

STANDARD QUALITY PLAN FOR 1.1 K.V. GRADE PVC CABLES AS PER 1554 (PART I)

Sl. Component of Check	Characteristics Documents	Category	Type/method	Extent of Check	Ref.	Acceptance	Format of	Agency	Remarks
Additional Tests for FR/ PVC									
	1. Smoke density Rating	MA	Environmental	-do-	ASTMD2843	60%Max.	GIL-GIR-003	IQC	FRLS
	2. Oxygen Index/ Temp Index	MA	Environmental	-do-	ASTMD2863	30/250°C Min	GIL-GIR-003	IQC	FR/FRLS
	3. HCL Gas Emmission	MA	Chemical	-do-	IEC 754-1	20% Max. by wt.	GIL-GiR-003	IQC	FRLS
b) Aluminium/Copper Wire Rod									
	1. Diameter	MA	Measurement	100%	IS5484 & is:613	IS5484 & is:613	GIL-GIR-006	IQC	
	2. Tensile strength	MA	Physical	100%	"	"	Supplier TC	IQC	
	3. Conductivity/ Resistivity	MA	Electrical	100%	"	"	Supplier TC	IQC	
	4. Surface Finish	MA	Visual	100%	Gemscab Standard	Supplier TC	IQC		
d) GI round wire/Flat strip									
	1. T. S. & Elongation	MA	Physical	4%	IS:3975	IS:3975	GIL-GIR-004	IQC	
	2. Torsion/Winding	MA	Measurement	4%	IS:3975	IS:3975	GIL-GIR-004	IQC	
	3. Uniformity of Zinc coating	MA	Chemical	4%	IS:3975	IS:3975	GIL-GIR-004	IQC	
	4. Mass of Zinc coating	MA	Chemical	4%	IS:3875	IS:3975	GIL-GIR-004	IQC	
2. INPROCESS INSPECTION									
a) Wire Drawing .									
	1. Surface finish	MA	Visual	Continuous	Gemscab Standard		GIL-P11-001	PQC	
	2. Diameter	MA	Measurement	Start & end	Gemscab Standard		GIL-P11-001	PQC	
	3. Tensile strength	MA	Mechanical	Every setting	IS:8130	IS:8130	GIL-P11-001	PQC	
	4. Wrapping	MA	Mechanical	Every setting	IS:8130	IS:8130	GIL-P11-001	PQC	
	5. Resistivity	MA	Electrical	Every setting	IS:8130	IS:8130	GIL-P11-001	PQC	
b) Conductor Stranding									
	1. No. of strands	MA	Counting	100% spools	Data Sheet	Data Sheet	GIL-P11-002	PQC	
	2. Dia./ Depth	MA	Measurement	Setting Sheet	Data Sheet	Data Sheet	GIL-P11-002	PQC	
	3. Lay length	MA	Measurement	Start & finish	Gemscab Standard		GIL-P11-002	PQC	
	4. Conductor	MA	Electrical	At Start	IS:8130	IS:8130	GIL-P11-002	PQC	
c) Core Insulation									
	1. Thickness/Dimension	MA	Measurement	Start & finish	Data Sheet	IS:1554-1	GIL-P11-003	PQC	
	2. Spark test	CR	Electrical	Continuous	Gemscab Standard		GIL-P11-003	PQC	
	3. Core Colour/Core	MA	Visual	Continuous	Data Sheet	IS:1554-1	GIL-P11-003	PQC	
e) Core Laying									
	1. Colour sequence	MA	Visual	at Start	Data Sheet	Data Sheet	GIL-P11-005	PQC	
	2. Lay direction / lay length	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-P11-005	PQC	
	3. Thickness of tape	MA	Visual/	At Start	Data Sheet	Data Sheet	GIL-P11-005	PQC	
	4. Dia/over laid up	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-P11-005	PQC	

