




Report No. HTT2025031148CH

RoHS Test Report

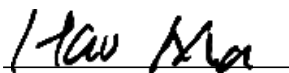
Application information:

Applicant name:	Jinan Hexi Environmental Engineering Co., LTD
Address:	No.149-1, Dongxi Street, Liuwangsi Village, Diao Town, Zhangqiu District, Jinan City, Shandong Province
Manufacturer:	Jinan Hexi Environmental Engineering Co., LTD
Address:	No.149-1, Dongxi Street, Liuwangsi Village, Diao Town, Zhangqiu District, Jinan City, Shandong Province

Sample information:

Sample Name:	Sandwich wall panel
Sample Model:	N/A
Trade mark:	
Sample Received Date:	Mar. 21, 2025
Testing Period:	Mar. 21, 2025 ~ Mar. 27, 2025
Test Requested:	As specified by client, to determine the Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, The Phthalate (DEHP, BBP, DBP & DIBP) content in the submitted sample compliance with RoHS directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102.
Test Method:	Please refer to next page.
Test Results	Please refer to next page(s).
Conclusion:	Based on the performed tests on submitted sample(s), the results Comply with the RoHS Directive 2011/65/EU, (EU) 2015/863 and amending Annex (EU)2017/2102.

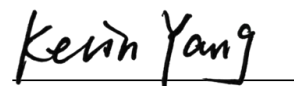
Completed by:



Reviewed by:



Approved by:



Technical Manager

Shenzhen HTT Technology Co., Ltd.



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1. Test Method(s):

As requested by the client, Reference to IEC 62321-3-1:2013 (Ed1.0) Procedures for the screening analysis of Lead (Pb), Cadmium (Cd), Mercury (Hg), total Chromium (Cr), and Bromine (Br) by XRF. If the screening analysis results exceed the screening limits of IEC 62321-3-1:2013 (Ed1.0) Annex A, use the chemical methods for testing.

Table1 IEC 62321-3-1:2013 (Ed1.0) Annex A screening limits of XRF (mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	Not applicable	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

BL = Less than screening limits of XRF

OL = More than screening limits of XRF

X = The results of screening analysis by XRF are within this range, requiring further chemical testing.

LOD = Limit of Detection

Table2 testing methods & Equipments

Testing Item	Testing Method	Equipment
Screening analysis by XRF		
Lead (Pb), Cadmium (Cd), Mercury (Hg) Chromium (Cr), Bromine (Br)	IEC 62321-3-1:2013 (Ed1.0)	ED-XRF
Chemical testing		
Lead (Pb)	IEC 62321-5:2013 (Ed1.0)	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 (Ed1.0)	ICP-OES
Mercury(Hg)	IEC 62321-4:2017 (Ed1.0)	ICP-OES
Hexavalent chromium (Cr(VI)) for plastic	IEC 62321-7-2:2017 (Ed1.0)	UV-VIS
Hexavalent chromium (Cr(VI)) for coating on metals	IEC 62321-7-1:2015 (Ed1.0)	UV-VIS
PBBs	IEC 62321-6:2015 (Ed1.0)	GC-MS
PBDEs	IEC 62321-6:2015 (Ed1.0)	GC-MS
DBP	IEC 62321-8:2017 (Ed1.0)	GC-MS
BBP	IEC 62321-8:2017 (Ed1.0)	GC-MS
DEHP	IEC 62321-8:2017 (Ed1.0)	GC-MS
DIBP	IEC 62321-8:2017 (Ed1.0)	GC-MS



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2. Method Detection Limit (MDL):

For XRF screening analysis (mg/kg)

Item	Pb	Cd	Hg	Br	Cr
Polymer	20	20	20	20	20
Other materials	50	50	50	50	50

For chemical testing (mg/kg)

Item	Pb	Cd	Hg	PBBs	PBDEs	DEHP	BBP	DBP	DIBP	Cr(VI)
General materials	2	2	2	10	10	50	50	50	50	See remark (2)

Remark:

- (1) PBBs and PBDEs method detection limit only for one substance;
- (2) MDL for polymer and Composites is 8 mg/kg, MDL for coating on metals is 0.10 $\mu\text{g}/\text{cm}^2$.

