PREPARED FOR DEPARTMENT OF THE

AIR FORCE

BY

KBR

ENGINEERING DESIGN SECTION

MORÓN AIR BASE

PERFORMANCE TECHNICAL SPECIFICATIONS FOR:

PROJECT QUUG 25-1012

RPR FACILITY FAÇADES, MULTI

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SECTION 01 11 00

SCOPE OF WORK AND DRAWINGS

1. SCOPE OF WORK: The scope of work consists of furnishing all labor, materials, plant, transportation, equipment and services to perform all work in strict accordance with the plans and specifications, complete and ready for use under a firm fixed price construction contract. The Contractor shall be responsible for temporary marking, beaconing and lighting of the area affected by the work and, if required, shall provide flaggers, escorts and foreign object controllers (FOD) during working hours. A single phase has been established for the execution of the project. The work includes, among others, the following activities, which include tests to be performed by an independent laboratory for quality control.

This project is composed of a Basic Package and three additive items. All works to be executed consist on the repair and finish works of the facades and annexes elements as indicated below:

1.1 CLIN 1 Building 202. (Base Bid)

1.1.1. (01) Removal & reinstallation of cables, accessories & other equipment.
1.1.2. (06) Paint removal.
1.1.3. (08) Cement mortar application.
1.1.4. (11) Clean and disinfect grease and oil-impregnated surfaces with quaternary ammonium degreaser and rinse with high-pressure hot water.
1.1.5. (12) Clean mildew-covered surfaces by brushing with a fungicide solution and rinsing with tepid water.
1.1.6. (14) Paint Unpainted Steel Surfaces with 2 component epoxy-polyamide primer with zinc phosphate and 2 component polyurethane acrylic enamel.
1.1.7. (17) Enamel Painted Steel and Galvanized steel surfaces with synthetic enamel coats.
1.1.8. (18) Enamel Unpainted Wood Surfaces with alkyd sealant primer and alkyd resin based synthetic enamel.
1.1.9. (23) Paint Exterior plaster, cement, masonry and other derivative smooth surfaces with high performance, resistance and coverage power vinyl copolymer based paint.
1.1.10. (36) Paint 10 cm height lettering on concrete surfaces.
1.1.11. (38) Paint 17 cm with traffic lane on asphalt floor surfaces.
1.1.12. (44) Disassemble gutter & downspout joints, prepare joint surfaces, apply new sealant and reassemble gutter joint.
1.1.13. (48) Clean gutters, downspouts and splashes, readjust and replace deteriorated anchorage.
1.1.14. (49) Remove broken exposed brick units and replace them with new units.
1.1.15. (50) Remove broken, missing or unadhered ceramic units and replace them with

new units.
1.1.16. (51) Remove unadhered sealing material and backing rods, clean joints and apply new back rod, primer and sealing material.
1.1.17. (52) Remove unadhered sealing material, clean joints and apply new primer and sealing material in roof flashing.
1.1.18. (54) Apply waterproofing emulsion for exterior surfaces to parapet, lintels and sill drips.
1.1.19. (55) Repair cracks on concrete elements as indicated.
1.1.20. (56) Waterproof lintel joints as indicated.
1.1.21. (57) Provide the appropriate auxiliary systems, equipment, scaffoldings, platforms and carry out the works in a safety manner in accordance with the regulations.
1.1.22. (58) Final cleaning.
1.1.23. (59) Separate, treat, transport and delivery waste from the demolition and repairing works to authorized dump.

1.2. CLIN 2 Building 231 (Additive item #01)

1.2.1. (01) Removal & reinstallation of cables, accessories & other equipment.
1.2.2. (06) Paint removal.
1.2.3. (12) Clean mildew-covered surfaces by brushing with a fungicide solution and rinsing with tepid water.
1.2.4. (13) Apply fungicide treatment on exterior plaster and concrete surfaces
1.2.5. (14) Paint Unpainted Steel Surfaces with 2 component epoxy-polyamide primer with zinc phosphate and 2 component polyurethane acrylic enamel.
1.2.6. (15) Paint Unpainted Galvanized Steel Surfaces with 2 component phosphate and passivator primer with corrosion inhibitor and 2 component polyurethane acrylic enamel.
1.2.7. (23) Paint Exterior plaster, cement, masonry and other derivative smooth surfaces with high performance, resistance and coverage power vinyl copolymer based paint.
1.2.8. (36) Paint 10 cm height lettering on concrete surfaces.
1.2.9. (48) Clean gutters, downspouts and splashes, readjust and replace deteriorated anchorage
1.2.10. (57) Provide the appropriate auxiliary systems, equipment, scaffoldings, platforms and carry out the works in a safety manner in accordance with the regulations.
1.2.11. (58) Final cleaning.
1.2.12. (59) Separate, treat, transport and delivery waste from the demolition and repairing works to authorized dump.

1.3. CLIN 3 Building 221 (Additive item #02)

1.3.1. (01) Removal & reinstallation of cables, accessories & other equipment.
1.3.2. (04) Cement mortar removal.
1.3.3. (06) Paint removal.

1.3.4. (08) Cement mortar application.
1.3.5. (11) Clean and disinfect grease and oil-impregnated surfaces with quaternary ammonium degreaser and rinse with high-pressure hot water.
1.3.6. (12) Clean mildew-covered surfaces by brushing with a fungicide solution and rinsing with tepid water.
1.3.7. (17) Enamel Painted Steel and Galvanized steel surfaces with synthetic enamel coats.
1.3.8. (22) Paint Unpainted Exterior plaster, cement, masonry and other surfaces Or with paint in poor conditions with universal fixing-primer + water based smooth carbonation resistant -vapor permeable coating and acrylic copolymer based coats.
1.3.9. (36) Paint 10 cm height lettering on metal surfaces.
1.3.10. (46) Remove defective and corroded sheet metal flashings. Replace with 3 meter long 24 ga galvanized 360 mm girth, 6 break flashing.
1.3.11. (57) Provide the appropriate auxiliary systems, equipment, scaffoldings, platforms and carry out the works in a safety manner in accordance with the regulations.
1.3.12. (58) Final cleaning.
1.3.13. (59) Separate, treat, transport and delivery waste from the demolition and repairing works to authorized dump.

1.4. CLIN 4 <u>Building 203 (Additive item # 03)</u>

1.4.1. (01) Removal & reinstallation of cables, accessories & other equipment.
1.4.2. (03) Repair cracked or deteriorated exterior concrete & plastered.
1.4.3. (06) Paint removal.
1.4.4. (12) Clean mildew-covered surfaces by brushing with a fungicide solution and rinsing with tepid water.
1.4.5. (17) Enamel Painted Steel and Galvanized steel surfaces with synthetic enamel coats.
1.4.6. (19) Enamel Painted Wood Surfaces with alkyd resin based synthetic enamel.
1.4.7. (24) Paint Exterior plaster, cement, masonry and other derivative texture surfaces with water based smooth covering carbonation resistant and water vapor permeable.
1.4.8. (35) Paint 8 cm width traffic lane on concrete floor surfaces.
1.4.9. (36) Paint 10 cm height lettering on concrete surfaces.
1.4.10. (53) Close A/C opening with perforated brick and cement mortar.
1.4.11. (57)Provide the appropriate auxiliary systems, equipment, scaffoldings, platforms and carry out the works in a safety manner in accordance with the regulations.
1.4.12. (58) Final cleaning.
1.4.13. (59) Separate, treat, transport and delivery waste from the demolition and repairing works to authorized dump.

2. <u>DRAWINGS:</u>

No. of Drawing	Sheet	Date	Title
M-865-01	1 of 11	Apr 2026	Cover Sheet, drawings schedule
M-865-02	2 of 11	Apr 2026	Site plan
M-865-03	3 of 11	Apr 2026	Site plan and Scope of Works
M-865-04	4 of 11	Apr 2026	Scope of Works Bldg. 202
M-865-05	5 of 11	Apr 2026	Scope of Works Bldg. 203
M-865-06	6 of 11	Apr 2026	Scope of Works Bldg. 221
M-865-07	7 of 11	Apr 2026	Scope of Works Bldg. 231
M-865-08	8 of 11	Apr 2026	Details
M-865-09	9 of 11	Apr 2026	Pictures (I)
M-865-10	10 of 11	Apr 2026	Pictures (II)
M-865-11	11 de 11	Apr 2026	Pictures (III)

*** END OF SECTION ***

SECTION 01 11 01

GENERAL CONDITIONS

1. GENERAL: The work consists of furnishing all labor, materials, utilities, transportation, equipment, and services to execute the project. In accordance with the drawings and specifications, complete and ready for use. Measurements shown on the drawings and specifications are given for reference use only. They are not conclusive and may be erroneous. It is the Contractor's responsibility to verify any and all of measurements. The Government will not be held responsible for measurements shown or measurements and estimations made by the contractor.

2. GENERAL DESCRIPTION: The work consists in, but is not limited to, executing the line items indicated in the scope of work. All line items indicated in the scope of work do not limit nor reduce the Contractor's responsibility to perform all work as required by the project in order to provide a complete and usable facility.

3. LOCATION: The work is located in Morón Air Base, Spain, as shown on the contract drawings.

4. DRAWINGS ACCOMPANYING SPECIFICATIONS: Drawings are the property of the Government and shall not be used for any purpose other than that contemplated by the specifications. The drawings indicated in the specifications are in A1 size.

5. WARRANTY: For this contract the Contractor shall provide a two-year standard commercial warranty for with all line items of the scope of work, including materials and workmanship. The warranty shall cover all defects noticed and reported to the Contractor within two years after acceptance of the work. The Contractor shall repair or replace defective materials at their expense within a reasonable time and as approved by the Contracting Officer. The Contractor must comply with any additional warranty periods established by Spanish codes and regulations. The Contractor shall submit the warranty letter within 15 calendar days after to the acceptance of the work by the Contracting Officer.

6. BASE ACCESS:

6.1. Permits or Authorizations: The Contractor shall obtain all permits or authorizations required to access Morón Air Base. All the communications in relation to the Base Access request must be directed to Construction Management Section for PASS&ID Office processing. Once the works have finalized, the Contractor will return the permits or authorizations. Contractor is responsible to provide the required escorts as required to execute the works.

6.2. Delays and Interruptions: The Contractor is advised that delays are liable to occur, due to security reasons, during the access/egress process of personnel and materials from Morón Air Base. Additionally, the Contractor shall immediately interrupt the work when it is required if security warning/risk situations occur. The contractor shall submit in writing, excess delays (90 minutes or more) experienced due to base access.

7. WORK CLEARANCE REQUEST:

7.1. 15 calendar days in advance, as minimum, before the commencement of the works, the Contractor shall request AF Form 103 "BCE Work Clearance Request" to Construction Management in order to obtain all the information pertaining to the current status of Base utilities. Additional requests shall be submitted to Construction Management 15 calendar days in advance, at minimum. The Contractor shall not perform any work under any circumstances without having the approved Work Clearance at the construction site (hard copy) and not before having marked at the site with stakes and/or pins the location of the utilities. Work Clearance Request shall only be processed once all materials and documentation necessary to commence work have been submitted and approved. The Contractor shall be responsible for any damage caused to Base utilities shown on the AF Form 103 and project drawings and shall be responsible for the repairs without additional cost to the Government.

7.2. Return entire permit to Geobase Office after completion of digging excavating activities. If additional utilities are located or encounters (or marked utilities are not found in their expected locations) then the requester shall provide a sketch to Geobase office precisely detailing the location(s) of all utilities that were found to not be in the location expected within the 10 workdays after the discovery of the discrepancy.

8. BASE UTILITIES:

8.1. The Contractor, at its expense and in coordination with the Contracting Officer or CE personnel, shall install and maintain all necessary temporary connections and distribution lines. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, and associated accessories.

8.2. Use of Base Utilities: Water, sewage and electrical utilities may be available to the Contractor for supply to the following buildings: Offices, latrines, break rooms and laboratories. If the contractor wants any of these available utilities, the contractor must provide the material for the temporary utility connection and he must perform the work for the temporary utility installation. If the contractor does not want any of these available utilities, the contractor is responsible for providing their own utilities at no additional cost to the government. Contractor must request officially the connection points needed in the Mobility Plan for CE review/approval.

Other utilities, apart from the listed below, shall be supplied by the Contractor at no cost to the Government.

The following utilities are available from the existing Base utilities:

1. Electricity: 120/208 volts, 60 Hz.

2. Non-potable water.

8.3. Base utility connection and/or disconnection: 15 calendar days before the connection/disconnection date, the Contractor shall request the connection and/or disconnection and shall indicate:

1. Type of utility required

2. Type of connection and/or disconnection to be performed

3. Utility use

4. Required consumption

5. Maximum duration

All connection and/or disconnection works of Base utilities shall be programmed between 08:30 and 16:00 hours (between 08:30 to 15:00 during the period from 15 June to 15 September) from Monday to Friday, except holidays. The utility connections and/or disconnections can be considered critical by the Government, in which case they shall be performed on the date and time most convenient to the Government, i.e. weekends and/or during nighttime hours, without additional cost to the Government. The Contractor shall be responsible for making connections and/or disconnections, conversion, transportation of Base utility to the work site, including the furnishing and installation of the mechanisms that prevent the backflow of water to the Base service (backflow preventers) and the furnishing and installation of the transformers, if required. The Contractor shall not activate or alter any control device of the Base utilities including water, sewage and electricity. The Government shall operate said control devices. The Contractor shall submit additional requests to Construction Management with a minimum of 15 calendar days in advance of the estimated date for the required connection, disconnection or control maneuver of the corresponding utility. The temporary overhead connections to utility are prohibited. All utilities shall be restored to their original condition prior to satisfying final contractual payments.

