

EU TYPE EXAMINATION CERTIFICATE



PRD N° 277B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC

Signatory of EA, IAF and ILAC Mutual Recognition Agreements

NOTIFIED BODY 2575

The PPE detailed herein meets the criteria of an EU Type Examination in accordance with Annex V, including the applicable clauses of the Essential Health and Safety Requirements of the PPE Regulation EU 2016/425.

Following an EU Declaration of Product Conformity you are hereby licensed to mark the product(s) detailed in accordance with Article 17 of the PPE Regulation EU 2016/425.

VALIDITY OF CERTIFICATE

This certificate will cease its validity at any time if needed, in particular if changes in the manufacturing process, in the raw materials or in PPE components will occur.

INTERTEK ITALIA SpA
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Manufacturer: Mid Ocean Brands B.V.

Address: PO BOX 644, 6710 BP, Ede, The Netherlands

Authorised Representative: -

Address: -

Certificate No.: ITASLNB25010849

Category Product: II

Brand Name: -

Model: -

Article(s) code: YC2405-03, YC2405-04, YC2405-05, YC2405-68, YC2405-38, MO2405-03, MO2405-04, MO2405-05, MO2405-68, MO2405-38

Product type: Protective Clothing - Enhanced Visibility Equipment

Reference(s) Standard: EN ISO 13688:2013+A1:2021, EN 17353:2020

Description:

Type B3 vest / belt. Enhanced visibility safety vest / belt in accordance with minimum areas of retroreflective tape. Retroreflective Tape: Tape bands adjoining one another in a vest / belt configuration; Classification: Type B3; Sizes: (>140cm).

This has been shown through satisfactory testing to: EN ISO 13688:2013+A1:2021, EN 17353:2020

Examination of the Technical File Documentation, No:

High visibility safety vest YC2405-03, YC2405-04, YC2405-05, YC2405-68, YC2405-38, MO2405-03, MO2405-04, MO2405-05, MO2405-68, MO2405-38 - Rev.1 19/05/2025

Test Report no. See Technical File

Remark: This certificate annuls and replaces the previous certificate no. ITASLNB24024481.

Note:

Issued at: Lastra a Signa (FI)

Issue Date 26/06/2025

General Manager Elena Ruffino

Expiry Date 22/01/2030



For and on behalf of INTERTEK ITALIA Spa



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Intertek Italia S.p.A. Via Miglioli, 2/A - 20063 Cernusco sul Naviglio, Milano - Italy

Number: GZHT91286346

Date: Sep 14, 2024

Applicant: MID OCEAN BRANDS B.V.
7/F, KINGS TOWER, 111 KING LAM STREET,
CHEUNG SHA WAN, KOWLOON, HONG KONG
Attn: DEREK HUI

Sample Description:

Eight (8) groups of submitted samples said to be:

- (A) One (1) piece of High visibility safety vests in Neon Green/Silvery
- (B) One (1) piece of High visibility safety vests in Blue/Silvery
- (C) One (1) piece of High visibility safety vests in Red/Silvery
- (D) One (1) piece of High visibility safety vests in Black/Silvery
- (E) One (1) roll of Neon Green elastic polyester with Silver Retro-reflective Printing
- (F) One (1) roll of Blue elastic polyester with Silver Retro-reflective Printing
- (G) One (1) roll of Red elastic polyester with Silver Retro-reflective Printing
- (H) One (1) roll of Black elastic polyester with Silver Retro-reflective Printing

Standard : EN 17353:2020

ISO 13688:2013/Amd.1:2021

Colour : Neon green /Silvery, Blue/Silvery, Red/Silvery, Black/Silvery

Manufacturer : 116209

Style No./Name : YC2405, MO2405

Ref. : High visibility safety vests

Country Of Origin : China

Goods Exported To : Europe

Previous Report No. : GZHT91273458(S1)

Date Received/Date Test Started : Sep. 12, 2024

Date Final Information Confirmed: --

Test Result Please Refer To Attached Page(S).

Should you have any query on this report, you may contact at gzfootwear@intertek.com

Authorized By:
For Intertek Testing Services Shenzhen Ltd.
Guangzhou Branch



Guiliang Dong
Senior Lab Manager



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HT / kayyu

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检验检测专用章

SHENZHEN BRANCH

(6)

1 Types And Minimum Area Requirements (EN 17353:2020, 4)

4.1 Types

Sample	(A)			
Size	One Size			
Requirements		Yes	No	N/A
The Enhanced Visibility Equipment Is Grouped Into Three Types Based On The Foreseeable Conditions Of Use:				
- Type A Equipment Worn By Users Where The Risk Of Not Being Seen Exists Only At Daylight Conditions. This Equipment Uses Only The Fluorescent Material As Enhanced Visibility Component.				√
- Type B Equipment Worn By Users Where Risk Of Not Being Seen Exists Only At Dark Conditions. This Equipment Uses Only The Retroreflective Material As Enhanced Visibility Component.		√		
Type B Is Subdivided In 3 Levels, As Below. The Classification Depends On The Total Area Worn Or On Placement Of The Device On User's Torso And Limbs:				
- Type B1 Includes Free Hanging Retroreflective Devices Only; These Devices Are Designed For Movement Recognition.				√
- Type B2 Includes Retroreflective Devices Or Retroreflective Material Either Temporarily Or Permanently Placed On Limbs Only; These Products Are Designed For Movement Recognition. As A Minimum, The Retroreflective Material Shall Be Positioned On The Limbs As A Separate Removable Device Or Shall Be Incorporated Into Clothing Design On A Permanent Basis As A Retroreflective Element.				√
- Type B3 Includes Retroreflective Material Placed On Torso Or Torso And Limbs. These Products Are Designed For Form Recognition, Or Form And Movement Recognition. Type B3 Items Shall Not Be A Combination Of Permanently Attached Reflective Material And Removable Reflective Devices.		√		
- Type AB Equipment Worn By Users Where Risk Of Not Being Seen Exists During Daylight, Twilight And Dark Conditions. This Equipment Uses The Fluorescent As Well As The Retroreflective And/or Combined Performance Materials As Enhanced Visibility Components.				√
For Each Type, The Relevant Material Requirements In Clause 6 Shall Be Fulfilled In Accordance To Clause 7.		√		

