



VS.

# CLOTHING SELECTION

## Single-use vs. reusable garment solution

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# CLOTHING STOCK VOLUME FOR WEEKLY CYCLE BY CLEANROOM CLASS

**COMPARISON**

Cleanroom class	100 000	10 000	1 000	100		10	1	
	ISO-8	ISO-7	ISO-6	ISO-5		ISO-4	ISO-3	ISO-1 & 2
	D	C		A/B				
				non-aseptic	aseptic			
Frock								
Two-pieces suit								
Coverall								
<b>Suggested frequency of change</b>	2/week	2/week	3/week	1/day	per entry*	per entry*	per entry*	per entry*
					* 4 entries per day			
<b>SINGLE-USE</b>	2	2	3	5	20	20	20	20
<b>REUSABLE</b>	5	5	7	11	44	44	44	44
								STOCK VOLUME
<i>Legend</i>		<i>recommended</i>						
		<i>application specific</i>						
		<i>not recommended</i>						

SOURCE: IEST-RP-CC003.3

**ON AVERAGE YOU REQUIRE LESS THAN HALF THE AMOUNT OF STOCK IF YOU SELECT SINGLE-USE VS. REUSABLE.**



## Reusable stock volume for weekly service cycle

CHANGE FREQUENCY BASED ON WEEKLY CYCLE	SETS REQUIRED	IN-USE	TRANSIT	LAUNDRY
1 X PER WEEK	3	1	1	1
2 X PER WEEK	5	2	1	2
3 X PER WEEK	7	3	1	3
4 X PER WEEK	9	4	1	4
DAILY = 5 X PER WEEK	11	5	1	5
2 X PER DAY = 10 X PER WEEK	22	10	2	10
3 X PER DAY = 15 X PER WEEK	33	15	3	15
4 X PER DAY = 20 X PER WEEK	44	20	4	20

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Source: common industry practice



# CLOTHING PERFORMANCE

**COMPARISON**

	<b>TYVEK®</b>	<b>REUSABLE</b>
<b>PARTICLE BARRIER EFFICIENCY</b>	<p>Consistent high level of particle barrier efficiency &gt; 99%* at relatively high air and moisture vapour transmission.</p> <p><small>*(barrier efficiency against airborne particles (25 mg/m<sup>3</sup>))</small></p>	<p>High level of particle barrier efficiency &gt; 90% available, however, typically at cost of air permeability.</p>
<b>CLEANLINESS</b>	<p>WASHED: CAT. I UNWASHED: CAT. II-III</p>	<p>Over expected life time of 2-3 years, risk of abrasion that may cause yarn or filament to break resulting in linting and/or particle shedding.</p>
<b>ELECTROSTATIC CHARGE DISSIPATION</b>	<p>Anti-static coating on both sides, applied when the nonwoven itself is manufactured.</p>	<p>Grid or stripes of conductive thread are woven in polyester. Risk of thread damage that may result in loss of electrostatic charge dissipation.</p>
<b>COMFORT</b> = air permeability + MVTR	<p>Good performance without compromising on particle barrier efficiency.</p>	<p>High air permeability very often compromises on particle barrier efficiency.</p>
<b>PEOPLE PROTECTION</b>	<p>Garments are CE-certified as personal protective equipment.</p> <p>In case of garment contamination, garment disposal at low costs. Risk of cross contamination may occur if not correct undressed.</p>	<p>Typically not CE-certified as personal protective equipment.</p> <p>In case of garment contamination, garment disposal at high costs. Risk of cross contamination may occur if not correct undressed and/or contamination is not recognised and garment laundered.</p>
<b>STERILITY</b>	<p>Recommended method: Gamma radiation. Particle barrier efficiency only minimal impacted. Mainly loss in physical property and liquid barrier performance.</p>	<p>Any type of sterilisation damages the inherent structure of polyester fabrics and significantly reduces the life time of the garment.</p>

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# ECONOMICS

**COMPARISON**

	<b>TYVEK®</b>	<b>REUSABLE</b>
<b>FLEXIBILITY</b>	No long-term commitment.	Leasing/Renting contracts very often commit over period of 3 years. Purchasing may result in high investment.
<b>HIDDEN COSTS</b>		Risk of cross contamination in case of unrecognised garment contamination may result in people or product damage.
		Sterilisation typically results in significant shorter life-time of polyester clothing.
		Disposal of clothing if contaminated by hazardous substance.
		Additional cost of garment replacement, repairs and re-labelling (name badges) can be exceptionally high.
<b>COMPLIANCE WITH EUROPEAN HEALTH AND SAFETY DIRECTIVE</b>	CE-certification as Chemical Protective Clothing, Cat. III ensures you meet legal requirements of people protection if hazard exposure / health risk occurs.	Typically not CE-certified as chemical protective clothing.

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# ECONOMICS

**COMPARISON**

CHANGE FREQUENCY BASED ON WEEKLY CYCLE FOR SINGLE OPERATOR	Disposable Garments			Re-Useable Garments					
	Used per Week	Weekly Cost at Typical Price per set coverall, hood, overboots	Annual Cost 52 weeks 20 operators typically 80% usage	Sets Required Coverall, Hood, Overboots	Weekly Cost Processing Rental Contract	Weekly Cost Rental 156 weeks Rental Contract	Weekly Cost Rental 156 weeks Rental Contract	2 Tier Rental Contract 156 weeks 20 operators & 80% returns Annual Cost *	Fixed Price Rental Contract 156 weeks 20 operators & 80% returns Annual Cost*
1 X PER WEEK	1	£ 4.38	£ 3,644.16	3	£ 3.00	£ 1.41	£ 4.41	£ 3,962.40	£ 4,586.40
2 X PER WEEK	2	£ 8.76	£ 7,288.32	5	£ 6.00	£ 2.35	£ 8.35	£ 7,436.00	£ 8,684.00
3 X PER WEEK	3	£ 13.14	£ 10,932.48	7	£ 9.00	£ 3.29	£ 12.29	£ 10,909.60	£ 12,781.60
4 X PER WEEK	4	£ 17.52	£ 14,576.64	9	£ 12.00	£ 4.23	£ 16.23	£ 14,383.20	£ 16,879.20
DAILY = 5 X PER WEEK	5	£ 21.90	£ 18,220.80	11	£ 15.00	£ 5.17	£ 20.17	£ 17,856.80	£ 20,976.80
2 X PER DAY = 10 X PER WEEK	10	£ 43.80	£ 36,441.60	22	£ 30.00	£ 10.34	£ 40.34	£ 35,713.60	£ 41,953.60
3 X PER DAY = 15 X PER WEEK	15	£ 65.70	£ 54,662.40	33	£ 45.00	£ 15.51	£ 60.51	£ 53,570.40	£ 62,930.40
4 X PER DAY = 20 X PER WEEK	20	£ 87.60	£ 72,883.20	44	£ 60.00	£ 20.68	£ 80.68	£ 71,427.20	£ 83,907.20

\* Please note re-useable annual costs do not include the cost of garment repairs re-labeling and replacements.

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