17일 ~ 2024년 07월 10일
- 시험성적서의 용도 : 품질관리용
- 시료명 : RUBBER SHEET INSULATION(19 mmTK SHEET)
- 시험방법
 - (1) KS M 6962:2012
- 시험결과

1) RUBBER SHEET INSULATION(19 mmTK SHEET)

시험항목	단위	시험방법	시험결과	비고	시험장소
√ 수증기 투습계수(두께 25 mm당)	ng/m ² ·s·Pa	(1)	1	-	A

"√" 표시항목은 당 시험연구원의 KOLAS 인정범위 밖의 항목입니다.

* 시험장소

A : 충청북도 청주시 청원구 오창읍 양청3길 73

— 끝 —

확인	작성자명	임순현	기술책임자명	서준식
비고	1. 이 성적서는 KS Q ISO/IEC 17025 및 KOLAS 인정과 관련이 있으며, 의뢰자가 제시한 시료 및 시료명에 한정된 결과로서 전체제품에 대한 품질을 보증하지는 않습니다. 2. 이 성적서는 홍보, 선전, 광고 및 소송용으로 사용될 수 없으며, 용도 이외의 사용을 금합니다. 3. 이 성적서의 일부만을 발췌하여 사용한 결과는 보증할 수 없습니다. 4. 이 성적서의 진위여부는 홈페이지(www.kcl.re.kr)에서 확인 가능합니다.			

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2024년 07월 10일

한국인정기구 인정 한국건설생활환경시험연구원장

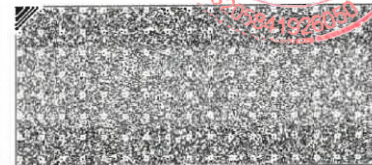
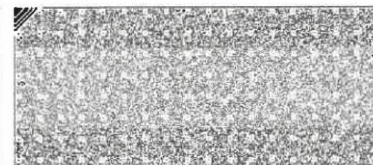
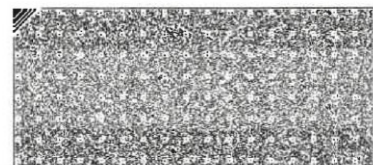


원본대조필

결과문의 : 28115 충청북도 청주시 청원구 오창읍 양청3길 73 ☎ (043)210-8932

총 1페이지 중 1페이지

양식TOP-12-01-010



K-FLEX ST RoHS 시험성적서

料有限公司

力索兰特 (苏州) 绝热材料有限公司

力索兰特 (



中国认可
国际互认
检测
TESTING
CNAS L0167

Test Report

No.: CANPC24009640502

Date: Sep 23, 2024

Page 1 of 8

Client Name: L' ISOLANTE K-FLEX(SUZHOU)CO,LTD

Client Address: 2728 NORTH LINHU AVENUE,FOHO HI-TECH INDUSTRIAL DEVELOPMENT ZONE,WUJIANG,JIANGSU PROVINCE,215211 P.R.CHINA

Sample Name: K-FLEX ST

Manufacturer: L'ISOLANTE K-FLEX(SUZHOU)CO,LTD

The above sample(s) and information were provided by the client.

SGS Job No.: GZPC2404002540

Sample Receiving Date: May 11, 2024

Testing Period: May 11, 2024 ~ May 15, 2024

Test Requested: Select test(s) as requested by the client.

Test Method(s): Please refer to next page(s).

Test Result(s): Please refer to next page(s).

