



## CHINASTARS REFLECTIVE

or over 20 years Chinastars has been providing safety solutions to worldwide companies and has become a major leader in the China safety industry by manufacturing high quality safety clothing and reflective fabric.

Chinastars provides a full range of safety clothing at excellent quality and competitive price. Including safety vests, reflective jackets, reflective rainwear, safety T-shirts, sweatshirts and reflective coveralls etc. to enhance the visibility for workers, police, firefighters, cyclists or pedestrians in low light conditions.

Reflective tape, as the key material, plays a decisive role in the service time and quality of safety clothing. Chinastars is also the leading reflective tape manufacturer in China. Products include various reflective fabrics, reflective heat transfer vinyls, reflective PVC tapes, reflective pipings etc.

Our products are certified to meet the major international standards, and have been exported to more than 70 countries. We are proud to have a diverse portfolio of satisfied clients on a global scale, including distributors, OEM/ODM and end users. We grow and develop with our customers, and aiming to bring confidence to each customer using or selling our products.

For more information, please visit our website or contact us.

www.chinareflective.com
info@chinastars.com.cn





#### WHY CHOOSE CHINASTARS?

here are many safety clothing manufacturers in the world, but fewer can offer you the quality and price as we do. We provide unparalleled safety solutions based on our 15-plus years of export experience and innovation. Making sure your requirements are met on time and to the highest quality is our top priority!

Leading manufacturer of safety clothing and key material reflective tape, better quality control & best possible pricing.

Export to over 70 countries, keep a full understanding of industry tendency worldwide.

Products certified to meet Oeko-Tex 100, EN20471, ANSI107, AS/NZS1906, AS/NZS4602, CSA-Z96 etc.

Factories certified by ISO 9001:2015 and ISO 14001:2015.

Mature and efficient supply chain and QC system that have been running for over a decade.

Superior customer services, professional sales team to offer the most appropriate and cost-effective solutions.

Professional design team to provide excellent ODM services to worldwide clients.

Innovative developments to offer new reflective tapes and unique designs.

| SAFETY VEST            |    |
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| SAFETY T-SHIRT         |    |
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| OEM/ODM SERVICE        |    |



## EN ISO 20471:2013

**European Standard for High visibility Clothing** & Accessories

EN 20471 imposes requirements on visible workwear for employees in high-risk areas. The employees will be visible and safe at night, during the day, and from all angles.

There are three classes which are related to risk assessment and are defined by the minimum areas of background fluorescent and retroreflective material.

**CLASS 2** performance is of intermediate level. It requires a minimum of 0.50m<sup>2</sup> of background material and 0.13m<sup>2</sup> of retro-reflective material.



#### CSV-018

Sizes: M-4XL

EN20471 Class 2, Solid Tricot, 2" Silver Reflective Tape, Hook and Loop Front, Fluorescent Lime / Orange.





### CSV-097

One Size

EN20471 Class 2, Solid Tricot, 2" Silver Reflective Tape, Elastic Straps and Velcro Side Fastening, Fluorescent Lime / Orange.



#### CSV-111

Sizes: M-4XL

107

EN20471 & ANSI107 Class 2, Solid Tricot, 2" Silver Reflective Tape, Hook and Loop Front, Fluorescent Lime / Orange.





#### CSV-001

Sizes: M-4XL

EN20471 & ANSI107 Class 2, Solid Tricot, 2"Silver Reflective Tape, Hook and Loop Front Closure, Fluorescent Lime / Orange.



### EN 20471





#### CSV-113 Sizes: M-4XL

EN20471 & ANSI107 Class 2, Solid Tricot, 2" Silver Reflective Tape, Zipper Front, 5 Pockets, Yellow & Royal Blue, Yellow & Red, Orange & Royal Blue, Yellow & Dark Blue.

#### CSV-112 Sizes: M-4XL

EN20471 & ANSI107 Class 2, Fluorescent Lime / Orange.