3. RoHS Requirement (mg/kg):

Restricted substances	Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs	DEHP	BBP	DBP	DIBP
RoHS limit	100	1000	1000	1000	1000	1000	1000	1000	1000	1000



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4. Test Result(s):

Part No.	Part Description	Restricted Substances	Results (mg/kg)		Conclusion (P/F)
			EDXRF	Chemical testing	
01	Metal sheet	Cd	BL	/	P
		Pb	BL	/	P
		Hg	BL	/	P
		Cr(VI)	BL	/	P
		PBBs	BL	/	P
		PBDEs	BL	/	P
		DEHP	/	N.D.	P
		DBP	/	N.D.	P
		BBP	/	N.D.	P
		DIBP	/	N.D.	P
02	Foam	Cd	BL	/	P
		Pb	BL	/	P
		Hg	BL	/	P
		Cr(VI)	BL	/	P
		PBBs	BL	/	P
		PBDEs	BL	/	P
		DEHP	/	N.D.	P
		DBP	/	N.D.	P
		BBP	/	N.D.	P
		DIBP	/	N.D.	P
03	Silver film	Cd	BL	/	P
		Pb	BL	/	P
		Hg	BL	/	P
		Cr(VI)	BL	/	P
		PBBs	BL	/	P
		PBDEs	BL	/	P
		DEHP	/	N.D.	P
		DBP	/	N.D.	P
		BBP	/	N.D.	P
		DIBP	/	N.D.	P

Note:

mg/kg = milligram per kilogram = ppm

N.D. = Not detected (<MDL)

BL=Less than screening limits of XRF

D = DETECTED = Inconclusive

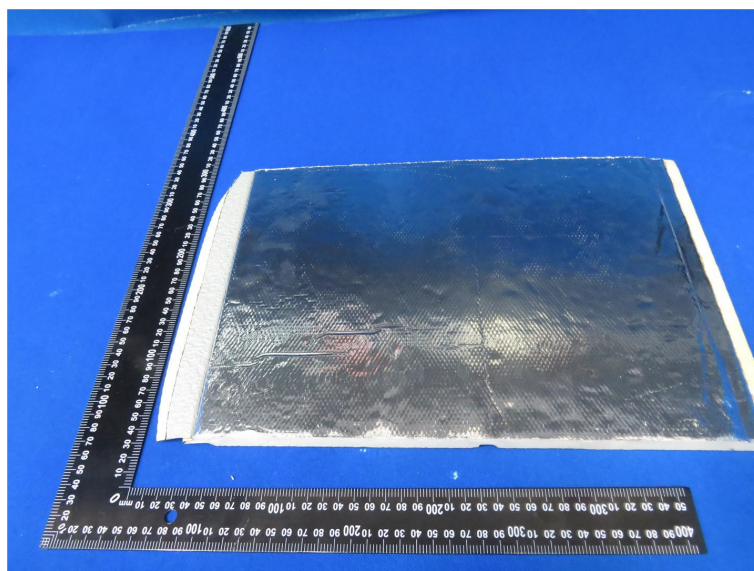
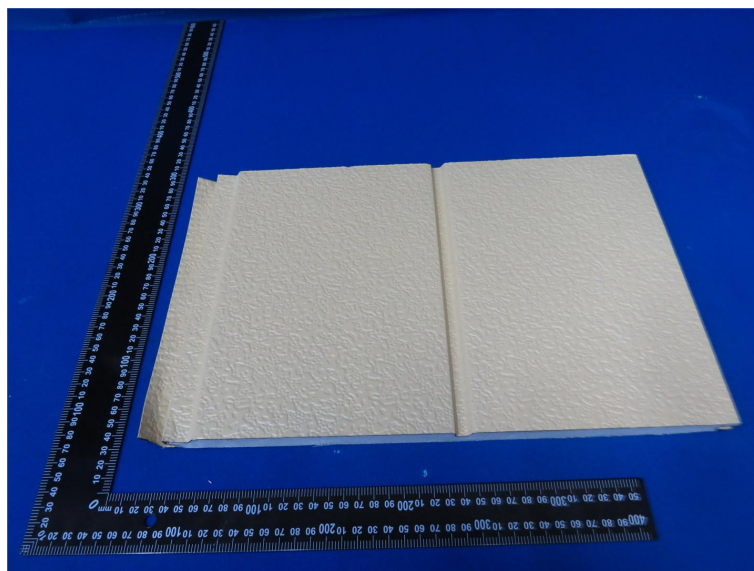
P = PASS

F = FAIL

/ = Not available

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Photo(s) of the sample(s)



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*** End of report ***