



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								
Suggested frequency of change	2/week	2/week	3/week	1/day	per entry*	per entry*	per entry*	per entry*
					* 4 entries per day			
SINGLE-USE	2	2	3	5	20	20	20	20
REUSABLE	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

	TYVEK®	REUSABLE
PARTICLE BARRIER EFFICIENCY	<p>Consistent high level of particle barrier efficiency > 99%* at relatively high air and moisture vapour transmission.</p> <p><small>*(barrier efficiency against airborne particles (25 mg/m³))</small></p>	<p>High level of particle barrier efficiency > 90% available, however, typically at cost of air permeability.</p>
CLEANLINESS	<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>
ELECTROSTATIC CHARGE DISSIPATION	<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>
COMFORT = 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>
PEOPLE PROTECTION	<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>
STERILITY	<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

	TYVEK®	REUSABLE
FLEXIBILITY	No long-term commitment.	Leasing/Renting contracts very often commit over period of 3 years. Purchasing may result in high investment.
HIDDEN COSTS		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.
COMPLIANCE WITH EUROPEAN HEALTH AND SAFETY DIRECTIVE	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 overall, 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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