## **UNDERSTANDING**

## **ANSI/ISEA 107-2015**

American National Standard for High-Visibility Safety Apparel & Accessories

ANSI 107-2015 standard includes a "Type" structure that keeps off-road ("Type 0"), roadway ("Type R"), and public safety ("Type P") garments separated by application and work environment. The types are further broken down into classes 1, 2 or 3. Three classes help the user to choose the proper garments based on expected work environment risks.

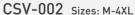
**TYPE R** (Roadway use) garments are for occupational workers who are exposed to roadway traffic and who work in an environment with moving equipment/vehicles.

**CLASS 2** garments are of intermediate level, for workers who will be exposed to traffic with speeds in excess of 25 mph. It requires a minimum of 775 in²(smallest size 540 in²) of background material and 201 in² of retro reflective or combined performance material.

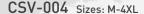
**CLASS 3** garments provide the highest level of safety, for workers who will be exposed to high speed traffic or reduced sight distances. It requires a minimum of 1240 in²(smallest size 1000 in²) of background material and 310 in² of retro reflective or combined performance material







EN20471 & ANSI107 Class 2, Solid Tricot, 2" Silver Reflective Tape, Zipper Front, 5 Pockets, Fluorescent Lime / Orange.



EN20471 & ANSI107 Class 2, Fluorescent Yellow & Dark Blue, Fluorescent Orange & Dark Blue.





5-OUT





#### CSV-021 Sizes: M-4XL

ANSI107 Class 2, Mesh, 2" Silver Reflective Tape, Hook and Loop Front, Fluorescent Lime / Orange.

#### CSV-016 Sizes: M-4XL

ANSI107 Class 2, Zipper Front, Fluorescent Lime / Orange.



#### CSV-114 Sizes: M-4XL

ANSI107 Class 2, Mesh, 2" Silver Reflective Tape, Hook and Loop Front, Fluorescent Lime / Orange.

#### CSV-116 Sizes: M-4XL

ANSI107 Class 2, Zipper Front, Fluorescent Lime / Orange.





#### CSV-117 Sizes: M-4XL

ANSI107 Class 2, Mesh, 2" Silver Reflective Tape, 5-point Breakaway, Hook and Loop Front, Fluorescent Lime & Orange.





ANSI107 Class 2, Solid Front, Mesh Back, 4" Orange/Yellow & 2" Silver Reflective Tape, Zipper Front, 2 Tab Holders, 4 Out Pockets, 3 Inside Pockets, Fluorescent Lime / Orange.

## CSV-120 Sizes: M-4XL ANSI107 Class 2, Solid Front, Mesh Back, 4" Orange/Yellow & 2" Silver Reflective Tape, Zipper Front, 2 Tab Holders, 4 Chest Pockets, 2 Inside Pockets, Adjustable Hook and Loop Straps, Fluorescent Lime / Orange. CSV-121 Sizes: M-4XL ANSI107 Class 2, 5-point Breakaway, Fluorescent Lime / Orange.



#### CSV-135 Sizes: M-4XL

ANSI107 Class 1, 3.5cm Silver Reflective Tape Sew on 9cm Solid Tricot, 4-point Breakaway, Fluorescent Yellow / Orange.

## **UNDERSTANDING**

## **ANSI/ISEA 107-2015**

American National Standard for High-Visibility Safety Apparel and Accessories

TYPE O, CLASS 1 garments provide the minimum visibility to differentiate the wear from noncomplex work environments where struck-by hazards will not be approaching at roadway speeds. It requires a minimum of 217 in2 of background material and 155 in<sup>2</sup> of retro reflective or combined performance material.





Yellow & 2" Silver Reflective Tape, Zipper Front, 4 Pockets, Fluorescent Lime / Orange.

## **CSA Z96-15**

Canadian Standard for High Visibility Safety Apparel

**CSA Z96-15** describes the requirements for high visibility apparel for Canadian workers to be seen by vehicle operators, especially in low-light conditions or darkness. CSA lists three classes of garments based on body coverage provided.

**CLASS 2** apparel has full coverage of the upper torso (front, back, sides and over the shoulders). Stripes/bands shall be composed of retroreflective or combined performance materials, and are to be displayed to ensure 360° visibility.