8.4. Base Utility Outages: When a utility outage is necessary, the Contractor shall request the utility outage, at least 15 calendar days in advance of the work, and shall indicate:

1. Type of affected utility
2. Type of cut to be performed
3. Maximum duration

All utility outages shall be scheduled from 08:30 and 16:00 hours (from 08:30 to 15:00 during the period from 15 June to 15 September) from Monday to Friday, except holidays. The utility outages can be considered critical by the Government, in which case they shall be performed on the date and time most convenient to the Government, i.e. weekends and/or during nighttime hours, without Government cost. The Contractor shall be responsible for making the outage, including the provision and installation of devices and materials. The Contractor shall not activate or alter any control device of the Base utilities, including water, sewage and electricity. The Government shall operate said control devices. Temporary overhead connections to utility are prohibited. All systems shall be restored to their original condition prior to satisfying final contractual payments.

9. HOT WORK: The Contractor shall submit for approval a written request to Construction Management 15 calendar days prior to any welding, as oxyacetylene or plasma cutting work. Said request shall indicate welding procedures and fire prevention measures. All welding work performed during the project execution shall be carried out by qualified welders only. The copies of the welder certificates, issued by an approved agency, shall be kept in the construction inspector's files. Contractor will be responsible to keeping in effect the Hot Work Permit along the project execution period with the frequency established by the Fire Prevention Department.

10. VEHICULAR, MACHINERY AND EQUIPMENT TRAFFIC:

10.1. Transit Control Plan: All works requiring vehicular or pedestrian traffic disruptions on the Base shall require an approved transit control plan. Said plan shall be approved at least 15 calendar days prior to carrying out said disruption. Said plan shall include:

1. Start date of the traffic disruption
2. Duration of the traffic disruption
3. Proposed alternative routes
4. Signs, barriers, cones, flags and/or flagmen to be implemented

The Contractor shall establish alternate procedures if unforeseen circumstances take place. The responsibility of the provision, erecting, keeping and removing all signs, barriers, cones and flags shall be solely the Contractor. Once the work is completed, the Contractor shall remove the signaling elements such as signs, barriers, cones and/or flags.

10.2. Access Route Plan: 10 calendar days after the contract commencement date, the Contractor shall submit an access route plan to Construction Management for its approval by Contracting Officer or authorized representative.

10.3. Trucks: Trucks loaded with loose material (volatile dust, construction debris or other objects that could fall from them) shall be duly covered. Said covers (tarpaulins, etc.) shall be securely secured and placed on the load before accessing the Base roads.

11. STOCKPILING:

11.1. Stockpiling area of demolished/removed material: The Contractor shall transport the demolished or excavated materials to an authorized dump. Should any of the Morón Air Base shops need all or part of any of the materials from the demolition operations (concrete, aggregate and natural ground), the Contracting Office representative shall coordinate with the base Construction Management office on the exact location to stockpile said material.

11.2. Stockpiling area for Contractor material and Contractor offices: The C.O. representative shall coordinate with the base Construction Management office the exact location for Contractor offices and stockpiling.

12. CONSTRUCTION SCHEDULE:

12.1. It shall be the sole responsibility of the Contractor to ensure all required submittals are submitted for approval in a timely manner, which shall not incur any delay in completion of the project. For materials or equipment requiring a long term of procurement and delivery, said term shall be included in the period of performance. Delay in delivery/procurement will not justify an extension of the period of performance.

12.2. The Contractor shall submit an updated Construction Schedule within 7 calendar days after the Construction Phase starting date and when requested by the Contracting Officer or his authorized representative. In no case is the Contractor required to submit an updated more frequently than 20 working days.

12.3. The Construction Schedule shall include a Gantt chart showing each task, including task description, identification number, duration in calendar days, earliest start and finish dates, predecessor and successor task identification numbers, critical path and float that a task in the project

network can be delayed without causing a delay to the subsequent task/s (free float) and to the project completion date (total float). The critical path shall be shown by means of a red color line and the float by means of black line after the predecessor task bar.

12.4. The Construction Schedule shall show the whole week, from Monday through Sunday. The labor days shall be from Monday through Friday. Saturday and Sunday shall be non-labor days. The holidays shall not be considered on the Construction Schedule and, therefore, they shall be considered labor days for Construction Schedule development purpose only.

12.5. The Construction Schedule shall be developed assuming 8-working hours for each labor days.

12.6. The Construction Schedule must include the following tasks if required:

12.6.1. Preconstruction tasks:

1. Preparation and transmittal of the bond and insurance submittals.

2. Preparation, transmittal, and approval of the submittals shown on document Schedule of Material Submittals (progress schedule, mobility plan, project sign, quality control plan, key staff, health and safety plan, environmental protection plan, AF Form 103 BCE Work Clearance Request, utility connection request, utility outage requests, welding work request, transit control plan, access routes, materials and equipment).

3. Procurement, fabrication and delivery on construction site of long lead time materials, equipment and fabricated assemblies.

4. The installation of the portable/modular buildings (rest room, dressing room, dining room, first aid, office, if required).

5. The installation of temporary connections from the portable/modular buildings to the utilities of the base.

6. The installation of the temporary fence and fabric plastic mesh along the perimeter of the area assigned for the Contractor (equipment and material storage, personnel vehicle parking area, portable/modular buildings, off-construction site disposal and waste area, if required).

7. The installation of the temporary plastic Jersey barriers filled with water, fence, fabric plastic mesh, cones and lights along the perimeter of the construction site.

8. The installation of the temporary signs, barriers, cones and flags along the transit routes.

9. The installation of the temporary occupational safety and health signs at the area assigned for the Contractor.

12.6.2. Construction tasks:

1. The construction tasks shown on the AF Form 3052, Construction Cost Estimate Breakdown, including testing, curing time and the submission of the delivery tickets of the waste and construction debris and the approval of the field test result data.

12.6.3. Finish tasks:

1. Required testing.

2. Commissioning.

3. Pre-final inspection, including the request.

4. Correction of deficiencies.

5. Final inspection, including the request.

6. The removal of the temporary occupational safety and health signs at the construction site.

7. The removal of the temporary plastic Jersey barriers filled with water, fence, fabric plastic mesh, cones and lights along the perimeter of the construction site.

8. Final cleaning.

9. The removal of the temporary signs, barriers, cones and flags along the transit routes.

10. The removal of the temporary occupational safety and health signs at the area assigned for the Contractor.

11. The removal of temporary connections to the utilities of the base, including the preparation and transmittal of the utility disconnection request, the utility outage request and the approval of the Government.

12. The removal of the portable/modular buildings.

13. The removal of the temporary fence and fabric plastic mesh along the perimeter of the area assigned for the Contractor.

14. Restoration of the area assigned for the Contractor. To include restoration of all grass by means of hydro seeding. Final project acceptance and progress report will not be approved until grass is established and accepted by Contracting Officer.

15. Preparation and transmittal of the letter submittal about the inventory of all excess supplies, materials and equipment imported duty free for use under this contract.

16. Preparation and transmittal of the As-Built drawing submittal.

17. Preparation and transmittal of the spatial data submittal.

18. Preparation and transmittal of the warranty letter submittal.

19. Preparation and transmittal of the submittal of a certificate from the authorized dump about the estimated amounts or waste and construction debris managed during the execution of the project.

20. Approval of the submittals.

21. Project closeout.

13. PROGRESS SCHEDULE (AF Form 3064): Within the 10 calendar days after the contract commencement date or another period determined by the Contracting Officer, the Contractor shall develop and submit a practicable schedule to Construction Management for its approval by Contracting Officer or authorized representative. The plan shall show:

1. Activity sequence that the Contractor proposes to perform the work.

2. Dates proposed by the Contractor for the start and completion of the salient features of the work (including the acquiring of materials, plant and equipment).

The progress schedule of the work shall be delivered in the line graphic format at an adequate scale indicating the percentage of work scheduled every 30 calendar days for its execution during the performance period. The programmed works shall correspond to the line items of the cost estimate of the contract. If the Contractor fails to submit a progress schedule of the works within the established period, the Contracting Officer may withhold the approval of the progress payments until the Contractor submits the required progress schedule.

14. PROGRESS REPORT (AF Form 3065): Every 30 calendar days progress report to be submitted to Construction Management Office in accordance with previously submitted Progress Schedule AF Form 3064. If the Contractor fails to submit a progress report of the works within the established period, the Contracting Officer may withhold the approval of the progress payments until the Contractor submits the required progress schedule. No work items will be considered 100% complete until approval of preconstruction and final submittals required. For each individual project Contracting Officer will determine the maximum percentage of work complete without preconstruction and final submittals required.

15. WORK PLAN

15.1 The Contractor shall submit a Work Plan within 7 calendar days after the Construction Phase starting date. The Work Plan shall present the construction activities planned to take place. The Work Plan shall be prepared in coordination with the Health and Safety Plan and the Quality Control Plan and shall contain the following:

1. The summary of the proposed methodology for the execution of each task required for the project completion.

2. The resources to be used for the execution of each task required for the project completion describing the equipment and personnel to be used.

3. Daily production for each task required for the project completion.

16. MOBILITY PLAN: The Contractor shall submit a mobility plan to Construction Management for its approval by Contracting Officer or authorized representative. Said plan shall show:

1. Location and area of the work site.

2. Location and area of the offices.

3. Location and area of the parking area.

4. Location and area of the material storage areas.

The Contractor shall include in the mobility plan the proposed system to supply the utilities required at each site.

16.1. Construction Site Fencing: The construction site, offices, parking area, latrines, and material storage areas shall be fenced in by means of a two-meter high fence with gates and locks, unless otherwise approved the Government. The Contracting Officer or authorized representative shall specify the type of fencing, height and color. Fences shall be screened with a green opaque mesh to prevent the view of the inside of the fenced area from the outside. Fencing shall be completely secured at top and bottom to prevent the access to the fenced area. The fence and mesh shall be adequately anchored to prevent their failing during high wind gusts. The Contractor shall include in the Mobilization Plan:

1. Photos, catalogs or samples of the fence to be used

2. Photos, catalog or samples of the mesh to be used

The Contractor shall not start the installation of the fencing and mesh until the plan is approved in writing by the Contracting Officer or authorized representative. The responsibility of providing, erecting, keeping and removing all the fences and meshes shall be solely the Contractor. The Contractor shall replace or repair, within the following 24 hours or as determined by the Contracting Officer or authorized representative, all fence or mesh sections that have been damaged or deteriorated. Once the works have been finalized, the Contractor shall remove the fences and meshes.

16.2. Offices: Temporary prefabricated buildings required for administrative reasons (office space, conference room and break room) shall be in good conditions. Temporary prefabricated buildings requiring paint, repairs or are in bad conditions shall not be allowed at the site. Said temporary prefabricated buildings shall show on the outside a plaque of 0.5 x 0.5 meters maximum dimensions, indicating the name of the company and telephone number (s) of the person (s) designated as POC for the Contractor. Once the works are finalized, the Contractor shall remove the temporary prefabricated buildings.

16.3. Latrines: Prefabricated temporary buildings required for personnel latrines shall be in good conditions. The prefabricated temporary buildings requiring paint, repairs or are in bad conditions shall not be allowed on the work site. These buildings shall be kept in perfect use conditions and sanitized, shall be treated for insects and shall be emptied and cleaned with a detergent for sanitary use once a week. The frequency of emptying and cleaning shall be adjusted according to needs. The prefabricated temporary buildings shall be located at no less than 50 meters from the existing buildings of Base if they cannot be located near a sewage manhole. Once the works have been

completed, the Contractor shall remove the temporary facilities and shall leave the area clean and sanitized.

16.4. Parking: The Contractor, their employees and subcontractors shall park all vehicles, including heavy machinery, equipment and vehicles, in areas where they do not pose an obstruction in the corresponding work site.

16.5. Material Storage: Material storage containers shall be in good conditions. The storage of materials, in containers or not, at the work site shall be at the Contractor's risk. The use of private security guards at the work site shall require the previous Spanish Air Force Security Forces approval. The Contractor shall not use the work site to store material. Once the works have finished, the Contractor shall remove the excess stored material.

17. QUALITY CONTROL PLAN: Within 15 calendar days after the Construction Phase starting date and after the approval of the Work Plan, the Contractor shall submit for its approval a complete Quality Control Plan in English and Spanish which may be consulted by the workers at the Contractor's offices at the site.

17.1. Content: The plan shall contain at minimum the following:

1. Names and qualifications of the proposed quality control chief and inspectors.

2. Organization Chart: Include the teaming partners/key subcontractors, and the works required for the project. The team partners/key subcontractors indicated shall be those that participate in the project and the same as those submitted in the contract bid. The lack of this information or variation with previously submitted teaming partners/key subcontractors is cause for the disapproval of the QC Plan.

3. Responsibility of the Quality Control Inspectors, Quality Control Manager and the Project Manager.

4. Inspection types to be performed. The Contractor shall fully develop a Program of Points Inspection (PPI) covering all types of works involved in the project. Development of the PPI shall be based in any and all of the following documents:

a. Project drawings and specifications.

b. Applicable regulations, standards and industry codes.

c. Specific regulations for certain products, installations or facilities.

d. Manufacturer's recommendations.

The type and number of Inspection Points (IP) shall be the required to obtain an acceptable level of inspection for achieving the best quality results. The Contracting Officer or authorized representative shall evaluate if the type and number of Inspection Points are sufficient to obtain the acceptable quality level.

5. Inspection procedures and actions to be taken for failed or unsatisfactory inspections.

6. Inspection Reporting Forms. Submit all reporting forms for any type of inspection to be performed under this project. As a minimum, a specific form shall be developed for each section of the specifications, covering all necessary inspection points for such work. Minimum information required for each IP shall be:

a. Description of the IP

b. Applicable documents

c. Type and frequency of inspection

d. Lot applied for the inspection

e. Responsible of the performed inspection

f. Inspection result

g. Date of inspection

h. Reference to non-compliance document/register, if not in compliance

i. Information about pass/rejection criteria for the IP

j. Other.

7. List of planned "Hold Inspection Points" with the estimated dates from the construction schedule.

8. "Schedule of Material Submittals" form of the project with column titled "Required Submission Date" filled in by the Contractor with the dates estimated by the Contractor for the submission of the corresponding item. Said estimated dates shall be based on the period for the delivery and review of the submissions and re-submissions, the period for the purchase orders, acquisitions and receptions at the work site of the items, the approved Work Plan of the Contractor and the completion date of the contract. If the Work Plan is modified, the Contractor shall update the "Schedule of Material Submittals" form.