Types And Minimum Area Requirements (EN 17353:2020, 4) (Cont)

4.2 Minimum Area Requirements

(A)

Areas Of Material For Types A, B3 And AB					
Height H Of The User	h > 140 cm ^a				
Type	Fluorescent Material	Retroreflective Material	Combined Performance Material	Requirement	Pass/Fail
B3	-	0.080 m ²	-	*2	Pass

Remark: *2= Table 3 - Minimum Required Areas Of Material In m² For Types A, B3 And AB

	A	B3	AB
Height H Of The User	h > 140 cm ^a		
Fluorescent Material	0.24	-	0.24
Retroreflective Material	-	0.08	0.08
Combined Performance Material	-	-	0.24
^a If The Height Range (Interval Figures As Described In EN ISO 13688:2013) Includes 140 cm (E.G. Garment Designed For Height Range From 138 cm To 142 cm), Then The Requirements As Stated In The Column " H > 140" Apply.			

NOTE: The Area Of Visibility Material Shown In Table 3 Cannot Be Reduced Below The Minimum Requirements By The Application Of Logos, Lettering, Labels, Etc.

2 Design Requirements (EN 17353:2020, 5)

Sample	(A)				
Size	One Size				
Requirements		Test Data	Yes	No	N/A
5.1 Size Designation					
The Size Designation For Garments Shall Be In Accordance With The Requirements Of EN ISO 13688:2013.		-	√		
5.2 Type A					
5.2.1 General					
Type A Garments (Including Partial Body Protective Clothing) Shall In Their Design Use At Least The Minimum Amount Of Fluorescent Material According To Table 3.		-			√
5.2.2 Visibility From All Sides					
Type A Garments Shall Be Made Up Of Fluorescent Material On All Sides To Ensure 360° Visibility (Visibility From All Sides). For Upper Body Garments Fluorescent Material Shall Be Evenly Distributed Around The Torso And/Or Upper Arms And/Or Limbs, If Any.		-			√
For Lower Body Garments, Fluorescent Material Shall Be Evenly Distributed Around The Legs.		-			√
Visibility From All Sides Shall Be Reached As Follows:					
- Not Less Than 40 % Of The Minimum Required Amount Of Fluorescent Material Specified In Table 3 Is Present On Both The Front And The Back When Laid Flat, And		-			√
- Not Less Than 10 % Of The Minimum Required Amount Of Fluorescent Material Specified In Table 3 Is Present On Both The Right And Left Sides When Laid Flat On The Back (Respectively On The Front).		-			√
5.3 Type B					
5.3.1 General					
These Garments Or Devices Shall In Their Design Use At Least The Minimum Amount Of Retroreflective Material According To Table 2 Or Table 3.		0.080 m ²	√		

Design Requirements (EN 17353:2020, 5) (Cont)

Requirements	Test Data	Yes	No	N/A
5.3.2 Type B1 – Free Hanging Devices				
The Devices Shall Be Removable.	-			√
The Total Area Of The Devices In Use Shall Meet The Requirements In Table 2.	-			√
A Type B1 Device Shall Be Retroreflective From Both Sides.	-			√
Its Optical Active Area Shall Be A Minimum 15 cm ² Per Side. The Total Area Shall Be Maximum 50 cm ² Per Side. In Order To Achieve 360° Visibility (Visibility From All Sides) At Least Two Devices Shall Be Used, These Shall Be Used On The Left And The Right Side Of The Torso. This Shall Be Specified In The User Information.	-			√
The Device Shall Be Flat And Its Maximum Thickness Shall Be 10 mm.	-			√
The Means Of Attachment (String, Ribbon, Cord, Spiral, Etc.) Shall Be A Minimum 10 cm, In Length Between The Points Of Attachment On The Garment And That On The Reflector To Enable Free Movement Of The Device Around Its Vertical Axis And Allow A Pendulum Effect.	-			√
5.3.3 Type B2 – Equipment For Limbs				
The Minimum Area Of Retroreflective Material Shall Fulfil The Requirements In Table 2.	-			√
To Ensure 360° Visibility (Visibility From All Sides), One Or More Devices Shall Be Applied To Each Upper And/Or Each Lower Limb.	-			√
When Retroreflective Material Is Applied To A Garment It Shall Also Be Positioned To Achieve 360° Visibility (Visibility From All Sides). The Material Shall Be Placed On The Limbs So As To Ensure A Minimum Width Of 20 mm Encircling Each Limb.	-			√
Any Gap In The Lengthwise Continuity Of The Retroreflective Material Shall Not Be Greater Than 50 mm, Measured Parallel To The Direction Of The Material, And The Total Of Such Gaps Shall Not Be Greater Than 50 mm Around The Limbs. Any Offset Not Greater Than The Width Of The Material Plus 5 mm Is Allowed.	-			√
Additionally, Separate Retroreflective Elements May Form Part Of An Applied Design In Conjunction With The Above. The Retroreflective Elements Shall Have A Minimum Area Of 25 cm ² Each.	-			√
In The Case Of B2 Garments Covering Upper And Lower Limbs, The Retroreflective Material Can Be Applied On The Upper Limbs Only, On The Lower Limbs Only Or On Both The Upper And Lower Limbs. In The Latter Case, The Minimum Amount Of Table 2 Shall Be Used For Upper Limbs And Also For The Lower Limbs.	-			√

