



Project Name : **AL FURSAN RESIDENTIAL BUILDINGS**

Project No. : **RES A29 & RES A30**

Form No. :

Client:
Al Fursan Real Estate Co.

Project Manager:
Dimitri Pagonis

Consultant:
Salfo Associates Consultant

Contractor:
Al Hassan int'l. Trading Co.

MATERIAL APPROVAL REQUEST (MAR)

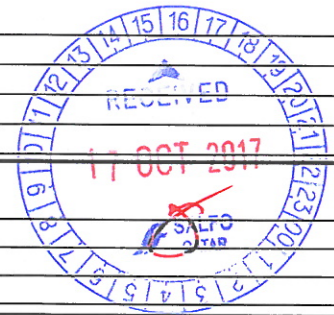
Submittal Contents: - Material/Sample - Mock-up
 - Catalogue/Brochure - others

MAR No. **AHTC-J015 & J016-MS-MECH-048** Rev. **0**
Date Submitted : **17-10-17**

Trade / Discipline:
 - Civil - Architectural - Electrical - Information Tech. (IT)
 - Structural - Mechanical - Plumbing - Others
 - Landscape - Interior Design

Date Required on Site: _____
Production Period : _____
Total Delivery Time: _____
Expected Arrival on Site: _____

Description of Material / Equipment:
FCU & AHU for A29 & A30 (Petra)



References:
a.) Specs. Ref. : _____ c.) QCS 2010 Ref. : _____
b.) Drawing Ref. : _____ d.) Statutory Req. : _____
c.) BOQ Ref. : _____ e.) Specified Vendors List _____
Others : _____

Manufacturer / Supplier Details: - Locally Manufactured - Imported Country of Origin: **Jordan**
a.) Local Supplier / Agent: Company Name : **Innovation Gate Trading Co**
Address / Contacts : **Qatar** Tel: **974 44141964** Fax: **974 44141937**
b.) Manufacturer : Company Name : **Petra Engineering Industries Co**
Address / Contacts : **Jordan**

Prepared by: (Contractors PE or CM)
Dharshan (DC)
Name / Sign / Date

Verified by: (Contractors QA/QC, QS, or Proj. Coordinator)
Abdul Muqtadir (QA/QC)
Name / Sign / Date

Recommended for Approval by: (Contractor's PM)
Muataz Zayed (PM)
Name / Sign / Date

COMMENTS BY THE CONSULTANT

As per attached Comments Sheet
P.U.

SALFO & ASSOCIATES SA		
FOXHILLS RES. A29 & A30		
DATE 17-10-17		
REF NO 1023		
DISTRIBUTION	ACTION	INFO
Proj. Director		
Proj. Manager		✓
Construction Mgr.		
Civil		
MEP		✓
QA/QC		
Contracts		
Procurement		

(Use a separate comments sheet when necessary, for easy traceability purposes do not forget to include the MAR No., Revision No., & corresponding date of this MAR to the comments sheet.)

Submittal Status : - A - Approved - B - Approved as Noted - C - Revise and Resubmit - D - Rejected

Supervision Consultant Signature :
P.U.
Name & Signature
RE or Senior Engineer 25/10/2017
Designation Date

D. Pagonis Alex
Name & Signature
Project Manager 25/10/2017
Designation Date

Client Approval / Endorsement (when required) :
Name & Signature
Designation Date

Approval or comments to the submittals does not relieve the Contractor from their responsibilities. The assessment is to review the general conformance and compliance of the submittal to the contract and specification requirements.

PROJECT : **AL FURSAN RESIDENTIAL BUILDINGS RES A29 & RES A30**
MAS No : **AHTC-J015 & J016-MS-MECH-048 Rev.0**
Date of Issue : **17/10/2017**
Material Description : **FCU & AHU (Air Handling Units) for A29 & A30**
Manufacturer : **PETRA Engineering Industries Co / JORDAN**
Supplier : **INNOVATION GATE TRADING Co / QATAR**