9. Perform daily reports of all activities carried out during the contract term. These daily reports shall be kept at the work site and shall be available for review at all times. A copy of the daily reports performed from Monday to Friday (or Sunday if the Contractor works during the weekend) shall be submitted weekly to Construction Management. The daily report shall include, at least, the following:

a. Inspection date

b. Weather conditions

c. Inspection of the equipment and materials delivered at the work site and their delivery date

d. Names of people who have visited the work site during the day and visit date

e. Inspection of the deficiencies found during the day and the taken corrective actions

f. Inspection and acceptance of the materials and workmanship.

g. Work performed during the day, including the used personnel and equipment

h. Any field change or modification approved by the Contracting Officer.

17.2. Daily Report electronic file naming. Each Daily Report shall be named as indicated on this paragraph, failure in doing so will result in rejection of the daily report and the Contractor has to resubmit it. Daily Report file names shall have the following format: XXXXXXX, YYYYYY, Daily Report, from ZZZZ WW VV to SSSS UU TT, where:

1. XXXXXXX stands for the contract number last seven digits, after removing the first "FA5575"digits.

2. YYYYYY stands for the project number

3. ZZZZ stands for the year in which the inspection is made on Monday

4. WW stands for the month in which the inspection is made on Monday

5. VV stands for the month in which the inspection is made on Monday

6. SSSS stands for the year in which the inspection is made on the last day of the weekly period (Friday or Sunday)

7. UU stands for the month in which the inspection is made on the last day of the weekly period (Friday or Sunday)

8. TT stands for the month in which the inspection is made on the last day of the weekly period (Friday or Sunday)

17.3. Acceptance of the Construction Quality Control (QC) Plan: Acceptance of the QC Plan is required before the start of the work. The Contracting Officer reserves the right to require changes in the QC Plan, operations and key personnel, including the dismissal of personnel, to ensure the specified work quality.

17.4. The Contractor shall be responsible for keeping the records.

18. PRE-FINAL AND FINAL INSPECTIONS: The pre-final and final inspections shall be conducted jointly with the Contractor, the Government inspector and a representative of the Contracting Office. The Contractor shall request a pre-final inspection once the works are completed in accordance with the inspector's judgement. After the solving of all the discrepancies found during the pre-final inspection, if any, the Contractor shall request a final inspection. All punch list items must have been completely fixed before final acceptance of the project works. The Contractor shall request to Construction Management the pre-final or final inspection at least 15 calendar days in advance of the desired date.

19. WORKDAY:

19.1. Normal Workday: Normal workday shall be from 08:00 to 17:00, from Monday to Friday, except holidays. The Contractor shall perform all work during normal workday unless the Contracting Officer or authorized representative issues a special authorization to deviate from said work schedule.

19.2. Special Working Hours: If the Contractor wishes to work outside the normal working hours, on Saturdays, Sundays or holidays, he shall submit a request to the Contracting Officer with at least 10 calendar days in advanced for evaluation (approval/disapproval).

20. CONSERVATION AND MAINTENANCE OF THE EXISTING FACILITIES:

Before the start of any work activity, the Contractor will carry out an inspection of the existing facilities at the work site (or adjacent to it), as well as the pavements proposed by the Contractor on the Transit Control Plan and on the Access Route Plan. The Contractor shall submit a report in writing, attaching photographs, to Construction Management of all the defects found during said inspection. The Contractor shall conserve and protect all existing facilities at the work site and adjacent to the work site. The Contractor shall repair all the defects that were not documented in the original report or have been further damaged by the Contractor's construction activities or negligence. These repairs will be completed without additional cost to the Government and before the final acceptance of the project.

21. ENVIRONMENTAL PROTECTION PLAN: Within 15 calendar days after the Construction Phase starting date, the Contractor shall submit to Construction Management for its approval by Contracting Officer or authorized representative an Environmental Protection Plan, in English and Spanish versions, which may be consulted by the workers at the Contractor's offices at the site. The contractors are responsible for the entire process of requesting environmental permits (where necessary) to conduct work after the approval from Spanish Air Force (SpAF) Base Commander. The contractor must submit the request for the SpAF Base Commander's approval to Civil Engineering. The program shall comply with applicable Spanish regulations and the below standards.

21.1. Integrated Natural Resources Management Plan for Morón Air Base (2015 - 2020)

21.2. Final Environmental Governing Standards for Spain, May 2014

21.3. Conservation and Maintenance of the Existing Vegetation: The Contractor shall conserve and protect the existing vegetation (trees, shrubs, grass) on the work site or adjacent to it that has not to be removed or has not to be affected by the works required by this contract. The Contractor shall only remove the trees and/or shrubs when specifically indicated on the specifications and

drawings and shall avoid damaging the remaining vegetation. If any tree branch is split during the execution of the works due to the handling of the equipment or due to some carelessness of the workers, the Contractor shall prune those affected branches with a clean cut and apply a pruning paste to said cut. The Contractor shall cut the vegetal cover and/or turf at the work site to include a minimum of 1 meter outside of fencing so that it does not exceed 10 cm in height. The Contractor shall restore, at no additional cost to the Government, to its original condition the area affected during the execution of the project works before the final acceptance of project works.

21.4. Site Cleaning: The Contractor shall remove debris, waste materials and garbage and shall keep the site always tidy. All waste materials and garbage shall be placed in containers provided by the Contractor, which shall be removed daily outside of the Base to an authorized dump during the progress of the work. The Contractor shall ensure that all volatile wastes are placed in suitable containers to prevent that the wind blows them to adjacent areas and/or the aerodrome. Once the works are completed, the Contractor shall remove the containers.

21.5. Access Route Cleaning: The Contractor shall be solely responsible for any material dumped/spilled by trucks, vehicles, machinery or equipment on the access routes. Said material deposited on the access routes shall be removed by the Contractor immediately. The Contractor shall be responsible for ensuring that all access routes are kept clean at all times. No amount of material deposited on the access routes shall be tolerated.

21.6. Waste and Debris: The Contractor, 15 calendar days prior to the final inspection date, shall submit a certificate from the authorized dump or waste management plant to the Construction Management for its approval by Contracting Officer or authorized representative with the quantities of waste and debris managed during the period of the execution of the works. The delivery tickets shall be previously delivered to Construction Management for their review during the work execution. A report detailing the types and quantities of construction debris removed will be provided to the environmental section upon completion of the works.

21.7. Hazardous Material: The contractor shall provide SDSs to the environmental section for review for each chemical they will be using to execute the project. Estimated quantities of each chemical to be used will also be provided. Before transporting any hazardous material, the Contractor shall contact the Chief of Construction Management to coordinate its handling, transportation and storage. The Contractor shall be responsible for complying with all applicable environmental regulations related to handling, transportation and storage of hazardous materials and/or waste.

21.8. Noise Control and Prevention: The Contractor shall comply with all applicable state, autonomous community, municipality and Base regulations related to the control and prevention of the noise. The Contractor shall take the measures required to prevent and control the noise in the vicinity of the construction area.

21.9. Dust Control and Prevention: The Contractor shall comply with all applicable state, autonomous community, municipality and Base regulations related to the control and prevention of the dust. The Contractor shall take the measures required to prevent and control the dust in the vicinity of the construction area.

21.10. Storm Water Pollution Control and Prevention: The Contractor shall comply with all applicable state, autonomous community, municipality and Base regulations related to the control and prevention of the pollution of the storm water. The Contractor shall take the measures required to prevent and control the pollution of the surface and ground storm waters.

22. SPECIFICATIONS AND DRAWINGS FOR THE CONSTRUCTION:

22.1. Maintenance and Updating of Specifications and As-Built Drawings: During the work execution, the Contractor shall keep 2 sets of specifications and drawings at A1 size. All the variations between the work as it has been built and the one indicated or specified on the original documents of the contract shall be shown in red. The As-Built drawings shall be kept updated at the work site at all times during the contract. All the revisions of the drawings shall be shown as follows:

1. The revisions shall be numbered

2. The revisions shall be marked in red accompanied with the revision number

3. The revision number shall be indicated on the "Mark" column of the title block

4. The revision description shall be indicated on the "Description" column of the title block

5. The approval date of the revision shall be indicated on the "Date" column of the title block

6. The Government Construction Management inspector has to sign on "Appr" column on the title block.

22.2. Availability and Review of As-Built Drawings: The As-Built drawings shall be available for inspection by the Contracting Officer or his authorized representative during the execution of the works.

22.3. Submittal of As-Built drawings: 15 calendar days prior to the final inspection date, the Contractor shall submit to Construction Management for its approval by Contracting Officer or authorized representative:

1. One complete set of the As-Built drawings in paper and A1 size showing:

   a. "As-Built" stamp near the title box

   b. Revisions numbered, marked in red, described, dated and signed by project inspector

2. One CD with the As-Built drawings in AutoCAD format. The AutoCAD version shall be the same version used by the Base Design Section. The name of the drawing files on the CD shall correspond to the drawing number. The CD, as well as the drawing title block, shall include the following information:

   a. Project Name and Number.

   b. Date.

   c. Contract Number.

   d. Contractor Name.

23. SITE INVESTIGATION AND CONDITIONS AFFECTING WORK: Site Investigation and Conditions Affecting the Work, Apr 1984). The Contractor will take steps reasonably to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to:

1. Conditions bearing upon transportation, disposal, handling, and storage of materials.

2. The availability of labor, water, electric power, and roads.

3. Uncertainties of weather, river stages or similar physical conditions at the site.

4. The conformation and conditions of the ground.

5. The character of equipment and facilities needed preliminary to and during work performance.

The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government. The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government.

24. PERMITS AND RESPONSIBILITIES: The Contractor, without additional expense to the Government, shall be responsible for obtaining any necessary licenses and permits, and for complying with any USAF or Spanish national, autonomous community and municipality laws, codes, and regulations applicable to the performance of the work. The Contractor shall be responsible for all damages to persons or properties that may occur due to the Contractor's operations. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work that may have been accepted under the contract.

25. CONTRACTOR AND SUBCONTRACTOR PERSONNEL: The key staff organizational chart identifying roles and responsibilities shall be posted in the Contractor's office at all times. Any proposed key staff proposed change during the execution of the project shall be submitted to Construction Management for its approval by Contracting Officer or authorized representative.

25.1. Key Staff: The Contractor shall submit the organizational chart of proposed key staff (Superintendent, Quality Control Manager, Surveyor, and Safety Chief) for Contracting Officer approval. The required key staff positions are mandatory and shall not be interchangeable. The Contractor shall identify Teaming Partners/Key Subcontractors and describe the extent of their involvement in the project and applicable qualifications, certifications, and specialized experience. The Contracting Officer or authorized representative shall have the right to determine, without appeal of such decision, whether the proposed or previously approved key personnel has the competence and technical capability or not, in which case, said key personnel shall be replaced immediately by another subject to approval by the Contracting Officer or his authorized representative.

25.2. Project Manager: The Contractor shall be responsible for the overall work management and shall assign a competent Project Manager from his own organization. The Project Manager must have the authority to act for the Contractor and the qualifications and experience necessary

to perform adequately the work in accordance with the characteristics and complexity of the project. The Project Manager must be able to effectively answer technical questions related to the project and effectively manage the works. The Project Manager must have, as a minimum, a university degree in Technical Architecture or Technical Engineering and at least 5-year experience managing similar projects.

25.3. Superintendent: The Contractor shall be responsible for work management and shall assign and have on the worksite a competent Superintendent from its own organization. The Superintendent must be present at the work site at all times during the project execution and must have the authority to act for the Contractor and the qualifications and experience necessary to perform adequately the work in accordance with the characteristics and complexity of the project. The Superintendent must be able to effectively answer technical questions related to the project and effectively manage the work. The Superintendent must have, as a minimum, a university degree in Technical or Architectural Engineering and at least 5-year experience managing similar projects or 10 years' experience managing similar projects without a Technical or Architectural Engineering degree.

25.4. Quality Control Manager: The Quality Control Manager shall be responsible for all activities related to the Quality Control/Assurance related to the assigned project/s. The Quality Control Manager shall be only dedicated to quality control activities, such as development and compliance of the Quality Control plan, inspection program, testing program, submittal preparation and certification (signature in the AF Form 3000), etc, and shall not perform any other duties related to project execution or cost control. The Quality Control Manager shall only be present at the work site during the project execution to perform duties stated in the Quality Control Plan and must have as a minimum a university degree in Technical Engineering or Technical Architecture and at least 5 years experience as Quality Control Manager on similar projects. The Quality Control Manager shall be able to manage to a maximum of five concurrent projects.

25.5. Other Quality Control Personnel / Quality Control Specialist: The project might require a quality control specialist for specific works or equipment with knowledge on the required matters.

22.4. Surveyor: The surveyor shall be present at the work site as required during the project execution to perform duties stated in the Quality Control Plan and the required topographical survey of the construction and work site and must have, as a minimum, a university degree in Technical Architecture or Technical Engineering and at least 5-year experience as Surveyor on similar projects.

25.6. Safety Officer: A designated safety officer will be assigned to each project to perform the duties stated in the Safety Plan and must have a 60 hours minimum of Basic Level official training on Occupational Safety and Health and at least 5 year experience as Safety Chief on similar projects.

26. ENGLISH SPEAKING REQUIREMENT:

26.1. All formal and informal meetings shall be conducted in English. Additionally, the contractor will have the ability to communicate in English at the construction site and through writing correspondence.

26.2. The Contracting Officer or authorized representative shall have the right to terminate any meetings, without cause for claim, if in their opinion, the Contractor's English does not have the linguistic capability described above.

27. INFORMATION DISCLOSURE: The disclosure of information or photographs concerning any aspect of the materials or services related to this bid request, purchase order or other documents related to this project without the prior written approval of the Contracting Officer is banned.