Design Requirements (EN 17353:2020, 5) (Cont)

Requirements	Test Data	Yes	No	N/A
5.3.4 Type B3 – Equipment For The Torso Or The Torso And Limbs				
The Minimum Area Of Retroreflective Material Shall Fulfil The Requirements In Table 3. Garments And Devices Shall Be Measured Flat And In Their Smallest Configuration.	0.080 m ²	√		
Retroreflective Material Shall Be Placed On The Torso So As To Ensure A Minimum Width Of 20 mm Encircling The Torso. Alternatively, Retroreflective Materials May Be Placed To Encircle The Upper Arms.	40 mm	√		
If A B3 Garment Covers Limbs Below The Elbows Or Knees, Then Retroreflective Material On The Limbs Is Required. In This Case, Type B2 Requirements (See 5.3.3) For The Limbs Shall Be Fulfilled Whilst The Remainder Of The Material Shall Be Placed On The Torso. It Is Not Necessary For A Minimum 20 mm Wide Band To Be Applied On The Limbs In This Case.	-			√
Additionally, Separate Retroreflective Elements May Form Part Of An Applied Design In Conjunction With The Above. The Retroreflective Elements Shall Have A Minimum Area Of 25 cm ² Each.	-			√
Visibility From All Sides Shall Be Reached As Follows:				
- Not Less Than 40 % Of The Minimum Required Amount Of Retroreflective Material Specified In Table 3 Is Present On Both The Front And The Back When Laid Flat, And	> 40%	√		
- Not Less Than 10 % Of The Minimum Required Amount Of Retroreflective Material Specified In Table 3 Is Present On Both The Right And Left Sides When Laid Flat On The Back (Respectively On The Front).	> 10%	√		
Any Gap In The Lengthwise Continuity Of The Retroreflective Material Shall Not Be Greater Than 50 mm, Measured Parallel To The Direction Of The Material, And The Total Of Such Gaps Shall Not Be Greater Than 100 mm Around The Torso. Any Offset Not Greater Than The Width Of The Material Plus 5 mm Is Allowed.	Max. Gap: 45 mm Total Gap: 47.8 mm	√		
In The Case Of B3 Garments Covering The Torso, And The Upper And Lower Limbs, The Retroreflective Material Can Be Applied On The Torso And The Upper Limbs Only, On The Torso And Lower Limbs Only Or On Both The Torso And The Upper And Lower Limbs. In The Latter Case, The Minimum Amount Of Table 2 Shall Be Used For Upper Limbs And Also For The Lower Limbs.	-			√

Design Requirements (EN 17353:2020, 5) (Cont)

Requirements	Test Data	Yes	No	N/A
5.4 Type AB				
These Garments Shall In Their Design Use The Minimum Amount Of Fluorescent Material And Retroreflective Material Or Combined Performance Material Of Appropriate Group According To Table 3. Design Requirements For Type AB Clothing Shall Follow The Same Rules In Terms Of Distribution Of Fluorescent Material As Applied To Type A In 5.2.	-			√
Design Requirements For Type AB Clothing Shall Follow The Same Rules In Terms Of Distribution Of Reflective Material As Applied To Type B2 As In 5.3.3 Or Type B3 In 5.3.4.	-			√
Combined Performance Material Shall Be Used Only In A Form That Maintains A Width Of ≥ 20 mm.	-			√
When Using Combined Performance Material, The Area Of Fluorescent Material Can Be Reduced By The Amount Of Combined Performance Material Used.	-			√

Remark:

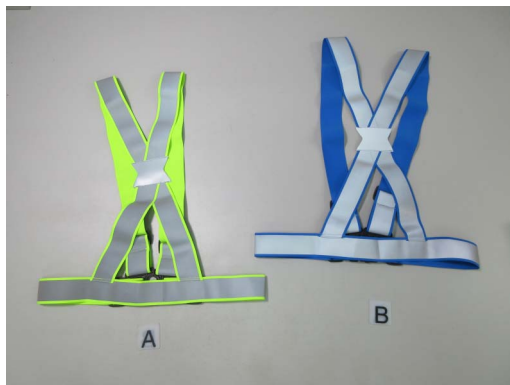
Table 2 - Minimum Required Areas Of Material In m² For Types B1 And B2

	B1 ^a	B2 ^b
Retroreflective Material	0.003	0.018
^a Total Area Of Both Sides Of A Single Device.		
^b If Devices, The Total Area Of Two Devices, Measured Flat.		

