

Alstom Project Documentation Analysis

This report contains summaries of the most important documents from the Alstom project.

1. 01 Architecture - Structure - Roads Specifications.pdf (in 04-02 Contract Documents\APPENDIX 3- Specification)

The document titled "01 Architecture - Structure - Roads Specifications.pdf" is an updated specification report for a new cabling factory construction project by Alstom, dated 23rd February 2025. Key points for a project manager include understanding the general requirements, work summary, unit price measurement and payment, project coordination, meetings, pre-construction conferences, progress meetings and schedules. The document also covers survey and layout data, construction photographs, submittals, shop drawings, product data, samples, security, applicable standards, testing laboratory services, and quality control. Temporary utilities such as electricity, lighting, water, telephone, and internet are also addressed. The document also discusses field offices, supervision personnel, personnel transport, temporary sanitary facilities, barriers and enclosures, project identification and signs, and product options and substitutions.

2. 02 Plumbing Specification.pdf (in 04-02 Contract Documents\APPENDIX 3- Specification)

The document titled "02 Plumbing Specification.pdf" is a detailed guide for the plumbing system of the new Alstom cabling factory. It includes specifications for toilet, bath, and laundry accessories, with sections on related documents, quality assurance, coordination, warranty, materials, public-use washroom accessories, and fabrication. The execution part covers installation, adjustment, and cleaning. The document also provides information on expansion fittings and loops for plumbing piping, including packless expansion joints, grooved-joint expansion joints, alignment guides, and anchors. Another section is dedicated to sleeves and sleeve seals for plumbing piping. The new project manager should familiarize themselves with these specifications to ensure the plumbing system meets the outlined standards.

3. 03 HVAC and Compressed Air Specification.pdf (in 04-02 Contract Documents\APPENDIX 3- Specification)

The document titled "03 HVAC and Compressed Air Specification.pdf" is a detailed specification report for the HVAC system at Alstom's new cabling factory. The report, dated 23rd February 2025, outlines the basic mechanical requirements for the project. Key sections include general descriptions, submittals, protection measures, job conditions, extra

stock and spare parts, operation and maintenance manuals, inspections, test reports and certificates, and guarantees. The document also covers the products to be used, including general materials, motors, and controls. The execution section details the general execution plan, cutting and patching, excavating and backfilling, installation of equipment, welding, protection, and field quality control. The new project manager should familiarize themselves with these specifications to ensure the project is executed according to the outlined standards.

4. 04 Mechanical Specification.pdf (in 04-02 Contract Documents\APPENDIX 3-Specification)

The Alstom Factory construction project document outlines the mechanical specifications for a new cabling manufacturing site. The document emphasizes the need for coordination with other trades and the provision of all necessary labor, materials, tools, and equipment for the installation of pumps and fittings. The work must adhere to several codes and standards, including ANSI, ASME, ASTM, NFPA, FM, UL, ISO, and IEC. Quality assurance measures include inspection and testing services, and the manufacturer must have a minimum of 10 years of experience. The pumps should operate without vapor binding and cavitations and within 25% of the midpoint of the maximum efficiency curve. Submittals required include certified pump curves, final required pump horsepower, manufacturers literature, and minimum controls on all pump installations. The document also specifies requirements for product handling, maintenance, and equipment manufacturers. The manufacturers should be reputable and have local agents for after-sale services. The document also mentions factory tests for main equipment and machinery.

5. 05 Firefighting Specification.pdf (in 04-02 Contract Documents\APPENDIX 3-Specification)

The document titled "05 Firefighting Specification.pdf" is a detailed specification report for the Alstom New Cabling Factory project, dated 23rd February 2025. The document provides comprehensive guidelines on the installation and quality assurance of fire-suppression systems in the new manufacturing cabling site. It covers various aspects such as sleeves and sleeve seals for fire-suppression piping, stack-sleeve fittings, sleeve-seal systems, sleeve-seal fittings, and grout. The document also provides instructions for sleeve installation, stack-sleeve-fitting installation, sleeve-seal-system installation, and sleeve-seal-fitting installation. Additionally, it includes a schedule for sleeve and sleeve-seal. The document also discusses escutcheons for fire-suppression piping. The new project manager should refer to this document for understanding the firefighting specifications for the project.