28. HEALTH AND SAFETY PROGRAM:

28.1. Health and Safety Plan: Within 15 calendar days after the Construction Phase starting date, the Contractor shall submit Health and Safety Plan in English and Spanish to Construction Management for his approval by Contracting Officer or authorized representative, which may be consulted by the workers at the Contractor's offices at the site. The Health and Safety Plan shall be written by a Superior Technician in Occupational Risk Prevention, specialty in Work Safety (Técnico Superior en Prevención de Riesgos Laborales, especialidad en Seguridad en el Trabajo) or by a competent and qualified technician in accordance with current regulations. The Health and Safety Plan shall identify the risks for the safety and health of the workers and shall propose, for each risk, the necessary preventive measures to protect the physical integrity of the workers and to minimize the material damages to the facilities. Fire prevention measures shall be indicated for the works that involve fire risk. The Contractor shall provide fire extinguishers for hazardous works due to the fire or fire risk. All avoidable risks shall be eliminated. Preventive measures shall preferably be collective. When the application of collective measures is not technically feasible, the use of Personal Protection Equipment shall be allowed. The Contractor shall indicate the content of the First Aid Kit in the Health and Safety Plan.

28.2. General Regulations: The Contractor shall implement the Health and Safety Plan in accordance with the corresponding current legislation of the state, autonomous community and municipality. The program shall include, but not be limited to, the following:

28.3. Standard of Occupational Safety and Health Administration of United States Department of Labor

1. Public Law 91-596, 84 STAT. 1590, 91st Congress, S.2193, 29 December 1970

2. Public Law 91-596, Amendments through 1 January 2004.

28.4. Standard of American National Standards Institute (ANSI) and American Society of Safety Engineers (ASSE)

1. ANSI/ASSE A10.8: Safety Requirements for Scaffolding

2. ANSI/ASSE A10.12: Safety Requirements for Excavation

3. ANSI/ASSE A10.13 (Comparison package): Safety Requirements for Steel Erection
s
4. ANSI/ASSE A10.18: Safety Requirements for Temporary Roof and Floor Holes, Wall Openings, Stairways and Other Unprotected Edges in Construction and Demolition Operations

5. ANSI/ASSE A10.32: Fall Protection Systems

28.5. Standard of American National Standards Institute (ANSI) and American Society of Safety Professionals (ASSP)

1. ANSI/ASSE Z359.1, Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

28.6. Standards of American Society of Mechanical Engineers (ASME)

1. Guide to Mobile Crane Standards (STP-SA-055)

2. Safety Standard for Portable Automotive Service Equipment (PASE)

3. Tower Cranes (B30.3)

4. Mobile and Locomotive Cranes (B30.5)

5. Winches (B30.7)

6. Articulating Boom Cranes (B30.22)

7. Personnel Lifting Systems (B30.23)

8. Self-Erecting Tower Cranes (B30.29)

28.7. Code of Federal Regulations (CFR)

1. CFR, Title 29, Part 1910 (29 CFR), Occupational Safety and Health Standards (Continued).

2. 29 CFR 1910.94 Ventilation

3. 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response

4. 29 CFR 1926 Safety and Health Regulations for Construction.

5. 29 CFR 1926.65 Hazardous Waste Operations and Emergency Response

6. 29 CFR 1926.502 Fall protection systems criteria and practices.

7. 40 CFR 763 Asbestos.

28.8. Standards of National Fire Protection Association (NFPA)

1. NFPA 10 Standard for Portable Fire Extinguishers

2. NFPA 70 National Electrical Code

3. NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations

28.9. Standards of the United States Air Force (USAF)

1. AFI 91-203, Air Force Consolidated Occupational Safety Instruction

28.10. Standards of the United States Army Corps of Engineers (USACE)

1. Engineer Manual (EM) 385-1-1, Safety and Health Requirements

28.11. Spanish Health, Life, & Safety Standards and Laws.

28.12. Base Regulations: The Contractor, his employees and subcontractors shall know and comply with all Base rules and regulations, including the regulations about fire, traffic and security.

28.13. Excavations and Hazardous Areas: The Contractor shall install the devices of signaling and protection (barriers, warning lights with portable lamp with minimum IP-44, self-powered light, beacons, flags, cones, signs and / or markers) along the excavations and other areas considered dangerous by the Government. The Contractor shall be responsible for supplying, erecting, keeping and removing all signaling and protection devices. The Contractor shall pay for the damages caused due to his negligence. Once the works are completed, the Contractor shall remove the signaling and protection devices.

28.14. Burning and Explosives: Burning practices and use of explosives without prior written authorization from the Government are forbidden.

29. ASBESTOS: The use of asbestos containing materials is forbidden.

30. LEAD PAINT: The use of lead paint is forbidden.

31. RADIO TRANSMITTER RESTRICTIONS: Radio transmitters shall not be used without prior approval from the Government.

32. WEATHER PROTECTION: The Contractor shall take the necessary precautions to protect the work, facilities, equipment and materials, including materials furnished by the Government or property of the Government, from the weather. The Contractor shall be responsible for knowing the weather forecast for each day and for taking the necessary protection measures. Before starting any work, the Contractor shall have the material (tarpaulins, etc…) or necessary equipment on the work site to protect the work, facilities, equipment and materials exposed to weather conditions that could affect them. The tarpaulins shall be waterproof and strong enough to withstand the weight of rainwater that may accumulate on the tarpaulins. The Contractor shall be responsible for the damage caused due to the lack of protection against the weather conditions.

33. MATERIAL, EQUIPMENT AND/OR PLAN SUBMISSIONS

33.1. Required Submissions: The contractor shall submit the documentation or samples indicated on the "Schedule of Material Submittals" form for each item described on that form.

If the submission of a material or equipment has not been approved by the Contracting Officer or his authorized representative, the Contractor shall not perform any purchase order of said material or equipment, nor shall receive and store it at the construction site nor shall use it for the construction.

If all the submissions corresponding to a work unit have not been approved by the Contracting Officer or his authorized representative, the Contractor shall not perform any work activity corresponding to the following work unit.

33.2. Procedure for the Submissions: The Contractor shall send an email to 496ABS.CE.CENM@us.af.mil attaching the files corresponding to AF Form 3000 and the documentation of the material, equipment, plan, etc. to be submitted. If the email size exceeds 10 Mbytes, the Contractor shall send the files using the DoD SAFE platform of the Internet page https://safe.apps.mil/. Due to DoD SAFE platform requirements, the Contractor shall request Construction Management office to have a drop-off request sent for each submission they need to do. The Contractor shall receive an automatically generated email with instructions to upload the documents that will be only valid for 14 calendar days. Failure to upload documents in such period, or incomplete/erroneous uploads will require a new drop-off request and shall be the only responsibility of the Contractor, and those delays shall not be accounted for extensions of period of performance. The files sent by email shall not be compressed.

33.2.1. Submittal Electronic File Naming: Each submittal file shall be named as indicated on this paragraph. If a file is not named so, the submittal shall be rejected. The contractor shall submit two files. The names of the files of the submittals shall have the following format: XXXXXXX, YYYYYY, Item WW, Sub WWRV, Sec ZZZ, AF3000/AAAAAAAAAA, where:

1. XXXXXXX represents the last seven digit of the contract number, after removing the first "FA5575" digits.

2. YYYYYY represents the project number

3. WW represents the item number of the "Schedule of Material Submittals" form corresponding to submitted material, equipment, plan, etc.. It shall be added a 0 to the first nine items

4. RV correspond to the re-submission number of a submittal previously submitted. RV digits shall not be included on the file name of the first submittal of each item. It shall be added a 0 to the first nine re-submissions of the same item

5. ZZZ represents the section number of the specifications corresponding to the submitted material, equipment, plan, etc.. Add the additional digits required to indicate the full number of the corresponding section

6. The "AF3000" digits shall ONLY be included on the file name corresponding to AF 3000 form for digital signature

7. AAAAAAAAAA represents up to the 10 first digits of the description of the item of the AF form 3000. The "AAAAAAAAAA" digits shall NOT be included on the file name corresponding to AF 3000 form

Example number 1 "19C0015, 151011, Item 08, Sub 08, Sec 011101, As-Built D" means that the file corresponds to the contract number FA5575-19-C-0015, project number QUUG 15-1011, item number 08 of the "Schedule of Material Submittals" form, submission number 08, corresponding to section 01 11 01 of the specifications, the As-Built Drawings submission. This file includes the information submitted for review.

Example number 2: "19C0015, 151011, Item 03, Sub 03R1, Sec 011100, AF3000" means that the file corresponds to the contract number FA5575-19-C-0015, project number QUUG 15-1011, item number 03 of the "Schedule of Material Submittals" form, re-submission number 1 of submission number 03, corresponding to section 01 11 00 of the specifications. This file includes the AF Form 3000 form only.

33.2.2. AF 3000 Form: The Contractor shall download the Material Approval Submittal form (AF 3000) from the web site http://www.e-publishing.af.mil/?txtSearchWord=af3000&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-8&output=xml_no_dtd&site=AFPW_EPubs&btnG.x=0&btnG.y=0. The AF Form 3000 shall be signed by the Quality Control Chief.

33.2.3. Submissions: Submissions of incomplete items shall not be accepted. In the file corresponding to the PDF documentation of the material, equipment, plan, etc., the Contractor shall include a PDF copy of the corresponding AF form 3000 as the first page of said documentation. The contractor shall ensure that all the necessary fields of the AF form 3000 are filled in, that ALL the submitted information corresponding to the material, equipment, plan, etc. is complete and accurate and that said information is highlighted on said documentation to prove that it meets the project requirements.

33.3. Submission Review: After the review period of each submission, the Contracting Officer or authorized representative shall return the AF form 3000 to the Contractor indicating if the submission has or not approved and the cause of such disapproval:

1. Request of minor clarifications, changes and/or additional information

2. The submitted information is incomplete or imprecise

3. The submitted information does not meet the project requirements

33.4. Performance Period Extension due to the Re-submissions: The performance period of the contract shall not be extended if the Contractor has to submit any re-submission for any reason or cause.

33.4.1. Disapproved Submissions: If a submission is disapproved by the Contracting Officer, the Contractor shall submit again the files corresponding to the AF form 3000 and the documentation of the material, equipment, plan, etc. If minor clarifications, changes and/or additional information were required or the submitted information was incomplete or inaccurate as justification for the disapproval of the submission, the Contractor shall include said required information in the documentation of the material, equipment, plan, etc.

33.4.2. Submittals Already Approved: When a submission has been approved by the Contracting Officer, the Contractor shall not submit a re-submission for the material, equipment, plan, etc. already approved unless said re-submission is accompanied by a justification for the requested substitution and the necessary complementary documentation (manufacturer's statement, original purchase order, etc.). The re-submission shall not be approved if it does not include the justification and the necessary complementary documentation. A simple statement from the Contractor, instead of from the manufacturer, shall not be accepted. In this case, the Contractor shall submit again the files corresponding to the AF form 3000 and the documentation of the material, equipment, plan, etc. with the justification and the necessary complementary documentation.

33.5. Delivery Date of the Submissions: The Contractor shall submit the files corresponding to AF form 3000 and the documentation of each item of the "Schedule of Material Submittals" form to the Construction Management no later than the date indicated by the Contractor on said "Schedule of Material Submittals" form included in the approved Quality Control Plan.

33.5.1. Review Period: Review Period for the Submissions: The review period of each submission may be up to 10 working days from the date of the receipt of the submission by Construction Management. In some cases, due to complexity, the review period may be up to 15 working days. These review periods are for planning purposes only, submittals requiring further coordination with respective Air Force Agencies may require additional government review periods.

34. <u>REQUEST FOR INFORMATION (RFI)</u>

34.1. RFI: The contractor shall submit the RFIs to request clarifications or additional information about specific aspects of the project or to propose reasoned and justified technical solutions and shall with sufficient time in advance so that the RFI can be reviewed and the contract completion date is not delayed.

34.2. Procedure for the RFIs: The Contractor shall send an email to the Contracting Officer attaching the files corresponding to "496 ABS Construction Request for Information Checklist (Post-Award)" form and the corresponding documentation of the material, equipment, plan, etc., if any. If the email size exceeds 10 Mbytes, the Contractor shall send the files using the DoD SAFE platform of the Internet page https://safe.apps.mil/. The files sent by email shall not be compressed.

34.2.1. RFI File Naming: Each RFI file shall be named as indicated on this paragraph. If a file is not named so, the RFI shall be rejected. The names of the files of the RFI shall have the following format: XXXXXXX, YYYYYY, RFI ZZ, AAAA, Attachment, where:

1. XXXXXXX represents the last seven digit of the contract number, after removing the first "FA5575" digits

2. YYYYYY represents the project number

3. ZZ represents the RFI number. It shall be added a 0 to the first nine RFIs

4. AAAAAA represents the description of the RFI

5. Attachment indicates that said file, if any, includes the documentation of the material, equipment, plan, etc. for which is requested information. The "Attachment" digits shall NOT be included on the file name corresponding to "496 ABS Construction Request for Information Checklist (Post-Award)" form

Example number 1: "19C0015, 151011, RFI 02, Sign Location, Attachment" means that the file corresponds to the contract number FA5575-19-C-0015, project number QUUG 15-1011, RFI number 02 and related to the sign location. This file includes information of the material, equipment, plan, etc. for which is requested information only.

Example number 2: "19C0015, 151011, RFI 02, Sign Location" means that the file corresponds to the contract number FA5575-19-C-0015, project number QUUG 15-1011, RFI number 02 and related to the sign location. This file includes the "496 ABS Construction Request for Information Checklist (Post-Award)" form only.

34.2.2. "496 ABS Construction Request for Information Checklist (Post-Award)" Form: The Contractor shall obtain the "496 ABS Construction Request for Information Checklist (Post-Award)" form from Construction Management.

34.2.3. RFIs: In the file corresponding to the PDF documentation of the material, equipment, plan, etc., for which is requested information, the Contractor shall include a PDF copy of the corresponding "496 ABS Construction Request for Information Checklist (Post-Award)" form as

the first page of said documentation. The Quality Control Chief shall ensure that all the necessary fields of the "496 ABS Construction Request for Information Checklist (Post-Award)" are filled in, that ALL the submitted information corresponding to the material, equipment, plan, etc. is complete and accurate.

