

# **APPENDIX – B**

## **FORMATS FOR CONSTRUCTION MONITORING**

## Appendix B

**Table 1: Procedure for Testing Materials on Site**

CEMENT		QC-M-01	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
1	Normal consistency	One for each source and when called for by the Engineer  Sampling should comply with IS 3535	On receipt of material at site and before using as directed by the Engineer. Test certificate to be produced to the Engineer before use.
2	Fineness		
3	Setting time – Initial/ final		
4	Compressive strength -72 hrs, 168 hrs, 672 hrs.		
For sulphate resistant cement as per IS-12330 OPC 43/53 shall conform to IS 8112/ 12269			

SAND		QC-M-02	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
1	Particle Size and shape IS 2386-Part-I	One test for 20 m <sup>3</sup>	On receipt at site and test certificate to be produced to the Engineer before use.
2	Fineness modulus	One test for 20 m <sup>3</sup>	
3	Deleterious constituents	One test for 20 m <sup>3</sup>	
4	Bulking test	One test per 20 m <sup>3</sup> or part there of One test for 20 m <sup>3</sup>	
5	Silt content IS2386- PartII		

WATER FOR CONSTRUCTION WORKS		QC-M-03	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
1	Alkalinity and acidity as per IS-3025	Once per source of supply and when called for by the Engineer	Before use of water from that source
2	Solids		

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<b>BRICKS &amp; BRICK TILES</b>		<b>QC-M-04</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Compressive strength	One test per 50,000 bricks or part thereof	On receipt at site
2	Physical properties		
3	Water absorption test		

SIZE STONE		QC-M-05	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
1	Water absorption test	One test per source and when called for	On receiptat site
2	Dimension check	As directed by the	
3	Type of rock	Engineer	

<b>COARSE AGGREGATE FOR CONCRETE</b>		<b>QC-M-06</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Aggregate Impact or Los Angeles Abrasion Value as per IS-2386 Part-IV	One for each source of supply and when called for by the Engineer	On receipt of material at site
2	Soundness as per IS- 2386 Part-V		
3	Deleterious material as per IS 2386-Part II		
4	Particle size distribution IS 2386-I		
5	10% Fine value as per IS 2386-Part IV		
6	Water Absorption		

When required, the contractor shall furnish the mix design along with material properties at least 15 days in advance.

<b>SOIL/EARTH/SUB-GRADE MATERIAL</b>		<b>QC-M-07</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Swelling index IS 2720 part XL	Two sets for 3000 m <sup>3</sup> or part thereof	On receipt at site
2	Liquid limits and plasticity index		
3	Deleterious material IS 1498		
4	OMC & MDD Test		
5	Chemical properties		

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6	Grain Size Distribution		
	Graph (by wet sieve analysis)		
7	Void ratio gradation		
8	Soaked CBR test (optional)	Two sets for 3000 m <sup>2</sup> or part thereof and as directed by the Engineer	

GRANULAR SUB-BASE MATERIAL		QC-M-08	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
1	California Bearing Ratio Test	As required	On receiptat site
2	Material combinations		
3	Moisture content as per IS-2270	1 test per 250 m <sup>3</sup> or part thereof	Prior to compaction
4	Fineness value BS 812 Part III	As required	On receiptat site
5	Soundness of material		
6	Air voids content		
7	Gradation by wet sieve analysis	1 test per 200 m <sup>3</sup> or part thereof	
8	Atterberg limits		
9	Deleterious constituents		
10	OMC and MDD		
The contractor shall furnish the GSB design mix along with material properties and test results at least 15 days before laying GSB at site.			

MATERIAL FOR WBM / WMM		QC-M-09	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
1	Aggregate Impact Value	One test for 200 m <sup>3</sup>	On receipt at site
2	Grading by wet sieve analysis	One test for 100 m <sup>3</sup>	
3	Flakiness Index and	One test for 200 m <sup>3</sup> of aggregate	
	Elongation Index		
4*	Atterberg limits of binding material *(Only for WBM)	One test for 25m <sup>3</sup> of binding material	

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	TC-M-09-02		
5	Atterberg limits of portion of aggregate passing 425 micron sieve. TC-M-09-02	One test for 100 m <sup>3</sup> of aggregate	
6	Water Absorption Test TC-M-05-01	Initially one set of 3 representative specimen for each source of supply and subsequently, when warranted by changes in the quality of aggregate	
7	Soundness Test TC-M-06-02	One for each source of supply and when called for by the Engineer	On receipt at site and when absorption value is more 2%
8*	Density of compacted layer of WMM *(Only for WMM)	One test for 500 m <sup>3</sup>	

METAL FOR BM/DBM/BC/SURFACE DRESSING /MSS/PRE-MIXCARPET		QC-M-10	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
1	Aggregate Impact Value	One test for 50 m <sup>3</sup> of aggregate or part thereof	On receipt at site and before using in the hot mixing
2	Flakiness Index and Elongation Index of aggregates		
3	Water absorption of aggregates	Initially one set of 3 representative specimen for each source of supply and subsequently, when warranted by changes in the quality of aggregate	
4	Stripping value		

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5	Gradation by wet sieve analysis TC-M-06-04	As directed by the Engineer for individual component and for combined coarse, fine aggregate and filler.	
6	Soundness Test TC-M-06-02	One for each source of supply and when called for by the Engineer	On receipt at site and when absorption value is more than 2%
7	10% Fine Value as per IS 2386 – Part IV -	One for 45 cum of part	

For DBM and BC, the contractor shall furnish the material properties and proposed job mix formula at least 20 days in advance.

<b>BINDER FOR WBM</b>		<b>QC-M-11</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Atterberg Limit Test	One test for 100 m <sup>3</sup> of binding material	On receipt at site

<b>FINE AGGREGATE FOR DBM/BC</b>		<b>QC-M-12</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Passing 2.36 mm sieve and retained on 75 micron sieve	As directed by the Engineer	Before use
2	Deleterious matter	Visual observation of lot before use	

<b>LIME</b>		<b>QC-M-13</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Chemical properties as per IS: 6932, 1514	3 final test samples for a lot size up to 100 tons as per Table 3 in IS 712	On receipt at site.
2	Physical properties as per IS: 6932		

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<b>BITUMEN</b>		<b>QC-M-14</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Grade of bitumen as directed/defined (Penetration Test)	Two samples per test subject to all or some tests as directed by the Engineer	On receipt of material at site before unloading from the truck
2	Ductility Test		
3	Flash and Fire Point Test		
4	Viscosity Test		
5	Softening Test		

<b>BORROW MATERIAL</b> <i>(Soil to be used in Embankment / Sub grade / GSB)</i>		<b>QC-M-15</b>	
<b>Sl. No.</b>	<b>Type of Test</b>	<b>Frequency of Test</b>	<b>Timing of Test/ Inspection</b>
1	Digging of borrow area for sampling	25 m c/c or closer depending upon soil strata variation	Before material is extracted for use in construction.

BORROW MATERIAL (Soil to be used in Embankment / Sub grade / GSB)		QC-M-15	
Sl. No.	Type of Test	Frequency of Test	Timing of Test/ Inspection
2	Sand Content	2 sets of observation per 3000 m <sup>3</sup> of soil and in each 6 observations required.	Before material is extracted for use in construction.
3	Wet Sieve Analysis		
4	Plasticity Index		
5	Modified Proctor Density		
6	Soaked CBR Test		
7	OMC		
8	MDD		
Borrow material source must be approved before extracting material.			

**Table 2: Procedures for Testing General Civil and Structural Works**

Sr. No	Type of Test	Frequency of Test	Timing of Test/ Inspection
<b>Embankment Formation</b>		<b>QC-G-01</b>	
1	Moisture content as per IS- 2720	One test for each 250 m <sup>3</sup> of soil	In-process
2	Field density test as per IS- 2720	5-10 density tests for each 1,000 m <sup>2</sup> compacted area, or as directed by Engineer	
3	Compaction	As per required number of passes	While compacting
<b>Excavation/Backfilling</b>		<b>QC-G-02</b>	
1	Layout, slopes of excavation, benching and over-burden	As directed by the Engineer	After excavation
2	Sub-soil water, shoring and strutting		
3	Bottom levels and compaction		
4	Soil classification		
5	Backfilling and compaction		After backfilling
<b>Concreting</b>		<b>QC-G-03</b>	
1	Compressive strength as per IS-516	One test for 1-5 m <sup>3</sup> of concrete  Two tests for 6-15 m <sup>3</sup> of concrete  Three tests for 16- 30 m <sup>3</sup> of concrete  Four tests for 31-50 m <sup>3</sup> + one set every 50 m <sup>3</sup> of additional concrete work.	Test samples to be taken while pouring. Testing to be done as specified in contract.

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Sr. No	Type of Test	Frequency of Test	Timing of Test/ Inspection
2	Slump test per IS-1199	Random checks throughout concreting as directed by the Engineer	Before pouring concrete
3	Inspection of steel reinforcement placement and bending, and formwork	Before pouring concrete	Before pouring concrete
4	Concrete Pour Report	When pouring is done	Immediately after pouring
<b>Mortar</b>		<b>QC-G-04</b>	
1	Compressive strength as per IS-2250	One sample for every 2 m <sup>3</sup> of mortar subject to a minimum of three samples for a day's work	Test samples to be taken while before mortaring. Testing to be done as specified in contract.
2	Consistency as per IS-2250		

**INSPECTION CHECKLISTS**

<b>Sr. No.</b>	<b>Checklist Name</b>	<b>Format No.</b>
1.	General Check list for Works	GC-1
2.	Inspection Checklists for Building Works	IC-1

**Format GC – 1: General Check list for Works**

Sr. No	Item to be checked	Yes / No/ Remarks
1.	Is the Community Information (Display) Board installed at the entry to slum? Is it useful in knowing the details of works?	
2.	Is the People's Estimate (pamphlet) also distributed to the community?	
3.	Is there a Community Monitoring Committee in the slum?	
4.	Is it able to monitor the Progress and Quality of work effectively?	
5.	<b>AVAILABILITY OF DOCUMENTS:</b> Are copies of following available at site i) Contract documents incl. contract drawings, ii) Construction (working) drawings, iii) Estimates and designs? iv) Are the Site Order Book and Quality Control Test Registers properly maintained and available at contractor's site office?	
6.	Is there a Work Plan of the contractor?	
7.	Are the TBMs set up & verified by Engineer – in - charge?	
8.	Are the underground works commenced / done first i.e., sewerage, water supply, drains, street lighting, roads in that sequence?	
9.	Are the construction of sewerage & drainage commenced from down- stream end?	
10.	Are the Drain top levels below the road edge levels and also below the Courtyard Levels of houses in general?	
11.	Are there any encroachments to be removed?	
12.	Is there any delay in progress of work with reference to work plan?	
13.	Is there any deviation in work or field conditions with reference to design? Does any technical / financial problem need to be addressed?	
14.	Is the construction as per construction drawings?	
15.	Is the Contractor conducting quality control tests? Is the Quality control test register being maintained properly and endorsed by the Engineer – in -charge?	
16.	Is proper barricading provided where necessary to ensure safety of residents?	
17.	Are drains and sewers properly connected to their disposal points?	
18.	Is there free flow of drainage?	
19.	What is the feedback of community on: i) quality of work & ii) functional aspects of works?	