COMMENTS SHEET

A. AHU

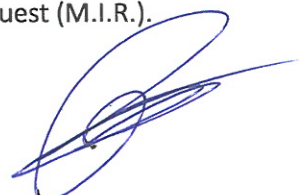
1. Since the proposed Wheel Type Heat Exchangers does not guarantee 100% sealing between supply and exhaust air, and since exhaust air in our case is coming from Toilet areas, it is expected that unpleasant odours will be mixed with fresh air. To avoid above case, we require to include in your quotation adequate size and type Carbon filters as also to install double brush sealing between the rotor matrix and casing parts. Please revise your proposal accordingly.
2. Since Supply Air Fans' Motors will be driven by Variable Frequency Drives (VFD), coordination between VFD Manufacturer/Supplier and Fan Motors Manufacturer/Supplier should be made, in order for the Fan Motors to be equipped with all necessary fittings required (e.g. insulated motor bearings, shaft grounding brush arrangement, coupler sleeve constructed of an EPDM material, etc.) to achieve the best VFD and Pump Motor combination, without any interference either to electrical supply system, either to the other ACMV equipment.
3. In Specification Comparison Sheet with QCS 2010 Section 22 Part 4 and Paragraph 4.2.1.10, in Contractor's Compliance Column it is referred that "comply with weather proof canopy". Consequently Contractor shall confirm that Sun shade cover shall be constructed and provide relevant Detail Construction Shop Drawings for Consultant approval.
4. In Specification Comparison Sheet with QCS 2010 Section 22 Part 4 and Paragraph 4.3.1.7, in Contractor's Compliance Column it is referred that "ESP Calculations is Contactor's scope". In Material Submittal, there are no such Calculations. Please provide relevant ESP Calculations for AHUs of both A29 and A30 Buildings. Also in the next Paragraph 4.3.1.8 it is mentioned that you comply with the QCS specification's requirement that Fan and Motor drive shall be oversized by at least 20%. Explain and justify your above-mentioned statement, since there are no actual ESP calculations in the submittal.
5. Provisions (Tapping points), should be illustrated in Construction Drawings, with their specifications (size, etc.), for Temperature Sensors, two (2) no (before filter section and after supply fan section), Humidity Sensor, one (1) no (after supply fan section) and Differential Pressure Sensors, two (2) no (filter section and supply fan section), since those sensors are specified in relevant AHUs Control Schematic Diagrams Design Drawings.
6. Since the Fan Motors absorbed power is significant greater than the Design's estimations, you should revise relevant Design Feeding Panels circuits components and provide the relevant revised Load Schedules. Also, you should check the relevant feeding cables voltage drops calculations and if voltage drops exceed the permissible ranges you should increase cables cross sections and submit the accepted voltage drop calculations for Consultant approval.
7. Provide Compliance Statement with QCS 2010 Section 9, Part 1, Paragraph 1.2.16 Noise Levels and Vibration, for all proposed AHU and FAHU equipment.



8. Before AHU and FAHU manufacturing, construction drawings, performance curves, wiring diagrams, dimension drawings, foundation drawings with anchor bolts, Factory Acceptance Test Procedure, Site Acceptance Test Procedure and Method Statement for installation, alignment, testing and commissioning will be submitted for Consultant approval.
9. Manufacturer authorized representative will supervise installation, assembly, alignment, testing, start up and commissioning activities of AHU and FAHUs.
10. Provide Materials List with manufacturer name, model types, order codes and specifications and recommended Spare Parts Priced List for two (2) years operation, for all equipment contained in your submittal.
11. Provide schedule with expected delivery time at project site for all offered equipment.
12. Provide terms, conditions and period of Manufacturers' warranty and guaranty for all offered materials and equipment.
13. Test Certificates and Certificate of Origin should be transmitted along with any product delivery to site and should be attached to any relevant Material Inspection Request (M.I.R.).
14. Manufacturer instructions for transporting, handling, storage, installation and testing should be also submitted along with every product delivery at site and should be also attached to any relevant Material Inspection Request (M.I.R.).

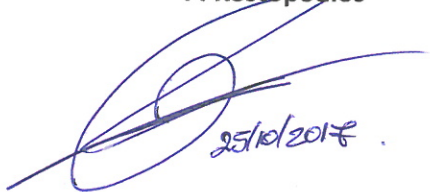
B. FCUs

1. For A30 Building, FCUs quantities, illustrated in Equipment Schedule Design Drawing, conflict with the quantities illustrated in relevant District Cooling Riser Diagram Design Drawing. Consequently, Contractor should revise FCUs quantities and submit them for Consultant approval, before FCUs procurement.
2. Provide Compliance Statement with QCS 2010 Section 9, Part 1, Paragraph 1.2.16 Noise Levels and Vibration, for all proposed FCUs equipment.
3. As mentioned in Design Notes for Schedule of FCUs Equipment, the Contractor should verify the External Static Pressure (ESP) listed in those Schedules. Otherwise new revised calculated ESP numbers should be provided for the supplier to revise accordingly the proposed FCUs' types.
5. Confirm that return plenum is included in your proposed equipment and provide specifications.
6. Provide list and description of performed FCUs' Factory Acceptance Tests and relevant test certificates issued.
7. Provide Method Statement for FCUs Installation, Ducting, Wiring, Regulating, Balancing and Testing.
8. Provide Materials List with manufacturer name, model types, order codes and specifications.
9. Provide recommended Spare Parts Priced List for two (2) years operation, for all equipment contained in your submittal.
10. Provide schedule with expected delivery time at project site for all offered equipment.
11. Provide terms, conditions and period of Manufacturers' warranty and guaranty for all offered materials and equipment.
12. Test Certificates and Certificate of Origin should be transmitted along with any product delivery to site and should be attached to any relevant Material Inspection Request (M.I.R.).



13. Manufacturer instructions for transporting, handling, storage, installation, testing, regulating, balancing and maintenance, should be also submitted along with every product delivery at site and should be also attached to any relevant Material Inspection Request (M.I.R).

SALFO MEP Engineer
P. Kostopoulos



25/10/2018