**CLASS 3** apparel provides the greatest body coverage and visibility. Apparel meets the same requirements as Class 2 with the addition of bands around both arms and legs.







#### CSV-125 Sizes: M-4XL

CSA-Z96 Class 2, Solid Tricot, 4" Orange/Yellow & 2" Silver Reflective Tape, Hook and Loop Front, 5point Breakaway, X Pattern Back, 4 Pockets, Fluorescent Lime / Orange.



CSV-128 Sizes: M-4XL

CSA-Z96 Class 2, Mesh, 4" Orange/ Yellow & 2" Silver Reflective Tape, X Pattern Back, 1 Pocket, 2 Tab Holders, Fluorescent Lime / Orange.





## AS/NZS 4602.1:2011

Australia / New Zealand Standard for High Visibility Safety Garments

**AS/NZS 4602.1** specifies the visual requirements for high visibility garments to ensure appropriate visibility for workers who may be exposed to traffic hazard in high risk situations. It also refers to another standard AS/NZS 1906.4:2010 for the reflective material that are used in the garments.

There are three classes relating to the application of the garments. Class D for daytime use only, Class N for nighttime use only, and Class D/N for day and/or night time use.

**CLASS D** garments made from high visibility background materials without retro-reflective tape, are designed for daytime use only. The minimum area of high visibility background material shall be no less than 0.2 m<sup>2</sup> both front and back.

**CLASS D/N** garments combine high visibility background materials with retro-reflective tape, making them suitable for day and night use, or for workplace with low light conditions. Retro-reflective tape shall comply to AS/NZS 1906 and in specific tape configurations.



CSV-122 Sizes: M-4XL

AS/NZS 4602.1 Class D/N, Solid Tricot, 2" Silver Reflective Tape, Hook and Loop Front, Fluorescent Lime / Orange.



CSV-123 Sizes: M-4XL

AS/NZS 4602.1 Class D, Solid Tricot, Hook and Loop Front, Fluorescent Lime / Orange.



MESH

CSV-129 One Size

Non-rated, Mesh, Hook and Loop Closure, Elastic Side Straps, Fluorescent Lime / Orange.







#### CSV-015 One Size

Non-rated, Mesh, 1" Reflective Gloss Tape, Hook and Loop Closure, Elastic Side Straps, Fluorescent Lime / Orange.

#### CSV-035 One Size

Non-rated, Soft Mesh, 2" Orange/Yellow & 3/4" Silver Reflective Tape, Hook and Loop Tab Closure, Elastic Side Straps, Fluorescent Lime / Orange.





#### CSV-030 One Size

Non-rated, Mesh, 2" Reflective Gloss Tape, Hook and Loop Snap Closure, Fluorescent Yellow, Orange, Black.



ANSI 107 Type P Class 2, Solid Tricot, Two 1" Silver Reflective Tape with Black Edging, Breakaway Shoulders & Sides, 2 Mic Clip, Pen Pocket, Fluorescent Lime.



#### CSV-130 One Size

Polyester Twill Fabric, 1" Reflective Gloss Tape, 2 Pockets, Hook and Loop Front, Blue, Red, Black, Green Color.



## **UNDERSTANDING**

## **ANSI/ISEA 107-2015**

American National Standard for High-Visibility Safety Apparel and Accessories

TYPE P CLASS 2 garments provide additional options for emergency responders, incident responders and law enforcement in temporary traffic control (TTC) zones. It requires a minimum of 450 in² of background material and 201 in² of retro reflective or combined performance material.



ANSI 107

ANSI 107 Type P Class 2, Solid Tricot, 2" Silver Reflective Tape with Black Edging, V-neck, Breakaway Shoulders & Sides, 2 Tab Holders, Fluorescent Lime.



# SAFETY VEST | RUNNING CSV-096 One Size 2" Reflective Elastic Band, Plastic Buckles and Strap Tighteners, Fluorescent Lime / Orange. CSV-132 One Size Tricot and Mesh Fabric, Silver Reflective Tape, Elastic Side Straps, Fluorescent Yellow / Green. CSV-141 Sizes: S-L

Softshell Fabric with Reflective Printing, Zipper

Closure, 2 Zipper Pockets, Fluorescent Lime.