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Sr. No	Item to be checked	Yes / No/ Remarks
20.	Specific remarks on performance of consultant (where mobilised). Is there a Resident Engineer stationed for the slum for supervision?	
21.	Whether regular site visits are done by Engineer – in – charge?	
22.	<b>CONCRETE WORK:</b> <b>CEMENT:</b> Is the manufacturer's test certificate for cement produced? Is it fresh (<1 month from date of manufacture), free from lumps? Is it stacked properly in stacks less than 10 bags height over a raised wooden platform to prevent contact with moisture? Is air entry into the store room prevented to prevent formation of lumps?	
23.	<b>AGGREGATES:</b> Is the fine aggregate (FA or sand) of good quality coarse river sand and conform to the grading requirements of mortar / concrete (as applicable) as per IS:383?	
24.	Has bulking of sand been tested? If there is bulking, has the volume of sand been adjusted accordingly?	
25.	Is the Coarse Aggregate (CA) of hard variety, cubical in shape and not flaky and conforms to the grading requirements of CA for concrete as per IS: 383?	
26.	Is the content of deleterious matter like coal & lignite, clay lumps, material finer than 75 micron IS sieve (dust), soft fragments, organic matter etc. <5% as per IS: 383?	
27.	Is the Maximum Size of Aggregate maintained as specified? (For RCC, it should not be more than 20 mm; for PCC, it should not be more than ¼ of the minimum thickness of the member subject to a maximum of 50 mm). For pavement concrete, it should not be more than 25 mm as per MORTH.	
28.	Is the % water absorption <2% for the CA for concrete?	
29.	Has the concrete mix design been done by a designated laboratory and approved by the Engineer-in-Charge?	
30.	Is the CA being wetted before being used for concrete?	
31.	Is the concrete being mixed in a mechanical mixer with hopper?	
32.	Is the minimum cement content not less than that specified as per Table 5 of IS: 456 based on exposure conditions and the type of work?	
33.	Is the water / cement ratio properly adhered to as per mix design?	

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<b>Sr. No</b>	<b>Item to be checked</b>	<b>Yes / No/ Remarks</b>
34.	Are the concrete cube samples taken for compressive strength testing in accordance with sampling criteria in IS: 456?	
35.	Is the concrete properly placed in position from a height of less than 0.5 m?	
36.	Is the workability as per slump test in the required range for the nature of work being undertaken?	
37.	Is the concrete being emptied from the drum onto a smooth impermeable platform?	
38.	Is vibrator being used on the work? Is there a spare vibrator?	
39.	Is the form work strong enough to prevent bulging when vibrated? Is it free from holes etc. to prevent loss of cement slurry?	
40.	Is the concrete being cured adequately as per requirements ?	
41.	Is the form work removed only after the expiry of prescribed period for the type of structural element?	
42.	Is the acceptance criteria being followed as per IS: 456?	
43.	Are manufacturer's test certificate produced for conformance to IS: 1786 for Tor steel and to IS 432 for mild steel (as applicable) from manufac- tures?	
44.	Have the i) yield strength test, ii) % elongation test, iii) rebend test been conducted for the steel being used on major / important works? Does it meet the specifications?	
45.	Is there any coating of earth or dirt etc. for the steel which prevents forma- tion of proper bond with the concrete?	
46.	Is the steel of adequate anchorage length, with proper cover (higher spec- ified cover for water retaining structures as per IS: 3370) with chairs and placed in forms and properly tied with GI binding wire?	
47.	Are the overlaps of required bond / anchorage? Ie Minimum 50 times dia. of bar for tension Ie. Minimum 40 times dia. of bar for compression Whether overlaps are staggered?	
48.	Is proper detailing of reinforcement done as per SP 34, particularly at joints?	
49.	Has the reinforcement assembly been checked by the Engineer – in - charge prior to laying of concrete w.r.t. approved designs?	
50.	Is necessary provision / arrangement for services like water supply, electrical fixtures etc. made in the form work prior to laying of concrete (for buildings)?	

**POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL**

<b>Sr. No</b>	<b>Item to be checked</b>	<b>Yes / No/ Remarks</b>
51.	Is sampling of concrete cubes and compressive strength testing done as per the sampling criteria in IS: 456-2000?	
52.	BRICK WORK: Are the bricks well burnt without un burnt portions, of rectangular shape, with sharp edges, free from cracks and of correct size? Are they properly stacked in stacks not more than 20 courses?	
53.	Do they give clear metallic sound when struck with a hammer? Are they intact and do not break when dropped from a height of about 2m?	
54.	Are the bricks soaked in water for 2 hours before being used?	
55.	Have the bricks been tested for compressive strength? Do they satisfy 50 kg/cm <sup>2</sup> for 1st class bricks (for sewer man holes) and 35 kg/cm <sup>2</sup> for 2nd class bricks for other works?	
56.	Is the % water absorption after 24 hours not more than 20%?	
57.	Does the sand fall in the grading as prescribed? Is the mortar used as per specified mix proportions?	
58.	Is the frog (manufacturer's mark) kept on the top of the brick while laying the brickwork?	
59.	Are the joints in each layer broken to prevent stress concentration?	
60.	Is the thickness of mortar joint as per specification? (Not more than 12 mm for 2nd class brickwork and 10 mm for 1st class brickwork)	
61.	Are the joints raked when mortar is green for at least 7.5 mm before plastering?	
62.	Is the brickwork cured for at least 14 days after construction?	
63.	Any constraints to speedy progress of work?	
64.	Any constraints to maintaining quality of work?	
65.	Any other remarks of the Inspecting Officer	

Format– IC – 1: Checklists for Building Works

Sr. No.	Items	Remarks by Implementation agency / Authorised representative	Compliance by Contractor
<b>1) EXCAVATION &amp; PCC</b>			
<b>A. Pre Excavation</b>			
1	Construction Drawings indicating levels available at Site		
2	Proper safety precautions taken for site and public		
3	Precautions taken for dewatering and protecting site from flooding		
4	Dumping ground established		
5	Setting out and levels as per drawings		
6	Intermediate levels checked		
<b>B. Post Excavation</b>			
1	Characteristics of excavated strata noted and deviations informed		
2	Appropriate shoring and shuttering done		
3	Final excavation levels, surface inspected and approved		
4	Anti-Termite Treatment has been done post excavation		
<b>2) PLAIN CEMENT CONCRETEWORKS</b>			
<b>A . Pre-concreting</b>			
1	All levels and dimensions checked for correctness		
2	Shuttering is as per plan and has no gaps in between		
3	All materials are of specified brand and grade		

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<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
<b>B. During Concreting</b>			
1	Mixing of concrete has been done as specified		
2	Slump and other tests carried out as specified		
3	Honeycombing removed		
4	Required number of Samples have been taken for carrying out slump tests, cube tests etc		
<b>C. Post Concreting</b>			
1	Concreting has been done as per specified line and level		
2	Curing has been done as specified		
3	Compaction has been done properly		
4	Remedial measures taken for removal of defects		
<b>3) ANTI TERMITE TREATMENT(ATT)</b>			
1	Chemicals for ATT are as per specifications		
2	Chemicals in use are within the expiry date.		
3	Sufficient quantities of chemicals are available at site for ATT.		
4	Safety precautions have been taken for carrying out ATT and storage of Chemicals.		

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<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
5	Record of consumption maintained at site.		
<b>4) BACKFILLING</b>			
1	Filling material/ earth is as per specification		
2	Anti-termitetreatmenthas been carriedout before commencement of backfilling		
3	Filling has been done in layers of 300 mm, watered and compacted as per specifications		
4	Proper compaction method has been adopted		
5	Filling has been done to the required levels		
<b>5) REINFORCED CEMENT CONCRETEWORKS</b>			
<b>A. Pre-concreting</b>			
1	All specified materials available at site		
2	Cement is of the required grade and not more than three months old.		
3	Shuttering checked for Staging & Propping, line & level, dimensions cleaning etc and its quality approved		

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<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
4	Application of oil & grease carried out		
5	Mixer/Vibrator as specified available at site with adequate means to run them during concreting		
6	Cut-out & Sleeves/Inserted		
7	Surface of reinforcement is clean and free from rust		
8	Bars have been provided as per structural drawings		
9	Lap length & dowels provided as per codal provisions		
10	Pin bars & chairs/cover blocks provided as per requirements		
11	Tying of bars has been done correctly		
12	Service lines(Electrical, Plumbing, Others) if any, provided before commencement of concrete		
<b>B. General Arrangement</b>			
1	Availability/ Arrangement of pumps etc, proper access & walkway checked		
2	Adequacy of vibrators/ needle including diesel vibrator		
3	Slump cone & test cubes made		
4	Safety and health measures taken before commencement		
<b>C. During Concreting</b>			

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<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
1	All necessary precautions taken before commencement of concreting		
2	Samples of taken for slump, cube tests etc for each batch		
3	Proper Compaction done and checks on Staging & Scaffolding carried out		
4	Covering of green concrete carried out		
5	Surface finish checked		
6	Construction joints provided		
<b>D. Post Concreting</b>			
1	De-shuttering started on Vertical faces / Other faces carried out as per codal provisions		
2	Proper curing of concrete carried out		
3	Line & Level of surface checked for correctness		
4	Defects, notified and removed		
5	Cube and other test results will be intimated to the engineer in charge for further action		
<b>6) MASONRY, MORTAR AND PLASTER</b>			
<b>A. Pre-Masonry Work</b>			
1	Availability of material as per daily requirement checked		

