



CE 98 0402

**Chemi Cover Dress
C/91 (R)
TECHNICAL SPECIFICATION
TS C/9107-2**



- **Disposable**
- **Documented Protection for most Hazardous Chemicals for more *than 4 hours***
- **Double Barrier, 10 ply EVOH**
- **One size only**
- **Jacket with integrated hood**
- **Trousers with integrated foot covers**

Comments: Now 3-finger gloves
Replaces: TS C/9107 - 2 of 01-11-27
Encl: Donning Instruction
Pages: 0-14

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1 GENERAL DESCRIPTION

1.1 General Features

- 1.1.1 The Chemi Cover Dress C/91 and C/91 R, in the following called C/91(R), consists of a jacket with an integrated hood and trousers with integrated foot reinforcements, both manufactured out of the same Chem-proof barrier material. A pair of 3-finger gloves comes within each package (page 7).
- 1.1.2 In combination with a protective mask, the C/91(R) gives complete and documented protection, against most common Hazardous Chemicals and dangerous flammable solvents, for more than 4 hours.
- 1.1.3 The 10 ply thermo plastic film material includes a double barrier of EVAL (Ethylene Vinyl Alcohol, also shortened as EVOH), which has outstanding chemical protection performances when hidden inside a Polyethylene multilayer film co-extrudate. Although the protection is excellent, the material resistance against chemicals has limitations. Therefore, if contaminated, consider the C/91(R) as disposable.
- 1.1.4 The C/91 and the C/91 R have only one size each. The R-version is designed to protect even the oxygen tubes on the back. In order to fit all individual sizes, both jackets have a belt and EPDM wristbands. Both trousers also have a waist belt and a pair of braces. The foot covers have four integrated "shoe strings".

1 GENERAL DESCRIPTION

1.2 Function

1. 2. 1 The hood, integrated in the jacket, has a circular opening for the protective mask. A reinforcement ring is sealed around the opening to ensure flexible fitting to the mask without being ruptured when stretched to surround the respirator and goggles or the mask visor.
1. 2. 2 Flexible EPDM wristbands are attached to tighten the sleeve openings outside the gloves.
1. 2. 3 Both sleeves are sealed to the front of the jacket forming one common large sleeve entrance for both arms, which enables both easier manufacturing and easier donning.
1. 2. 4 If the waist belt is tightened up loosely, the trousers will fit any size by adjusting the braces.
1. 2. 5 All four "shoe strings" integrated in each foot cover shall be tied on top of the ankle, to fix the foot cover properly in position around the boot.
- 1.2. 6 Both Foot Covers have three sinuous formed lines of hot melt glue as an Anti Skid Grip to prevent sliding on wet metal or smooth concrete surfaces.

2 APPLICABLE DOCUMENTS

2.1 Manufacturing Drawings

- 2.1.1 Drawing No: 492007, C/91 "Jacket / Hood" of 00-03-10
- 2.1.2 Drawing No: 492008, C/91 "Sleeve and Ring constr." of 94-03-07
- 2.1.3 Drawing No: 492009, C/91 "Trousers" of 00-03-10
- 2.1.4 Drawing No: 492004, C/91(R) "Foot Covers" of 00-03-10
- 2.1.5 Drawing No: 492010, C/91 R "Jacket / Hood" of 00-03-10
- 2.1.6 Drawing No: 492011, C/91 R "Sleeve and Ring constr." of 94-03-07
- 2.1.7 Drawing No: 492012, C/91 R "Trousers" of 00-03-10
- 2.1.8 Drawing No: 491005, C/91 "Chemi Cover Gloves" (3-F) 94-03-07

2.2 Testing Methods (Designations updated = xxxx)

- 2.2.1.1 Resistance to Mustard Gas FMV:A 53739
- 2.2.1.2 Chemical Resistance Test as per Fixperm x 10 and ASTM F 739-85
- 2.2.2.1 Thickness ISO 4591 :1992: ISO 4593 : 1993
- 2.2.2.2 Weight per m² (DIN 53 352) = DIN EN 22286 = ISO 2286
- 2.2.3.1 Tensile Strength in MPa ISO 1184:1983
- 2.2.3.2 Tensile Strength in Newton DIN 53 455
- 2.2.4.1 Tear Resistance - The "trouser"-shaped
test specimen method ISO 6383 - 1:1983
- 2.2.4.2 Tear Strength in Newton DIN 53363
- 2.2.4.3 Tear Resistance - The Elmendorf method ISO 6383 - 2:1983