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass

料有限公司

力索兰特 (苏州) 绝热材料有限公司

力索兰特 (

원본대조필

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet Shi
Approved Signatory

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Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: GN.Docscheck@sgs.com

No.108, Kachun Road, Science City Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路108号 邮编: 510663
t (86-20) 82155555 www.sgs.com.cn
t (86-20) 82155555 sgs.china@sgs.com

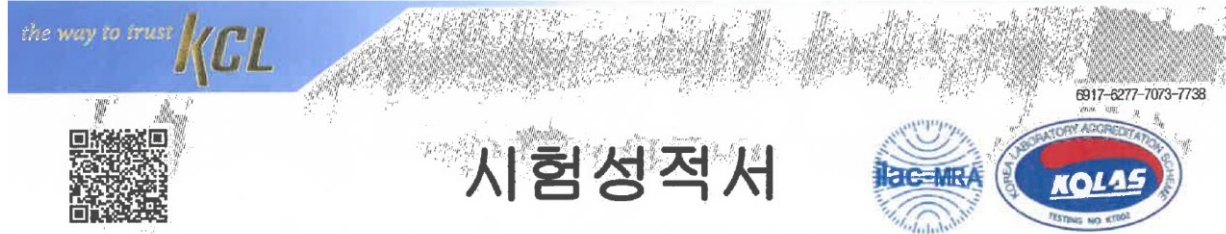
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力索兰特 (苏州) 绝热材料有限公司

力索兰特

Member of the SGS Group (SGS SA)

KS M ISO 9772 2012 수평연소 시험성적서



- 성 적 서 번 호 : CD24-00205K
- 의뢰자
 - 업체명 : L'ISOLANTE K-FLEX(SUZHOU)CO.,LTD
 - 주 소 : 2728 NORTH LIN HU AVENUE,FOHO HI-TECH INDUSTRIAL DEVELOPMENT ZONE,WUJIANG, JIANGSU PROVINCE,P.R.CHINA 215211
- 시험기간 : 2024년 08월 19일 ~ 2024년 09월 12일
- 시험성적서의 용도 : 거래처 제출
- 시료명 : Flexible Elastomeric Cellular insulation
- 시험방법
 - (1) KS M ISO 9772:2012

확인	작성자 성명	오동욱	기술책임자 성명	최정운	최정운
비고 : 1. 이 성적서는 KS Q ISO/IEC 17025 및 KOLAS 인정과 관련이 있으며, 의뢰자가 제시한 시료 및 시료명에 한정된 결과로서 전체제품에 대한 품질을 보증하지는 않습니다. 2. 이 성적서는 홍보, 선전, 광고 및 소송용으로 사용될 수 없으며, 용도 이외의 사용을 금합니다. 3. 이 성적서의 일부만을 발췌하여 사용한 결과는 보증할 수 없습니다. 4. 이 성적서의 진위여부는 홈페이지(www.kcl.re.kr)에서 확인 가능합니다.					

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2024년 09월 12일

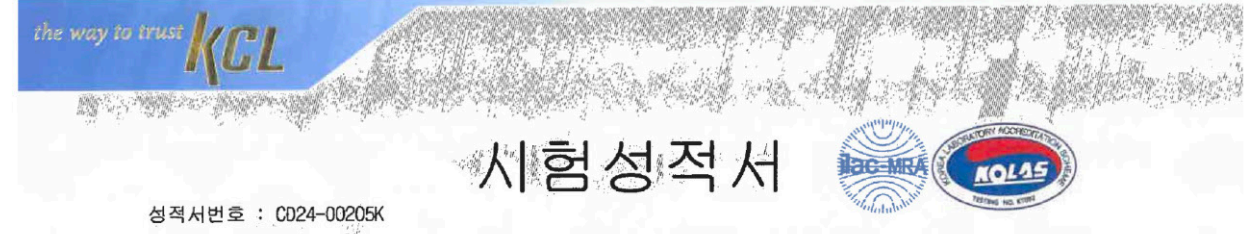
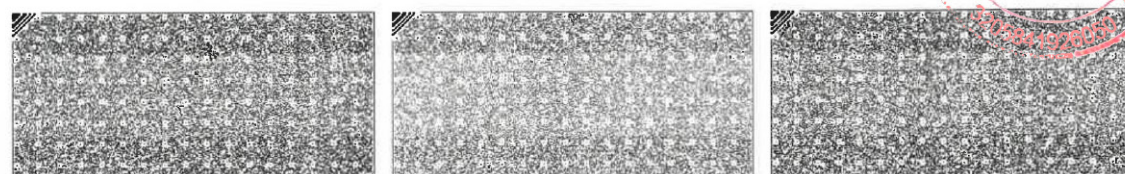
한국인정기구 인정 한국건설생활환경시험연구원

