

Inspection and Test Plan



Document : Inspection and Test Plan
Client :
Project : Solar Energy System
PO no. :
TSS Reference :

Rev	Date	Description	Prepared	Checked
00				
01				
02				



Inspection and Test Plan

ABBREVIATIONS	QUANTITY TESTED / INSPECTED		
A = Approval without comments by client H = Hold point R = Review of verifying document(s) W = Witnessed test / inspection Example: "4W" means "witnessed inspection one sample unit".	1 = 100% 2 = 10% 3 = One complete (typical) control system 4 = One sample unit		
Note: ⁽¹⁾ : or client's responsible person	Inspection level: II	Critically rating: 2	Certification: EN 10204 type 3.1



Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
1	PROJECT ENGINEERING DRAWINGS & DOCUMENTS									
1.1	Approval of key documents: a. System sizing b. Inspection Test Plan c. Single Line Diagram(s) d. Sub-vendor list e. Component datasheets f. VDRL g. General Arrangement (top view)	N.A.	Purchase order and Material requisition	-	Key documents approved by client/company without comments	Approved key documents	H	A	A	
1.2	Approval of electrical drawing(s)	N.A.	Purchase order and Material requisition	-	Electrical drawings approved by client/company without comments	Approved drawing(s) and "final" drawing(s)	H	A	A	

Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
1.3	Approval of mechanical drawings for: a. PV module support structure b. Battery box(es)	N.A.	Purchase order and Material requisition	-	Mechanical drawings approved by client/company without comments	Approved drawing(s) and "final" drawing(s)	H	A	A	
1.4	Approval of FAT procedure	N.A.	Purchase order and Material requisition	-	FAT procedure / report approved by client/company without comments	Approved FAT Procedure	H	A	A	
1.5	Approval of SAT procedure	N.A.	Purchase order and Material requisition	-	FAT procedure / report approved by client/company without comments	Approved SAT Procedure	H	A	A	
2	PV MODULES									
2.1	a. Visual check b. Type check c. Quantity check d. Dimensional check	TSS warehouse, Netherlands	Approved system sizing and component datasheet	1 (100%)	Undamaged, type, quantity and dimensions are according system sizing and datasheet	TSS QC report	H	4W	R	Quantity that can be inspected by client is one sample

Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
2.2	PV module performance test	TSS office, Netherlands	Component datasheet	1 (100%)	Performance (Watt peak value) is within limits as per datasheet	TSS PV module Watt peak list	H	R	R	Watt peak list is generated at production plant of sub-vendor and it is not part of the FAT procedure
3	SUPPORT STRUCTURE									
3.1	a. Visual check b. Type check c. Quantity check d. Dimensional check e. Coating colour / thickness (if applicable)	TSS Warehouse, Netherlands or sub vendor's location	Approved general arrangement drawing(s)	1 (100%)	Undamaged, material type, quantity and dimensions are according drawing(s)	Certificate of conformity from sub-vendor	H	4W	R	Quantity that can be inspected by client is one sample of loose members only
4	CONTROL EQUIPMENT & CONTROL ENCLOSURES									
4.1	Visual check <ul style="list-style-type: none"> • SAJB • CB • BCB • DB 	TSS sub vendor's location	Component datasheets, approved electrical & mechanical drawing(s)	1 (100%)	Undamaged, enclosures properly assembled, components of correct type and labelling is according electrical drawing(s)	TSS QC report	H	4W	R	Quantity that can be inspected by client is one sample

Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
4.2	Functional testing <ul style="list-style-type: none"> SAJB CB BCB DB 	TSS sub vendor's location	Approved electrical drawing(s) and FAT report	1 (100%)	Equipment tested according approved FAT report without malfunctions	TSS Function Check report	H	4W	R	
5	BATTERY CELLS									
5.1	a. Visual check b. Type check c. Quantity check d. Dimensional check	TSS warehouse, Netherlands or sub vendor's location	Component datasheet and approved system sizing	1 (100%)	Undamaged, type and quantity are according system sizing and datasheet	TSS QC report	H	4W	R	Quantity that can be inspected by client is one sample
5.2	Battery cells performance test	TSS warehouse, Netherlands or sub vendor's location	Component datasheet	1 (100%)	Battery cells are meeting the test requirements	Battery cells capacity test report from sub-vendor	H	R	R	Capacity test is generated at production plant of sub-vendor and it is not part of the FAT procedure
6	BATTERY BOX									

Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
6.1	a. Visual check b. Type check c. Quantity check d. Dimensional check e. Coating colour / thickness (if applicable)	TSS warehouse, Netherlands or sub vendor's location	Approved general arrangement drawing(s)	1 (100%)	Undamaged, material type, quantity and dimensions are according drawing(s)	Certificate of conformity from sub-vendor	H	4W	R	Quantity that can be inspected by client is one sample of loose members only
7	CABLES									
7.1	a. Visual check b. Type check c. Quantity check d. Core diameter	TSS warehouse, Netherlands or sub vendor's location	Component datasheet(s) and approved electrical drawing(s)	1 (100%)	Undamaged, type, quantity and size are according datasheets and electrical drawing(s)	TSS QC report	H	4W	R	Quantity that can be inspected by client is one sample
7.2	Cable characteristics check (conductor resistance and insulation resistance test)	TSS sub vendor's location	Component datasheet(s)	1 (100%)	Cable characteristics are according datasheet	Cable QC test report from sub-vendor	H	R	R	Conductor resistance and insulation resistance test are generated at production plant of sub-vendor and it is not part of the FAT procedure

Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
8	CABLE GLANDS									
8.1	a. Visual check b. Type check c. Quantity check d. Dimensional check	TSS, Netherlands	Component datasheet and electrical drawing(s)	1 (100%)	Undamaged, type, quantity and size are according datasheets and electrical drawing(s)	TSS4U QC report	H	4W	R	Quantity that can be inspected by client is one sample of each type
9	FACTORY ACCEPTANCE TEST (FAT)									
9.1	Factory Acceptance Test (on all control equipment of one (typical) system only)	TSS sub vendor's location	Approved FAT procedure	3	FAT procedure/report performed completely and, if applicable, punch list items agreed between vendor and client (or client's representative)	FAT report signed by TSS and client (or client's representative)	H	3W	3W	FAT includes review of all inspection documents (item 1 till 8) and functional testing of one, temporarily wired, typical charge controller by simulating the solar modules and batteries with DC power supplies.

Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
9.2	Heat Soak Test Charge Controller	TSS sub vendor's location	Approved FAT procedure	4	Charge Controller tested according approved FAT procedure without malfunctions	FAT report signed by TSS and client (or client's representative)	H	4W	4W	
9.3	Verification calibration of all measuring instruments for FAT	TSS office, Netherlands	-	-	-	Valid calibration certificate for all measuring instruments, check sticker on instrument.	H	R	R	
10	PREPARATION FOR SHIPMENT									
10.1	Visual check packing of all solar power system components	TSS warehouse, Netherlands and / or sub vendor's location	Approved packing specification and (preliminary) packing list	1 (100%)	Undamaged, packing according packing specification and quantities according (preliminary) packing list	TSS4U QC report Final packing list	H	4W	R	Quantity that can be inspected by client is one sample
10.2	Issuance of Inspection Release Note (IRN) from client (or client's representative)	-	-		Inspection Release Note received by vendor (approved and signed)	Final Inspection Release Note	H	H	R	

Item No.:	Activity description:	Inspection / test location:	Reference document / specifications:	Quantity Inspected by TSS internal QC:	Acceptance criteria:	Verifying document(s):	TSS:	Client: ⁽¹⁾	Company:	Remarks:
11	FINAL DOCUMENTATION									
11.1	MRB / databook	TSS, Netherlands	Approved MRB index and Vendor Document List (VDL)	-	All documents are final or as built, all test and inspection documents are available (signed) and approved	Final MRB databook	H	R	R	
12	SITE ACCEPTANCE TEST (SAT)									
12.1	Site Acceptance Test (SAT)	Clients companies site	Approved SAT procedure	1 (100%)	SAT procedure performed completely and, if applicable, punch list items agreed between vendor and client (or client's representative)	SAT report signed by TSS and client (or client's representative)	H	W	W	