6. 06 Electrical Specification.pdf (in 04-02 Contract Documents\APPENDIX 3- Specification)

The document titled "06 Electrical Specification.pdf" is a detailed guide for the electrical specifications of the new Alstom cabling factory. The document is divided into three main sections: General, Products, and Execution. The General section covers related documents, regulations and standards, power supply, telephone public exchange lines, motors and other electrically operated equipment, climatic conditions, drawings, submittals, quality assurance, coordination, and equipment and materials. The Products section details the supporting devices, electrical identification, covers for trenches, brackets, supports, rails and tracks, concrete bases, equipment for electricity metering, anti-condensation heaters and ventilators, and electrical control locations. The Execution section outlines the installation and application of electrical equipment and supporting devices, support installation, identification materials and devices, and fire stopping. The document is dated 23rd February 2025 and is crucial for understanding the electrical requirements and standards for the new manufacturing cabling site.

7. 07 Low Current Specification.pdf (in 04-02 Contract Documents\APPENDIX 3-Specification)

The document titled "Low Current Specification" pertains to the new manufacturing cabling site of Alstom. The document, dated 23rd February 2025, provides a detailed specification report for the project. It includes sections on common clauses for structured cabling, general information, products, and execution. Key areas covered include related documents, summary, reference standards, definitions and abbreviations, scope of work, products and work by others, confidentiality, system description, submittals, quality assurance, delivery, storage and handling, project/site conditions, warranty, maintenance and support, spare parts and extra material. Execution details include examination, measurement procedures, preparation, installation, field quality control, cleaning, demonstration, and training. The document also includes a section on identification for communication systems. The new project manager should pay attention to all these areas for a comprehensive understanding of the project.

8. Getechnical Report - Alstom Cabling plant - Borg Al-Arab, Alexandria - Sep 2024 - R2.pdf (in 04 Signed Contract + Annexes\04-02 Contract Documents)

The document is a report on the exploratory geotechnical investigations and foundation recommendations for the Alstom Cabling Plant at Borg Al-Arab, Alexandria, Egypt. The report was prepared by ARDAMAN-ACE, a consulting firm specializing in soil mechanics, foundations, and material testing. The report provides details on the site location, topography, and project description. It outlines the field activities, including marking and survey for borehole locations, borehole execution, and installation of standpipe piezometers. The document also includes a comprehensive laboratory testing program, which includes grain size analysis, Atterberg limits, free swelling, pocket penetrometer test,

oedometer test, and chemical analysis for soil samples. The report provides information on the general subsurface conditions, including the presence of silty clay, sand, and groundwater. The document concludes with an analysis of field and laboratory test results. The new project manager should familiarize themselves with these findings to understand the site conditions and foundation recommendations.

9. Geotechnical Report - Alstom Cabling plant - Borg Al-Arab, Alexandria - S... (1).pdf (in 03-04 Final Tender Documents\ROUND #2)

The document is a geotechnical report on the Alstom Cabling Plant in Borg Al-Arab, Alexandria, Egypt, conducted by Ardaman-ACE Consulting Engineers. The report provides findings from exploratory geotechnical investigations and offers recommendations for the plant's foundations. The study involved marking and surveying borehole locations, borehole execution, and the installation of standpipe piezometers. Laboratory tests were conducted, including grain size analysis, Atterberg limits, free swelling, pocket penetrometer test, oedometer test, and chemical analysis for soil samples. The subsurface conditions were analyzed, revealing the presence of silty clay, sand, clay, and groundwater. Field and laboratory test results were analyzed, including standard penetration tests, percentage of fines, and Atterberg limits. The report is crucial for understanding the soil mechanics and foundation requirements for the plant.