CSV-140 Sizes: S-L

Yellow & Black.

Solid Tricot, Reflective Printing Fabric, Silver Reflective Tape, Zipper Closure, Fluorescent



## EN 1150:1999

European Standard for Visibility Clothing for Non-professional Use

Whilst EN ISO 20471 specifies requirements for high visibility clothing for professional use in the work place, the EN 1150 standard provides details for non-professional use. It is considered to be suitable for children, cyclists and pedestrians or other traffic related interaction activities.

EN 1150 can either be satisfied by the minimum area of background and retro reflective materials or, depending on the height of the wearer, the combined performance area.



Solid Tricot with Reflective Printing, Elastic Straps and Velcro Side Fastening, Fluorescent Lime.



Solid Tricot with Reflective Printing, 1" Silver Reflective Tape, Hook and Loop Front, Fluorescent Orange & Lime.



2-OUT

CSV-092 Sizes: XS-L Solid Tricot with Reflective Printing, 2 Pockets, Hook and Loop Front, Fluorescent Lime.



## SAFETY VEST | PET CSV-046 Sizes: S-L Solid Tricot, 1" & 2" Silver Reflective Tape, Adjustable Velcro Fasteners, Fluorescent Lime. CSV-134 Sizes: S-L Polyester Nylon Silver Reflective Fabric, Adjustable Velcro Fasteners, Silver Grey in Daylight, Reflective White at Night When illuminated by Light. CSV-133 Sizes: S-L 100% Polyester Fabric with Reflective Printing, Reflective Pattern Customizable,

Adjustable Velcro Fasteners, Fluorescent Orange .



## EN ISO 20471:2013

European Standard for High Visibility Clothing & Accessories

**CLASS 3** performance provides the highest level of conspicuity. A Class 3 garment is required to cover the torso and has sleeves with reflective bands or/and trouser legs with reflective bands. It requires a minimum of  $0.80m^2$  of background material and  $0.20m^2$  of retro reflective material.



#### CSR-T013 Sizes: M-4XL

ANSI 107 & EN 20471 Class 3, Short Sleeve, Birdseye Mesh, 2" Silver Reflective Stripes, Breast Pocket, Fluorescent Lime / Orange.





ANSI 107 & EN 20471 Class 2, Short Sleeve, Birdseye Mesh, 2" Silver Reflective Stripes, Breast Pocket, Fluorescent Lime / Orange.





CSR-T011 Sizes: M-4XL

ANSI 107 & EN 20471 Class 2, Short Sleeve, Polyester Jersey Fabric, 2" Silver Reflective Stripes, Breast Pocket, Fluorescent Lime / Orange.

# T-SHIRT ANSI MESH 107 20471 1-OUT CSR-T015 Sizes: M-4XL ANSI 107 & EN 20471 Class 2, Long Sleeve, Birdseye Mesh, 2" Silver Reflective Stripes, Breast Pocket, Fluorescent Lime / Orange.





#### CSR-T016 Sizes: M-4XL

ANSI 107 & EN 20471 Class 3, Long Sleeve, Polyester Jersey Fabric, 2" Silver Segmented Reflective Stripes, Breast Pocket, Fluorescent Lime / Orange.



#### CSR-T014 Sizes: M-4XL

ANSI 107 & EN 20471 Class 2, Short Sleeve, Birdseye Mesh, 2" Silver Segmented Reflective Stripes, Breast Pocket, Fluorescent Lime / Orange.







CSW-012 Rain lacket

Sizes: M-4XL

ANSI 107 & EN 20471 Class 3, PU Coated 300D Oxford, 2" Silver Reflective Stripes, Attached Hide-away Hood, 2 Pockets, Fluorescent Lime / Orange.



107

CSP-006 Pant

Sizes: M-4XL

ANSI 107 Class E & EN 20471 Class 1, PU Coated 300D Oxford, 2" Silver Reflective Stripes. Draw String Waist, 2 Pockets, Fluorescent Lime / Orange.