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<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
2	Quality check for bricks/ blocks/ sand/ cement carried out		
3	Provisions kept for electrical and other services		
<b>B. During masonry work</b>			
1	Checking for line/ level/ right angle carried out		
2	Mortar checked for mix proportion		
3	Proper raking of joints		
4	Seismic bands provided as per zonal requirements		
<b>C. Post masonry</b>			
1	Check cleaning of dead mortar and broken bricks/ blocks etc.		
2	Curing carried out as per requirements		
<b>D. Plastering/Pointing</b>			
1	Mortar for plastering as specified for each side of wall		
2	Quality of cement and sand checked		
3	Curing work done as per requirement		
4	Preparation of surface		
<b>E. During Plastering</b>			
1	Mortar mixing in tray		
2	Addition of water proofing compound		

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<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
3	Proper roughing of first coat		
4	Check for collection of mortar spills		
5	Cleaning of dead mortar		
6	Check of waviness		
7	Check for grooves/ drip moulds		
8	Application of cement slurry on concrete surface		
<b>F. After Plastering</b>			
1	Curing		
2	Check for hollowness		
3	Check for cracks		
4	Check for diagonal		
5	Lime wash after 3 days (within 5 days in case of neeru application)		
6	Safety and health measures		
<b>7) WATER PROOFING</b>			
1	Surface for waterproofing has been prepared and cleaned		
2	Safety measures/ precautions taken before commencement of works		
3	Specified type of water proofing used		
4	Specified material used for waterproofing		
5	The material used was as per specification		
6	Work has been carried out as per specifications by the department/ specialized agency		

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<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
<b>8) IPS/TILE FLOORING AND DADO</b>			
1	Layout of floor checked and proper slopes for draining water are maintained specially in bath room and toilet.		
2	Thickness bases at GL checked of different floor		
3	Check for proper back filling under floor done		
4	Metal/glass strips laid properly in IPS flooring		
5	Curing of IPS Flooring done as per requirements		
6	Dado provided as per required height		
7	Cleaning and finishing done		
<b>9) PLUMBING &amp; WATER SUPPLY</b>			
1	GI/CI/HDPE pipes etc. confirms to relevant IS codes		
2	Pipes of required diameter and their fittings used		
3	Plumbing and Water Supply work carried out through a licensed plumber		
4	Works done as per specification		
5	Plumbing and Water Supply works tested on completion -		
6	Defects rectified		

**POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL**

Sr. No.	Items	Remarks by Implementation agency / Authorised representative	Compliance by Contractor
<b>10) INTERNAL ELECTRICAL WORKS</b>			
<b>A.GENERAL</b>			
1	Layout plans: showing the position of L.T Panels/ distribution board, lighting fixtures, lighting distribution, scheme, receptacles, etc available before commencement of work		
2	All the following items are as per specification and of approved makes L T Panels/ Distribution Boards Lighting Fixtures Conduits, including accessories Receptacles Junction Boxes Cables/Wires Any other item		
<b>B. SURFACE CONDUIT WIRING / CONCEALED CONDUIT WIRING</b>			
1	Conduit and accessories are of specified make, gauge and diameter		
2	Proper installation of all conduit wiring and concealed wiring.		
<b>C. CHECK LIST FOR EARTHING</b>			
1	Earth electrode provided as specified.		
2	Types and size of main/sub main and circuit earthing conductors provided as specified		
<b>D. MAIN AND DISTRIBUTION BOARDS</b>			

**POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL**

<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
1	Main switch board is fabricated based on approved shop drawings and the entire material used is as per BIS Code.		
2	Make of switches and other items as specified.		
<b>CHECK LIST FOR EXTERNAL ELECTRICAL WORKS</b>			
<b>A. CHECK LIST FOR O.H. LINES</b>			
1	Poles used are of approved make as specified and conform to relevant BIS codes.		
2	Test certificate as applicable.		
3	Pole embedded below ground level as specified.		
4	Metallic poles are adequately earthed with specified size of earth conductor.		
5	Strays struts, insulators, conductors used conform to relevant BIS Code.,		
6	Earth wire conductor used as specified.		
7	Lightning arrestors used as specified		
8	Spacing of poles, spans and clearance between, conductors and, surroundings kept as specified.		
9	Insulators used for specified grade.		

**POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL**

<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
<b>B. CABLE LAYING</b>			
1	Trenches of specified dimensions excavated and prepared		
2	Required quantity of sand cushioning provided; cable laid; another layer of sand and brick protective covering provided. Refilling done earth ramming and dressing done.		
3	Cables entry point in building or crossing roads path protected by providing Hume pipes or PVC pipe		
4	Cable tested before and after laying and before emerging		
<b>C. CHECK LIST FOR EARTHING</b>			
1	Earth electrode provided as specified		
2	Types and size of main/ sub main and circuit earthing conductors provided as specified.		
<b>11) DRAINAGE WORKS</b>			
1	Excavation for drains carried out as per the approved lay-out		
2	Bed Concrete laid as per specifications with proper slopes and cuttings		
3	All pipes procured and laid as per requirement		

**POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL**

<b>Sr. No.</b>	<b>Items</b>	<b>Remarks by Implementation agency / Authorised representative</b>	<b>Compliance by Contractor</b>
4	Jointing of pipes done as per specifications		
5	Manholes provided as per design		
6	Materials for construction of manhole as specified		
7	End of the pipes plugged		
8	Drainage line tested before putting to use		
<b>12)</b>	<b>CEMENT CONCRETE ROADS</b>		
1	Materials used for construction of sub base, base and cement concreting is as specified		
2	Grading of Aggregates is as per specifications		
3	Right of Way Maintained as per drawings		
4	Aggregates spread uniformly to proper profile		
5	Centre line, gradient and camber maintained as specified -		
6	Cross section levels of precedent layer recorded		
7	Tests of aggregates carried out as specified and record		
8	Top concrete surface is of required grade and mix		
9	All tests carried out as per the relevant BIS Codes		
<b>13)</b>	<b>OTHERS</b>		

---

POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

---

Sr. No.	Items	Remarks by Implementation agency / Authorised representative	Compliance by Contractor
1	Whether the provision for adequate ventilation and natural lighting has been made as per National Building code?		
2	Whether facility for storage in terms of Almirah/ Shelves / Lofts / Platform has been made ?		
3	Whether Sanitary fittings have been provided?		

## ARCHITECTURAL WORK

PROJECT :  
PMC :  
CLIENT :  
CONTRACTOR :

### SECTION-E: INSPECTION REQUEST FORMS FOR ARCHITECTURAL WORKS

#### INSPECTION REQUEST FOR BRICKWORK

**FORM NO: FM-AW-01**

Inspection Date:..... Time:.....

Location:..... Drawing Ref.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Availability of material as per daily requirement			
Proper stacking of bricks/blocks			
Wetting o bricks			
Door/Windows frames if any to be erected in position.			
Setting out/alignment			
Verticality and flatness			
Quality, Size and Type of bricks to specification			
Cement mortar mix			
Damp proof Course in place and to specification			
Reinforcement/dowels in Place and to spec.			
Bonding and lying			
Joints Even and raked out			
Stiffener to specification			
Provision of Window opening with lintel			
Rubbish Cleared away			
Check curing			
REMARKS:			

**Inspected by:**

Name:.....

Date:.....

**Approved by:**

Name:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

**FORM NO: FM-AW-02**

DATE:

### COMPRESSION TEST FOR BRICKS

Inspection Date:

Brand Name:

Date of receipt:

Location

Drawing Ref.

Element:

Sample No	Maximum Load at Failure (N or Kgf)	Average Area (mm <sup>2</sup> or cm <sup>2</sup> )	Compressive Strength (N/mm <sup>2</sup> or kg/cm <sup>2</sup> )	Remark
1				
2				
3				
4				
5				

Limits: Minimum 75 Kg/cm<sup>2</sup>

Remarks

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

**FORM NO: FM-AW-03**

DATE:

### DIMENSIONAL AND WATER ABSORPTION TEST FOR BRICKS

Inspection Date:

Brand Name:

Date of receipt:

Location

Drawing Ref.

Element:

#### DIMENSIONAL TEST:

Sample No	Weight of Dry Brick (Kg) (W1)	Weight of Wet Bricks (Kg) (W2)	Water absorption (%) $(W2-W1)/W1 \times 100$	Remark
1				
2				
3				
4				
5				

Average%:

Limits: Water Absorption less than 20% as per CPWD

Remarks

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

SECTION-E: *INSPECTION REQUEST FORMS FOR ARCHITECTURAL WORKS*

INSPECTION REQUEST FOR PLASTERING

**FORM NO: FM-AW-04**

Inspection Date:..... Time:.....

Location:..... Drawing Ref.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials and quality to specification			
Cement mortar/plaster mix			
Wetting brick surface			
Cement splash-dash to concrete surface			
Joints between brick and RC Structural surface			
Provision for pipe Sleeves/openings			
Plaster Thickness (lvel peg)			
Surface finish and flatness			
Trueness of corners /arises			
Groove lines and joints			
Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

# POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

## QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

### PART 4.11.2: QUALITY RECORDS

#### SECTION-E: INSPECTION REQUEST FORMS FOR ARCHITECTURAL WORKS

#### INSPECTION REQUEST FOR SCREEDING

**FORM NO: FM-AW-05**

Inspection Date:..... Time:.....

Location:..... Drawing Ref.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials and quality to specification			
Cement mortar/plaster mix			
Waterproofing in wet areas complete with 200mm skirting			
Falls to drains/FW & FT			
Screed thickness (level peg)			
Joints & dividing strips at doorway			
Surface finish and flatness			
Floor level at doorway and next floor finishes			
Curing/non-metallic surface hardener			
Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

SECTION-E: *INSPECTION REQUEST FORMS FOR ARCHITECTURAL WORKS*

INSPECTION REQUEST FOR PAINTING WORKS

**FORM NO: FM-AW-06**

Inspection Date:..... Time:.....

Location:..... Drawing Ref.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Material type			
Colour			
Surface preparation			
1 <sup>st</sup> Coat/Sealer Coat			
Internal finishes:			
External finishes:			
2 <sup>nd</sup> Coat /Mid Coat			
Internal Finishes:			
External finishes:			
3 <sup>rd</sup> Coat/Finishes Coat			
Internal finishes:			
External finishes:			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

SECTION-E: INSPECTION REQUEST FORMS FOR ARCHITECTURAL WORKS

INSPECTION REQUEST FOR TILING & MARBLES WORKS

**FORM NO: FM-AW-07**

Inspection Date:..... Time:.....

Location:..... Drawing Ref.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Typ, size and colour of materials to specification			
Free damage, cracks, chips, bubbles			
Adhesive/cement mix			
Surface preparation – clean and free of loose materials			
Setting out, alignment, squareness			
Flatness and falls to drains, FW & FT			
Finishes around inserts, drains, switches			
Regular & continuous joints			
Tiles bedded and pointed in grout matching tile/marble skirting			
Cleanliness and rubbish cleared away			
Protection			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

SECTION-E: *INSPECTION REQUEST FORMS FOR ARCHITECTURAL WORKS*

INSPECTION REQUEST FOR STONE WORKS

**FORM NO: FM-AW-08**

Inspection Date:..... Time:.....