34.3. RFI Review: After the review period of each RFI, the Contracting Officer or authorized representative shall return the "496 ABS Construction Request for Information Checklist (Post-Award)" to the Contractor indicating:

1. If the RFI has or not approved, if the Contractor has made a proposal, and the cause of such disapproval

2. The requested clarifications or additional information

34.4. Performance Period Extension due to the RFIs: The performance period of the contract shall not be extended if the Contractor has to submit any RFI for any reason or cause, except if the Contracting Officer or his authorized representative approves it.

34.5. Review Period of the RFIs: The review period of each RFI may be up to 10 working days from the date of the receipt of the RFI by Construction Management. Depending on the complexity, the review period may be longer, in which case the Contractor shall be notified by Construction Management.

35. MATERIAL AND/OR EQUIPMENT PURCHASE ORDER AND DELIVERY

35.1. Material and/or Equipment Purchase Order: Once the Contractor has received the approval from the Contracting Officer for the submission, the Contractor shall make the purchase order of the approved equipment or material. The Contractor shall keep a copy of all delivery tickets of each material or equipment at the construction site for their inspection by the authorized representative of the Government.

35.2. Delay of the Delivery of Materials and/or Equipment: The delay of the delivery of materials and/or equipment shall not justify an extension of the performance period of the contract. and the Contracting Officer is notified in writing within 10 days of the beginning of any delay.

36. COMMENCEMENT OF THE WORKS: The Contractor shall not start any work activity until the following submissions are approved by the Contracting Officer or his authorized representative:

1. Construction schedule

2. Work plan
3. Classification certificate
4. Quality certificate
5. Environment certificate
6. Laboratory certificate, if required
7. Work clearance request
8. Base utility connection/disconnection request, if required
9. Base utility outage request, if required
10. Welding work request, if required
11. Transit control plan, if required
12. Access haul routes
13. Progress schedule
14. Mobility plan
15. Quality control plan
16. Environmental protection plan
17. Key Staff
18. Personnel listing
19. Health and safety plan

Once all the materials and/or equipment necessary for a specific work activity are at the construction site for their use, the Contractor may begin the works related to such work activity. The Contractor shall request an authorization from the Contracting Officer if he wishes to start the works without all the materials and/or equipment at the construction site.

37. PRE-CONSTRUCTION CONFERENCE: The Contracting Officer may conduct a preconstruction conference before commencement of work. The Contracting Officer may request the attendance of the Contractor's key staff, representatives of the subcontractors and Government departments involved on the project. The contractor will lead a presentation on how the work will be completed and a detailed view of the construction schedule.

38. CONSTRUCTION CONFERENCES: As required, construction conferences will be held at the request of the Government. All key staff and subcontractors may be requested to attend as required.

39. GENERAL CONDITIONS UPDATE: It is expected that this document may suffer changes/additions/modifications throughout the life of this contract. Whenever a change to these General Conditions is made, Contracting Officer shall deliver the updated general conditions to all contractors for acceptance in the way that is considered more convenient to the Government. These modifications shall either be unilateral or bi-lateral, as determined by the Government.

*** END OF SECTION ***

SECTION 01 11 02

SPECIAL CONDITIONS

1. PERFORMANCE PERIOD: The performance period estimated by the Government for the completion of the entire work ready for use, including from the preconstruction activities through the finish works, is 150 calendar days, including an average inclement weather days. The required field investigation to detect underground services, including unforeseen utilities, may slow work progress.

1.1. It shall be the sole responsibility of the Contractor to ensure all required submittals are submitted to Construction Management for approval in a timely manner, which shall not incur any delay in completion of the project. For materials or equipment requiring a long term of procurement and delivery, said term shall be included in the period of performance. Delay in delivery/procurement will not justify an extension of the period of performance.

2. GOVERNMENT-FURNISHED MATERIAL (GFM): No GFM is used. .

3. EQUIPMENT, CONTROLS, AND MATERIAL OF THE UNITED STATES OF AMERICA: Not used.

4. CERTIFICATES: The submitted certificates shall be original or a notarized copy. The Contractor shall submit the certificates within 30 calendar days after the award date.

4.1. Classification Certificate of the Contractor: Contractor and/or key subcontractors must hold an updated Certificate of Classification issued by the Spanish "Registro Oficial de Licitadores y Empresas Clasificadas del Estado" of the "Ministerio de Hacienda y Administraciones Públicas" covering the following groups, subgroups, and categories. The certificate holder must execute the activities related to the certificate.

Group	Subgroup	Category
C	1, 2, 4 & 7	2

Certificate of Classification C-1-2 corresponds to work activities which annual average cost is more than 150.000 euros and up to 360.000 euros related to Demolitions, C-2-2 activities which annual average cost is more than 150.000 euros and up to 360.000 euros and are related to Brick or concrete structures., C-4-2 corresponds to work activities which annual average cost is more than 150.000 euros and up to 360.000 euros and are related to Masonry, pargeting and coverings. C-7-2 corresponds to work activities which annual average cost is more than 150.000 euros and up to 360.000 euros and are related to Waterproofing and Insulations.

4.2. Removed, demolished, milled and/or excavated material: The Contractor shall transport the removed, demolished, milled and/or or excavated materials to an authorized dump.

*** END OF SECTION ***

SECTION 04 20 00

UNIT MASONRY

PART 1 - GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

NORMAS TECNOLOGICAS DE LA EDIFICACION (NTE)

NTE PTL	1973, "TABIQUES DE LADRILLO".
NTE FFL	1978, "FACHADAS. FÁBRICA DE LADRILLO".
NTE EFL	1974, "ESTRUCTURAS DE FÁBRICA DE LADRILLO".
NTE EFL	1974, "ESTRUCTURAS DE FÁBRICA DE BLOQUES DE HORMIGÓN".

UNA NORMA ESPAÑOLA (UNE)

UNE-EN 771-1:2011 +A1:2016	2016, "ESPECIFICACIONES DE PIEZAS PARA FÁBRICA DE ALBAÑILERÍA. PARTE 1: PIEZAS DE ARCILLA COCIDA."
UNE-EN 772-1:2011 +A1:2016	2016, "MÉTODOS DE ENSAYO DE PIEZAS PARA FÁBRICA DE ALBAÑILERÍA. PARTE 1: DETERMINACIÓN DE LA RESISTENCIA A COMPRESIÓN."
UNE 67036	1999, "PRODUCTOS CERÁMICOS DE ARCILLA COCIDA. ENSAYO DE EXPANSIÓN POR HUMEDAD"

MINISTERIO DE LA PRESIDENCIA

MP RC 16	2016, "INSTRUCCIÓN PARA LA RECEPCIÓN DE CEMENTOS (RC-16)"

MINISTERIO DE VIVIENDA

CTE DB-SE F	2019, "CÓDIGO TÉCNICO DE LA EDIFICACIÓN. DOCUMENTO BÁSICO SEGURIDAD ESTRUCTURAL. FÁBRICA"
CTE DB- HR	2019, "CÓDIGO TÉCNICO DE LA EDIFICIACIÓN DOCUMENTO BÁSICO PROTECCIÓN FRENTE AL RUIDO"
CTE-DB-HS	2022, "CÓDIGO TÉCNICO DE LA EDIFICIACIÓN DOCUMENTO BÁSICO. SALUBRIDAD"
	CONSORCIO TERMOARCILLA.
	1999," Manual para el uso del Bloque Termoarcilla"

1.2 SUBMITTALS

Submit the following:

1.2.1 Manufacturer's Catalog Data: Supply catalog showing the type and characteristics of the hollow brick, brick to be exposed and special parts (same as existing by Malpesa) intended to be used.

1.2.2 Certificates: Supply manufacturer's certificates of compliance of INCE and AENOR.

1.3 DELIVERY, STORAGE AND HANDLING. Deliver cementitious materials to the site in unbroken containers, plainly marked and labeled with manufacturers' names and brands. Store cementitious materials in dry, weather tight sheds or enclosures and handle so as to prevent entry of foreign materials and damage by water or dampness. Store masonry units off the ground and handle with care to avoid chipping and breakage. Protect materials from damage and, except for sand, keep dry until used. Cover sand to prevent intrusion of water and foreign materials and to prevent drying.

1.4 ENVIRONMENTAL CONDITIONS

Comply with the requirements specified below for the respective air temperatures:

a. Air Temperature 40 to 32 Degrees F (5 to 0 degrees C): Heat sand or mixing water to produce mortar temperature between 40 and 120 degrees F.

1.5 SCHEDULING

Coordinate masonry work with the work of other trades to accommodate built-in items and to avoid cutting and patching.

PART 2 - PRODUCTS

2.1 MASONRY UNITS

2.1.1 Building Brick

UNE-EN 771-1:2011 +A1:2016 and MP RC-16 for hollow type. Compressive strength shall not be less than 100 Kg/cm² for solid bricks and 50 Kg/cm² for hollow bricks, according to UNE-EN 772-1:2011 +A1:2016.

2.2 MORTAR

2.2.1 Portland Cement. Cement used as indicated in MP RC-16. Cement type and class to conform to CTE DB-SE F.

2.2.2 Sand. According to CTE DB-SE F.

2.2.3 Water. According to CTE DB-SE F, it shall be clean, potable, and free from substances which could adversely affect the mortar.

2.2.4 Mortar Types. According to CTE DB-SE F.

2.3 MASONRY ACCESSORIES:

2.3.1 Anchors and Wall Ties: Provide approved designs of stainless steel, zinc-coated steel, or non-corrosive metal having the equivalent total strength of steel types. Zinc coat steel by the hot-dip process after fabrication.

a. Corrugated Metal Ties: Not less than 7/8-inch (22 mm) wide by 7 inches (17 cm) long and not lighter than 22 gage (0,8 mm).

b. Rigid Steel Anchors: Not less than 1 inch (25 mm) wide, 3/16 inch thick (5 mm), and 4 inches (100 mm) long with each end bent not less than 2 inches (50 mm).

2.3.2 Fastenings: Build in bolts, metal wall plugs, and other metal fastenings furnished under other sections, for securing fixtures and other items.

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 Protection

a. Stains: Protect exposed surfaces from mortar and other stains. When mortar joints are tooled, remove mortar from exposed surfaces with fiber brushes and wooden paddles. Protect base of walls from splash stains by covering adjacent ground with sand, sawdust, or polyethylene.

b. Loads: Do not apply loads for at least 72 hours after masonry is constructed.

c. Provide temporary bracing as required.

3.1.2 Surface Preparation. Surfaces on which masonry is to be placed shall be smooth, clean, and free of foreign substances when mortar is applied.

3.2 WORKMANSHIP. Workmanship shall be as indicated in NTE PTL. Carry masonry up level and plumb. Step back unfinished work for joining with new work. Build in door frames, or windows frames as the masonry work progresses. Fill spaces around metal door frames solidly with mortar. Handle masonry units with care to avoid chipping, cracking, and spalling of faces and edges. Drilling, cutting, fitting, and patching to accommodate the work of others shall be performed by masonry mechanics. Cover tops of exposed walls and partitions not being worked on with a waterproof membrane secured in place and extended down at least 2 feet on both sides. Inspect scaffolding regularly to ensure that it is amply strong, well braced, and securely tied in position. Do not overload scaffolding.

3.3 MORTAR MIXING. Measure mortar materials in adequate containers to maintain control and accuracy of proportions. Do not measure materials with shovels. Mix mortar in a mechanical batch mixer for not less than 3 nor more than 5 minutes after all ingredients are in so as to produce a uniform mixture. Add water gradually as required to produce a workable consistency. Do not load mixer beyond its rated capacity. Keep mortar boxes, pans, and mixer drums clean and free of debris and dried mortar. Retemper mortar which has stiffened because of evaporation by adding water and mixing to obtain a workable consistency. Do not use or retemper mortar which has not been placed in final position within 2 1/2 hours after the initial mixing. Do not use antifreeze compounds, salts, or other substances to lower the freezing point of mortar.

a. Mortar: Mix mortar in accordance with CTE DB-SE F to obtain type mortar required.

3.4 TOLERANCES

Masonry work shall be within the following limits:

a. Variation from True Plane: 1:500.
b. Variation from Plumb: 5 mm in one story.

3.5 BRICKWORK

3.5.1 Application: Unless indicated or specified otherwise, lay bricks in running bond. Fill completely joints between units with mortar. Form bed joints of a thick layer of mortar slightly furrowed. Form head joints by applying a full coat of mortar on the brick to be laid. Slushing of head joints will not be permitted. Lay closure bricks with mortar on each bedding surface of unit to be laid and units in place. Place units carefully without disturbing those previously laid. Dry or butt joints will not be permitted.

3.5.2 Bonding and Anchoring. Unless indicated otherwise, extend partitions from the floor to the bottom of the slab above. The two last rows shall be joined with plaster instead of cement. Structurally bond or anchor walls and partitions to each other. Completely embed anchors in mortar joints.

3.5.3 Intersection of Partition with other Walls or Partitions. Tie with wire mesh ties at vertical intervals of not more than 500 mm or with masonry bonding in alternate courses.

3.5.4 Exterior Walls. Exterior wall shall be continuous over structural elements by patching with thin bricks 2,5 cm thick over pilars and front of slabs. The exterior main masonry sheet shall be performed with perforated brick. The interior secondary masonry sheet, shall be performed with doble hollow brick.

3.5.5 Weather tightness. In no case shall the perforations of hollow bricks be oriented towards the exterior.

3.6 CLEANING

3.6.1 Protection. During cleaning operations, protect work which may be damaged, stained, or discolored.

3.6.2 Pointing. Upon completion of masonry work and before cleaning, cut out defective mortar joints and tuck point joints and all holes solidly with prehydrated mortar.

3.6.3 Cleaning. Clean masonry surfaces with clear water and stiff fiber brushes and rinse with clear water. Where stains, mortar, or other soil remain, continue scrubbing with warm water and detergent. Immediately after cleaning each area, rinse thoroughly with clear water. Restore damaged, stained, and discolored work to original condition or provide new work.