Table 3 - Minimum Required Areas Of Material In m² For Types A, B3 And AB

	A	B3	AB	A	B3	AB
Height H Of The User	$h \leq 140$ cm ^a			$h > 140$ cm ^a		
Fluorescent Material	0.14	-	0.14	0.24	-	0.24
Retroreflective Material	-	0.06	0.06	-	0.08	0.08
Combined Performance Material	-	-	0.14	-	-	0.24
^a If The Height Range (Interval Figures As Described In EN ISO 13688:2013) Includes 140 cm (E.G. Garment Designed For Height Range From 138 cm To 142 cm), Then The Requirements As Stated In The Column "H > 140" Apply.						

Compliance: The Submitted Sample **MEETS** The Design Requirements Of Type B3 Of EN 17353:2020, Clause 5.



End Of Report

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Remark:

1. As Requested by the Applicant, For Details Refer to Attached Page (5).
2. All the tested item are tested under the standard condition.
3. The report is valid with commission test only for the test samples in the case of delivering samples by clients.

/ kayyu

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TEST REPORT



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国际互认
检测
TESTING
CNAS L0220

Number: GZHT91331817

Date: Apr 30, 2025

Applicant: MID OCEAN BRANDS B.V.
7/F, KINGS TOWER, 111 KING LAM STREET,
CHEUNG SHA WAN, KOWLOON, HONG KONG
Attn: DEREK HUI

Sample Description:

Three (3) pieces of submitted samples said to be High visibility safety vests in Dark Pink.

Standard : ISO 13688:2013/Amd.1:2021

Styles No./Name : YC2405, MO2405

Manufacturer : 116209

Country Of Original : China

Good Exported to : Europe

Date of Sample Received : Apr. 23, 2025

Testing Period : Apr. 23, 2025 - Apr. 28, 2025

Date Final Information Confirmed/ --/--

Date Payment Received:

Test Result Please Refer To Attached Page(S).

Should you have any query on this report, you may contact at gzfootwear@intertek.com

Authorized By:
For Intertek Testing Services Shenzhen Ltd.
Guangzhou Branch

Rachel Lin

Rachel Lin
Technical Specialist



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(6)

1 pH Value

As Per ISO 13688:2013/Amd.1:2021, 4.2, With Reference To ISO 3071:2020 For Textile, Potassium Chloride (KCl) Solution Extracted, pH Value Was Measured By pH Meter.

	Result	Requirement
	6.3	*

Temperature Of The Extracting Solution: 23.9℃

pH Of The Extracting Solution: 5.88

Remark: * = The pH Value Shall Be Greater Than 3.5 And Less Than 9.5

The Expanded Uncertainty Of The pH Value Of Specimen Is 15%, Which An Uncertainty With A Coverage Factor k=2, At Approximately 95% Confidence Level.

Tested Component: Pink Elastic Polyester With Silver Retro-Reflective Printing

Conclusion:

Standard
ISO 13688:2013/Amd.1:2021 For pH Value

Result
Pass

2 Azo Colourants Content

With Reference To Test Method: Textile Method (ISO 14362-1:2017)

Amines Content Was Determined By Gas Chromatography-Mass Spectrometry (GC-MS)

	Forbidden Amine	CAS No.	Results (mg/kg)	
			Method T	Method D
1.	4-Aminodiphenyl	92-67-1	<5	<5
2.	Benzidine	92-87-5	<5	<5
3.	4-Chloro-o-toluidine	95-69-2	<5	<5
4.	2-Naphthylamine	91-59-8	<5	<5
5.	o-Aminoazotoluene	97-56-3	<5	<5
6.	2-Amino-4-nitrotoluene	99-55-8	<5	<5
7.	p-Chloroaniline	106-47-8	<5	<5
8.	2,4-Diaminoanisole	615-05-4	<5	<5
9.	4,4'-Diaminodiphenylmethane	101-77-9	<5	<5
10.	3,3'-Dichlorobenzidine	91-94-1	<5	<5
11.	3,3'-Dimethoxybenzidine	119-90-4	<5	<5
12.	3,3'-Dimethylbenzidine	119-93-7	<5	<5
13.	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	<5	<5
14.	p-Cresidine	120-71-8	<5	<5
15.	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	<5	<5
16.	4,4'-Oxydianiline	101-80-4	<5	<5
17.	4,4'-Thiodianiline	139-65-1	<5	<5
18.	o-Toluidine	95-53-4	<5	<5
19.	2,4-Toluylenediamine	95-80-7	<5	<5
20.	2,4,5-Trimethylaniline	137-17-7	<5	<5
21.	o-Anisidine	90-04-0	<5	<5
22.	4-Aminoazobenzene	60-09-3	<5	<5

Remark: Requirement = 30 mg/kg

Reporting Limit = 5 mg/kg

Method T: Direct Buffer Extraction As Per ISO 14362-1:2017 Section 10.2

Method D: Colourant Extraction With Xylene As Per ISO 14362-1:2017 Section 10.1

Tested Component: Pink Elastic Polyester With Silver Retro-Reflective Printing

Conclusion:

Standard

ISO 13688:2013/Amd.1:2021 Protective Clothing -
General Requirements - Azo Colourants Content

Result

Pass



End Of Report

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Remark:

1. As Requested by the Applicant, For Details Refer to Attached Page (5).
2. All the tested item are tested under the standard condition.
3. The report is valid with commission test only for the test samples in the case of delivering samples by clients.