2.3 Product Requirements

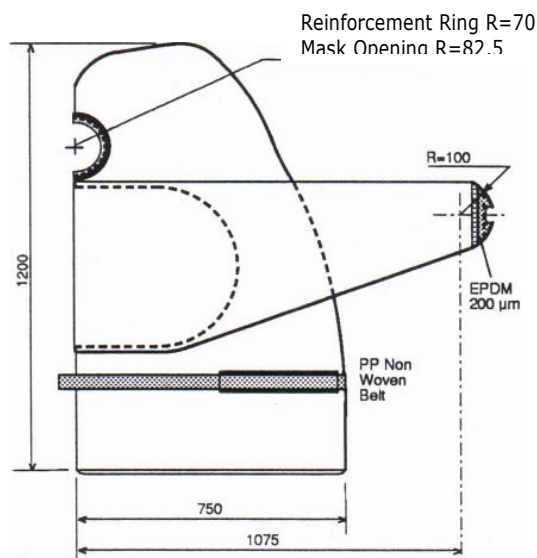
- 2.3.1 Product Requirements (items 5. 1. 1 - 5. 1. 11 and 5. 2. 1)

3 PRODUCT DESIGN

3.1.1 C/91 Jacket with integrated hood

Scale = 1:20

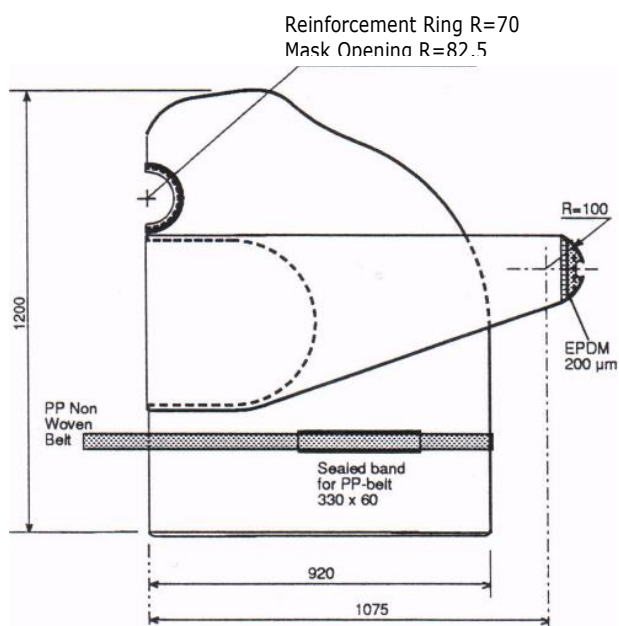
Tolerance = +/- 3%



3.1.2 C/91 R Jacket with integrated hood

Scale = 1:20

Tolerance = +/- 3%

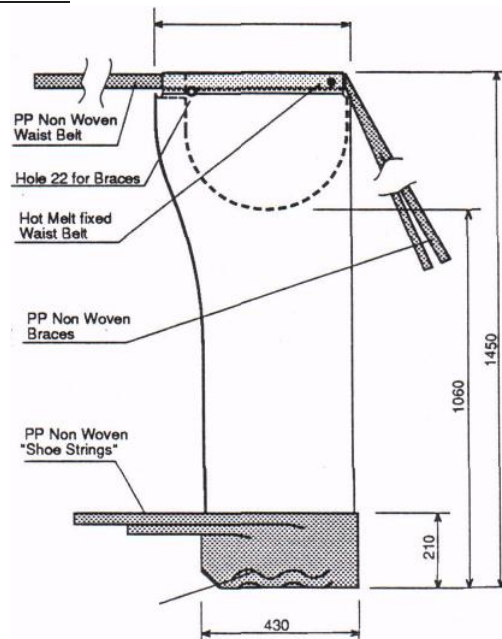


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3 PRODUCT DESIGN