END OF SECTION

SECTION 07 92 00

SEALANTS

PART 1 - GENERAL

1.1 REFERENCES: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

UNA NORMA ESPAÑOLA (UNE)

UNE 104281-4-2	1986, Bituminous and Bituminous Modified Materials: Joints Sealant for Concrete Elements. Testing Methods Penetration
UNE 104281-4-4	1986 Bituminous and Bituminous Modified Materials. Joints Sealant for Concrete Elements. Testing Methods. Bond to Mortar Blocks

1.2 SUBMITTALS: Submit the following:

1.2.1 Manufacturer's Catalog Data:

a. Sealants, Primers and Bond Breakers: Data for the sealants shall include shelf life, recommended cleaning solvents, application instructions, and color chart.

1.3 ENVIRONMENTAL CONDITIONS: The ambient temperature shall be within the limits of 5 and 38 degrees C when sealant is applied.

1.4 DELIVERY AND STORAGE: Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, color, and material designation clearly marked thereon.

PART 2 - PRODUCTS

2.1 MATERIALS: Sealant materials shall be used as recommended by the manufacturer.

2.2 INTERIOR SEALANT: Shall be a single component butyl rubber base sealing compound. A multicomponent or single component polyurethane sealing compound may be used for horizontal joints.

2.2.1 Single component clear silicone sealant shall be used for all plant finished surfaces and as indicated.

2.2.2 Color: Color of sealant shall be as selected by the Contracting Officer or authorized representative.

2.3 EXTERIOR SEALANT: Shall be of the following types:

2.3.1 Single component urethane base sealing compound.

2.3.2 Multicomponent polyurethane sealing compound.

2.3.3 Single component polyurethane sealing compound.

2.3.4 Single component clear silicone sealant shall be used for all prefinished surfaces and for aluminum windows.

2.3.5 Color of sealant shall be as selected by the Contractor Officer.

2.4 PRIMER FOR SEALANTS: Use a non-staining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

2.4.1 Bond Breakers: Use the type and consistency recommended by the sealant manufacturer for the particular application.

2.4.2 Backstops: Use backstops in all joints even if they are not shown in drawings. Use fiberglass roping, or neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements, as recommended by the sealant manufacturer. Backstop material shall be compatible with the sealant. Do not use oakum and other types of absorptive materials as backstops.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION: Surfaces shall be clean, dry to the touch, free from frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Where grooves have not been provided, suitable grooves shall be cleaned out to the depth of 13 millimeters and ground to a minimum width of 6 millimeters without damage to the adjoining work.

3.1.1 Aluminum or Bronze Surfaces: Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating,

remove tape and any residual adhesive just prior to sealant application. Use non-staining solvents recommended by the item manufacturer.

3.2 SEALANT PREPARATION: Do not modify the sealant by addition of liquids, solvents, or powders. Mix multicomponent elastomeric sealants in accordance with manufacturer's printed instructions.

3.3 APPLICATION:

3.3.1 Backstops: Provide a suitable backstop where necessary. In all joints the back of joints shall be filled tightly with a backstop material.

3.3.2 Primer: Just prior to application of the sealant or calking compound, clean out all loose particles from joints. Apply primer in accordance with compound manufacturer's directions.

3.3.3 Bond Breaker: Bond breakers shall be provided as recommended by the sealant manufacturer for each type of joint and type of sealant used.

3.3.4 Sealant Compounds: Use a compound that is compatible with the material to and against which it is applied. Do not use a compound that has exceeded its shelf life or has become too jelled to be discharged in a continuous flow from the gun. Apply the compound in accordance with the manufacturer's printed instructions. Force the compound into joints with sufficient pressure to fill the joints solidly. Compound shall be uniformly smooth and free of wrinkles.

3.3.4.1 Interior Sealant: Provide sealant at all exposed joints in the building and at all joints indicated to receive sealant.

3.3.4.2 Exterior Sealant: Provide sealant at all joints around the perimeter of openings and at all exposed joints on the building and at all joints indicated to receive sealant or where required for first class workmanship. Provide also at the following locations:

a. Joints and recesses formed where frames and subsills of windows, doors, and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations.

b. Metal-to-metal joints where sealant or caulking is shown or specified.

c. Bottoms of exterior door frames and thresholds.

d. Decks and walkways at construction joints.

3.4 PROTECTION AND CLEANING:

3.4.1 Protection: Protect areas adjacent to joints from compound smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

3.4.2 Cleaning: Immediately scrape off fresh compound that has been smeared on adjacent surfaces and rub clean with a solvent as recommended by the compound manufacturer for cleaning these surfaces. Upon completion of compound application, remove all remaining smears and stains resulting therefrom and leave the work in a clean and neat condition.

*** END OF SECTION ***

SECTION 09 23 24

PLASTER AND STUCCO

PART 1 - GENERAL

1.1 REFERENCES: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

NORMAS TECNOLOGICAS DE LA EDIFICACION (NTE)

NTE RPE 1974, "Revestimientos de paramentos enfoscados y enlucidos."

UNA NORMA ESPAÑOLA (UNE)

UNE EN 197-1 2000, "Cemento. Parte 1: Composición, especificaciones y criterios de conformidad de los cementos comunes."

CÓDIGO TÉCNICO DE LA EDIFICACIÓN

Ley 38/1999 de 5 de noviembre de Ordenación de la Edificación.

1.2 QUALITY ASSURANCE: Erect sample panel as directed. Finished plaster work shall match the approved sample panel.

1.3 DELIVERY, STORAGE, AND HANDLING: Deliver materials in the manufacturers' original unbroken packages or containers which are labeled plainly with the manufacturers' names and brands. Keep cementitious materials dry and stored off the ground, under cover, and away from sweating walls and other damp surfaces until ready for use.

1.4 TREATMENT AND ENVIRONMENTAL CONDITIONS:

1.4.1 Portland Cement Plaster: Maintain an ambient temperature of not less than 5 degrees C continuously where plastering work will be performed. Maintain this temperature for not less than 48 hours prior to the application of plaster, while performing plastering, and during the curing operation. In interior plastering work, maintain heat within the building until normal occupancy conditions are established.

1.4.2 Concrete regeneration lost and recovery of the initial geometry: For manual recovery of small volumes, shall apply structural mortars in function on the thickness of required

products for thickness of 0,5 a 3 cm and thickness entre 3 y 8 cm. Apply mortar by finishing trowel or gauging trowel and continue with the cured process for any other hydraulic binder. This mortar will be also used to cover the depressions that could come up or any holes from visible rebars. For greater thickness several layers shall apply.

1.4.3 Repair works of cracks in precast concrete pieces. Cracks shall be dry and clean of dust.

1.5 SUBMITTALS

1.5.1 Repair Mortar, one-component.
1.5.2 Repair Mortar for large thickness.
1.5.3 Thin layer repair mortar.
1.5.4 Injection resin of low viscosity.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT: UNE 41.154. Gray Portland Cement.

2.2 AGGREGATES:

2.2.1 Sand for Portland Cement Lime Plaster: NTE RPE gradation of sand shall conform to the following requirements:

a. Sand Gradation for Basecoats:

Percentage Retained by weight (plus or minus 2 percent) on each sieve.

Sieve Size (mm) UNE	Min.	Max.
No. 5	0	0
No. 2,5	0	10

Sieve Size (mm) UNE	Min.	Max.
No. 1,25	10	40
No. 0,63	30	65
No. 0,32	70	90
No. 0,16	95	100

b. Sand for Finish Coats: Natural color and graded within the limits shown above for

basecoats, except that the sand shall pass the No. 2,5 mm sieve, and for smooth finish the sand shall pass the No. 0,63 mm sieve.

2.3 WATER: Suitable for domestic consumption, and free of mineral and organic substances that affect the hardening and durability of the plaster or stucco.

2.4 PROPORTIONING AND MIXING: Unless specified otherwise, materials are specified on a volume basis and shall be measured in approved containers, which will ensure that the specified proportions will be controlled and accurately maintained during the progress of the work. Measuring materials with shovels (shovel count) will not be permitted.

2.4.1 Portland Cement Plaster Basecoats: Mix base coat in proportion of one part by volume Portland cement and 2 1/2 to 4 parts sand. Workability shall dictate the actual amount of sand within the specified limits. Thickness of base coat will be 1,5 cm maximum.

2.4.2 Portland Cement Finish Coat: When thickness of plaster is greater than 1,5 cm, install a finish coat over base coat. Mix finish coat in the proportion of one part by volume of Portland cement and not more than 4 parts by volume of damp loose sand. Workability shall govern the actual amount of sand used in the finish coat, within the limits specified herein. Whertrowel yetoweled finish is indicated, allow plaster to set up to the extent that it does not flow ahead or under the trowel, yet has not solidified. Trowel the face lightly to embed the granules. Do not over-trowel or burnish the surface.

2.5 MIXING: Mix materials in approved mechanical mixers of the type in which the quantity of water can be controlled accurately and uniformly, except that finish coats containing lime may be hand mixed. While the mixer is in continuous operation, add approximately 90 percent of the estimated quantity of water, half of the sand, and all of the cementitious materials. Introduce the other one-half of the sand into the mixer in that same sequence and mix thoroughly with the remainder of the water until the mixture is uniform in color and consistency. Avoid excessive mixing and agitation. Discard plaster which has begun to set before it is used; retempering will not be permitted. Do not use frozen, caked, or lumped materials. Empty mixers and mixing boxes after each batch is mixed and keep free of old plaster.

2.6 REPAIR MORTAR:

2.6.1 Repair Mortar, one-component, cement based, synthetic resins, silica fume and reinforced with polyamide fibers. For thickness of 0,5 a 3 cm, use as reference Sika Mono Top

a. 612 or similar approved.
b. Grain size 0-2 mm
c. Compression resistance at 28 days 40-50 N/mm²
d. Resistance to flexotension at 28 days ~8-9 N/mm²
e. Adherence by concrete traction 1,5-2 N/mm²

2.6.2 Repair Mortar for large thickness, one-component, cement based, synthetic resins, silica fume and reinforced with polyamide fibers. For thickness of 3 a 8 cm, use as reference Sika Mono Top 618 or similar approved.

a. Grain size 0-8 mm
b. Compression resistance at 28 days 40-50 N/mm²
c. Resistance to flexotension at 28 days ~8-9 N/mm²
d. Adherence by concrete traction 1,5-2 N/mm²

2.6.3 Thin layer repair mortar, one-component, cement based, synthetic resins, silica fume and reinforced with polyamide fibers. For thickness no greater than 3 mm, use as reference Sika Monotop 620 or similar approved.

a. Grain size 0-0,3 mm
b. Compression resistance at 28 days ~25-35 N/mm²
c. Resistance to flexotension at 28 days ~7,5-11 N/mm²
d. Adherence by concrete traction 1,5-2,5 N/mm²

2.6.4 Injection resin of low viscosity: Mix of two components for injections, based on high strength epoxy resins of, solvent free. Use as reference Sikadur-52 injection or similar approved.

a. Density to +20ºC 1,1 kg/l
b. Viscosity to +20ºC -430 mPa.s
c. Compression resistance at 7 days 52 N/mm²
d. Resistance to flexotension at 7 days 61 N/mm²
e. Resistance to tension at 7 days 37 N/mm²
f. Adhesion to concrete at 7 days >4 N/mm²

PART 3 - EXECUTION

3.1 SURFACE PREPARATION: Clean surfaces to receive plaster of projections, dust, loose particles, grease, bond breakers, and foreign matter. Before plaster work starts, wet masonry and concrete surfaces thoroughly with a fine fog spray of clean water to produce a uniformly moist condition. Check metal grounds, corner beads, screeds, and other accessories carefully for alignment before starting work. Check expansion and control joints and supporting metal structures to ensure that expansion and control joints can move unrestrainedly.

3.2 APPLICATION OF PLASTER:

3.2.1 Application and Slump: NTE RPE. Plaster shall be applied by hand. Control the fluidity of cement-lime plaster to have a slump of not more than 2 1/2 inches when tested using a 2- by 4- by 6-inch high slump cone. Subsequent to determining water content to meet the specified slump, do not add additional water to the mix. Conduct the slump test according to the following procedure:

a. Place cone on level, dry, non-absorptive base plate.
b. While holding cone firmly against base plate, fill cone with plaster taken directly from the hose or nozzle of the plastering machine, tamping with metal rod during filling to release air bubbles.
c. Screed off plaster level with top of cone. Remove cone by lifting it straight up with a slow and smooth motion.
d. Place cone in a vertical position adjacent to freed plaster sample, using care not to jiggle base plate.
e. Lay a straightedge across top of cone, being careful not to vibrate cone. Measure slump in inches from the bottom edge of the straightedge to the top of the slumped plaster sample.

3.2.2 Workmanship: Apply plaster in walls to be tiled in one coat for plaster thickness less than 15 mm. Apply plaster in two coats when plaster required is greater than 15 mm. Apply plaster in walls to be painted in one coat for plaster thickness less than 15 mm. Apply plaster in two coats when plaster required is greater than 15 mm.

3.3 PORTLAND CEMENT & REGENERATION PLASTER:

3.3.1 Walls to Be Tiled: In those walls to be tiled, apply scratch coat and keep continuously damp for not less than 24 hours before tile is to be set. Apply scratch coat in the thickness indicated or as necessary to bring the face of the tile to the required plane, but not less than 1/4 inch from the face of the material it is being applied to and with a level surface within a tolerance of 1/4 inch in 8 feet. Apply scratch coat after substantial grounds, plugs, hangers, and other such accessories have been installed for plumbing fixtures, electrical outlets, and other fixtures, and fittings have been installed that are to be secured to tiled surfaces. Apply scratch coat with sufficient pressure to ensure a proper bond and key with the base and a proper base for the setting bed. While the mortar is still plastic, cut the scratch coat with a trowel to the depth of the coat and for the full height of the tile bed. Cut horizontally or cross-scratch on one-inch centers for the extent of the tile bed. Use mortar for scratch coats within one hour after mixing. At no time shall the mortar be retempered. Protect scratch coat and keep moist during curing period. A leveling coat of the same mix specified for the scratch coat shall be applied over the scratch coat when the surface of the scratch coat is not level within the specified tolerance or when a base coat thickness of more than 3/4 inch is required. Scratch leveling coat and cure for not less than 24 hours.