TEST REPORT

Report No. : WTF24F07160632R1C
Applicant : Mid Ocean Brands B.V.
Address : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan,
Kowloon, Hong Kong
Manufacturer : 116209
Sample Name : High visibility safety vest, High visibility safety vest,
Reflective body belt
Sample Model : YC2405, MO2405, MO6445
Test Requested : Refer to next page (s)
Test Method : Refer to next page (s)
Test Conclusion : **Pass** (Please refer to next pages for details)
Date of Receipt sample : 2024-07-09 & 2025-04-23
Testing period : 2024-07-09 ~ 2024-07-15 & 2025-04-23 to 2025-04-29
Date of Issue : 2025-04-29
Test Result : Refer to next page (s)
Note : 1.As specified by client, only test the designated sample.
2.As per client's requirement, the test results of sample
No.1~No.6 are extracted from report No.
WTF24F07160632C.

Prepared By:

Waltek Testing Group (Foshan) Co., Ltd.

Address: No.13-19, 2/F., 2nd Building, Sunlink Machinery City, Xingye 4 Road, Guanglong Industrial Park,
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Tel:+86-757-23811398 Fax:+86-757-23811381 E-mail:info@waltek.com.cn

Signed for and on behalf of
Waltek Testing Group (Foshan) Co., Ltd.

Swing Liang

Swing.Liang



WTF24F07160632R1C



Report No.: WTF24F07160632R1C

Job No.: FSW2407090362CJ

Summary

Item No.	Test Requested	Test Conclusion
1	Determination of Lead content in the submitted sample in accordance with REACH regulation Annex XVII Entries 63 (EC) No. 1907/2006 and the amendment No. 836/2012 and (EU) 2015/628	Pass
2	Determination of Cadmium content in the submitted sample in accordance with REACH regulation Annex XVII Entries 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011, No. 835/2012 and (EU) 2016/217	Pass
3	Determination of specified Phthalates content according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 & No. 2018/2005	Pass
4	Determine the specified AZO Colorants contents in the submitted sample in according to the Entries 43 in Annex XVII of the REACH Regulation (EC) No.1907/2006 and the Amendment Regulation (EC) No.552/ 2009 & No.126/ 2013 (previously restricted under Directive 2002/61/EC).	Pass
5	Determination of specified Polycyclic Aromatic Hydrocarbons (PAHs) content in submitted sample in accordance with Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013.	Pass
6	As requested by the applicant, to test Colour Fastness to Rubbing in the submitted sample.	Pass

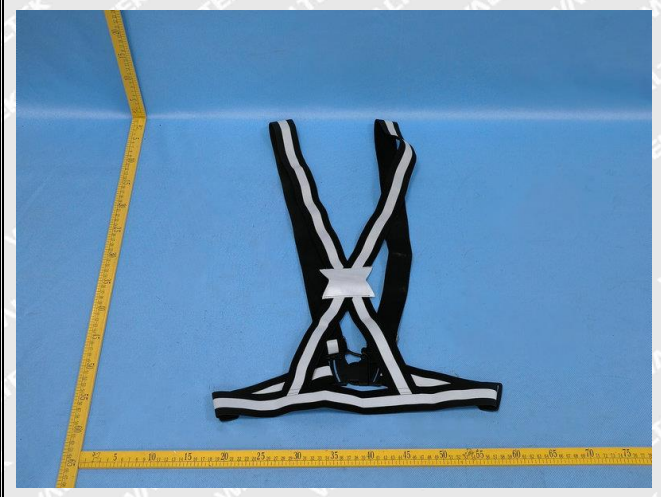
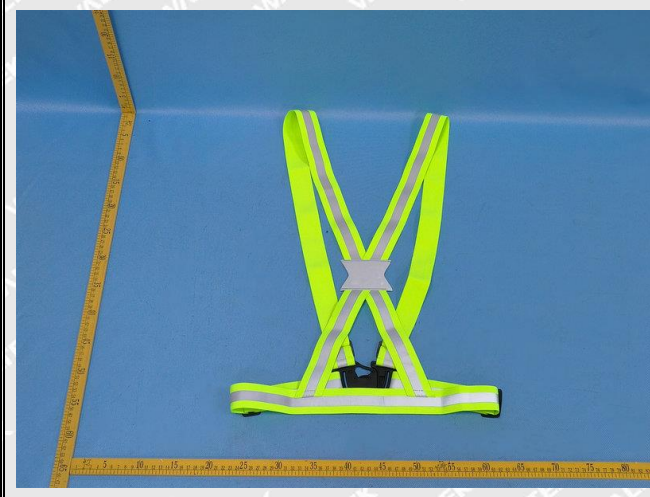
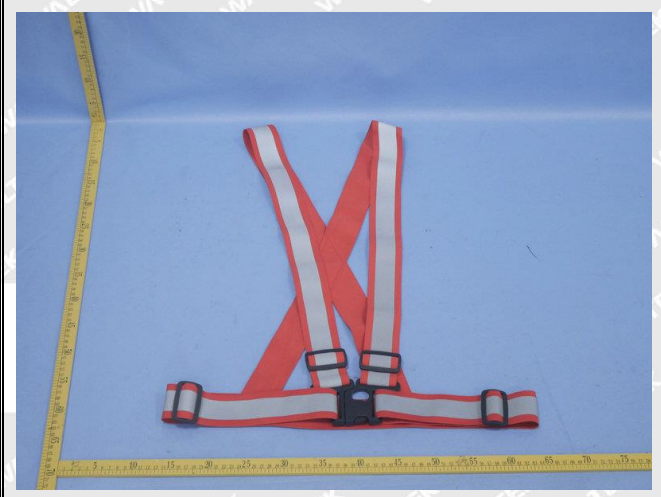
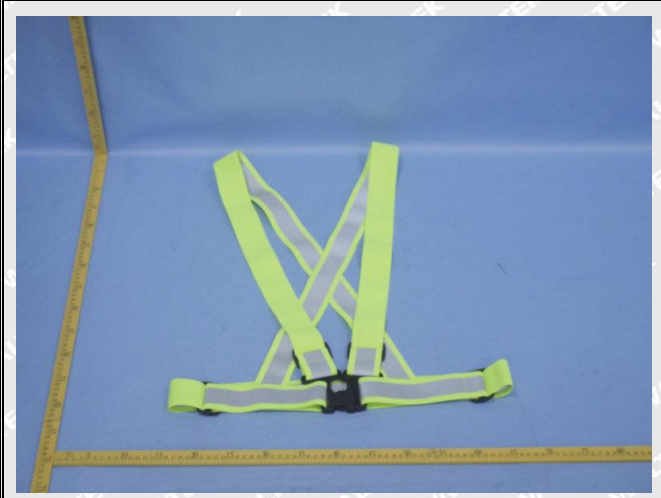
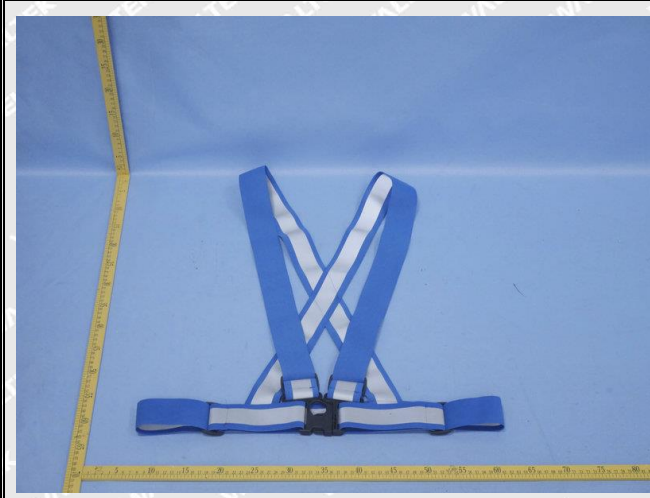
WALTEK



