

TABLE OF CONTENTS

EF 100	Check List –Submission to Departmental Representative
EF 110	Equipment/Sub-Trade List
EF 111	Check List – Shop drawings and Product and Samples
EF 112	Progress Claim Summary – Div 26, 27, 28, 33
EF 120	Check list – Colour Coding
EF 130	Certificate of Penetrations Through Separations
EF 131	Certificate of Seismic Restraint Installation
EF 132	Certificate of Acoustic and Vibration Isolation
EF 140	Check List & Record – Items to be Handed to Owner
EF 141	Check List –Demonstration to Departmental Representative
EF 142	Check List – Substantial Performance Submissions - Electrical
EF 143	Certificate of Substantial Performance - Electrical
EF 144	Check List – Work Remaining after Substantial Performance
EF 145	Certificate of Total Performance - Electrical

1.1 EF 100 Check List – Submissions to Departmental Representative

ITEM	CHECKED BY	DATE
10 DAYS AFTER AWARD OF THE CONTRACT – List of equipment suppliers and subtrades (EF 110) – Detailed price breakdown (EF 112)		
A.S.A.P. – Shop drawings and Product Samples (EF 111)		
WITH EACH APPLICATION FOR PROGRESS PAYMENT – Price breakdown (EF 112)		
PRIOR TO DEMONSTRATION OF SYSTEMS – Demonstration agenda		
DEMONSTRATION OF SYSTEMS – Checklists for sign off of Demonstrations (EF 141)		
10 DAYS PRIOR TO SUBSTANTIAL PERFORMANCE – Submission of items listed on Form EF-142		
WHEN REQUESTING REVIEW OF OUTSTANDING WORK – Checklist of work remaining (EF 144) – Certificate of total completion (EF 145)		

1.2 EF 110 Equipment/Sub-Trade List

ITEM	COMPANY/SUPPLIER
Switchgear and Distribution	
Motor Control	
Wiring Devices	
Luminaries	
Fire Alarm System	
Fire Alarm Verification Agency	
Structured Cabling for Communications Sub-trade	
Access Control Sub-trade	
Intrusion Detection Sub-trade	
Seismic Engineer	
Testing and Commission Agency	

1.3 EF 111 Check List –Shop drawings and Product and Samples

ITEM	DATE SUBMITTED	REVIEW	
		ACTION	DATE
Motor Control			
Wiring Devices			
Luminaires			
EXIT Signs and Emergency Lighting			
Fire Alarm System			
Structured Cabling for Communication System			
Access Control System			
Intrusion Detection System			

NOTES:

- .1 Submit samples where indicated to the Departmental Representative for review prior to installation.

EF 112 Progress Claim Summary – Division 26, 27, 28, 33

PROJECT:

CLAIM NO: _____

FOR MONTH OF: _____

ITEM		PRICE	WORK TO DATE		PREVIOUS WORK		THIS MONTH	
		\$	%	\$	%	\$	%	\$
Base Contract:								
General Conditions								
Mobilization (not to exceed 2%)								
Demolition								
Site Work & Utility	Mat Lab.							
Conduit, Boxes & Wire	Mat Lab.							
Distribution	Mat Lab.							
Motor Control	Mat Lab.							
Wiring Devices & Plates	Mat Lab.							
Lighting	Mat Lab.							
Fire Alarm System	Mat Lab.							
Structured Cabling for Communication System	Mat Lab.							
Access Control System	Mat Lab.							
Intrusion Detection System	Mat Lab.							
O & M								
Testing & Commissioning								
Other								
Cash Allowances								
Total Base Contract								

Change Order								
Total Change Orders								
Total Contract:								
Amount due less 10% mechanics lien holdback								

Submit this form as called for on **EF 100** for tender price breakdown and for each progress claim

1.4 EF 120 Check List – Colour Coding

Obtain sign off from Departmental Representative prior to colour coding systems.

Project Identification: e.g. _____

	SYSTEM	MAJOR BAND	MINOR BAND	CHARACTERS
1	120/208 volt Non Essential	<i>Light Blue</i>		
2	120/208 volt Essential	<i>Light Blue</i>	<i>Black</i>	
3	Fire Alarm	<i>Red</i>		<i>FA</i>
4	Television	<i>Dark Brown</i>		<i>TV</i>
5	AV or RF	<i>Light Brown</i>		<i>AV/TV</i>
6	Communications	<i>White</i>		<i>COM</i>
7	Security	<i>Dark Green</i>		<i>SEC/PA</i>
8	Other			

Prepared By _____

Departmental Representative Sign-Off _____

Date _____

1.5 EF 130 Certificate of Penetrations Through Separations

Project Identification: _____

I hereby declare that I _____

am an employee/a principal of _____

have personally witnessed that all electrical service penetrations through fire separations (rated & non-rated) and sound separations in the following areas have been properly sealed in accordance with the specified requirements.

SIGNED _____ DATE _____

AREA	SIGNED	DATE
Level:		
Level:		
Level:		
Level:		
Level:		
Level:		
Level:		
Level:		
Level:		
Level:		

NOTES:

- 1 This certificate shall be submitted to Departmental Representative prior to Substantial Performance.