3.3.2 Wall to Be Painted: Screed the plaster with a template advanced with a combined longitudinal crosswise motion. Use leveling laths to guarantee an adequate flatness of all surfaces. Apply plasters in walls in one coat for plaster thickness less than 15 mm. Apply plaster in two coats when plaster required is greater than 15 mm. Apply first coat after substantial grounds, plugs, hangers, and other such accessories have been installed. Apply scratch coat with sufficient pressure to ensure a proper bond and key with the base. Use mortar for scratch coats within one hour after mixing. At no time shall the mortar be retempered. Protect scratch coat and keep moist during curing period. A leveling coat of the same mix specified for the scratch coat shall be applied over

the scratch coat when the surface of the scratch coat is not level within the specified tolerance or when a base coat thickness of more than 15 mm is required.

3.3.3 Concrete regeneration lost and recovery of the initial geometry: For a manual repair of small volumes, shall apply structural mortars in function on thickness of required products for thickness of 0,5 a 3 cm and thickness entre 3 y 8 cm. For greater thickness apply several layers. Apply mortar by finishing trowel or gauging trowel and continue with the cured process for any other hydraulic binder. This mortar will be also used to cover the depressions that could come up or any holes from visible rebars.

3.4 TRUE CEILING PLASTER: Cement plaster shall be applied in two layers to obtain a total thickness of 15 mm. The first layer shall be applied to a thickness of 10mm, scraped flat to obtain a uniform and deeply scratched surface to provide adequate adhesion for the second coat. Second coat shall be of the same material as the first coat applied in a coat of 5mm to obtain a smooth flat finish.

3.5 CRACK REPAIR:

3.5.1 Surface Preparation: Eliminate weak concrete, damaged or deteriorated, until sound concrete is obtained around the cracks, which has adhesion strength of at least 1 N/mm².

3.5.2 Cleaning: The support should be free of dust, grease, oil, remains of concrete, any substance that dismiss or stop the treatment adherence. Cleaning mechanical systems can be used until 2mm depth, abrasive based, etching based on sandblast, or with low pressure water without exceeding 18 Mpa.

3.5.3 Concrete Scraped: When it is required to restitute a concrete surface to a depth of 15 mm. this shall be accomplished by stabbing to provide a rough surface thus offering a surface adequate for adherence to posterior mortar repair operations.

3.5.4 Reconditioning of Surface: This shall be accomplished by means of manually applied epoxy based mortar, in the case there is no presence of water nor humidity. On the contrary, the recovery of the surface shall be accomplished by means of cement based mortars. When epoxy based mortars are used, injection work shall be commenced 24 hours after application of the mortar. In the case of cement based mortars the waiting period shall be 3 days.

3.5.5 Injection Execution.

a. Maximum injection pressure: Will not exceed 65 bars.
b. Drilling completion: Drilling will oblique to the crack plane, therefore it will be execute with 45º approximately. The diameter drill will be 2 mm more than the one from the injector. The distance between drills as well as the one to the crack will be 15 cm. and in

a alternating pattern on each side of the crack.

c. Injectors installation: Insert the injector in the drill hole and tighten up the injector twisting its head until it gets fixed to the support without been broke. Check for any obstructions in the injection path. For which shall inject external air with no moisture and oil throughout two of the injectors. Rest of the injectors will remain closed.

d. Sealing and injection: As soon as all injectors are set, the crack path will be sealed with structural epoxy resin adhesive to avoid leaking of injection material. Set the non-return valve in the first injector, then after proceed to mix the epoxy resin of low viscosity and do the injection until the dough begins to flow through the next injector. Change the valve and so on until the total crack is filled.

3.6 PATCHING AND POINTING: Upon completion of the plastering works, cut out and patch loose, cracked, damaged, or defective plaster. Match patching of existing work in texture, color and finish flush with plaster previously applied. Point and patch plastered surfaces abutting or adjoining other finish work in a neat manner. Remove plaster droppings or spattering from all surfaces. Leave clean, exposed plastered surfaces, in a condition ready to receive paint or other finish. Remove protective covering from floors and other surfaces and rubbish and debris from the building.

*** END OF SECTION ***

SECTION 09 90 00

PAINTS AND COATINGS

PART 1 - GENERAL

1.1 REFERENCES: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

NORMAS TECNOLOGICAS DE LA EDIFICACION (NTE)

NTE RPP-1976	"Revestimientos, pinturas".

UNA NORMA ESPAÑOLA (UNE)

UNE IN 005	1963 "Instrucciones para la preparación de las superficies que se han de pintar".
UNE EN ISO 11890-1	2007 "Pinturas y barnices. Determinación del contenido en compuestos orgánicos volátiles (COV). Parte 1: Método por diferencia."

CE MARKING

Directive 2004/42/CE	2004 "on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC"

1.2 SUBMITTALS: Submit the following:

1.2.1 Certificates: For each type of coating, or other product furnished, submit a certificate from the manufacturer stating that the product conforms to requirements referenced. Manufacturer's Material Safety Data Sheets shall be also submitted.

1.2.2 Delivery tickets: The contract shall submit the delivery tickets from the vendor, containing the quantities and size of the containers of each product received on the job site, the name of the contractor or subcontractor and the reference of the contract or the facility intended to be painted. The material received shall be checked by the Contracting Office authorized person.

1.3 REGULATORY REQUIREMENTS:

1.3.1 Lead Content: Do not use coatings having a lead content.

1.3.2 Chromate Content: Do not use coatings containing zinc-chromate or strontium-chromate.

1.3.3 Asbestos Content: Do not use coating containing asbestos.

1.4 DELIVERY AND STORAGE: Deliver materials in sealed, labeled containers bearing the manufacturer's name, brand designation, specification number, batch number and color. Restrict storage and mixing of materials to locations designated by the Contracting Officer.

1.5 SAFETY METHODS: Apply coating materials using safety methods and equipment in accordance with the manufacturer's recommendations.

1.5.1 Toxic Materials: To protect personnel from overexposure to toxic materials, the most stringent guidelines shall be adhered to:

a. The manufacturer’s when using mineral spirits, or other chemicals. Use impermeable gloves, chemical goggles or face shields, and other recommended protective clothing and equipment to avoid exposure of skin, eyes, and respiratory system. Conduct work in a manner to minimize exposure of building occupants and the general public.

b. Manufacturer's Material Safety Data Sheets.

1.6 ENVIRONMENTAL CONDITIONS:

1.6.1 Interior Coatings: Unless otherwise specified by the manufacturer, apply coatings when surfaces to be painted are dry and the surface temperatures in a range of 6º – 28ºC before application and during the drying period. Sun exposure will not directly affect the application plane. In rainy weather, if the surface is not protected the application will be postponed.

1.7 COLOR SELECTION: Colors of finish coats shall be as indicated or specified. Where not indicated or specified, colors shall be selected by the Contracting Officer. Manufacturers' names and color identification are used for the purpose of color identification only. Named products are acceptable for use only if they conform to specified requirements. Products of other manufacturers are acceptable if the colors approximate colors indicated and the

product conforms to specified requirements.

1.7.1 Exterior plaster, cement, masonry and other surfaces:

Background RAL 1014
Shadow of the number of the facility RAL 5024
Number of the inatallation RAL 8002
Big trim RAL 1011
Small trim RAL 8002

1.7.2 Exterior steel, galvanized steel or wood surfaces:
Door and window frames and leaves RAL 8002

1.7.3 Interior plaster, cement, masonry and other surfaces
Background White

1.7.4 Interior steel, galvanized steel or wood surfaces:
Door and window frames RAL 8002
Door and window leaves RAL 1011

1.8 LOCATION AND SURFACE TYPE TO BE PAINTED: All plaster, masonry and others, carpentry (except aluminum) and metal structures shall be painted.

1.8.1 Paint Included: Where a space or surface must be painted as indicated, the following areas will be included unless otherwise specified:

a. Surfaces behind dismountable objects and surface mounted elements which can be easily removed by unfastening elements such as screws and bolts.

b. Existing coated surfaces that are damaged during performance of the work.

1.8.2 Paint Excluded: Do not paint the following unless otherwise indicated.

a. Concealed surfaces which are inaccessible by panel boards, fixed ductwork, machinery, and equipment fixed in place.

b. Surfaces in concealed spaces. Concealed spaces are defined as spaces above suspended ceilings, attic spaces, crawl spaces and chases.

c. Copper, stainless steel, aluminum, brass, and lead, and varnish, lacquer and cork finished surfaces, chalkboards and factory finished items.

d. Precast concrete surface to be exposed.

1.8.3 Lettering: In all buildings requiring an identification number. All lettering shall be accomplished following building 202 lettering as a guideline.

PART 2 - PRODUCTS

2.1 MATERIALS: Paint products shall be furnished by re-known manufacturers. The material received on the job site shall be checked by the Contracting Office authorized person, these shall come in their original, sealed package and shall adjust to the delivery tickets. Products shall not be transferred to containers other than the original ones. Once the containers are empty the Contracting Office representative shall authorize the removal and delivery to the authorized dump.

2.2 PRODUCTS REQUIREMENTS: The applicable products shall comply with the following requirements:

2.2.1 Prime Coat:

2.2.1.1 Unpainted Steel Surfaces: Two component epoxi-polyamide primer with zinc phosphate.

Color:	Red
Volume solids:	50,0 %
Density:	1,4 kg/l
Film thickness:	45 microns

2.2.1.2 Unpainted Galvanized Steel Surfaces: Phosphate and passivator primer of two components with corrosion inhibitors and chromate-free:

Gloss:	Semi-matte
Color:	Greenish-yellow
Solids:	20% volume
Density:	0.95 kg/l of the product mixed
Efficiency for 10 microns	20 – 25 m^2/l
Film thickness	8 – 10 microns dry or 50 microns wet

2.2.1.3 Unpainted Wood Surfaces: Alkyd type sealant primer.

Gloss:	Matte
Color:	White

Solids:	61%
Density:	1.48 kg/l
Efficiency	10 -14 m²/l depending on surface type

2.2.1.4 Exterior plaster, cement, masonry and other surfaces with paint in poor conditions: Synthetic resin solution in aliphatic solvents.

Color:	Transparent, colorless
Solids:	9.2 % volume
Density:	0.81 kg/l approximately
Efficiency	Varies depending on surface porosity, 8 -12 m²/l and coating.

2.2.1.5 Interior/Exterior plaster, cement, masonry and other surfaces with mildew: Solution with special fungicide additives.

Color:	Colorless
Solids:	5% volume
Density:	1 kg/l approximately

2.2.1.6 Interior plaster, cement, masonry and other surfaces with paint in poor condition: Concentrated acrylic copolymer latex sealer:

Color:	Transparent, once dry.
Solids:	45%, volume
Density:	1.02% kg/l approximately
Efficiency:	Variable, depending on surface, 25 – 30 m²/l

2.2.1.7 Interior plaster, cement, masonry and other surfaces with mildew: Solvent based acryllic resin impermeable paint.

Gloss:	Matte
Color:	White
Solids:	39% volume
Density:	1.40% kg/l
Efficiency:	2 – 5 m²/l

2.2.1.8 Exterior Varnished Surfaces: Synthetic resin based open pore varnish with insecticide and fungicide agents.

Gloss:	Matte
Color:	Colorless

Solids:	18% volume
Density:	0.9 kg/l
Efficiency:	Variable, depending on the surface, 10 – 14 m²/l

2.2.1.9 Interior plaster, cement, masonry and other surfaces of work areas: Alkyd sealant primer.

Titanium dioxide pigments and extenders.
Aliphatic hydrocarbon solvent.
Matte Gloss.
White Color.
VOC 340 g/L
Solids content 55 % + 2 by volume.
75% + 2 by weight.
Density 1.45 + 0.05. Kg/Lt.
Viscosity 80 + 2 K.U.
Drying at 23ºC and 50% R. H.. Tack-free: 4 - 5 hours
Recoat in 24 hours.
Theoretical Coverage 10 - 14 m²/Lt. approximately, with brush application.
Film thickness 70 - 100 wet microns. 40 - 55 dry microns.

2.2.1.10 Concrete pavement subjected to average traffic of light vehicles and parking areas, resistant to the occasional spillage of fuel: Epoxy-resin based mortar and dual-component calibrated mineral fillers for primer coat and surface uniformity.

Aspect: Liquid.
Color: Pigments in several colors: red, green, gray.
Boiling point: 100 ºC (water).
Fusion point: 0 ºC (water).
Water solubility: Miscible.
Density: Approx. 1.5 g/cm3.
Viscosity: 4500-8500 mPa.s. (Brookfield RVT, spl.6, 100 rpm.).

2.2.2 Intermediate and Final Coat:

2.2.2.1 Steel Surfaces: Two component polyurethane acrylic enamel.

Color:	To be determined
Volume solids:	50,0 %
Density:	1,2 kg/l
Film thickness:	40 microns.

2.2.2.2 Galvanized Steel Surfaces: Two component polyurethane acrylic enamel.

Color:	To be determined
Volume solids:	50,0 %
Density:	1,2 kg/l
Film thickness:	40 microns

2.2.2.3 Wood Surfaces: Alkyd resin base synthetic enamel.

Gloss:	High-gloss
Color:	To be determined
Solids:	Varies depending on colors, average of 50% volume
Density:	Varies depending on colors. Average of 1.2 kg/l
Efficiency:	11 – 14 m²/l approximately.

2.2.2.4 Exterior plaster, cement, masonry and other surfaces: Acryllic copolymer base textured coat.

Gloss:	Matte
Color:	To be determined
Volume solids:	61% volume
Density:	Varies depending on colors. Average of 1.9 kg/l
Efficiency:	2 m²/l and coat, depending on support and type of finish.