Location:..... Drawing Ref:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Typ, size and colour of materials to specification			
Free damage, cracks, chips, bubbles			
Adhesive/cement mix			
Surface preparation – clean and free of loose materials			
Setting out, alignment, squareness			
Flatness and falls to drains, FW & FT			
Finishes around inserts, drains, switches			
Regular & continuous joints			
Tiles bedded and pointed in grout matching tile/marble skirting			
Cleanliness and rubbish cleared away			
Protection			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

## CONCRETE WORK

PROJECT:

PMC

CLIENT:

CONTRACTOR:

### PART 4.11.2: QUALITY RECORDS

#### SECTION A: INSPECTION REQUEST FORMS FOR CONCRETING WORKS

#### INSPECTION REQUEST FOR PRE-CONCRETING WORKS

FORM NO: **FM-CW-01**

Inspection Date:.....

Time:..... Concreting Element:.....

Drawing Ref:.....

Floor:..... Location:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
SURVEY & LAYOUT			
BASE COMPACTION			
FORMWORK Cleanliness Tightness Dimension plumb Form ties Cutout & Sleeves/Inserts			
STEEL REINFORCEMENT Bar size & number Spacing Cover & spacers provided Lapping lengths Column starter bars			
CONSTRUCTION PART Chipping cleanliness			
PLUMBNESS			
ELEVATION			
Top of lean concrete			
Top of concrete			
THICKNESS OF CONCRETE			
OTHERS: Chemical Embedded material Water stopper			
SERVICES IF ANY: Electrical Plumbing Others			
GENERAL ARRANGEMENTS: Availability / Arrangement of pumps Proper access and walkway Adequacy of vibrators/needle Including diesel vibrator Slump cone and test cubes Safety and health measures Proper arrangement for lighting			

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION A: INSPECTION REQUEST FORMS FOR CONCRETING WORKS

### INSPECTION REQUEST FOR PRE-CONCRETINGWORKS

**FORM NO: FM-CW-02**

Curing Inspection Date:..... RFI Ref:.....

Finishing Inspection Date:..... Concreting Element:.....

Water proofing Inspection Date:..... Location:.....

Backfilling inspection date:..... Drawing Ref:.....

Concrete Grade:..... Floor:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
CONCRETING CURING Curing membrane in place?			
CONCRETE FINISH Top surface Side surfaces Cracks Honeycombing			
DEFECTS IF ANY Remedial measures taken			
WATERPROFING MEMBRANE All surfaces covered Correct materials used			
BACKFILLIG Backfill materials suitable Placing and compaction Sheet piles removed			

REMARKS:

**Inspected by:**

Name:.....

Date:.....

**Approved by:**

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION A: INSPECTION REQUEST FORMS FOR CONCRETING WORKS

CONCRETE POURING RECORD

FORM NO: FM-CW-03

Location :.....Concreting Date:.....

Element:..... Concrete Mix:.....

Truck No.	Delivery Order	Batching Time	Arrival Time	Start Discharge	Finish Discharge	Slump	Concrete Vol. (m3)	Cumulative Vol. (m3)	Cubes Taken	Remarks

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

**QUALITY ASSURANCE MANUAL**

  
  
  
  

**PROJECT:**

**PMC:**

**CLIENT:**

**CONTRACTOR:**

**CONTRACTOR:**

[illegible]

Date:

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT:  
PMC  
CLIENT:  
CONTRACTOR:

#### PART 4.11.2: QUALITY RECORDS

#### SECTION M: INSPECTION REQUEST FORMS FOR CONCRETE WORKS

##### SIEVE ANALYSIS FINE AGGERGATE

##### FORM NO: FM-CW-05

Reference: IS 383 and IS 2386

Date of Receipt:.....

Source Name:.....

Date of Testing:.....

Location:.....

Quantity of sample:.....

Washed / Unwashed:.....

Sieve sizes	Mass Retained (Gms)	Cumulative Mass Retained (Gms)	Percentage Retained (%)	Total Passing (%)	Percentage Passing for acceptable limits (As per IS 383 – 1970)			Remarks
					ZONE I	ZONE II	ZONE III	
10mm					100	100	100	
4.75mm					90-100	90-100	90-100	
2.36mm					60-95	75-100	85-100	
1.18mm					30-70	55-90	75-100	
600mic					15-34	35-59	60-79	
300mic					5-20	8-30	12-40	
150mic					0-10	0-10	0-10	

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION M: *INSPECTION REQUEST FORMS FOR CONCRETE WORKS*

#### SIEVE ANALYSIS COARSE AGGERGATE 10MM

#### FORM NO: FM-CW-06

Reference: IS 383 and IS 2386

Date of Receipt:.....

Source Name:.....

Date of Testing:.....

Location:.....

Quantity of sample:.....

Washed / Unwashed:.....

Sieve sizes	Mass Retained (Gms)	Cumulative Mass Retained (Gms)	Percentage Retained (%)	Total Passing (%)	Percentage Passing for acceptable limits (As per IS 383 – 1970)	Remarks
12.5mm					100	
10mm					85-100	
4.75mm					0-20	
2.36mm					0-5	

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

#### PART 4.11.2:QUALITY RECORDS

#### SECTION M: INSPECTION REQUEST FORMS FOR CONCRETE WORKS

##### SIEVE ANALYSIS - COARSE AGGERGATECOMBINED

#### FORM NO: FM-CW-07

Reference: IS 383 and IS 2386

Date of Receipt:.....

Source Name:.....

Date of Testing:.....

Location:.....

Quantity of sample:.....

Washed / Unwashed:.....

Sieve sizes	Mass Retained (Gms)	Cumulative Mass Retained (Gms)	Percentage Retained (%)	Total Passing (%)	Percentage Passing for acceptable limits (As per IS 383 – 1970)	Remarks
40mm					100	
20mm					95-100	
10mm					25-55	
4.75					0-10	

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

PROJECT:  
PMC  
CLIENT:  
CONTRACTOR:

FORM NO: FM-CW-8

DATE:

### FLANKINESS INDEX TEST

1. DATE OF TEST .....
2. MATERIAL .....
3. SOURCE .....
4. SAMPLE TAKEN FROM .....
5. TOTAL WEIGHT OF AMPLE .....

SAMPLE SIZE	WEIGHT SAMPLE GAUGED (Gms)	WEIGHT IF SAMPLE PASSIG OF GAUGE (Gms)
Passing though 40mm & Retaining on 25mm		
Passing through 25mm & Retaining on 20mm		
Passing through 20mm & Retaining on 16mm		
Passing through 16mm & Retaining on 12.5 mm		
Passing through 12.5 mm & Retaining on 10mm		
Passing through 10mm & Retaining on 6.3		
Total		

Flakiness Index (%) =  $\frac{\text{Total Weight Passing on Gauge}}{\text{Total Weight of Sample Gauged}} \times 100$

Limits: Not more than 35%

Name:

Name:

Date:

Date:

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

PROJECT

PMC

CLIENT

CONTRACTOR

FORM NO: FM-CW-9

DATE:

### DETERMINATION OF SP. GRAVITY AND WATER ABSORPTION

DATE OF TEST

.....

MATERIAL

.....

SOURCE

.....

SAMPLING POINT

.....

Weight of Pycnometer (A) = W1

Weight of pycnometer filled with water (B) = W2

Weight of about 500 gms dried Agg + Pycnometer (C) = W3

Weight of about 500 gms dried Agg + Pycnometer + Water (D) = W4

SSD weight of 500 gms dried Agg = W5

Specific Gravity =

$$\frac{W3-W1}{W2-W1+W3-W4}$$

Water Absorption =

$$\frac{W5 - (W3-W1)}{W3-W1} \times 100$$

Remarks:

Name:

Date:

Name:

Date

---

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

---

PROJECT  
PMC  
CLIENT  
  
CONTRACTOR

FORM NO: FM-CW-10

DATE:

### *DETERMINATION OF SP. GRAVITY AND WATER ABSORPTION*

DATE OF TEST .....  
MATERIAL .....  
SOURCE .....  
SAMPLING POINT .....

Weight of Pycnometer (A) = W1  
Weight of pycnometer filled with water (B) = W2  
Weight of about 500 gms dried Agg + Pycnometer (C) = W3  
Weight of about 500 gms dried Agg + Pycnometer + Water (D) = W4  
SSD weight of 500 gms dried Agg = W5

Specific Gravity = 
$$\frac{W3-W1}{W2-W1+W3-W4}$$

Water Absorption = 
$$\frac{W5 - (W3-W1)}{W3-W1} \times 100$$

Remarks:

Name:

Name:

Date:

Date

---

POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

---

PROJECT	QUALITY ASSURANCE MANUAL
PMC	
CLIENT	

FORM NO: FM-CW-11

DATE:

*DETERMINATION OF 10% FINES VALUE (IS 2386)*

DTE OF TEST :

MATERIAL :

SOURCE :

SAMPLING POINT :

	Sample1	Sample2
WEIGHT OF TEST SAMPLE :		
LOAD IN TONNES (X) :		
PERCENTAGE OF FINE PASSING		
2.36 MM SIEVE :		
MEAN VALUE OF % FINES (Y) :		
LOAD REQUIRED FOR 10 % FINES: $(14 \times x) / (Y + 4)$		

Limits: Max Load 50 T as per IS 383

Remarks

Name:

Name:

Date:

Date:

QUALITY ASSURANCE MANUAL												
PROJECT PMC CLIENT CONTRACTOR												
<b>FORM NO: FM-CW-12</b>		DATE:										
CEMENT FINENESS TEST												
<p>CEMENT MANUFACTURERE : _____</p> <p>TYPE OF CEMENT : _____</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">SAMPLE 1</th> <th style="padding: 5px;">SAMPLE 2</th> <th style="padding: 5px;">SAMPLE 3</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> <tr> <td style="height: 60px;"></td> <td></td> <td></td> </tr> </tbody> </table> <p>WEIGHT OF CEMENT TAKEN (A) _____</p> <p>WEIGHT OF CEMENT RETAINED ON 90 MIC SIEVE IN GMS (B) _____</p> <p>% OF FINENESS = <math>B / A \times 100</math></p> <p style="text-align: center;">Average value:</p> <p>PERMISSIBLE LIMITS : NOT MORE THAN 10%</p>   <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Name : _____</p> <p>Date: _____</p> </div> <div style="width: 45%;"> <p>Name: _____</p> <p>Date: _____</p> </div> </div>				SAMPLE 1	SAMPLE 2	SAMPLE 3						
SAMPLE 1	SAMPLE 2	SAMPLE 3										