※ 2024.09.12 재발급 R1 담당자 : 오동욱, 승인자 : 최정운

결과문의 : 28115 충청북도 청주시 청원구 오창읍 양청3길 73 ☎ (043)210-8967

총 3페이지 중 1페이지

양식 TQP-12-01-01(1)



성적서번호 : CD24-00205K

■ 시험결과

1) 온도 (23 ± 2) °C, 상대습도 (50 ± 5) % 에서 48시간 처리된 시편

시험항목	단위	시험결과					시험방법	시험장소
		1회	2회	3회	4회	5회		
연소 길이 $l_t(L_d+25)$	s	25	25	25	25	25	(1)	A
연소 시간 (t_b)	s	0	0	0	0	0		
경과 시간 (t_e) (잔열 시간 + 잔광 연소 시간)	s	0	0	0	0	0		
잔열 시간	s	0	0	0	0	0		
잔광 연소 시간	s	0	0	0	0	0		
연소 속도 (v)	mm/min	해당없음						
지시습의 발화 여부	Y/N	없음	없음	없음	없음	없음		
※ 등급 : HF-1								

2) 온도 (70 ± 2) °C 에서 (168 ± 2) 시간 처리된 시편

시험항목	단위	시험결과					시험 방법	시험 장소
		1회	2회	3회	4회	5회		
연소 길이(L_d+25)	s	25	25	25	25	25	(1)	A
연소 시간(t_b)	s	0	0	0	0	0		
경과 시간(t_e) (잔열 시간 + 잔광 연소 시간)	s	0	0	0	0	0		
잔열 시간	s	0	0	0	0	0		
잔광 연소 시간	s	0	0	0	0	0		
연소 속도(v)	mm/min	해당없음						
지시습의 발화 여부	Y/N	없음	없음	없음	없음	없음		
※ 등급 : HF-1								

※ 본 시험은 「국토교통부 고시 제2023-24호」 난연등급 시험과 무관함

※ 시험장소

A. 충청북도 청주시 청원구 오창읍 양청3길 73

— 끝 —

원본대조필

총 3 페이지 중 3 페이지

양식 TQP-12-01-01(1)



KS F 2271 : 2012 가스 유해성 시험성적서



TEST REPORT

1. NO : CT24-087092E
2. Client
 - Name : L'ISOLANTE K-FLEX(SUZHOU)CO.,LTD
 - Address : 2728 NORTH LIN HU AVENUE,FOHO HI-TECH INDUSTRIAL DEVELOPMENT ZONE,WUJIANG, JIANGSU PROVINCE,P.R.CHINA-215211
3. Date of Test : 2024.10.10 ~ 2024.11.07
4. Use of Report : Quality control
5. Test Sample : Steel 1 mm + Rubber foam insulation 12 mm
6. Test Method
 - (1) KS F 2271:2021

料有限公司 力索兰特 (苏州) 绝热材料有限公司 力索兰特

Affirmation	Tested By Name : Na In Geol	Technical Manager Name : CHOI, Joung Yoon
This report is accredited by KOLAS and KS Q ISO/IEC 17025. Our report apply only to the standards or procedures identified and to the sample(s) tested unless otherwise specified. The test results are not indicative of representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products. The results of using only a portion of this report cannot be guaranteed. The authenticity of this test report can be checked on KCL website(www.kcl.re.kr).		