## UNDERSTANDING

## EN ISO 20471:2013

**European Standard for High Visibility Clothing** & Accessories

CLASS 1 performance provides less visibility than Class 2 or 3, but can be a good alternative for low risk duties and environments. It requires a minimum of 0.14m<sup>2</sup> of background material and 0.10m<sup>2</sup> of retro reflective material.

## **ANSI/ISEA 107-2015**

American National Standard for High-Visibility Safety Apparel and Accessories

**CLASS E** as a supplement type of ANSI 107, can be applied to rain pants, bib pants, shorts etc. It can combine with a Class 2 vest for an ANSI Class 3 ensemble: or a Class 3 vest to attain a higher level visibility. It requires a minimum of 465 in<sup>2</sup> of background material and 109 in<sup>2</sup> of retro-reflective or combined performance material.



CSW-013 Rain Jacket

Sizes: M-4XL

ANSI 107 & EN 20471 Class 3, PU Coated 300D Oxford. 2" Silver Reflective Stripes. Attached Hide-away Hood. 1 Phone Pocket, 2 Lower Front Pockets, 1 Sleeve Pencil Pocket, Fluorescent Lime & Black, Fluorescent Orange & Black.



CSP-013 Pant Sizes: M-4XL

ANSI 107

POCKET

ANSI 107 Class E & EN 20471 Class 1, PU Coated 300D Oxford, 2" Silver Reflective Stripes, Draw String Waist, 2 Pockets, Fluorescent Lime & Black, Fluorescent Orange & Black.



CSW-014 Long Raincoat Sizes: M-4XL



ANSI 107 & EN 20471 Class 3. PU Coated 300D Oxford, 2" Silver Reflective Stripes, Attached Hideaway Hood, 2 Pockets, Fluorescent Lime / Orange.











ANSI 107 & EN 20471 Class 3, PU Coated 300D Oxford Shell, Quilted Taffeta Liner, 2" Silver Reflective Stripes, Detachable Hide-away Hood, Elastic Waists & Wrists, 1 Phone Pocket, 2 Zipper Pockets, Fluorescent Lime / Orange.



ANSI 107 & EN 20471 Class 3, PU Coated 300D Oxford Shell, Zip-out Fleece Jacket Liner, 2" Silver Reflective Stripes, Detachable Hide-away Hood, Elastic Waists & Wrists, 1 Phone Pocket, 2 Zipper Pockets, Fluorescent Lime & Black, Fluorescent Orange & Black.



CSJ-005 Jacket Sizes: M-4XL

ANSI 107 & EN 20471 Class 3, PU Coated 300D Oxford Shell, Fleece Body Plus Quilted Sleeves, 2" Silver Reflective Stripes, Detachable Hood with Drawstring, Snap Wrist Closure, 1 Phone Pocket, 2 Lower Front Pockets, Fluorescent Lime / Orange.







CSC-002 Coverall Sizes: M-4XL

Grey Color Cotton-poly Blend Fabric, 4" Orange & 2" Silver Reflective Tape, Hidden Zipper Closure, 9 Pockets, Snap Button at Wrist and Ankle Openings for Adjustment.



EN 20471

CSJ-016 4 in 1 Jacket

Sizes: M-4XL



EN 20471 Class 3, PU Coated 300D Oxford Shell, 4 in 1 Jacket, Zip-out Inside Jacket with Quilted Taffeta Liner, Zip-off Inside Sleeves, 2" Silver Reflective Stripes, Detachable Hide-away Hood, 3 Outside Pockets, 3 Inside Pockets, Elastic Wrists, Fluorescent Lime & Black, Fluorescent Orange & Black.



3-OUT 2-IN CSA-Z96 Class 3, PU Coated 300D Oxford Shell, 4 in 1 Jacket, Zip-out Inside Jacket with Quilted Taffeta Liner, Zip-off Inside Sleeves, 4" Orange/Yellow & 2" Silver Reflective Tape, X Pattern Back, 3 Outside Pockets, 2 Inside Pockets, Fluorescent Lime & Black, Fluorescent Orange & Black.