Report No.: WTF24F07160632R1C

Job No.: FSW2407090362CJ

Sample photo:





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Test Results:**1) Lead (Pb)**

Test Method: With reference to IEC 62321-5:2013, the analysis was performed by ICP-OES.

Test Item	LOQ (mg/kg)	Results (mg/kg)			Limit (mg/kg)
		No.1+No.2	No.3+No.4	No.5+No.6	
Lead(Pb)	2	145*	ND*	ND*	500
Conclusion	--	Pass	Pass	Pass	--

Test Item	LOQ (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		No.7	
Lead(Pb)	2	ND	500
Conclusion	--	Pass	--

Note:

- (1) mg/kg = milligram per kilogram
- (2) ND = Not Detected (lower than LOQ)
- (3) LOQ = Limit of quantitation
- (4) Limit of Lead was quoted from REACH regulation Annex XVII Item 63 (EC) No. 1907/2006 and the amendment No. 836/2012 and (EU) 2015/628.
- (5) "*" = Results are calculated by the minimum weight of mixed components.

2) Cadmium (Cd)

Test Method: With reference to IEC 62321-5:2013, the analysis was performed by ICP-OES.

Test Item	LOQ (mg/kg)	Results (mg/kg)
		No.1+No.2
Cadmium(Cd)	2	ND*
Conclusion	--	Pass

Note:

- (1) mg/kg = milligram per kilogram
- (2) ND = Not Detected (lower than LOQ)
- (3) LOQ = Limit of quantitation
- (4) Limit of Cadmium according to REACH regulation Annex XVII Item 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011 and No. 835/2012 and (EU) 2016/217.

Category	Limit (mg/kg)
Wet paint	100
Surface coating	1000
Plastic	100
Metal parts of jewellery and hair accessories	100

- (5) "*" = Results are calculated by the minimum weight of mixed components.



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3) Phthalates

Test Method: With reference to EN14372:2004, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Test Items	LOQ (%)	Results (%)	Limit (%)
		No.1+No.2	
Benzyl butyl phthalate (BBP)	0.005	ND*	sum of four phthalates < 0.1
Di (2-ethyl hexyl)- phthalate (DEHP)	0.005	0.049*	
Dibutyl phthalate (DBP)	0.005	ND*	
Diisobutyl phthalate (DIBP)	0.005	ND*	
Diisodecyl phthalate (DIDP)	0.01	ND*	sum of three phthalates < 0.1
Diisononyl phthalate (DINP)	0.01	ND*	
Di-n-octyl phthalate (DNOP)	0.005	ND*	
Conclusion	--	Pass	--

Note:

DBP= Dibutyl phthalate

BBP= Benzyl butyl phthalate

DEHP= Bis-(2-ethylhexyl)- phthalate

DINP= Di-isononyl phthalate

DNOP= Di-n-octyl phthalate

DIDP= Di-isodecyl phthalate

DIBP= Diisobutyl phthalate

(1) % = percentage by weight

(2) ND = Not Detected or lower than limit of quantitation

(3) LOQ = Limit of quantitation

(4) "<" = less than

(5) The above limit was quoted according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 & No. 2018/2005 (formerly known as Directive 2005/84/EC) for phthalate content in toys and child care articles.