QUALITY ASSURANCE MANUAL

PROJECT

PMC

CLIENT

CONTRACTOR

FORM NO :-CW-13

DATE:

*CONSISTENCY, INITIAL & FINAL SETTING TIME TESTS*

*(AS PER IS 4031)*

W	M	Y

CEMENT MANUFACTURERE

TYPE OF CEMENT

GRADE

Trial No.	Weight of Plan cement In gms	Water in cc	% of water	Time	Needle penetration in mm

LIMITS (AS PER IS: 8112)

SANDARD CONSISTENCY = (P) %

INITIAL SETTING TIME = Minutes

FINAL SETTING = Minutes

SAMPLE CONFORMS / DO NOT CONFORMS TO I.S REQUIREMENTS

Name:

Name:

Date:

Date:

QUALITY ASSURANCE MANUAL

PROJECT

PMC

CLIENT

CONTRACTOR

FORM NO :-CW-14

DATE:

*SOUNDNESS TEST OF CEMENT*

*(AS PER IS CODE 4031)*

W	M	Y

NAME OF MANUFACTURERE :

TYPE OF CEMENT :

STANDARD CONSISTENCY :

WEIGHT OF CEMENT

TAKEN (gm) :

WATER TAKEN (ml) :

Mould No.	Initial Distance (mm)	Final Distance (mm)	Difference (mm)	Average (mm)
1				
2				

PERMISSIBLE LIMIT (AS PER IS 81120 – NOT MORE THAN 10MM

SAMPLE CONFORMS / DO NOT CONFORMS TO IS REQUIREMENT

Name:

Name:

Date:

Date:

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

FORM NO :-CW-15

DATE:

CEMENT COMPRESSIVE STRENGTH

(AS PER IS 4031-1988)

W	M	Y

CEMENT MANUFACTURERE :  
TYPE OF CEMENT :  
DATE OF SAMPLING :  
DATE OF CASTING CUBES :  
CEMENT :\  
SAND = 600 gm (200GM OF gr I, II & III)  
WATER =  $\left( \frac{P}{4} + 3 \right) \times \frac{800}{100}$

WHERE P = CONSISTENCY EXPRESS AS % AS PER FORM NCIF

Testing after	Cube No	Load at fracture	Compressive Strength (N/mm <sup>2</sup> )		Permissible limits as per IS: 8112	
		(T)	Individual	Average	Fore Grade 43	Remark
3 days Date_____	1					
	2					
	3					
7 days Date_____	4					
	5					
	6					
28 days Date_____	7					
	8					
	9					

SAMPLE CONFORMS / DO NOT CONFORMS TO IS REQUIREMENT

Name:

Name:

Date:

Date:

QUALITY ASSURANCE MANUAL			
PROJECT			
PMC			
CLIENT			
CONTRACTOR			

FORM NO: FM-CW-16

DATE:

BAR BENDING SCHEDULE FORMAT

B.B.S

S.NO	DESCRIPTION	SHAPE & size	DIA OF BAR	BAR MARK	NO OF MEMBERS	TOTAL NO OF BARS	C.L. IN 'M'	TOTAL LENGTH IN 'M' DIA WISE				
							Total length in 'm'					
							Total Wt in 'MT'					

Grande total In MT

NAME:

NAME:

DATE:

NAME

**POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL**

<b>QUALITY ASSURANCE MANUAL</b>			
PROJECT			
PMC			
CLIENT			
CONTRACTOR			

**FORM NO: FM-CW-17**

**DATE:**

<b>INSPECTION REQUEST FOR ROLLING MARGIN – REINFORCEMENT STEEL</b>
--

Reference Tag No.:								
Diameter of Reinforcement steel:								
Weight of lot received (in MT):			Date of Receipt					
Reference Invoice No.:			Veh No:					
	Length of Sample (m)			Weight (Kgs)			% Difference	Remark
	(a)	(b)	(c)=(a+b)/2					
Sample 1								
Sample 2								
Sample 3								
Total For samples=								
Average weight per meter length =								

Total weight of lot=		MT	1
Standard Weight per meter		Kg/m	2
Actual weight per meter		Kg/m	3

**POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL**

Rolling Margin=		%	$\frac{((3)-(2))/(3)) \times 100}{(4)}$
Wt for Reconciliation =			$((1)-(1) \times (4)/100)$

Tolerance on Nominal Mass as per CPWD:

Nominal Size in mm	Tolerance on the nominal mass percent		
	Batch	Individual sample	Individual sample for coils
a) upto and including 10mm	$\pm 7$	$\pm 8$	$\pm 8$
b) over 10mm, upto and including 16mm	5	-6	6
c) over 16mm	$\pm 3$	-4	$\pm 4$

Remarks:

Name:

Name:

---

---

POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

---

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

**FORM NO: FM-CW-18**

DATE:

pH VALUE TEST

S.NO	Source	Test for	Date of Test	pH Value	Remarks

Limits:

For water = More than 6.00 ( As per IS: 456)

For Admixture = Between 6.00 to 9.00 (As per IS: 9103)

Name:

Name:

Date:

Date:

---

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

---

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

**FORM NO: FM-CW-19**

DATE:

### DETERMINATION OF BULK DENSITY

DATE OF TEST :

MATERIAL :

SOURCE :

SAMPLING POINT :

Weight of Container (W1) kg				
Weight of Container + Material (W2) kg				
Volume of Container (V) M3				
Bulk Density (kg/cum)	$((W2-W1)/V)$			

Remarks

Name:

Name:

Date:

Date:

<b>FORM NO: FM-CW-20</b>	<b>DATE:</b>	
<u><b>CONCRETE REQUESTION SLIP</b></u>		
<p>TO,</p> <p>QA/QC In-charge / Plant In-charge</p>		
<p>Please supply following grade of concrete for ---project. Others details are as under</p>		
Concrete Grade;	Slump required	
Min Cement:	No of cubes required	
Quantity (cum):	Location :	
	Required Time:	
Requested By	Approved By	Received By
Site Engineer	QA.QC Engineer / In-charge	Plant In-charge
Time :	Time:	Time:
Date:	Date:	Date:

FORM NO: FM-CW-21		DATE:	
<u>CONCRETE DELIVERY CHALLAN</u>			
Date:		Concrete Grade:	
Truck No:		Cement Content:	
Location of Pour:		W/C ratio:	
Batching start time:		Max size agg.	
Batching finish time:		admixture(Type &dose)	
Quantity(cum)		Concrete temp at site:	
No of cubes taken at B.P.		slump at B.P.	
Arrival of truck at site		Ambient temp:	
Discharge started:		Concrete temp at site:	
Placement completed (Time):		Slump at site.....mm. Time.....	
No of cubes taken at site:		Admixture redosed..... after redoes.....	

Plant Engineer

Site Engineer

Date:

Date:

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

#### PART 4.11.2: QUALITY RECORDS

#### SECTION –A: CONCRETING WORKS

### CONCRETE POUR CARD

FORM NO: FM-CW-22

Inspection Date:

Dwg. No.:

RFI Ref. Date:

Location:

PCWI (FM-CW-01) Date:

Concrete Grade:

Concreting Element:

Concrete Qty:

Concrete start Time:

Concrete Finish Time:

(1) Details of Concreting element: Dimensions and Grids

(2) Other checks carried out	Checked by	Remarks
a) Survey Points Checked		
b) Form work checked		
c) Placing of Steel reinforcement checked		
d) Quantity of reinforcement checked (Ref. to BBS (FM-CW-19))		
e) Cover block and thickness of pour		
f) Provision of M&E services checked		
g) Concreting arrangements checked		
h) safety arrangements checked		

Inspected and Permitted for concreting

Name:

Dame:

Date:

Date:

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

#### PART 4.11.2: QUALITY RECORDS

#### SIEVE ANALYSIS COARSE AGGREGATE 63-45

SECTION – A : Inspection request for concrete works

FORM NO: FM-CW-07a

Reference : CPWD Specification

Date of Receipt:..... Source Name:.....

Date of Testing:..... Location:.....

Quantity of Sample:.....

Sieve sizes	Mass Retained (Gms)	Cumulative Mass Retained (Gms)	Percentage Retained (%)	Total Passing (%)	Percentage Passing for acceptable limits (As Per CPWD)	Remarks
90mm					100	
63mm					85-100	
53mm					25-75`	
45mm					0-20	
22.4mm					0-5	

Remarks:

Inspected by :  
*Rep*

Approved by:  
*Consultant*

Name:.....  
Date:.....

Name:.....  
Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

### SIEVE ANALYSIS COARSE AGGREGATE 13.2MM

#### PART 4.11.2: QUALITY RECORDS

SECTION – A : Inspection request for concrete works

FORM NO: FM-CW-07b

Reference : CPWD Specification

Date of Receipt:..... Source Name:.....

Date of Testing:..... Location:.....

Quantity of Sample:.....

Sieve sizes	Mass Retained (Gms)	Cumulative Mass Retained (Gms)	Percentage Retained (%)	Total Passing (%)	Percentage Passing for acceptable limits (As Per CPWD)	Remarks
13.2 mm					100	
11.2 mm					95-100	
5.6 mm					15-35`	
280 mic					0-10	

Remarks:

Inspected by :  
Rep

Approved by:  
Consultant Rep

Name:.....  
Date:.....

Name:.....  
Date:.....

**PLUMBING SYSTEM**

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-L: *INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM*

**INSPECTION REQUEST FOR PIPEWORK**

**FORM NO: FM-PBW-01**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification. Support brackets/hangers & fixings Joints-no visible signs of leaks Allowance for expansion Painting / coating & colour coding Insulation type & installation Identification labeling / marking Direction of flow arrows Pressure testing Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-L: INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM

TEST REPORT FOR PIPEWORK LEAKAGE & PRESSURE TESTING

**FORM NO: FM-PBW-02**

Location/Floor: \_\_\_\_\_

Sub-con \_\_\_\_\_

Zone: \_\_\_\_\_

Page No: \_\_\_\_\_ Of \_\_\_\_\_

Drawing Ref: \_\_\_\_\_

Inspection Date: \_\_\_\_\_

Test Required: \_\_\_\_\_

Duration: \_\_\_\_\_

Media: \_\_\_\_\_

Pressure: \_\_\_\_\_

Allowable Pressure Drop: \_\_\_\_\_

Time: \_\_\_\_\_

Procedure: \_\_\_\_\_

Tools & Equipment Used : \_\_\_\_\_

DURATION	Time	Time	Pressure	Pressure	Pressure	Results	REMARKS
	Start	End	Start	End	Difference	(A / R)	

Any leaks found?