## CSR-NS001 Neck Shade One Size

Mesh Fabric, 2" Orange/Yellow & 1" Silver Reflective Tape, Fits Cap Style and Full Brim Hard Hats, Fluorescent Lime / Orange.



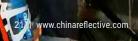
#### CSR-LS001 Leg Sleeves One Size

Tricot Fabric, 2" Silver Reflective Stripes, Adjustable Hook and Loop Closure, Elastic Knee Openings, Fluorescent Lime / Orange.



## CSR-AB002 Armband One Size

2" Elastic Band with 1" Silver Heat Transfer Reflective Tape, Adjustable Hook and Loop Closure, Fluorescent Lime



Innovation and customized developments are our top priority. Chinastars is a leading manufacturer of reflective tape and custom made safety clothing with over a decade of experience. As a result, Chinastars can offer you professional suggestions and provide you excellent OEM & ODM services.

## **COMMON FABRICS**

Below are some of the most commonly used safety clothing fabrics for your reference:



Tricot Fabric

120gsm, 100% PES, EN 20471/ ANSI 107, Suitable for Certified Solid Safety Vests.



Twill Fabric

130gsm, 100% PES, EN 20471/ ANSI 107, Suitable for Work Suit.



Oxford Fabric

150D. 300D. 100% PES. PU Coated. EN 20471/ANSI 107, Suitable for Rain Wear, Jackets.



Filament Fabric

60gsm, 80gsm, 100gsm, 100% PES, Suitable for Non-rated Solid Safety Vests & Piping.



Birdeye Mesh

130-140gsm, 100% PES, EN 20471 /ANSI 107, Suitable for T-shirt.



Fleece Fabric

260gsm, 280gsm, 300gsm, 100% PES, EN 20471/ANSI 107, Suitable for Sweatshirt.



#### American Mesh

110gsm, 100% PES, ANSI 107, Suitable for Certified Mesh Safety Vests.



Jersey Fabric

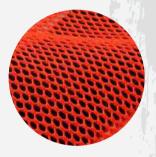
180-200gsm, 100% PES, EN 20471 /ANSI 107, Suitable for T-shirt.



Reflective Printing **Fabric** 

Custom Reflective Patterns, Printed

to Various Base Fabrics, Suitable for Safety Vests, Jackets.



Mesh Fabric

55-60gsm, 90gsm, 130gsm, 100% PES, Suitable for Nonrated Mesh Safety Vests.



Pique Fabric

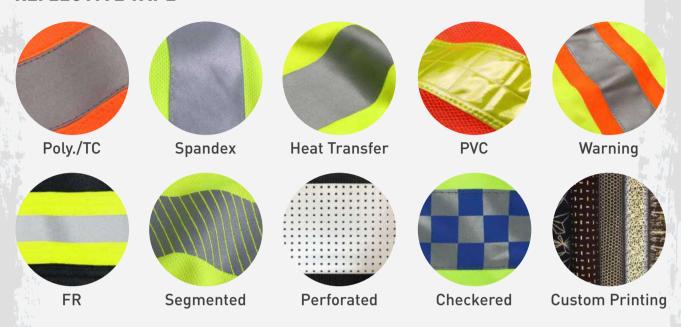
200gsm, 100% PES, EN 20471/ ANSI 107, Suitable for Polo Shirt.



#### Reflective Fabric

Highly Reflective at Night with Light, Silver Grey in Daylight, Suitable for Outer Shell Jackets or Safety Vests.

## **REFLECTIVE TAPE**



## **CUSTOM LOGO**



Silk Screen
Economical, Plate Fee Charged
Per Color, Suitable for Large
Area Printing with Fewer Colors.



Reflective Heat Transfer

Highly Reflective, Easier to be Seen at Night, Silver or Custom Colors.



**Heat Transfer** 

Suitable for Small Area Printing with Multiple Colors or Gradient Colors.



**Embroidery**More Expensive, Suitable for Small Logo.

## **PACKAGE**



**OPP** Bag



PE Bag with Slider



Cloth Bag



Retail Package



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ZHEJIANG CHINASTARS NEW MATERIALS GROUP CO., LTD.

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