

The background image shows a steel fabrication shop. In the foreground, a worker in a black long-sleeved shirt with the 'MAJESTY Steel Industries' logo on the back and a grey baseball cap is leaning over a large steel beam. In the background, another worker is visible near a large crane. The scene is dimly lit with a warm, orange glow from a light source in the background.

MAJESTY

Corporate Profile

Your Trusted Steel Fabrication Partner



STRENGTH
YOU CAN TRUST



QUALITY
THAT LASTS



INNOVATION
THAT BUILDS



COMMITMENT
THAT DELIVERS

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SECTION 1

ABOUT OUR COMPANY



Established in 2017, MAJESTY is a specialized steel structures and metal fabrication company serving the industrial, commercial, and oil & gas sectors.

We provide high-quality fabrication and installation services for structural steel, platework, industrial steel components, and customized steel solutions, delivering every project with a strong commitment to quality, safety, and on-time completion.



Our strength comes from combining practical industry experience with a network of highly qualified engineering professionals.

By collaborating with experienced engineers who have contributed to major industrial and construction projects, MAJESTY is able to deliver reliable engineering solutions while maintaining the flexibility, responsiveness, and personalized service of a specialized fabrication company.



We build long-term partnerships by delivering quality, flexibility, and reliability.

Our clients include engineering consultants, general contractors, industrial facility owners, oil & gas companies, and steel fabrication companies seeking dependable subcontracting support. We understand the importance of meeting technical specifications, maintaining high workmanship standards, and delivering projects on schedule.



Driven by continuous improvement, MAJESTY is investing in expanding its production capabilities and strengthening its fabrication capacity to meet the growing demands of the steel construction industry.

Our vision is to become a trusted regional partner for structural steel fabrication by combining engineering excellence, operational efficiency, and outstanding customer service.

SECTION 2



MISSION & VISION



OUR MISSION

To deliver high-quality structural steel and platework solutions through engineering excellence, reliable execution, competitive pricing, and on-time project delivery while building long-term partnerships with our clients.



OUR VISION

To become one of Egypt's most trusted steel fabrication companies, recognized for quality, reliability, continuous improvement, and customer satisfaction, while expanding our production capabilities to serve larger industrial and infrastructure projects.

A photograph of a building's exterior wall made of light-colored vertical panels. On the wall, there is a large, three-dimensional sign. At the top is a stylized logo of three vertical bars. Below it, the word "MAJESTY" is written in large, bold, sans-serif capital letters. At the bottom, "Steel Fabrication Division" is written in a similar font, but with a slight curve to follow the building's angle. The lighting is warm, suggesting sunset or sunrise.

MAJESTY
Steel Fabrication Division

SECTION 3

OUR FACTORY

**Factory:**

Our Factory locates in Alsadat 8th industrial zone at block 111 .

**Head Quarter:**

Our head quarter locates in G43 building, New narges, 5th settlement, New cairo.

**MAJESTY**

STEEL & PLATE WORKS CONSTRUCTION



SECTION 4

ABOUT OUR SERVICES



Structural Steel

- Industrial Buildings
- Warehouses
- Factory Buildings
- Mezzanine Floors
- Pipe Racks
- Platforms
- Canopies



Platework

- Hoppers
- Chutes
- Tanks
- Silos
- Ducts
- Transition Pieces



Miscellaneous Steel

- Staircases
- Handrails
- Ladders
- Catwalks
- Guardrails



Installation

- Steel Erection
- Site Installation
- Maintenance
- Shutdown Works



SECTION 5

SCOPE OF WORK



We provide end to end steel solutions for a wide range of industries.



Transport &
Installation



Project
Applications



Maintenance
& Expansion



Steel
Fabrication



Engineering
Design



Steel Building
Systems



OUR COMMITMENT

Delivering high quality, innovative and sustainable steel solutions with safety and excellence at the core.

QUALITY
You Can Trust

SAFETY
Our Priority

ON-TIME
Every Time

SECTION 6

MANUFACTURING PROCESS

A structured and precise manufacturing process that ensures the highest standards of quality, safety, and on-time delivery.



Cutting

Utilizing advanced machinery to ensure high precision in shaping raw steel materials according to project specs.



Built UP

Assembling primary structural components meticulously to create a solid foundation for the final steel framework.



Fit-Up

Aligning and tacking pieces together accurately to verify dimensions before the permanent welding process starts.



