



# SE-shield

*Personal protective ensemble*

Tyvek® and Tychem®  
QC single-use suits



## User instructions

100325-03 C

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## **User instructions for SE-shield ensemble Tyvek® and Tychem® QC single-use suits S-ITC and S-PEC**

SE-shield is a range of SEA personal protective ensembles for use in hazardous environments.

Each SE-shield ensemble consists of a pressurised protective suit integrated with the SE400AT FPBR (fan-supplied positive-pressure breath-responsive respirator). By directing a small amount of filtered air from the SE400 into the suit via a special SE-shield breathing hose, positive pressure is maintained inside the suit. This provides added body protection and perceived cooling without reducing the SE400's high level of breathing protection.

***IMPORTANT! SE-shield suits should be used only by trained personnel and in accordance with these user instructions.***

***IMPORTANT! SE-shield suits should always be used with SE-shield pressurisation breathing hose and dual batteries.***

***WARNING! Tyvek® and Tychem® QC materials are not flame-resistant and should not be used around heat, flame, sparks, or in potentially flammable or explosive environments.***

***WARNING! All Tyvek® and Tychem® materials cause electrostatic discharge under some conditions. Do not use in explosive atmospheres or in atmospheres containing hydrogen or enriched oxygen. For more information contact SEA.***

*Note: Refer to the SE400 user instructions for proper use of the SE400 respirator.*

*Note (USA only): SE-shield suits are not approved as protective suits in the USA and have not been tested or approved by NIOSH as protection against any contaminants which may penetrate the suit and/or attack the skin.*

### **SE-shield Tychem® QC – Industrial chemicals and dust**

- Disposable, light-weight, single-use suit

- Yellow polyethylene-coated Du Pont Tychem<sup>®</sup> QC material
- Elasticised cuffs around wrists, ankles and mask visor
- Protects against particles and gases
- Recommended by SEA for protection from industrial chemicals and particles

### ***SE-shield Tyvek<sup>®</sup> – Dust and other particulates***

- Disposable, light-weight, single-use suit
- White Du Pont Tyvek<sup>®</sup> material
- Elasticised cuffs around wrists, ankles and mask visor
- Protects against particles only
- Recommended by SEA for protection from nuisance and hazardous particles, including asbestos

## **Suit sizes**

The suits are available in the following sizes to suit the wearer:

<b>Suit size</b>	<b>Wearer height cm (feet/inches)</b>	<b>Chest/bust cm (inches)</b>
L	170–182 (5'7"–6'0")	88–96 (35"–38")
XL	182–194 (6'0"–6'4")	96–104 (38"–41")
XXL	188–200 (6'2"–6'7")	100–108 (40"–43")
XXXL	200–212 (6'7"–6'11")	104–116 (41"–46")

*Note: Where a wearer's height and chest/bust dimensions give different suit sizes, use the larger suit size.*

## Unpacking

Each suit is packed with the following items:

- SE-shield disposable suit
- User instructions

## Storage

Store the suit in a cool, dry place. Avoid direct sunlight. Avoid storing near sharp objects.

When stored correctly and with packaging seal unbroken, storage life of 5 to 10 years can be expected.

## Donning the suit

Donning the suit is easier if you have a chair available.

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1. Fully assemble the SE400 with SE-shield pressurisation breathing hose, backpack, SE-Talk, dual battery adaptor (not shown) and fully charged batteries, but with mask disconnected (see SE400 user instructions). Position the fan unit on the back pack with the filter ports pointing downwards.
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2. Undo the threaded nuts on the fan unit filter panel. Check that the seals are in place around both filter ports.



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3. Insert the filter ports through the corresponding holes in the back of the suit. Refit the nuts and tighten firmly.



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4. Screw in the filters and tighten firmly. Fit pre-filters and pre-filter holders.



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5. Feed the SE400 SE-shield breathing hose through the hose sleeve on the suit.



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6. Connect the breathing hose to the mask, keeping the hose sleeve well away from the connection.



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7. Pull the hose cover all the way up to the regulator connection.



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8. Drape the assembled suit over a chair, hooking the filters over the backrest.



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9. Climb into the suit. Do not wear shoes.



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10. Put on the backpack. Fasten the waist belt and the chest strap.



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11. Put your arms through the sleeves of the suit.



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12. Sling the neck strap around your head.



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13. Put on the mask.





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14. To increase comfort and minimise visor fogging, turn on the fan unit by pressing either the control button on the speaker unit or the power switch on the fan unit.



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15. Pull the hood over your head and fit the elasticised opening neatly around the visor frame.



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16. Zip up the suit.



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17. Put on suitable outer footwear and gloves.



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*Note: After donning, inspect the suit. If the suit is punctured, its level of protection will be reduced and it should be discarded.*

## Permeation data for Tychem<sup>®</sup> QC material

Chemical name	Liquid or gas	Mean	Mean
		normalised breakthrough time	
		minutes	$\mu\text{g}/\text{cm}^2/\text{minute}$
Acetone	L	Immed. (<10 min.)	10
Acetonitrile	L	Immed.	16
Ammonia	G	Immed.	3.1
1,3-Butadiene	G	Immed.	12
Carbon disulfide	L	Immed.	High
Chlorine	G	Immed.	>50
Dichloromethane	L	Immed.	High
N,N-Dimethylformamide	L	Immed.	0.72
Ethyl acetate	L	Immed.	13
Ethylene oxide	G	Immed.	167
n-Hexane	L	Immed.	High
Hydrogen chloride	G	Immed.	9.3
Methanol	L	Immed.	2.2
Nitrobenzene	L	Immed.	18
Sodium hydroxide, 50%	L	>480	<0.1
Sulfuric acid (conc.)	L	>480	<0.1
1,1,2,2-Tetrachloroethylene	L	Immed.	High
Tetrahydrofuran	L	Immed.	183
Toluene	L	Immed.	50.3

*Values are averages of samples tested to ASTM F739.*

For further information please contact SEA.

## Asbestos fibre barrier data for Tyvek®

<b>Fibre length</b>	<b>Mean fibre challenge</b>	<b>Mean asbestos fibre barrier efficiency</b>
	<b>Fibres/mm<sup>2</sup></b>	<b>%</b>
All fibre lengths	41,558	99.08
All fibres longer than 0.5 µm	36,584	99.18

*Du Pont Haskell Laboratory test method using Chrysotile asbestos fibres.*

For further information please contact SEA.

## Decontamination and doffing

The SE-shield suits are disposable. Where decontamination is necessary, follow a decontamination procedure appropriate to the contaminant(s). The user should continue to wear the SE400 during decontamination.

Use blunt-ended scissors to cut the suit away from the SE400, with the motor running and the mask fitted. First cut a hole in the suit around the filter ports, then continue cutting along the full length of the breathing hose cover, taking care not to puncture the breathing hose. The suit can now be removed and discarded without removing the respirator.



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