(Yes/ No)

REMARK:

INSPECTION ACCEPTANCE			
Signature:			
Representative Involved			
Name: Date:			

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-L: *INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM*

INSPECTION REQUEST FOR VALVES, GAUGES & PUMPS

**FORM NO: FM-PBW-03**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Correct sizes, type, make & model. Model:..... Make:..... Capacity:..... Head:..... Installed in correct location/direction. Fixings, mountings or plinths Connections Balancing & adjustments Power & control installation Identification labeling/ name plate Direction of flow arrows Painting, insulation & protection Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-L: *INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM*

**INSPECTION REQUEST FOR TANKS**

FORM NO: FM-PBW-04

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification. Type, size, capacity& dimensions Type:..... Capacity:..... Dimensions:..... Support & platform details Leaks & water-tightness Supply connections Distributions connections Ball valves, stopcocks etc. Protection / painting / coating Cover / insulation Water levels indicator & level electrode and control wiring. Overflow connection & drain Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-L: INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM

INSPECTION REQUEST FOR PUMPS

FORM NO: FM-PBW-05

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
<p>Correct size, type, make &amp; model</p> <p>Make:.....</p> <p>Model:.....</p> <p>Capacity:.....</p> <p>Head:.....</p> <p>Installed in correct location &amp; direction</p> <p>Fixing, mounting or plinths</p> <p>Connections with pipe-work</p> <p>Name plate &amp; identification labeling</p> <p>Direction of flow arrows</p> <p>Balancing &amp; adjustments</p> <p>Isolating valves</p> <p>Gauges</p> <p>Gland drains</p> <p>Electrical connection &amp; controls</p> <p>Painting, insulation &amp; protection</p> <p>Instruments &amp; control/circuit boards</p> <p>Cleanliness &amp; rubbish cleared away</p>			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-L: *INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM*

**INSPECTION REQUEST FOR CABLE TRAYS, TRUNKING & CONDUCTING**

FORM NO: FM-PBW-07

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification. Mechanical damage to materials Hangers/brackets/ fixing to trunking/ trays Fixing to structure Joints, couplers & junction. Earth bonding & continuity at joints. Galvanizing touched up Painting correct colour & complete Cables installation & dressing Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-L: *INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM*

**INSPECTION REQUEST FOR ELECTRICAL CONNECTION OF EQUIPMENTS**

FORM NO: FM-PBW-08

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification			
Name plate, labeling & danger signs			
Cables lugs & terminal tightness			
Size, type & rating of cables			
Damage / minimum bending radius to cable			
Earthing of equipment & casing			
Cables installation & dressing			
Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-L: *INSPECTION REQUEST FORMS FOR PLUMBING SYSTEM*

**INSPECTION REQUEST FOR SWITCH BOARDS & CONTROL PANELS**

FORM NO: FM-PBW-09

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification 7 shop drawings. Name plate, labeling & danger signs Cabinet size, finish colour, damage etc. Housing & enclosure protection Installation & fixing to structure Relays, circuit breakers & fuses. Wiring neat & tidy Warning & operation lights Instruments & control/circuit boards Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

MISC WORKS

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

FORM NO. FM-RWI-01

Date:

REQUEST FOR WORK INSPECTION

TO:

RWI:

SUBMITTED BY:

SIGN:

We will be doing the following work:

☐ QC Sampling  
QC Lab/site Testing

☐ Survey setting out

☐ Piling works

☐ RCC works

☐ Architectural work

☐ Water proofing works

☐ BLOCK: ☐ A ☐ B ☐ C ☐ D ☐ E

FLOOR LEVEL: \_\_\_\_\_ GRID LINE: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

Remarks:

Acknowledge Received By:

Name:

Date:

Sign:

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

FORM NO: FM-APV-01

SECTION – 1:MISC. WORKS

MATERIAL APPROVAL SUBMITTAL FORM

A) Material Name & Description:	
B) Location to be used:	
C) Type of Service:	
D) Material Specification as per BOQ/Contract Spec./Dwgs:	
E) Manufacturer's Name:	
F) Sample submission details:	
Number of sample:	
REMARKS :	
Submitted By:	
NAME:	SIGNATURE:
	DATE:
APPROVAL STATUS:	
<input type="checkbox"/> Approved	<input type="checkbox"/> Not Approved
COMMENTS: _____	
SIGNATURE: _____	
DATE: _____	

Sample Submission for Approval

**Form No: FM-APV-02**

Sample no:

Material:

Location:

---

Project title:

Submission by:

Signature/date:

Submission to:

Approved by:

Submission to

Approved by:

FM-TC-06a

DT. NO:

DATE: \_\_\_\_\_

JOB REF: \_\_\_\_\_

QUALITY PLAN TRANSLTAL

TO: THE TEAM LEADER  ATTN:	OUR REF:	
	YOUR REF:	
	NAME OF PROJECT	

NO.	DOC. OR DRWG. NO	REV	QUANTITY		DESCRIPTION	STATUS
			NEG	PRINTS		

1	APPROVED	5	FORWARD PLANNING	9	DESIGN
2	EXAMINED & RETURNED WITH COMMETNS	6	FOR REVIEW	10	DISTRIBUTION
3	FOR APPROVAL OR COMMENTS	7	AS REQUESTED	11	TENDERING/QUOTATION
4	ADVANCE INFORMATION	8	FINAL RECORDS	12	CONSTRUCTION

CHARGE TO CLIENT	
CHARGE TO ADDRESSEE	
NOT CHARGABLE	
CASH PAYMENT	

ISSUED BY: \_\_\_\_\_ RECEIVED BY:

NAME : \_\_\_\_\_ NAME :

DATE : \_\_\_\_\_ DATE :

FM-TC-06b

DT. NO:

DATE: \_\_\_\_\_

JOB REF: \_\_\_\_\_

METHOD STATEMENT TRANSLTAL

TO: THE TEAM LEADER
ATTN:

OUR REF:	
YOUR REF:	
NAME OF PROJECT	

NO.	DOC. OR DRWG. NO	REV	QUANTITY		DESCRIPTION	STATUS
			NEG	PRINTS		

NOTE: THE STATUS OF THE AABOVE DOCUMENT OR DRAWINGS IS INDICATED IN THE FINAL COLUMN (SEE KEY BELOW)

1	APPROVED	5	FORWARD PLANNING	9	DESIGN
2	EXAMINED & RETURNED WITH COMMETNS	6	FOR REVIEW	10	DISTRIBUTION
3	FOR APPROVAL OR COMMENTS	7	AS REQUESTED	11	TENDERING/QUOTATION
4	ADVANCE INFORMATION	8	FINAL RECORDS	12	CONSTRUCTION

CHARGE TO CLIENT	
CHARGE TO ADDRESSEE	
NOT CHARGABLE	
CASH PAYMENT	

ISSUED BY: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_

NAME : \_\_\_\_\_ NAME \_\_\_\_\_

DATE : \_\_\_\_\_ DATE \_\_\_\_\_

# POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

**FM-TC-06c**

DT. NO:

DATE:

JOB REF:

## TECHNICAL TRANSLTAL

TO: THE TEAM LEADER
ATTN:

OUR REF:	
YOUR REF:	
NAME OF PROJECT	

NO.	DOC. OR DRWG. NO	REV	QUANTITY		DESCRIPTION	STATUS
			NEG	PRINTS		

NOTE: THE STATUS OF THE AABOVE DOCUMENT OR DRAWINGS IS INDICATED IN THE FINAL COLUMN (SEE KEY BELOW)

1	APPROVED	5	FORWARD PLANNING	9	DESIGN
2	EXAMINED & RETURNED WITH COMMETNS	6	FOR REVIEW	10	DISTRIBUTION
3	FOR APPROVAL OR COMMENTS	7	AS REQUESTED	11	TENDERING/QUOTATION
4	ADVANCE INFORMATION	8	FINAL RECORDS	12	CONSTRUCTION

CHARGE TO CLIENT	
CHARGE TO ADDRESSEE	
NOT CHARGABLE	
CASH PAYMENT	

ISSUED BY: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_

NAME : \_\_\_\_\_ NAME \_\_\_\_\_

DATE : \_\_\_\_\_ DATE \_\_\_\_\_

# POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

**FM-TC-06d**

DT. NO:

DATE: \_\_\_\_\_

JOB REF: \_\_\_\_\_

## SAMPLE SUBMISSION TRANSLTTAL

TO: THE TEAM LEADER          ATTN:	OUR REF:	
	YOUR REF:	
	NAME OF PROJECT	

NO.	DOC. OR DRWG. NO	REV	QUANTITY		DESCRIPTION	STATUS
			NEG	PRINTS		

NOTE: THE STATUS OF THE AABOVE DOCUMENT OR DRAWINGS IS INDICATED IN THE FINAL COLUMN (SEE KEY BELOW)

1	APPROVED	5	FORWARD PLANNING	9	DESIGN
2	EXAMINED & RETURNED WITH COMMETNS	6	FOR REVIEW	10	DISTRIBUTION
3	FOR APPROVAL OR COMMENTS	7	AS REQUESTED	11	TENDERING/QUOTATION
4	ADVANCE INFORMATION	8	FINAL RECORDS	12	CONSTRUCTION

CHARGE TO CLIENT	
CHARGE TO ADDRESSEE	
NOT CHARGABLE	
CASH PAYMENT	

ISSUED BY: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_

NAME : \_\_\_\_\_ NAME \_\_\_\_\_

DATE : \_\_\_\_\_ DATE \_\_\_\_\_

# POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

**FM-TC-06e**

DT. NO:

DATE: \_\_\_\_\_

JOB REF: \_\_\_\_\_

## SHOP DRAWING TRANSLTTAL

TO: THE TEAM LEADER
ATTN:

OUR REF:	
YOUR REF:	
NAME OF PROJECT	

NO.	DOC. OR DRWG. NO	REV	QUANTITY		DESCRIPTION	STATUS
			NEG	PRINTS		

NOTE: THE STATUS OF THE AABOVE DOCUMENT OR DRAWINGS IS INDICATED IN THE FINAL COLUMN (SEE KEY BELOW)

1	APPROVED	5	FORWARD PLANNING	9	DESIGN
2	EXAMINED & RETURNED WITH COMMETNS	6	FOR REVIEW	10	DISTRIBUTION
3	FOR APPROVAL OR COMMENTS	7	AS REQUESTED	11	TENDERING/QUOTATION
4	ADVANCE INFORMATION	8	FINAL RECORDS	12	CONSTRUCTION