Welding

Skilled technicians perform manual welding with extreme focus to maintain structural integrity and joint strength.



Automatic Welding

Implementing automated welding technology to achieve uniform seams and accelerate production for large scale tasks.



Visual

Conducting thorough visual inspections to detect any surface defects and ensure compliance with quality standards.



Lifting

Using specialized heavy equipment to safely handle and transport massive steel structures within the factory floor.





SECTION 7

MACHINES & UTILITIES

Equipped with advanced machinery and facilities to ensure precision and efficiency



CNC
MACHINES



PLASMA & OXY
FUEL CUTTING



WELDING
MACHINES



OVERHEAD
CRANES



PAINTING
BOOTH



FABRICATION
LINES



SECTION 8

OUR TEAMS



Our strength lies in our people. A dedicated team of engineers, technicians and skilled professionals working together to deliver excellence.

50+

SKILLED
EMPLOYEES

10

ENGINEERS &
SUPERVISORS

15+

PROJECTS
COMPLETED

SECTION 9

WHY CHOOSE MAJESTY?



High Quality & Safety Standards



On-Time Delivery



Advanced Technology & Equipment



Experienced & Skilled Team



Competitive Pricing



Strong Commitment to Clients



SECTION 11

PRE-QUALIFICATION & MAJOR PROJECTS



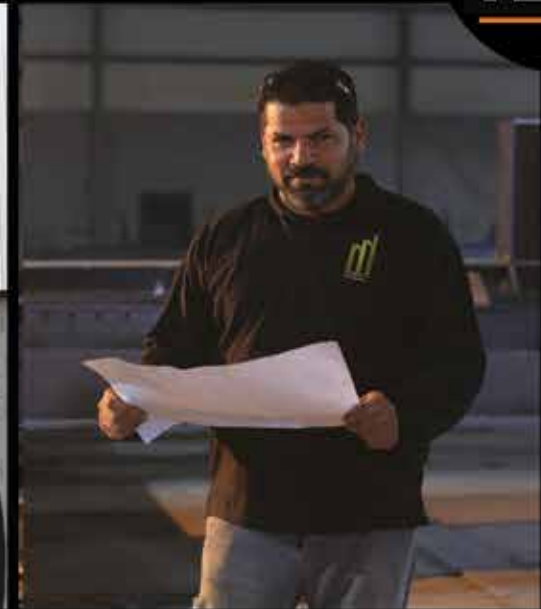
Prequalified with leading contractors and oil & gas companies.



Successfully completed various projects across multiple sectors



Proven track record of quality, safety and timely delivery



Markets We Serve

Industries



**Industrial
Facilities**



Oil & Gas



**Commercial
Buildings**



**Warehousing
& Logistics**



Infrastructure

Clients



**Engineering
Consultants**



**General
Contractors**



**Industrial
Companies**



**Steel Fabrication
Companies**



**Developers
& Investors**



**Factory
Owners**



MAJESTY

STEEL & PLATE WORK CONSTRUCTION



SECTION 12

WE WORKED WITH



Redcon
Construction



Americana
Group



Senourita
Foods



BRT Bus Rapid
Transit



Egyptian Propylene
& Polypropylene Company



الهيئة الهندسية
للقوات المسلحة



محافظة الغربية



Emaar
Properties



Al Shal
Automotive



BK
company



Emar Al Delta
Company



كلية الهندسة
جامعة طنطا



Mansour
Group



Al Salam
University



EGEC



Green organic



Al Jazi
Developments



MAJESTY
KHALID & HASSAN BUILDING CONSTRUCTION GROUP

Our Recent Projects



Mivida English School Playground



AREA

AREA 1440 m²



TONNAGE

42 ton



SCOPE OF WORK

Supervision of fabrication, erection, and sandwich panels installation according to the project specifications.