2.2.2.5 Interior plaster, cement, masonry and other surfaces: Vinyl copolymer based paint.

Gloss:	Matte
Color:	To be determined
Solids:	Varies depending on color, average of 32% volume
Density:	Varies depending on colors, average of 1.45 kg/l
Efficiency:	10 – 14 m²/l and coat, depends of color and surface

2.2.2.6 Varnished Surfaces: Synthetic base semi-open pore varnish with insecticide and fungicide.

Gloss:	Matte
Color:	to be determined
Solids:	32%, volume
Density:	0.9% kg/l
Efficiency:	10 – 16 m²/l, depending on surface

2.2.2.7 Surfaces subjected to special moisture conditions: Chloride rubber based smooth coating, physical drying by evaporation of the solvents.

Gloss:	Matte
Color:	to be determined
Viscosity UNE 48076	67 U.K.
Density:	1.2 kg/l
Efficiency:	7-9 m^2/l, depending on surface

2.2.2.8 Traffic markings and signs on concrete or asphalt surfaces: Chlorinated rubber resin solvent based paint with reflectorizing glass beads added.

Gloss:	Matte
Color:	to be determined
Matter by weight:	63%
Viscosity UNE 48076	95 U.K.
Density:	1.4 kg/l
Efficiency:	6-8 m^2/l, depending on surface

2.2.2.9 Interior plaster, cement, masonry and other surfaces in work areas: modified alkyd resin based satin-finish synthetic enamel.

Non-volatile vehicle: Alkyd resins.
Titanium dioxide pigments and non-fading pigments.
Aliphatic hydrocarbon solvent
Satin gloss. Approx. 40% GU/ at 60º.
White and black colors.
Solids content 63-59% by weight, depending on color. White 63% ± 2
43 % by volume, depending on color. White 41% ± 2
VOC 395 g/L
Density 1.175Kg/L depending on color. White 1.398Kg/L
Viscosity 80 K.U ± 5
Drying at 23ºC and 50% R.H. 4-6 hours
Recoat after 24 hours.
Theoretical coverage 10.5 - 14 m^2/l. approximately.
Film thickness 71-95 wet microns, 29-39 dry microns
Heat resistance 90ºC (dry heat).

2.2.2.10 Interior surfaces in plaster, cement, masonry and derived materials in areas susceptible to developing mildew and algae: Acrylic copolymer-based latex paint with anti-mold fungicide

Binder: Styrene-acrylic emulsion
Solvent: Water
Non-volatile matter by weight U.N.E. 48087:51.7+/-1%
Density U.N.E. 48098:1.44+/-0.03 kg /l
Krebs Stormer viscosity at 25º U.N.E 48076: 100+/-10 K.U.
Coverage efficiency at 100 wet microns: 97.3%
Theoretical coverage at 100 wet microns: 8.4 m2/l
Reaction to fire U.N.E. 23727: M1. Non-flammable
Drying times U.N.E. 48086: Touch dry: 30 min. Total: 1 hour
Recoat interval U.N.E. 48086: 2 hours minimum
Finish: Matte
VOC Content< 23 g/l

2.2.2.11 Concrete pavement subjected to average traffic of light vehicles and parking areas, resistant to the occasional spillage of fuel:

a Two coats of textured mortar based on dual component acrylic-epoxy resins, calibrated fillers and pigments.

Abrasion resistance:	Taber<0.2
Approximate efficiency:	0.4 kg/m² per coat

b Sealant coat with acrylic-epoxy resin based dual component paint

Abrasion resistance:	Taber<0.2 g, μ>40 poises
Approximate efficiency:	0.2 kg/m²
Approximate total thickness:	1.0 mm.
Slip resistance:	Rd: class 3.
Reaction to fire:	Euroclass Bfl-s1.

2.2.3 Preliminary Cleaning and Disinfection Treatments:

2.2.3.1 Hydrocarbon-Impregnated Surfaces and Equipment: Apply a water-solvent non-ionic alkaline degreaser and rinse with high-pressure hot water.

Concentrated Ph:	13.2
Ph at 1%:	11.5
Density at 20°C:	1.097
Freezing point:	-2°C
Active matter %:	17.7

2.2.3.2 Grease- and Oil-Impregnated Surfaces: Apply a high-emulsion quaternary

ammonium degreaser and rinse with high-pressure hot water.

Ph at 5%:	12-13
Density at 20°C:	1.07± 0.01gr/c.c.

2.2.3.3 Mildew-Covered Surfaces: Brush surfaces with a fungicide solution and rinse with tepid water. The solution will have the following composition:

157 c.c. trisodium phosphate
30 c.c. household detergent
946 c.c. sodium hypochlorite at 5.25%
2840 c.c. tepid water

2.2.4 Waterproofing Treatments:

2.2.4.1 Waterproof for lintel joints.

Polypropylene mesh
Intermedial and final coats: Elastic photocrosslinkable waterproofing.

Gloss:	Semimatte
Color:	to be determined
Viscosity UNE 48076	175 +/- 25 PO.
Volume of solid:	53 +/ - 1
VOC:	Cat. c/BA 75/40 (2007/2010):15,56 g/.

2.2.4.2 Waterproofing emulsion for exterior surfaces: Ready-to-use emulsion, based on silanes and siloxanes, that acts as water repellent.

PART 3 - EXECUTION

3.1 PROTECTION OF AREAS AND SPACES: Prior to surface preparation and coating applications, remove, mask, or otherwise protect, hardware, hardware accessories, machined surfaces, plates, lighting fixtures, public and private property, and other such items not to be coated that are in contact with surfaces to be coated or could be affected by paint during the works. Following completion of painting, workmen skilled in the trades involved shall reinstall removed items. Restore surfaces contaminated by coating materials, to original condition and repair damaged items.

3.2 SURFACE PREPARATION: Unless the paint or primer manufacturer recommends a different surface preparation, proceed to cleaning the general support, removing dust, dirt, splinters, loose particles, grease, oil, disintegrated coatings, and other substances deleterious to

the coating All elements, such as door and window frames, conduits, installations and down spouts shall be mounted and installed on the wall surface. Interior areas shall be brushed and dust-free before and during the application of the coating material. Surfaces shall not be painted until all the works which produce dust or suspended particles are finalized. Artificial procedures for drying the primer or surface before applying the primer shall not be used. Surfaces shall be level and smooth unless a textured finish, as on the exterior walls, is desired.

3.2.1 Preparation of Steel Surfaces: Unless the paint or primer manufacturer recommends a different type of surface preparation, proceed to scrape rust with a wire brush followed by a meticulous manual cleaning with a brush. Apply primer for ferrous metal no later than 6 hours after cleaning the surface and, if flash rusting takes place, clean again prior to applying the primer.

3.2.2 Preparation of Galvanized Steel Surfaces: Unless the paint or primer manufacturer recommends a different type of surface preparation, proceed to clean the galvanized steel surfaces followed by application of adequate products to thoroughly degrease.

3.2.3 Preparation of Wood Surfaces: Unless the paint or primer manufacturer recommends a different type of surface preparation, proceed to clean the support surface. Do not use water on uncoated wood. Moisture content in exterior wood shall be 14 – 20% abd 8 – 14% for interior woods. Insects and moss shall be removed and treated with insecticide and fungicide products. Loose knots shall be removed and replaced with healthy wood wedges of similar characteristics. Healthy knots which are resinous shall be immediately bled by means of a blow torch or similar and later scraping the resin away with a scraper. Putty cracks, joints, nailholes, nail heads and other imperfections and sanded down smooth. Non-resinous knots shall be treated with a knot sealer making sure it penetrates all crevices. Allow putty and sealer to dry thoroughly and sand smooth. Apply primer coat over wood trims immediately after receiving them at the work site.

3.2.4 Preparation of Plaster, Cement, Masonry and Other Surfaces: Unless the paint or primer manufacturer recommends a different type of surface preparation, proceed to patch all joints, cracks, holes, and other surface defects with patching plaster or spackling compound and sand out smooth. Putty defects, seal with a coat applied by brush, roller or paint gun. Small fins and imperfections on the surface shall be sanded. Surface moisture shall not exceed 6% before painting, having dried naturally. In addition to moisture content requirements, plaster shall be allowed to age a minimum of 10 days before application of coatings. Plaster, cement, masonry and other surfaces shall be inspected between coat applications to eliminate imperfections. All salt efflorescence, such as alkalinity, shall be removed by means of a chemical treatment of zinc sulphate or fluosilicate crystals dissolved in hot water in a concentration of 5 – 10%, prior to painting. Surface stains produced by mildew, besides being scraped or removed by means of a scouring pad, shall be disinfected by washing fungicides and applying the established paint treatment. The established paint treatment for areas stained by interior humidity shall be applied.

3.2.5 Preparation of Varnished Surfaces: Unless the paint and primer manufacturer recommend a different type of surface preparation, proceed to cleaning the support surface followed by sanding down the wood smooth.

3.2.6 Concrete Floor Preparation: To be completely set (28 days) and dry. Eliminate grout mechanically by means of a milling machine, shotblaster or grinder. Eliminate dust by aspiration. Eliminate dirt and grease, badly adhered old pain and other surface contaminants.

3.3 APPLICATION:

3.3.1 Coating Application: Unless the paint or primer manufacturer recommends a different type of application for the pain or primer, the following process shall be implemented. Paint the different items in the workshop when possible. Paint and finish doors and other prefabricated elements before delivering them to the work site. Apply coating at the work site only for repair of minor defects or damaged surfaces. Thoroughly work coating materials into joints, crevices, and open spaces. Touch up damaged coatings before applying subsequent coats. Interior areas shall be broom clean and dust free before and during the application of coating material. Surfaces shall not be painted until all dust or suspended particle producing works have finished. Artificial procedures for drying the paint or surface before applying the paint shall not be used. For epoxy paints, follow manufacturer recommendations and instructions with special precautions.

3.3.1.1 Drying Time: Allow time between coats, as recommended by the coating manufacturer, to permit thorough drying. Provide each coat in specified condition to receive the next coat.

3.3.1.2 Primers and Intermediate Coats: Unless the paint or primer manufacturer recommends a different type of paint or primer application, do not allow primers or intermediate coats to dry more than 5 days before applying subsequent coats. Each coat shall cover the surface of the preceding coat or surface completely and there shall be a visually perceptible difference in shades of successive coats. Mixing of the primer or paint components shall be performed at the moment of application and in the quantities specified by the manufacturer. Wood surfaces shall be sanded down smooth between the different coats of paint to be applied

3.3.1.3 Finished Surfaces: Provide finished surfaces free from runs, drops, ridges, waves, laps, brush marks, and variations in colors.

3.3.2 Thinning of Paints or Primer: Unless the paint or primer manufacturer recommends a different type of thinning process for the paint or primer, reduce paints or primers to proper consistency by adding fresh paint or primer, except when thinning is mandatory for the type of paint or primer being used. Obtain written permission from the Contracting Officer to use

thinners. The written permission shall include quantities and types of thinners to be used.

3.3.3 Coating Systems: Minimum: Apply paints, primers, enamels, undercoats, and other coatings to a minimum dry film thickness of 40 micras each coat unless specified otherwise. Coating thickness, where specified, refers to the minimum dry film thickness in micras.

3.3.4 Number and Trim: Contractor shall paint the building trims with the size, shades and colors indicated in drawings. For identification numbering and lettering, see section 1.7 of this specification.

3.4 COATING SYSTEMS: Unless the paint or primer manufacturer recommends a different type of coating:

3.4.1 Metal Surfaces: One coat of primer and two coats of paint.

3.4.2 Interior plaster, cement masonry and other surfaces: One coat of primer and two coats of paint.

3.4.3 Wood Surfaces: One coat of primer and two coats of varnish for natural finish and, one coat of primer and two coats of paint for a painted finish.

3.4.4 Exterior plaster, cement, masonry and other surfaces: One coat of primer and two coats of paint.

3.4.5 Concrete Floors: Two coats of paint, unless the manufacturer recommends a different type of application.

3.5 INSPECTION AND ACCEPTANCE: In addition to meeting the previously specified requirements, prove the mobility of moving components, including but not limited to swinging and sliding doors, cabinets and hardware for inspection by the Government. Perform this demonstration after appropriate curing and drying times of the coatings have elapsed and prior to invoicing for final payment.

3.6 TABLE OF PAINTING:

Steel Surface:

Coat	Material	Film thickness dry
Primer	Synthetic priming base on modified alkyd resins.	35 micras
Intermediate	Modified alkyd resin base enamel	30 micras
Top coat	Modified alkyd resin base enamel	30 micras

Galvanized Steel Surface:

Coat	Material	Film thickness dry
Primer	Phosphate and pasivator primer of two components with corrosion inhibitors and chromate-free	8-10 micras
Intermediate	Modified alkyd resin base enamel	30 micras
Top coat	Modified alkyd resin base enamel	30 micras

Wood Surfaces:

Coat	Material	Film thickness dry/ Efficiency
Primer	Alkyd type sealant	8-10 micras
Intermediate	Synthetic base semi-open pore varnish with insecticide and fungicide	10-16 m²/l
Top coat	Synthetic base semi-open pore varnish with insecticide and fungicide	10-16 m²/l

Interior Plaster, cement, masonry and other surfaces. Marked on the drawings as EP:

Coat	Material	Efficiency
Primer	-	-
Intermediate	Two component epoxi paint	6-7 m²/litre
Top coat	Two component epoxi paint	6-7 m²/litre

Interior Plaster, cement, masonry and other surfaces. Marked on the drawings as P or PV or PC:

Coat	Material	Efficiency
Primer	10% water + 90% Vynil plastic paint	4,5 m²/l
Intermediate	Vynil plastic paint	5 m²/litre
Top coat	Vynil plastic paint	5 m²/litre

Exterior Cement, concrete, brickwork and similar surface:

Coat	Material	Efficiency
Primer	15% water + 85% Vynil plastic paint	4,25 m²/litre
Intermediate	Vynil plastic paint	5 m²/litre
Top coat	Vynil plastic paint	5 m²/litre

Concrete Floor:

Coat	Material	Efficiency
Primer	-	-
Intermediate	Water epoxi paint	6,2 m²/litre
Top coat	Water epoxi paint	6,2 m²/litre

*** END OF SECTION ***