1.6 EF 131 Certificate of Seismic Restraint Installation

Project Identification: _____

I hereby declare that I _____

am an employee/a principal of _____

Certify that the seismic restraint of all electrical equipment and wiring system installation meets the requirements of the Vancouver Building By-Law as it relates to seismic restraint and the Schedules B1, B2 & CB have been signed and submitted to the Departmental Representative.

SIGNED _____ DATE _____

NOTES:

- .1 This certificate shall be submitted to the Departmental Representative prior to Substantial Performance

1.7 EF 140 Check List & Record – Items to be Handed to Owner

ITEM	QUANTITY	RECEIVED	DATE
Fluorescent Lighting Ballasts	5 of ea type		
Fluorescent lamps - no less than 10% of each size & type	24 minimum		
EXIT signs	1 minimum		
Motor Starter HOA selector switch	1		
Motor Starter Pilot lights	2		
Motor Starter Operating coil for each size starter	1		
Motor Starter Control fuses	3 of ea type		
Motor Starter Power fuses	3 of ea type		
Rated Access Door Keys	2		
Salvaged Materials (Attach List)			

NOTES:

- 1 Copies of this form shall be submitted to the Departmental Representative and the owner with all items signed off prior to substantial performance.

Prepared By _____

Departmental Representative Sign Off _____

Date _____

1.8 EF 141 Check List – Demonstration to Departmental Representative

SYSTEM/ITEM	CONTRACTOR		OWNER	
	SIGNED	DATE	SIGNED	DATE
Motor Control Operation				
Lighting System Controls				
Fire Alarm System				
Structured Cabling for Communication System				
Access Control System				
Intrusion Detection System				
Electric Interlocks				
Location of Control Devices				
Access to Equipment				
Review of Maintenance Manual				
Points of required Maintenance				

NOTES:

- .1 Contractor shall submit copies of this form with each appropriate item signed and dated by the person having overall charge of commissioning prior to substantial performance. (See **EF 143**).
- .2 Departmental Representative shall sign off each item during or after the demonstration.
- .3 Contractor to strike out items where they do not apply to the systems being demonstrated.
- .4 Interlocks and controls to be demonstrated by following the descriptions and diagrams in the contract documents and proving that all controls function as required.
- .5 Where multiple identical controls are installed, the Departmental Representative may elect to only witness sample items, but the person having charge of commissioning is expected to have checked them all.

1.9 EF 142 Check List – Substantial Performance Submissions - Electrical

SECTION	ITEM	DATE	STATUS
260500	Final Electrical Inspector Certificate		
260500	Fire Stop Penetration Certificate. (EF-130)		
260500	Items handed to Departmental Representative Checklist. (EF 140)		
260500	Identification		
260500	Record Drawings		
260500	Operating & Maintenance Manuals		
260505	Seismic Engineer Report and Schedules (EF131)		
260924	Lighting Controls Commissioning		
270000	Communication cables test verification results		
280000	Access Control System Commissioning		
280000	Intrusion Detection System Commissioning		
283100	Fire Alarm Verification Report and Appendix C (FA)		
	Contractors' Letter of Guarantee		
	Demonstration to Departmental Representative agenda		
	Demonstrations Checklists (EF 141)		
	Substantial Performance Certificate (EF143)		
	Checklist of work remaining after Substantial (EF 144).		

NOTES:

- 1 This list is provided as a checklist and may not include all Substantial Performance requirements.

1.10 EF 143 Certificate of Substantial Performance - Electrical

I hereby certify that I _____
am an employee / a principal /an agent

of _____

and have personally witnessed the following with regard to the electrical systems work specified for the above project and that to the best of my knowledge except as noted on **EF 144** (attached);

- The installation is complete and as specified.
- The systems have been commissioned and operate satisfactorily.
- Every control sequence and every control performs as specified.
- The systems are clean.
- All of the required submissions have been made to the consultant.

SIGNED _____ DATE _____

NOTES:

- .1 This certificate must be completed and submitted to the Departmental Representative prior to substantial performance.
- .2 If it is apparent that the systems or their operation are seriously deficient then all reasonable costs and consultant time charges relating to any subsequent site reviews shall be deducted from the contract sum.

1.11 EF 144 Check List – Work Remaining After Substantial Performance

ITEM NO.	DESCRIPTION	COMPLETION		
		CLAIMED BY	DATE	VERIFIED DATE

NOTES:

- .1 This form must be filled in and submitted to the Departmental Representative prior to substantial performance.
- .2 Any discovered outstanding items will be added to the list by the Departmental Representative.
- .3 The Contractor may include estimated values against the outstanding work but determination of the actual amounts to be held will be made by the Departmental Representative.
- .4 The Contractor shall sign off each item as it is completed and submit the list monthly to the Departmental Representative. When all items are signed off the completed list shall be submitted with the certificate of total performance **EF 145**.

1.12 EF 145 Certificate of Total Performance – Electrical

I hereby certify that I _____
am an employee / a principal / an agent

of _____

and have personally witnessed that each item of outstanding work on the checklist and record of work remaining after substantial completion EF 144 (attached) has been satisfactorily completed and I hereby certify that the Electrical systems work specified on the above project is complete.

SIGNED _____ DATE _____

NOTES:

- .1 This certificate must be completed and submitted to the Departmental Representative when requesting total performance.
- .2 If it is apparent during the final review that the systems or their operation are seriously deficient then all reasonable costs and consultant time charges relating to any subsequent site reviews shall be deducted from the contract sum.

END OF SECTION