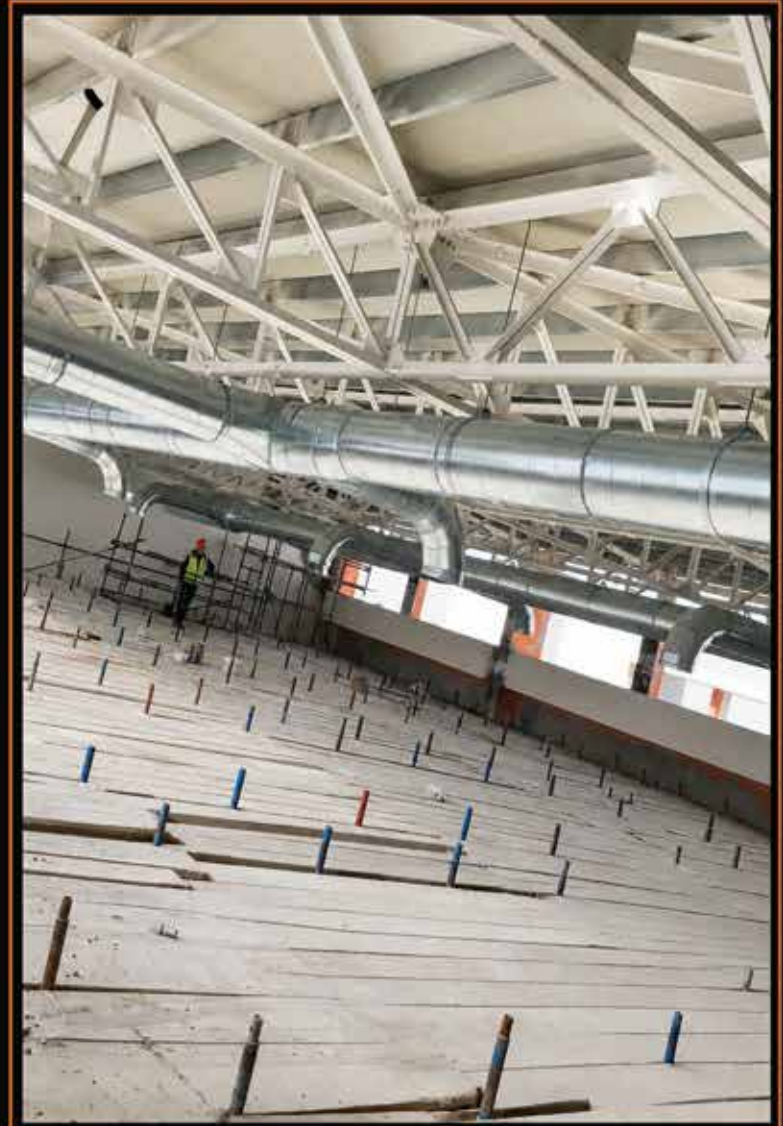
CLIENT

EMAAR Misr



CONSULTANT

EGEC



Our Recent Projects



Mivida English School Playground



AREA

AREA 1440 m²



TONNAGE

42 ton



SCOPE OF WORK

Supervision of fabrication, erection, and sandwich panels installation according to the project specifications.