CHARGE TO CLIENT	
CHARGE TO ADDRESSEE	
NOT CHARGABLE	
CASH PAYMENT	

ISSUED BY: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_

NAME : \_\_\_\_\_ NAME \_\_\_\_\_

DATE : \_\_\_\_\_ DATE \_\_\_\_\_

**G. HVAC SYSTEM**

QUALITY ASSURANCE MANUAL
PROJECT PMC CLIENT CONTRACTOR

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR DUCTING
--------------------------------

**FORM NO: FM-ACW-01**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification			
Size and dimensional check			
Assembly and jointing			
Joints sealants and gaskets			
Hangers fixings to structure			
Hangers and brackets			
Corrosion protection/painting			
Duct penetrations through walls			
Installation of balancing dampers			
Cleanliness and rubbish cleared away			

REMARKS:
----------

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR THERMAL & ACOUSTIC INSULATION

**FORM NO: FM-ACW-02**

Inspection Date:..... Time:..... Sub-con:.....  
Drawing Ref:..... Floor:..... Location:.....  
Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials thickness & type to spec. Fixing pins to ducting Insulation joints & installation Foil joints, laps & installation Installation around duct accessories Protection to insulation from external works Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

# POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

## QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

### PART 4.11.2:QUALITY RECORDS

#### SECTION-J: INSPECTION REQUEST FORMS FOR HVAC SYSTEM

#### INSPECTION REQUEST FOR THERMAL & ACOUSTIC INSULATION

#### FORM NO: FM-ACW-03

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials type, size & finish to spec.			
Correct location of outlet			
Connection to ducting			
Secure fixing & supporting			
Finishing around installed outlet			
Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

#### PART 4.11.2:QUALITY RECORDS

#### SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

#### INSPECTION REQUEST FOR THERMAL & ACOUSTIC INSULATION

#### FORM NO: FM-ACW-04

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials type, make & model to specification & shop drawings. Fitting installation of damper Access opening to damper Labeling & identification Motor installation & power connections Open/close functioning Air Leakage Controls Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR THERMAL & ACOUSTIC INSULATION

**FORM NO: FM-ACW-05A**

Location/Floor: \_\_\_\_\_

Sub-con \_\_\_\_\_

Zone: \_\_\_\_\_

Page No: \_\_\_\_\_ of \_\_\_\_\_

Drawing Ref: \_\_\_\_\_

Inspection Date: \_\_\_\_\_

Test Required: \_\_\_\_\_

Duration: \_\_\_\_\_

Media: \_\_\_\_\_

Pressure: \_\_\_\_\_

Allowable Pressure Drop: \_\_\_\_\_

Time: \_\_\_\_\_

Procedure: \_\_\_\_\_

Tools & Equipment Used : \_\_\_\_\_

DURATION	Time	Time	Pressure	Pressure	Pressure	Results	REMARKS
	Start	End	Start	End	Difference	(A / R)	

Any leaks found?

(Yes/ No)

Water flowing OK?

(Yes/ No)

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

#### PART 4.11.2: QUALITY RECORDS

#### SECTION-J: INSPECTION REQUEST FORMS FOR HVAC SYSTEM

#### INSPECTION REQUEST FOR VALVES, GAUGES & PUMPS

#### FORM NO: FM-ACW-06

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Correct sizes, types, make & model. Installed in correct location & direction Fixings, mountings or plinths Connections Balancing & adjustments Power & control installation Pumps Shaft, coupling alignment Identification labeling / name plate Direction of flow arrows Painting, insulation & protection Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

## POST EARTHQUAKE RECONSTRUCTION OF SCHOOL IN NEPAL

### QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

#### PART 4.11.2:QUALITY RECORDS

#### SECTION-J: INSPECTION REQUEST FORMS FOR HVAC SYSTEM

#### INSPECTION REQUEST FOR THERMAL & ACOUSTIC INSULATION

#### FORM NO: FM-ACW-07

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification. Type, size, capacity & dimensions. Support & platform details Leaks & water-tightness Supply connections Ball valves, stopcocks etc. Protection / painting / coating Cover / insulation Water levels indicator & level electrode and control wiring. Overflow connection & drain Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

SECTION-J: INSPECTION REQUEST FORMS FOR HVAC SYSTEM

INSPECTION REQUEST FOR AIR HANDLING UNITS

FORM NO: FM-ACW-08

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Equipment make, model, type to spec. as per approved drawings.			
Plinth & vibration mounting			
Casing/enclosure fixing & protection			
Labeling & identification			
Checking of pipe connection			
Duct connection			
Electrical connection & controls			
Direction of rotation of motors			
Checking VFD			
Condensate drains			
Zone dampers			
Cooling coils			
Humidifiers			
Fan			
Reheat & preheat coils			
Filters & mixing boxes			
Insulation fixing, jointing & laps			
Cleanliness and rubbish cleared away			

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR FANS

**FORM NO: FM-ACW-09**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Equipment make, model, type to spec. as per approved drawings Vibration mounting & fixing Housing/casing fixing Duct connection Motor fixing & drive shaft/belt connection. Safety guards Labeling & identification Electrical connection & controls Direction of rotation of motor Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR FANS COILS UNITS

FORM NO: FM-ACW-10

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Equipment make, model, type to spec. as per approved drawings Vibration mounting & fixing Housing/casing fixing Duct connection Connecti0on to pipe work Condensate drain Blower / Fan Labeling & identification Electrical connection & controls Maintenance accessibility Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR CHILLERS & CONDENSERS

FORM NO: FM-ACW-11

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Equipment make, model, type to spec. as per approved drawings Vibration mounting & fixing Housing/casing fixing Connection to pipe-work, valves, overflow Checking of Insulation Checking of Drain Pip Compressor Refrigerant Condenser Labeling & identification Electrical connection & controls Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

SECTION-J: INSPECTION REQUEST FORMS FOR HVAC SYSTEM

INSPECTION REQUEST FOR COOLING TOWERS

FORM NO: FM-ACW-12

Inspection Date:..... Time:..... Sub-con:.....  
Drawing Ref:..... Floor:..... Location:.....  
Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Equipment make, model, type to spec. as per approved drawings Vibration mounting & fixing Housing/casing fixing Connection to pipe-work, valves, overflow Water distribution Duct connection Checking of Water Leakage Fan Safety guards Labeling & identification Electrical connection & controls Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT  
PMC  
CLIENT  
CONTRACTOR

PART 4.11.2: QUALITY RECORDS

SECTION-J: INSPECTION REQUEST FORMS FOR HVAC SYSTEM

INSPECTION REQUEST FOR CABLES TRAYS, TRUNKING & CONDUCTING

FORM NO: FM-ACW-13

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification. Mechanical damage to materials Hangers/brackets/fixing to tunking/ trays Fixing to structure Joints, couplers & junction Earth bonding & continuity at joints. Galvanizing touched up Painting correct colour & complete Cables installation & dressing Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT :  
PMC :  
CLIENT :  
CONTRACTOR :

PART 4.11.2: QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR ELECTRICAL CONNECTION OF EQUIPMENTS

**FORM NO: FM-ACW-14**

Inspection Date:..... Time:..... Sub-con:.....  
Drawing Ref:..... Floor:..... Location:.....  
Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification. Name plate, labeling & danger signs Cable lugs & terminal tightness Size, type & rating of cables Damage / minimum bending radius to cable Earthing of equipment & casing Cables installation & dressing Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....  
Date:.....

Approved by:

Name:.....  
Date:.....

QUALITY ASSURANCE MANUAL

PROJECT :  
PMC :  
CLIENT :  
CONTRACTOR :

PART 4.11.2: QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR HVAC SYSTEM*

INSPECTION REQUEST FOR SWITCH BOARDS & CONTROL PANELS

**FORM NO: FM-ACW-15**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification & shop drawings. Name plate, labeling & danger signs Cabinet size, finish, colour, damage etc. Housing & enclosure protection Installation & fixing to structure Relays, circuit breakers & fuses. Wiring neat & tidy Warning & operation lights Instruments & control/circuit boards Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT :  
PMC :  
CLIENT :  
CONTRACTOR :

PART 4.11.2: QUALITY RECORDS

SECTION-J: INSPECTION REQUEST FORMS FOR HVAC SYSTEM

INSPECTION REQUEST FOR PUMPS

**FORM NO: FM-ACW-16**

Inspection Date:..... Time:..... Sub-con:.....  
Drawing Ref:..... Floor:..... Location:.....  
Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
<p>Correct size, type, make &amp; model</p> <p>Make:.....</p> <p>Model:.....</p> <p>Capacity:.....</p> <p>Head:.....</p> <p>Type:.....</p> <p>Installed in correct location &amp; direction</p> <p>Pumps shaft, coupling alignment</p> <p>Fixing, mounting or plinths</p> <p>Connections with pipe-work</p> <p>Name plate &amp; identification labeling</p> <p>Direction of flow arrows</p> <p>Balancing &amp; adjustments</p> <p>Isolating valves</p> <p>Gauges</p> <p>Gland drains</p> <p>Electrical connections &amp; controls</p> <p>Painting, insulation &amp; protection</p> <p>Instruments &amp; control /circuit boards</p> <p>Cleanliness and rubbish cleared away</p>			

**ELECTRICAL SYSTEM**

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

**INSPECTION REQUEST FOR HT SWITCHGEAR**

**FORM NO: FM-ELW-01**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials as per specification. Cabinet size, finish, colour, damage etc. Name plate, labeling and danger signs Cable entry and cabinet fixing Installation and functioning of instruments Secondary wiring, size, colour etc Interlock (mechanical/electrical) & switch gear Check fuses Check relays Checking of Earthing Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-J: INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM

INSPECTION REQUEST FOR TRANSFORMER

FORM NO: FM-ELW-02

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification. Name plat and labeling Mechanical damage Housing or enclosure and protection Cable entry and installation/fixing Tripping facilities Earthing – use FM-ELW-04 Cable lug and cable connections secure Checking of Earthing Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-J: INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM

INSPECTION REQUEST FOR MAIN SWITCHBOARD/  
SUB-SWITCHBOARD/DISTRIBUTION BOARD

FORM NO: FM-ELW-03

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

Item	Description	Inspection		Remark
		Accept	Reject	
1.0	CABLE			
1.1	Incoming cable termination			
1.2	Outgoing cable termination			
1.3	Neutral cable			
1.4	Earth cable			
1.5	Control cable			
2.0	BREAKER & CONTRACTOR			
2.1	Incoming Breaker:.....Amp			
2.2	Outgoing Breakers:			
	.....No. (s).....Amp			
	.....No. (s).....Amp			
	.....No. (s).....Amp			
	.....No. (s).....Amp			
	.....No. (s).....Amp			
2.3	Contractor			