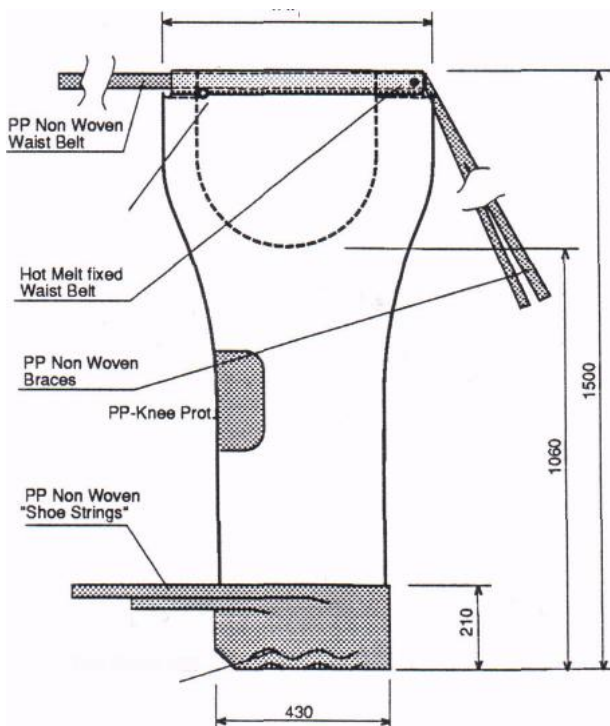
3.2.1 C/91 Trousers with integrated Foot Covers

Scale = 1:20
Tolerance = +/- 3%



3.2.2 C/91 R Trousers with integrated Foot Covers

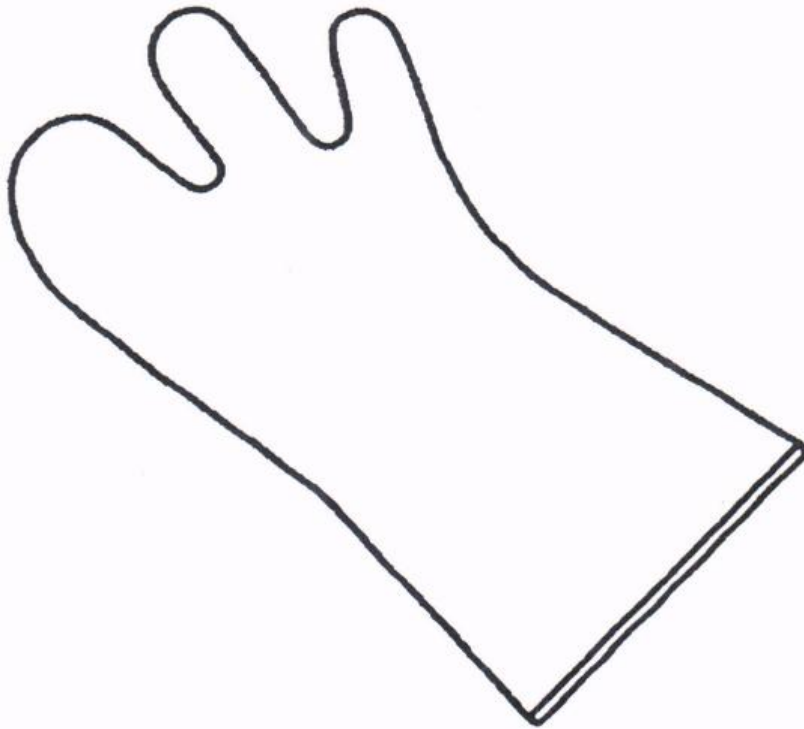
Scale = 1:20
Tolerance = +/- 3%



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3.3 C/91 Chemi Cover Gloves

Type: 3-Finger Glove (Measure Tolerance = +/- 3%)



Dimensions:

Total length	425 mm
Total width.....	245 mm
Thumb length	70 mm
Thumb entering width	48 mm
Forefinger length	90 mm
Forefinger entering width	48 mm
3-finger pocket length	95 mm
3-finger pocket entering width ...	95 mm
Entering width	220 mm
Width of seam.....	2.5-3.0 mm

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4 MATERIAL SPECIFICATION

- 4.1 Film Material LLDPE /EVAL (EVAL=EVOH)
- 4.1.1 Total Thickness: 125 micron (0,125 mm) +- 10 %
- 4.1.2 Weight per sqm: 115 grams+/-10%
- 4.1.3 Co-extruded materials: Polyethylene (LLDPE) – 4 ply
Ethylethylene Vinyl Alcohol (EVAL typ F) – 2 ply
Polyethylene Adhesives – 4 ply
- 4.1.4 Colour: Transparent
- 4.1.5 Surface treatment: None
- 4.2 Fibre Fabric Material
- 4.2.1 Weight per sqm: 230 grams + - 10 %
- 4.2.2 Fibre Polymer: Polypropylene
- 4.2.3 Fabric construction: Non Woven
- 4.2.4 Colour: Standard Grey
- 4.3 Hot Melt Glue and Anti Skid Grip Materials
- 4.3.1 Polymer: Low Molecular Weight Polyethylene
- 4.3.2 Colour: Non pigmented

5 PRODUCT SPECIFICATION

5.1 Film Material = LLDPE /EVAL (type F) (Jacket, trousers and Gloves)

	Characteristics	Requirements	Testing Method
5.1.1	Resistance to Mustard Gas	>12 h	FMV:A 53739
5.1.2	Res. To Methylenechloride	>4	ASTM F739-85
5.1.3	Thickness (mm) -"- (µm)	0,125 +/- 10% 125 +/-1 10%	ISO 4591:1992 ISO 4593:1993
5.1.4	Weight per sqm (grams)	115 +/- 10%	ISO 2286
5.1.5	Yield Strength (MPa)	< 10/10 (MD / TD)	ISO 1184: 1983 1)
5.1.6	Seal Strength (MPa)	> 10 (MD / TD)	ISO 1184: 1983 1)
5.1.7	Tensile Strength (MPa)	> 15/12 (MD / TD)	ISO 1184: 1983 1)
5.1.8	Tensile Strength (N)	> 20 (MD / TD)	DIN 53 455
5.1.9	Tensile Tear Strength (N/100 µm)	4 / 8 (MD / TD)	ISO 6383-1:1983 2)
5.1.10	Impact Tear Strength (N/100µm)	1.0/2.0 (MD/TD)	ISO 6383-2:1983
5.1.11	Tear Strength (N/125 µm)	>5 (MD/TD)	DIN 53 363 3)

5.2 Fibre Fabric Material (Foot Covers, Belt, Braces and Waist Belt)

	Characteristics	Requirements	Testing Method
5.2.1	Weight per sqm (grams)	230 +/- 10%	Scale

- 1) Test specimen with 6 mm waist. Tensile velocity 500 mm/min.
- 2) Deformation velocity 200 mm/min.
- 3) Deformation velocity 100 mm/min.

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8 RESTRICTIONS

8.1 Patent

8.1.1 The Chemi Cover Dress C/91(R) is a patented construction and must not be produced elsewhere without a New Pac Safety license.

8.2 Transportation and Storage instructions

8.2.1 Avoid high heat exposure of the C/91(R) as thermo plastic material may stick to itself or degrade. Recommended maximum temperature for short term storage is +70 °C.

8.2.2 Storage Life at periodically max +50 °C = 20 years.

8.3 Action Limitations

8.3.1 Extreme low temperatures as well as high temperatures reduce the film strength of the C/91(R) in action. Full reliability of the C/91(R) is guaranteed within the temperature range from -25 °C to +70 °C.

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9 QUALITY ASSURANCE

9.1 Suppliers Activity

9.1.1 New Pac Safety quality assurance routines and resources now meet the standards in SS-EN ISO 9001:2000.

9.2 References

9.2.1 New Pac Safety AB has many years' experiences in supplying the Swedish Defense Material Administration (FMV) in accordance with their quality assurance regulations.

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