10. Paint specification- (Flooring System – PU Crete) 19-1-25.pdf (in Epoxy Package\JOTUN)

The document is a paint specification for the Alstom Component Factory project, prepared by Eslam Ahmed from Jotun Coatings. The paint to be used is a high-performance, solvent-free polyurethane-based hybrid antimicrobial flooring system. Before painting, the concrete must be cured for 14-21 days (ideally 28 days), and completely dry with moisture content below 5%. Any oil, grease, or chemical substances should be removed by solvent wash and mechanical surface preparation methods. Any defects like pinholes, honeycombs, cracks, or chips should be filled with suitable epoxy filling material and sanded after drying. The paint application area is a concrete floor. The document also includes a price estimate. Payment is to be 100% cash in advance with the order, and the offer is valid for one month. Jotun offers on-site periodic assessment and inspection.

11. Paint specification-(Walls & Flooring) Alstom Component Factory 19-1-25.pdf (in Epoxy Package\JOTUN)

The document is a paint specification for the Alstom Component Factory. It details the types of paints to be used, their prices, and application instructions. The paints specified include

Jotafloor Lines Road marking UV-resistance, Jotafloor Sealer Solvent Base Epoxy, Jotafloor SF Pr 150 Solvent Free Primer Epoxy, Jotafloor Topcoat E grey STD 071 Solvent Free Epoxy, and Jotafloor EPC 300 Plus grey STD 071 Solvent Free Epoxy.

The document also provides specific instructions for surface preparation before painting. These include ensuring the concrete is cured for at least 14-21 days, removing traces of oil and grease, ensuring the concrete is completely dry, and removing any loose particles and chemical substances. Any pin holes, honey combs, cracks, and chip offs should be filled with suitable epoxy filling material.

The document also mentions the option to spread Jotafloor Non-Slip Aggregate for a non-slip surface. All prices are given in EGP. The document was prepared by Eslam Ahmed from Jotun Coatings.

12. Paint specification-(Flooring Pu Universal) Alstom Component Factory 19-1-25.pdf (in Epoxy Package\JOTUN)

The document is a paint specification for the Alstom Component Factory. The paint specified is Jotafloor PU Universal grey STD 071, a solvent-free polyurethane waterproof membrane, and Jotafloor SF Pr 150, a solvent-free primer epoxy. The prices are given in EGP. The document also provides a price estimate for the paint per litre and per can. The paint application is intended for a concrete floor with a compressive strength of not less than 25Mpa. The concrete must be cured for 14-21 days, ideally 28 days, and be completely dry before paint application. The document also mentions the removal of oil, grease, and other substances from the concrete surface. It is optional to spread Jotafloor Non-Slip Aggregate for a non-slip surface. Payment is to be 100% cash in advance with the order. The document also notes that prices may change for different colours.

13. Glazed curtain wall Specifications-2.pdf (in Alumnuim Doors & Windows Package\Specs)

The document outlines the specifications for a glazed aluminum curtain wall system for a new manufacturing cabling site. The system includes an aluminum framing system, glass panels, and other accessories such as fire stops and perimeter sealant. The document references both Egyptian and American standards, including specific codes for aluminum works, loads, structural steel works, and various American Architectural Manufacturer Association (AAMA) and American Society of Testing and Materials (ASTM) standards. The curtain wall system is designed to be self-supporting, factory pre-finished, and includes double glazing glass and related anchorage and attachment devices. The system must withstand loads, thermal and structural movement without failure, including air infiltration and water penetration exceeding specified limits. The glazing should be physically and

thermally isolated from framing members. The system should be designed to withstand wind loads and seismic loads according to the Egyptian Code for loading and structural steel works.

14. Glazing Specifications.pdf (in Alumnuim Doors & Windows Package\Specs)

The document outlines the specifications for the glass and glazing work in the Alstom Factory construction project. The contractor is responsible for providing labor, materials, and equipment to install glass in various types of windows and doors. The glass should be stored in a dry, well-ventilated area to avoid damage from moisture and handled carefully to prevent edge damage. Installation should not proceed under adverse weather conditions or outside the manufacturer's recommended temperature range. The contractor should provide a written 5-year guarantee covering weather tightness, structural adequacy, and sealants. The document also specifies the materials to be used, including tinted glass for aluminum windows and doors, clear glass for windows and doors, and various glazing compounds. The contractor is responsible for ensuring the correct glass size for each opening and adhering to the material manufacturers' recommendations during installation.