2024.11.07

Korea Conformity Laboratories

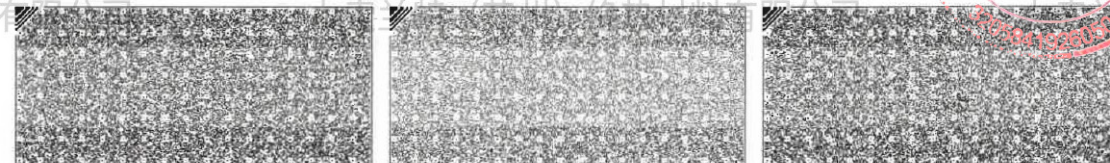


원본대조필

Result Inquiry : 73, Yangcheong 3-gil, Ochang-eup, Cheongwon-Gu, Cheongju-Si, Chungbuk, Korea (82-43-210-8973)

Page 1 of 5

TQP-12-01-04-1



TEST REPORT

No. : CT24-087092E

7. Test Results

■ Gas Toxicity Test result			Test date	2024.10.28
Test item	Unit	Test results		Test method
		1 st	2 nd	
Average time of laboratory mouse stopped moving	min:s	14:30	14:45	KS F 2271:2021

※ Location: 73, Yangcheong 3-gil, Ochang-eup, Cheongwon-Gu, Cheongju-Si, Chungbuk, Korea

Gas Toxicity Test Conditions

Heating condition	6 minutes total heating time - 6 minutes with the auxiliary heat source / 3 minutes with the main heat source (following 3 minutes of auxiliary heating)				
Heating side of specimen (requested by client)	Steel side				
Test condition	Temp. (19 ~ 22) °C, Humidity (62 ~ 64) % R.H.				
Test duration (min)	15				
Laboratory mouse	Type	ICR group female	Age	5 weeks	Weight (18 ~ 22) g

Test Specimen Specification

Width (mm)	Specimen 1	219.0	Specimen 2	219.0
Length (mm)		219.0		219.1
Thickness (mm)		13.3		13.3
Mass (g)		400.6		402.1
Density (kg/m³)		628.0		630.1
Pretreatment	Temp. (23 ± 2) °C, Humidity (50 ± 5) % R.H.			

Animal Test Report

Committee approval number	1A24-01910
Committee approval date	2024. 10. 27.
Test name	Testing method for gas toxicity of finish materials of buildings

Test Specimen Configuration(requested by client)

Composition	Material	Manufacturer	Model Name	Thickness
Steel	-	L'ISOLANTE K-FLEX(SUZHOU) CO., LTD	-	1 mm
Rubber foam insulation	NBR	L'ISOLANTE K-FLEX(SUZHOU) CO., LTD	-	12 mm

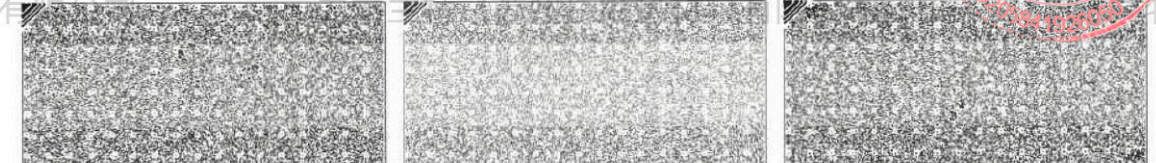
※ Markings by client request

- Style Name : K-FLEX ST
- Description : Flexible Elastomeric Cellular insulation
- Manufacturer : L'ISOLANTE K-FLEX(SUZHOU) CO., LTD

Page 2 of 5

원본대조필

TQP-12-01-04(1)



K-FLEX ST UL94 수직연소 시험성적서



中国认可
国际互认
检测
TESTING
CNAS L4743

Test Report

Report No.: AJFS2308007970RS Date: SEP.12, 2023 Page 1 of 4

L'ISOLANTE K-FLEX (SUZHOU) CO. LTD

2728 NORTH LINHU AVENUE, FOHO HI-TECH INDUSTRIAL DEVELOPMENT ZONE, WUJIANG DISTRICT, SUZHOU CITY, JIANGSU PROVINCE, P.R. CHINA 215211

Sample Name: FLEXIBLE ELASTOMERIC FOAM INSULATION MATERIAL

Thickness: 25mmTK

Style/Item No.: K-FLEX ST

The above sample(s) was / were submitted and identified on behalf of the client. SGS is not responsible for the authenticity, integrity and results of the data and information and / or the validity of the conclusion arising therefrom. Results apply to the sample as received.