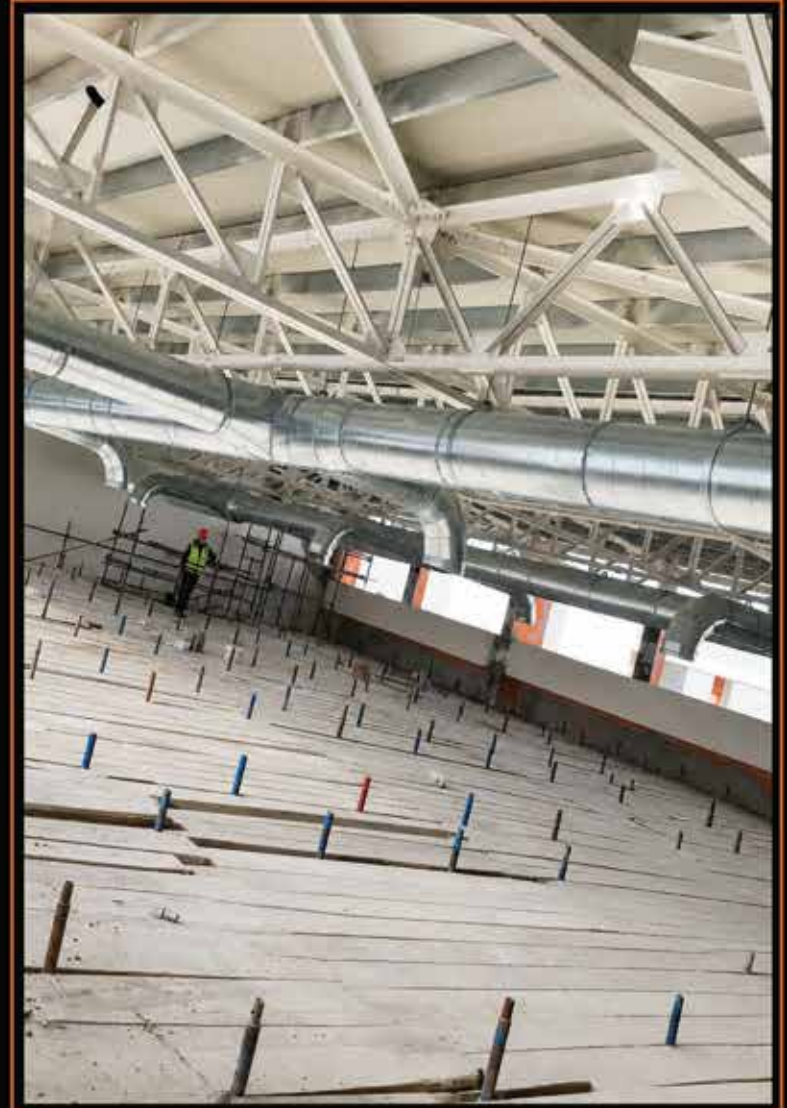
CLIENT

EMAAR Misr



CONSULTANT

EGEC



Our Recent Projects



Mivida English School Theatre



AREA

AREA 1080 m²



TONNAGE

34 ton



SCOPE OF WORK

Supervision of fabrication, erection, and sandwich panels installation according to the project specifications.



CLIENT

EMAAR Misr



CONSULTANT

EGEC



MAJESTY

REAL ESTATE DEVELOPMENT



Our Recent Projects



AlJazi - Al-rehab - New Cairo



AREA

Area of one building 80 m²



TONNAGE

128 ton



NUMBER OF BUILDINGS

16



SCOPE OF WORK

Supervision of fabrication, erection according to the project specifications.



CLIENT

AlJazi



ALJAZI
DEVELOPMENTS



MAJESTY
REAL ESTATE DEVELOPMENT



Crisis Building- Gharbia Government



Installation Of Steel Structural System And Decking Slab Of Crisis Building at Gharbia Government



AREA
AREA 584 m2



TONNAGE
36 tons



SCOPE OF WORK

Shop Drawings, Fabrication
and Erection of Steel Structure and Steel Decking Slab
According to Project Specification.



CLIENT
Gharbia Government



CONSULTANT
Engineering Authority of
Gharbia Government



Senyorita Foods - Americana Group



Structural System Of A New Production Lines



TONNAGE
14 ton



SCOPE OF WORK

Design According To AISC (american institute of steel construction), Shop Drawings, Fabrication And Erection of Steel Structural System.



CLIENT
Senyorita Foods



CONSULTANT
Prof.Dr: Hany Al-Khareby



MAJESTY

STEEL STRUCTURE CONSTRUCTION



Kidney Hospital - Tanta University



Installation of Roof CatWalk, Connected Bridge And Transistors Bases



TONNAGE
16 ton



SCOPE OF WORK
Shop Drawings, Fabrication And Erection According To Project Specification



CLIENTS
Tanta University



CONTRACTOR
Military Production Company For Projects, Engineering And Consultancy



EXECUTIVE CONTRACTOR
Emaar Al-delta Group



CONSULTANT
Engineering Research and Consulting Center of (Faculty Of Engineering - Tanta University)



MAJESTY

STEEL & ALUMINUM CONSULTING



EPP-Egyptian company for Propylene and polypropylene....



Strengthening of RC Columns of pipe rack 2303



TONNAGE
Lump Sum



SCOPE OF WORK

Design According To AISC (american institute of steel construction), Shop Drawings, Fabrication, Site Welding And Erection of Steel Structural System.



CLIENT
EPP



CONSULTANT
Prof.Dr: Hany Al-Khareby



Chillers Platform-new Banha University



Construction of Chillers platform Chassis



SCOPE OF WORK

Design According To
ECP, Shop Drawings, Fabrication, Epoxy Painting And
Erection of Steel Structural System.