15. Addedum 1 - 02 Plumbing Specification - Secondary IRR Specification.pdf (in ROUND #1\Addendums)

The document is an addendum to the plumbing specification for Alstom's new cabling factory, focusing on the irrigation system. The project involves supplying, installing, and commissioning an automated irrigation system with all related components. The contractor is responsible for preparing shop drawings, submitting technical information and material samples for client approval, and commissioning the irrigation system upon completion. The contractor must also provide the client with four original sets of As-Built drawings and detailed Operation and Maintenance Manuals, including Arabic translations. The project requires manufacturers and installers with at least 10 and 5 years of experience respectively. The project must comply with various ISO, SASO, and BS codes and standards. The contractor needs to confirm the availability of all items with the required specs during the tendering period. The client's approval is required before issuing the Project Handing Over Certificate.

16. Addendum 2 - 01 Architecture - Structure - Roads Specifications - Part 2....pdf (in ROUND #1\Addendums)

The document titled "Addendum 2 - 01 Architecture - Structure - Roads Specifications - Part 2" is a detailed report on the specifications for the new Alstom cabling factory. Key sections include concrete dry shake floor hardener, masonry, various divisions on metals including

structural steel, metal fabrications, composite metal cladding, and metal sheet cladding. The document also covers thermal and moisture protection, with sections on rubber/bitumen protective coating, thermal insulation, vapor barrier, sandwich panels, bitumen torch applied membrane for roofing, flashing and sheet metal, firestopping, and sealants. These sections outline the specific materials and methods to be used in the construction of the factory. The project manager should familiarize themselves with these specifications to ensure the project aligns with the outlined standards.

17. Addendum 3 - 06 Electrical Specifications - Street Lighting.pdf (in Received\250202)

The document is an electrical specification for the new Alstom cabling factory's street lighting. The work includes providing all necessary materials, equipment, accessories, services, and tests to complete and make ready for operation all lighting fixtures, drivers, and lamps according to the drawings and specifications. The supplier must submit calculations performed by the latest version of the DIALux lighting design software for all typical lighting installations of the project. The contractor is required to install a mockup from each supplier on the project site for review and evaluation. The manufacturers should have at least 5 years of experience in the manufacture of lighting fixtures, drivers, and lamps. The LED street lighting system should comply with the latest editions of the IEC/CIE, BS EN, IEEE, ANSI, UL standards. The document lists specific standards that the lighting system must meet, including those related to luminaires, LEDs, lumen maintenance, photometric properties, chromaticity, photobiological safety, radio disturbance characteristics, and electromagnetic compatibility.

18. Addendum 4 - 06 Electrical Specifications - Parking Control Equip.pdf (in Received\250202)

The document is an electrical specification for the new Alstom cabling factory's parking control equipment. The parking control system includes automatic barrier gates, vehicle detectors, ANPR cameras, entry and exit terminals, miscellaneous parking control equipment, management software, and access control units. The project must comply with local building codes, ordinances, regulations, and relevant authorities' requirements. It should also adhere to either North American or European standards, depending on the applicable requirements. The contractor is responsible for providing the final design and construction documents, all equipment, software, material, labor, and services required to construct and install the parking control equipment. The project is related to various other sections, including cast-in-place concrete, metal fabrications, overhead coiling doors and grilles, panel signage, fabricated structures, basic electrical materials and methods, low-voltage electrical power conductors and cables, grounding and bonding for electrical systems, raceways and boxes for electrical systems, among others.

19. 01 Architecture - Structure - Roads Specifications.pdf (in ROUND #1\TDs - 240112)

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20. 02 Plumbing Specification.pdf (in ROUND #1\TDs - 240112)

The document titled "02 Plumbing Specification.pdf" is a detailed guide for the plumbing system of the new Alstom cabling factory. It includes specifications for toilet, bath, and laundry accessories, with sections on related documents, quality assurance, coordination, warranty, materials, public-use washroom accessories, and fabrication. The execution part covers installation, adjustment, and cleaning. The document also provides information on expansion fittings and loops for plumbing piping, including packless expansion joints, grooved-joint expansion joints, alignment guides, and anchors. Another section is dedicated to sleeves and sleeve seals for plumbing piping. The new project manager should familiarize themselves with these specifications to ensure the plumbing system meets the outlined standards.