Test Requested:

UL 94-2022-03, Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, clause 8, 50W (20 mm) Vertical Burning Test; V-0, V-1 or V-2.

Test Results: -- See attached sheet --

Conclusion: According to the test results and the classification system, the tested sample, when tested at a normal thickness of 12.2mm, is assigned as 'UL 94, V-0j.

Test Period:

Sample Receiving Date : AUG.30, 2023

Test Performing Date : AUG.30, 2023 TO SEP.08, 2023

Signed for and on behalf of

SGS-CSTC Standards Technical Services Co., Ltd. Anji Branch

Echo Li

Approved Signatory



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AJFS2308007970RS
Verification:
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원본대조필



SGS-CSTC Standards Technical Services Co., Ltd.
Anji Branch Fire Technology Service

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No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t: (86-572) 501825 f: (86-572) 501829 www.sgs.com.cn
中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编: 313300 t: (86-572) 501825 f: (86-572) 501829 e: sgs.china@sgs.com

Member of the SGS Group (SGS SA)

CFE 시험성적서



시험성적서



한국화재보험협회 부설
방재시험연구원

성적서번호: GK2025-0038
페이지 1 (총 5)



우) 12661 경기도 여주시 가남읍 경충대로 1030 TEL) 031-887-6600 FAX) 031-887-6610

1. 의뢰인

- 업체(기관)명 : L'ISOLANTE K-FLEX(SUZHOU) Co., Ltd. 대표자 Charles Khoo
- 주 소 : 2728 North Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Wujiang District, Suzhou City, Jiangsu Province, P.R. China 215211
- 접수일자 : 2025. 01. 16. (반입일자: 2025. 01. 15.)

2. 시험품목 : K-FLEX ST

3. 시험일자 : 2025. 02. 04.

4. 시험용도 : 자체품질관리

5. 시험장소 : ☒ 고정시험실 ☐ 현장시험실

(주소 : 방재시험연구원 주소와 동일)

6. 시험방법 : ISO 5658-2:2006

7. 시험환경 : 온도 : (20 ± 2) °C, 습도 : (50 ± 5) % R.H.

8. 시험결과 :

시험체 번호	1	2	3	비 고
평균 연소 지속열, $Q_{sb}(MJ/m^2)$	0.11	0.11	0.10	세부내용: '시험내용'참조
소화점 임계 열류속, $CFE(kW/m^2)$	23.8	23.8	25.2	

* 이 성적서의 내용은 시험 의뢰인에 의해 제공된 시료에 한하며, 용도 이외의 사용을 금합니다.

확 인	실 무 자 성 명 : 진 영 화	승인자(기술책임자) 성 명 : 홍 성 호
-----	----------------------	---------------------------

한국인정기구 인정 한국화재보험협회 부설 방재시험연구원 원본대조필

* 위 성적서는 국제시험기관인정협력체(International Laboratory Accreditation Cooperation) 상호인정협정(Mutual Recognition Arrangement)에 서명한 한국인정기구(KOLAS)로부터 공인받은 분야에 대한 시험결과입니다.



D08-02A(6)

210×297(mm)

K-FLEX ST 무석면 시험성적서

中国认可
国际互认
检测
TESTING
CNAS L0599

Test Report

No.: SHARS24018311101

Date: Aug 15, 2024

Page 1 of 3

Client Name: L' ISOLANTE K-FLEX (SUZHOU) CO. LTD.

Client Address: 2728 North Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Wujiang District, Suzhou City, Jiangsu Province, P.R. China 215211

Sample Name: FLEXIBLE ELASTOMERIC FOAM INSULATION MATERIAL

Item No.: K-FLEX ST

The above sample(s) and information were provided by the client.