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f) Extruded I Inner Sheath									
	1. Thickness of sheath	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-PII-006	PQC	
	2. Dia. Over Sheath	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-PII-006	PQC	
g) Armouring									
	1. Size of wire/ strip	MA	Measurement	At Start	Data Sheet	IS:3975	GIL-PII-007	PQC	
	2. Direction of lay	MA	Visual	At Start	Data Sheet	Data Sheet	GIL-PII-007	PQC	
	3. Lay Length	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-PII-007	PQC	
	4. No. of wire/strip	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-PII-007	PQC	
	5. Dia. over armourMA	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-PII-007	PQC	
h) Outer sheath									
	1. Thickness of sheath	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-PII-008	PQC	
	2. Diameter over sheath	MA	Measurement	At Start	Data Sheet	Data Sheet	GIL-PII-008	PQC	
	3. Marking/Embossing	MA	Visual	Continuous	Data Sheet	Data Sheet	GIL-PII-008	PQC	
	4. Colour	MA	Visual	Continuous	Data Sheet	Data Sheet	GIL-PII-008	PQC	
3. FINAL TESTS									
a) Routine test									
	1. High voltage	CR	Electrical	100% Drum	IS:1554-1	IS:1554-1	GL-FIR-001	FQC	
	2. Conductor resistance	CR	Electrical	100% Drum	IS: 1554-1	IS:1554-1	GL-FIR-001	FQC	
b) Acceptance test									
	1. Annealing test (for copper)	MA	Physical	As per IS: 1554-Pt-1-8	IS:8130	IS:8130	GL-FIR-008	FQC	
	2. Tensile strength and	MA	Physicals	As per IS: 1554-Pt-1-8	IS:8130	IS:8130	GL-FIR-008	FQC	
	3. Conductor resistance	CR	Electrical	AS per IS 1554-Pt-1-8	IS.8130	IS:8130	GIL-FIR-008	FQC	
	4. Thickness of INS.&SH	MA	Measurement	As per IS: 1554-Pt-1-8	IS:1554-1	IS:1554-1	GIL-FIR-008	FQC	
	5. T.S. & Elongation at break	MA	Physical	As per IS:1554-Pt-1-E	IS:5831	IS.5831	GIL-FIR-008	FQC	
	6. Insulation resistance	CR	Electrical	As per IS:1554-Pt-1-8	IS:5831	IS.5831	GIL-FIR-008	FQC	
	7. H.V. Test	CR	Electrical	As per IS:1554-Pt-1-E	IS:1554-1	IS:1554-1	GIL-FIR-008	FQC	
c) Type Test									
	1. Tensile strength& Wrapping	MA	Physical	1 Sample per lot	IS:8130	IS:8130	GIL-FIR-003	FQC	
	2. Annealing test(for Cu.)	MA	Physical	1 Sample per lot	IS:8130	IS:8130	GIL-FIR-003	FQC	
	3. Conductor resistance test	CR	Electrical	1 Sample per lot	IS:8130	IS:8130	GIL-FIR-003	FQC	
	4. Test for armour (wire /	FQC							
	i) Torsion / winding test	MA	Physical	1 Sample per lot	IS : 3975	IS : 3975	GIL-FIR-004	FQC	
	ii) Mass of zinc coating	MA	Chemical	1 Sample per lot	IS : 3975	IS : 3975	GIL-FIR-004	FQC	

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	iii) Uniformity of zinc coating	MA	Chemical	1 Sample per lot	IS : 3975	IS : 3975	GIL-FIR-004	FQC	
	iv) TS Elongation	MA	Physical	1 Sample per lot	IS : 3975	IS : 3975	GIL-FIR-004	FQC	
	5. Thickness of insulation &	MA	Measurement	1 Sample per lot	IS : 1554-1	IS : 1554-1	GIL-FIR-003	FQC	
	6. Physical tests on Ins.&Sh.GIL-FIR-003 FQC								
	i) T.S & Elongation	MA	Physical	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	ii) Ageing in Air oven	MA	Thermal	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	iii) Shrinkage	MA	Thermal	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	iii) Loss of mass	MA	Thermal	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	iv) Hot deformation	MA	Thermal	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	v) Heat Shock Test	MA	Thermal	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	vi) Thermal stability	MA	Thermal	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	7. Insulation Resistance (Vol.	CR	Electrical	1 Sample per lot	IS : 5831	IS : 5831	GIL-FIR-003	FQC	
	8. HV Test	CR	Electrical	1 Sample per lot	IS : 1554-1	IS : 1554-1	GIL-FIR-003	FQC	
	9. HV Test (Water Immersion	CR	Electrical	1 Sample per lot	IS : 1554-1	IS : 1554-1	GIL-FIR-003	FQC	
	10. Flammability Test	MA	Visual	1 Sample per lot	IS : 1554-1	IS : 1554-1	GIL-FIR-004	FQC	
	d) FR/FRLS TESTS								
	a) Tests on Sheath								
	1. Smoke density Rating	MA	Envir.	1 Sample per lot	ASTMD2843	60%Max.	GIL-FIR-005	FQC	
	2. Oxygen/ Temp. Index	MA	Envir.	1 Sample per lot	ASTMD2863	29/250°C Min	GIL-FIR-005	FQC	
	3. HCL Gas emission	MA	Chemical	1 Sample per lot	IEC 754-1	20% Max by wt.	GIL-FIR-005	FQC	
	4 Flammability Tests(for								
	i) Swedish chimney test	MA	Envir.	1 Sample per lot	SS4241475C1.3	GIL-FIR-005	FQC		
	ii) Test on Single cable	MA	Envir.	1 Sample per lot	IEC332-1	GIL-FIR-005	FQC		