3.0	PROTECTION			
3.1	Earth fault (IDMT) setting:.....			
3.2	ELCB/EF:.....A.....mA			
3.3	CT:.....Class.....Ratio			
4.0	INSTRUMENTATION			
4.1	Ammeter & Voltmeter			
4.2	Ammeter & Voltmeter selector switch			
4.3	Indicator lights			
4.4	Instrument fuses			
5.0	MISCELLANEOUS			
5.1	Circuit labeling, danger signs & name plate			
5.2	Circuit diagram			
5.3	Finish, damage etc.			
5.4	Earth bar & earth connection			
5.5	Cleanliness & rubbish cleared away			

REMARK:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSPECTION REQUEST FOR EARTHING

**FORM NO: FM-ELW-04**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Installation in accordance with drawings Earth conductors correct size Security of all terminations and joints/ connection Earth cable insulation completer and correct colour Earth cable connection to removable equip. clamps tight tight with lock washers in place Earth chamber and cover Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSPECTION REQUEST FOR LIGHTING, POWER AND FITTINGS INSTALLATION

**FORM NO: FM-ELW-05**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification Cable material, size and colour Light fitting type, number and size Position and installation of light fitting Power outlet type, number and size Circuit identification Position and installation of power outlet Switch type, position and installation Lighting control by switch/BAS Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-J: INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM

INSPECTION REQUEST FOR EXTERNAL LIGHTING

FORM NO: FM-ELW-06

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification Cable materials, size and colour Light fitting type, number and size In each circuit Cable installation in trenches or ducts Backfilling Lighting fitting finish & protection Position and installation of light Fitting Circuit and panels labeling & circuit identification Control of circuit by timers/BCS Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSPECTION REQUEST FOR CABLE MANAGEMENT SYSTEM

**FORM NO: FM-ELW-07**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Material to specification Install in accordance with approved Construction Drawing Correctness of brand, model & type Correctness of location & mounting Size and type of junction/service box Size of trunking All plugging Secure of installation Damage on material & galvanizing Cover, fly over & outlet plates Level with finish floor level Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSPECTION REQUEST FOR CABLES DUCTS, DRAW PITS AND MANHOLES

**FORM NO: FM-ELW-08**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification Size, number and type of ducts Setting out, depth Duct joint check, bedding & backfill Duct bends to correct radius Blockages cleared & draw cords installed Manholes complete with watertight construction Draw cords tied & secure in manholes Cover and frame bedding details Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSULATION RESISTANCE TEST FOR LV CABLES

**FORM NO: FM-ELW-09**

Main switchboard/sub-switchboard/Distribution Board Name:.....

Location:..... Floor:..... Inspection Date:..... Time:.....

Sub-contractor:..... Drawing Ref:.....

Make:.....

Circuit No	No. x Core(C), Size(mm <sup>2</sup> ), Cable Type	Cable Route		Insulation Resistance (M Ω)									
		From	To	R-Y	R-B	Y-B	R-N	Y-N	N-N	R-E	Y-E	B-E	N-E

REMARK:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

EARTH RESISTANCE TEST SHEET

**FORM NO: FM-ELW-10**

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Installation in accordance with drawings Earth conductors correct size Security of all terminations and joints/ connection Earth cable insulation complete and correct colour Earth cable connection to removable equip. clamps tight with lock washers In place Earth chamber and cover Cleanliness and rubbish cleared away			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSPECTION REQUEST FOR CONDUIT

**FORM NO: FM-ELW-11**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Installed in accordance with approved construction drawing Correctness of brand & type Damage on conduit Damage on Painting Correctness of location & mounting Marking Source of Installation Check earth cable link			

REMARKS:

Inspected by:

Approved by:

Name:.....

Name:.....

Date:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSPECTION REQUEST FOR CABLE TRAY & TRUNKING

**FORM NO: FM-ELW-12**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Material to specification Mechanical damage to materials Fixing to structure Hangers/brackets/fixing to trunking /tray Joints, couplers & junctions Earth bonding & continuity at joints Galvanizing touched up Painting correct colour & complete Cables installed & tied properly Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

INSPECTION REQUEST FOR LIGHTNING PROTECTION SYSTEM

**FORM NO: FM-ELW-14**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Material to specification Earth conductor correct size Earthing electrodes & connection clamps Fixing to structure Connection of Air terminal Location & height & location Ohm reading less than 10 Ohm <b>Actual reading:_____</b> Earth chamber & cover Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

## QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-J: *INSPECTION REQUEST FORMS FOR ELECTRICAL SYSTEM*

### INSPECTION REQUEST FOR TELEPHONE SYSTEM

FORM NO: FM-ELW-16

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Material to specification Main distribution frame type, size, & installation Wiring & cabling, size & installation Sockets, type, position & installation Earthing – use form FM-ELW-04 Correct phones & switch boards Programming of system complete Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

**FIRE FIGHTING SYSTEM**

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR PIPE-WORK

**FORM NO: FM-FFW-01**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Material to specification			
Support brackets/hangers & fixings			
Joints-no visible signs of leaks			
Allowance for expansions			
Painting / coating & colour coding			
Insulation type & installation			
Identification labeling/markings			
Direction of flow arrows			
Pressure testing			
Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: INSPECTION REQUEST FORMS FOR FIRE FIGHTING SYSTEM

TEST REPORT FOR PIPEWORK LEAKAGE & PRESSURE TESTING

**FORM NO: FM-FFW-02**

Location/Floor: \_\_\_\_\_

Sub-con \_\_\_\_\_

Zone: \_\_\_\_\_

Page No: \_\_\_\_\_ Of \_\_\_\_\_

Drawing Ref: \_\_\_\_\_

Inspection Date: \_\_\_\_\_

Test Required: \_\_\_\_\_

Duration: \_\_\_\_\_

Media: \_\_\_\_\_

Pressure: \_\_\_\_\_

Allowable Pressure Drop: \_\_\_\_\_

Time: \_\_\_\_\_

Procedure: \_\_\_\_\_

Tools & Equipment Used : \_\_\_\_\_

DURATION	Time	Time	Pressure	Pressure	Pressure	Results	REMARKS
	Start	End	Start	End	Difference	(A / R)	

Any leaks found?

(Yes/ No)

REMARK:

--

INSPECTION ACCEPTANCE			
Signature:			
Representative Involved			
Name: Date:			

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-K: INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK

INSPECTION REQUEST FOR VALVES, THERMOMETERS, GAUGES & PUMPS

**FORM NO: FM-FFW-03**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
<p>Correct sizes, type, make &amp; model.</p> <p>Model:</p> <p>Make:</p> <p>Capacity:</p> <p>Head:</p> <p>Installed in correct location/direction/ Fixings, mountings or plinths</p> <p>Connections</p> <p>Balancing &amp; adjustments</p> <p>Power &amp; control installation</p> <p>Identification labeling / name plate</p> <p>Direction of flow arrows</p> <p>Painting, insulation &amp; protection</p> <p>Cleanliness &amp; rubbish cleared away</p>			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR TANKS

FORM NO: FM-FFW-04

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Material to specification Type, size capacity & dimensions Type:..... Capacity:..... Dimensions:..... Support & platform details Leaks & water-tightness Supply connections Distribution connections Ball valves, stopcocks etc. Protection / painting /coating Cover / insulation Water levels indicator & level electrode and control wiring. Overflow connection & drain Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR SPRINKLER HEAD & CO2/FM200 DISCHARGE NOZZLE

**FORM NO: FM-FFW-05**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Type, size & finish to spec. Location & connection to pipework Direction of spray Height compared to finished ceiling Painting & identification Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR BREECHING INLET, LANDING VALVES & HYDRANTS

**FORM NO: FM-FFW-06**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Type, size & make to specification. Location & position Installation & fixing Connections to pipe-work\screw Screw threads & dust caps Valve handle free to turn Cabinet / glass door panel Painting, identification & labeling Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR HOSE REELS

**FORM NO: FM-FFW-07**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Type, size, finish & material to specification.			
Location & position			
Installation & fixing of drum			
Connections to pipe work & swivel joints			
Damage to reel			
Drum free to rotate			
Damage to hose			
Hose nozzle (spray & jet) – shooting range			
Painting, identification & labeling			
Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR CO2 / FM200 STORAGE CYLINDER

**FORM NO: FM-FFW-08**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Type, size finish to specification. Type:..... Size:..... Rating:..... Manifold connection Pressure regular Manufacture's test certificate supplied Support bracket for cylinder Storage cage Painting, identification & labeling Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR CABLE TRAY, TRUNKING AND CONDUITS

FORM NO: FM-FFW-09

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification			
Mechanical damage to materials			
Hangers/ brackets/ fixing to trunking/ trays			
Fixing to structure.			
Joints, coupler & junction.			
Earth bonding & continuity at joints.			
Galvanizing touched up			
Painting correct colour & complete			
Cables installation & dressing			
Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2:QUALITY RECORDS

SECTION-K: *INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK*

INSPECTION REQUEST FOR ELECTRICAL CONNECTION OF EQUIPMENTS

**FORM NO: FM-FFW-10**

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification			
Name plate, labeling & danger signs			
Cable lugs & terminal tightness			
Size, type & rating of cables			
Damage/minimum bending radius to cable			
Earthing & casing			
Cables installation & dressing			
Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date:.....

QUALITY ASSURANCE MANUAL

PROJECT:

PMC

CLIENT:

CONTRACTOR:

PART 4.11.2: QUALITY RECORDS

SECTION-K: INSPECTION REQUEST FORMS FOR FIRE FIGHTING WORK

INSPECTION REQUEST FOR SWITCH BOARDS & CONTROL PANELS

FORM NO: FM-FFW-11

Inspection Date:..... Time:..... Sub-con:.....

Drawing Ref:..... Floor:..... Location:.....

Make:.....

DESCRIPTION	ACCEPTED	NOT ACCEPTED	REMARKS
Materials to specification & shop drawings Name plate, labeling & danger signs Cabinet size, finish, colour, damage etc. Housing & enclosure protection Installation & fixing to structure relays, circuit breakers & fuses. Wiring neat & tidy Warning & operation lights Instruments & control/circuit boards Cleanliness & rubbish cleared away			

REMARKS:

Inspected by:

Name:.....

Date:.....

Approved by:

Name:.....

Date