SGS Job No.: SH-AJFS2408009524RS

Sample Receiving Date: Aug 12, 2024

Testing Period: Aug 12, 2024 ~ Aug 15, 2024

Test Requested: Select test(s) as requested by the client.

Test Method(s): Please refer to next page(s).

Test Result(s): Please refer to next page(s).

Test Requirement	Conclusion
Asbestos	See Results

원본대조필

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.Lilac Wei
Approved SignatorySHARS24018311101
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Test Report

No.: SHARS24018311101

Date: Aug 15, 2024

Page 2 of 3

Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA24-0183111-0001.C001	Black foam

Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

Asbestos

Test Method: With reference to NIOSH 9000:2015 and ISO 22262-1:2012, analysis was performed by XRD/PLM.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Actinolite	77536-66-4	%(m/m)	0.1	Negative
Amosite	12172-73-5	%(m/m)	0.1	Negative
Anthophyllite	77536-67-5	%(m/m)	0.1	Negative
Chrysotile	12001-29-5 /132207-32-0	%(m/m)	0.1	Negative
Crocidolite	12001-28-4	%(m/m)	0.1	Negative
Tremolite	77536-68-6	%(m/m)	0.1	Negative

Notes:

(1) Negative = the absence of asbestos, Positive = the presence of asbestos.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.

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K-FLEX ST 항곰팡이 시험성적서 25mm

有限公司 力索兰特 (苏州) 绝热材料有限公司 力索兰特

中国认可
国际互认
检测
TESTING
CNAS L0167

Test Report

GZF24-0038079-01

Date: 2024-10-28

Client Name: L' ISOLANTE K-FLEX(SUZHOU)CO., LTD

Client Address: 2728 North Linhu Avenue, FOHO Hi-Tech Industrial Development Zone, Wujiang, Jiangsu Province, 215211 P.R.China

Sample Name: Flexible rubber and plastic foam insulation material

Sample Batch No.: /

Production Date: /

Manufacturer: L'ISOLANTE K-FLEX(SUZHOU)CO., LTD

Sample other information: Material and Mark: K-FLEX ST; Product specification: 25mmTK

Above information and sample(s) was/were submitted and certified by the client, SGS quoted the information with no responsibility as to the accuracy, adequacy and/or completeness.

SGS reference No.: GZPL2409003459

Date of Sample Received: 2024-09-11

Testing Period: 2024-09-11 ~ 2024-10-28

Test Method(s): Please refer to next page(s).

Test Results(s): Please refer to next page(s).

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SGS Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

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Test Report

GZF24-0038079-01

Date: 2024-10-28

Sample Description:

Sample No.	SGS Sample ID	Description
1	GZF24-0038079-0001	Sheet sample

Test Result(s):

Test Requested: Selected test(s) as requested by applicant: Antifungal activity test

Test Method: ASTM G 21-15(2021)e1 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

GZF24-0038079-0001

Test organism(s)	Concentration of spores (spores /mL)	Rating observed growth on specimens (after 28 days)
*Test organism	1.0×10 ⁶	0 Grade**

Notes:

*Test organism

Trichoderma virens CICC 2535 (equal to ATCC 9645), Aspergillus brasiliensis ATCC 9642, Chaetomium globosum ATCC 6205, Talaromyces pinophilus ATCC 11797, Aureobasidium pullulans ATCC 15233

History name of test organism

Aspergillus brasiliensis Historically known as A.niger.

Talaromyces pinophilus Historically known as P.pinophilum.

Trichoderma virens Historically known as Gliocladium virens.

According to ASTM G 21-15(2021)e1 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi, observed fungi growth rating on the specimens include:

0-None

1-Traces of growth (less than 10%)

2-Light growth (10 to 30%)

3-Medium growth (30 to 60%)

4-Heavy growth (60% to complete coverage)

** The microscope(50 X) was used to confirm the observation.

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