(6) "*" = Results are calculated by the minimum weight of mixed components.



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4) AZO

Test Method: With reference to BS EN ISO 14362-1: 2017 and BS EN ISO 14362-3: 2017, analysis was performed by Gas Chromatographic Mass Spectrometry (GC-MS)

No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.3+No.4
1	4-Aminobiphenyl	92-67-1	30	ND*
2	Benzidine	92-87-5	30	ND*
3	4-chloro-o-Toluidine	95-69-2	30	ND*
4	2-Naphthylamine	91-59-8	30	ND*
5	o-Aminoazotoluene	97-56-3	30	ND*
6	2-Amino-4-nitrotoluene	99-55-8	30	ND*
7	p-Chloroaniline	106-47-8	30	ND*
8	2,4-diaminoanisol	615-05-4	30	ND*
9	4,4'-Diaminodiphenylmethane	101-77-9	30	ND*
10	3,3'-Dichlorobenzidine	91-94-1	30	ND*
11	3,3'-Dimethoxybenzidine	119-90-4	30	ND*
12	3,3'-Dimethylbenzidine	119-93-7	30	ND*
13	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	30	ND*
14	p-cresinin	120-71-8	30	ND*
15	4,4'-Methylen-bis-(2-chloroaniline)	101-14-4	30	ND*
16	4,4'-Oxydianiline	101-80-4	30	ND*
17	4,4'-Thiodianiline	139-65-1	30	ND*
18	o-Toluidine	95-53-4	30	ND*
19	2,4-Toluylendiamine	95-80-7	30	ND*
20	2,4,5 – Trimethylaniline	137-17-7	30	ND*
21	o-anisidine	90-04-0	30	ND*
22	4-aminoazobenzene	60-09-3	30	ND*
23	2,4-Xylidin	95-68-1	30	ND*
24	2,6-Xylidin	87-62-7	30	ND*
Conclusion		--	--	Pass



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No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.5+No.6
1	4-Aminobiphenyl	92-67-1	30	ND*
2	Benzidine	92-87-5	30	ND*
3	4-chloro-o-Toluidine	95-69-2	30	ND*
4	2-Naphthylamine	91-59-8	30	ND*
5	o-Aminoazotoluene	97-56-3	30	ND*
6	2-Amino-4-nitrotoluene	99-55-8	30	ND*
7	p-Chloroaniline	106-47-8	30	ND*
8	2,4-diaminoanisol	615-05-4	30	ND*
9	4,4'-Diaminodiphenylmethane	101-77-9	30	ND*
10	3,3'-Dichlorobenzidine	91-94-1	30	ND*
11	3,3'-Dimethoxybenzidine	119-90-4	30	ND*
12	3,3'-Dimethylbenzidine	119-93-7	30	ND*
13	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	30	ND*
14	p-cresinin	120-71-8	30	ND*
15	4,4'-Methylen-bis-(2-chloroaniline)	101-14-4	30	ND*
16	4,4'-Oxydianiline	101-80-4	30	ND*
17	4,4'-Thiodianiline	139-65-1	30	ND*
18	o-Toluidine	95-53-4	30	ND*
19	2,4-Toluylendiamine	95-80-7	30	ND*
20	2,4,5 – Trimethylaniline	137-17-7	30	ND*
21	o-anisidine	90-04-0	30	ND*
22	4-aminoazobenzene	60-09-3	30	ND*
23	2,4-Xylidin	95-68-1	30	ND*
24	2,6-Xylidin	87-62-7	30	ND*
Conclusion		--	--	Pass



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No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.7
1	4-Aminobiphenyl	92-67-1	30	ND
2	Benzidine	92-87-5	30	ND
3	4-chloro-o-Toluidine	95-69-2	30	ND
4	2-Naphthylamine	91-59-8	30	ND
5	o-Aminoazotoluene	97-56-3	30	ND
6	2-Amino-4-nitrotoluene	99-55-8	30	ND
7	p-Chloroaniline	106-47-8	30	ND
8	2,4-diaminoanisol	615-05-4	30	ND
9	4,4'-Diaminodiphenylmethane	101-77-9	30	ND
10	3,3'-Dichlorobenzidine	91-94-1	30	ND
11	3,3'-Dimethoxybenzidine	119-90-4	30	ND
12	3,3'-Dimethylbenzidine	119-93-7	30	ND
13	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	30	ND
14	p-cresinin	120-71-8	30	ND
15	4,4'-Methylen-bis-(2-chloroaniline)	101-14-4	30	ND
16	4,4'-Oxydianiline	101-80-4	30	ND
17	4,4'-Thiodianiline	139-65-1	30	ND
18	o-Toluidine	95-53-4	30	ND
19	2,4-Toluylendiamine	95-80-7	30	ND
20	2,4,5 – Trimethylaniline	137-17-7	30	ND
21	o-anisidine	90-04-0	30	ND
22	4-aminoazobenzene	60-09-3	30	ND
23	2,4-Xylidin	95-68-1	30	ND
24	2,6-Xylidin	87-62-7	30	ND
Conclusion		--	--	Pass

Note:

- ND = Not Detected or lower than limit of quantitation
- mg/kg=Milligram per kilogram
- Limit of quantitation (mg/kg): Each 5mg/kg
- The CAS-numbers 97-56-3 and 99-55-8 are further reduced to CAS-numbers 95-53-4 and 95-80-7.
- AZO colorants that are able to form 4-aminoazobenzene, generate under the condition of this method aniline and 1,4-phenylenediamine. The presence of these colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorant used.
- “*” = Results are calculated by the minimum weight of mixed components.



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5) Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method: With reference to AFPS GS 2019:01 PAK method, analysis was performed by Gas Chromatographic Mass Spectrometry (GC-MS).

Test Items	Unit	Results	LOQ	Limit
		No.1+No.2		
Benzo(a)anthracene (BaA)	mg/kg	ND*	0.2	1.0
Chrysene (CHR)	mg/kg	ND*	0.2	1.0
Benzo[b]fluoranthene (BbFA)	mg/kg	ND*	0.2	1.0
Benzo[k]fluoranthene (BkFA)	mg/kg	ND*	0.2	1.0
Benzo(a)pyrene (BaP)	mg/kg	0.4*	0.2	1.0
Dibenzo[a,h]anthracene (DBAhA)	mg/kg	ND*	0.2	1.0
Benzo[j]fluoranthene (BjFA)	mg/kg	ND*	0.2	1.0
Benzo[e]Pyrene (BeP)	mg/kg	ND*	0.2	1.0
Conclusion	--	Pass	--	--

Note:

(1) ND = Not Detected or lower than limit of quantitation

(2) mg/kg=milligram per kilogram=ppm

(3) LOQ = Limit of quantitation

(4) As per Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013, Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 1 mg/kg (0,0001 % by weight of this component) of any of the listed PAHs.

(5) As per Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013, Toys, including activity toys, and childcare articles, shall not be placed on the market, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 0,5 mg/kg (0,00005 % by weight of this component) of any of the listed PAHs.

(6) “*” = Results are calculated by the minimum weight of mixed components.



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6) Colour Fastness to Rubbing

Colour Fastness to Rubbing						
(ISO 105-X12: 2016; Size of rubbing finger: 16mm diameter.)						
		No.3	No.4	No.5	No.6	Client's Limit
Length	Dry staining	4-5	4-5	4-5	4-5	2-3
	Wet staining	4-5	4-5	4-5	4-5	2-3
Width	Dry staining	--	--	--	--	2-3
	Wet staining	--	--	--	--	2-3
Conclusion		Pass	Pass	Pass	Pass	--

Colour Fastness to Rubbing			
(ISO 105-X12: 2016; Size of rubbing finger: 16mm diameter.)			
		No.7	Client's Limit
Length	Dry staining	4-5	2-3
	Wet staining	4-5	2-3
Width	Dry staining	--	2-3
	Wet staining	--	2-3
Conclusion		Pass	--

Note:

(1) Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.

Description for Specimen:

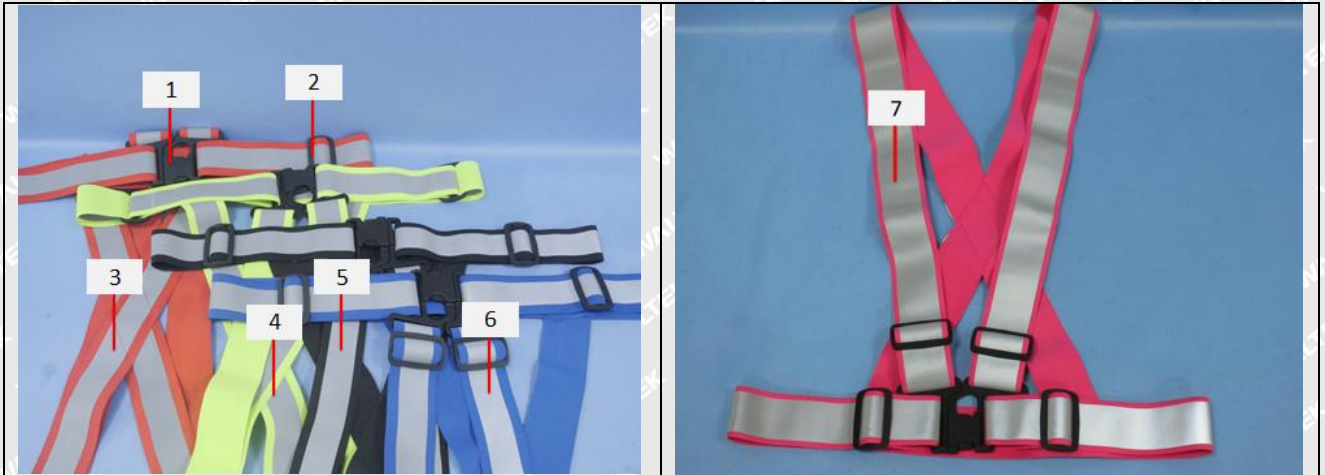
Specimen No.	Specimen Description
1	Black plastic buckle
2	Black plastic buckle
3	Red elastic band with grey film
4	Green elastic band with grey film
5	Black elastic band with grey film
6	Blue elastic band with grey film
7	Pink elastic band with grey film



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Photograph of parts tested:



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Remarks:

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===== End of Report =====

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