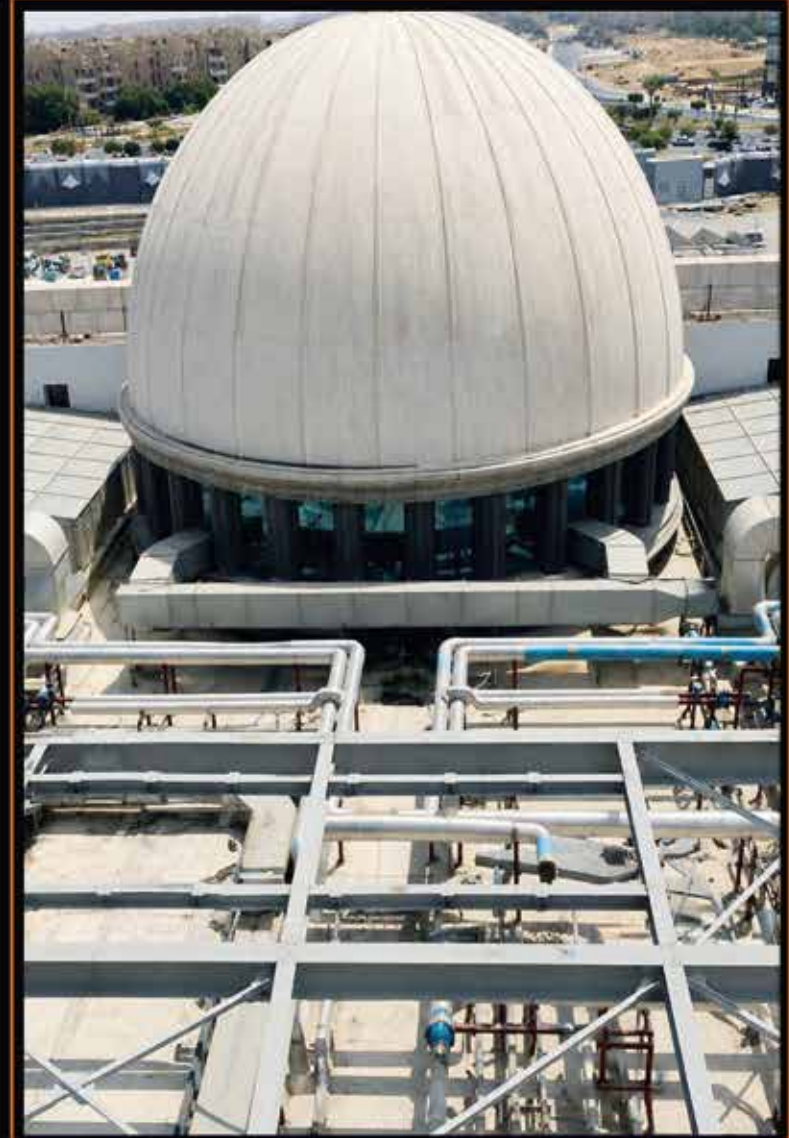
CLIENT

Egyptian armed forces
engineering authority



CONSULTANT

CES consulting,
engineering Centre



Final product stores cladding



EPP-Egyptian company for propylene and polypropylene



SCOPE OF WORK

Sheeting Shop Drawings, Supply And Erection of Steel Sheeting.



CLIENT
EPP



CONSULTANT
EPP engineering
department



EGYPTIAN PROPYLENE
& POLYPROPYLENE



MAJESTY

DESIGN & BUILDING CONSTRUCTION



Green Organic Foods



Construction of green organic factory



SCOPE OF WORK

Design According To AISC (american institute of steel construction), Shop Drawings, Fabrication, Sand blasting, Epoxy paintings And Erection of Steel Structural System.



CLIENT

Green organic -
Prof.Dr.Eng. Emad Etman



CONSULTANT

Green organic
engineering department



MAJESTY

STEEL & REINFORCEMENT CONSTRUCTION



BRT-West Mall



Fabrication Of Steel Structure of west mall of bus rapid transit at the intersection of the ring road with the Suez road in cairo



AREA

AREA 3300m²



TONNAGE

3500 tons



SCOPE OF WORK

Shop Drawings and Fabrication of Steel Structure According to Project specification and AWS standards.



CLIENT

Ministry of Transportation



CONSULTANT

Dr.Fouad Farahat



AlShal Centre



Steel Shed of alshal shed designed and fabricated with system as space truss system

SCOPE OF WORK



Design According To AISC (american institute of steel construction), Shop Drawings, Fabrication And Erection of Steel Shed with system as space truss system that gives an elegant architectural look similar to space truss With significant difference in actual cost which increases the value engineering of the project.



TONNAGE

This project is an elegant architectural cover and cannot be measured by weight.



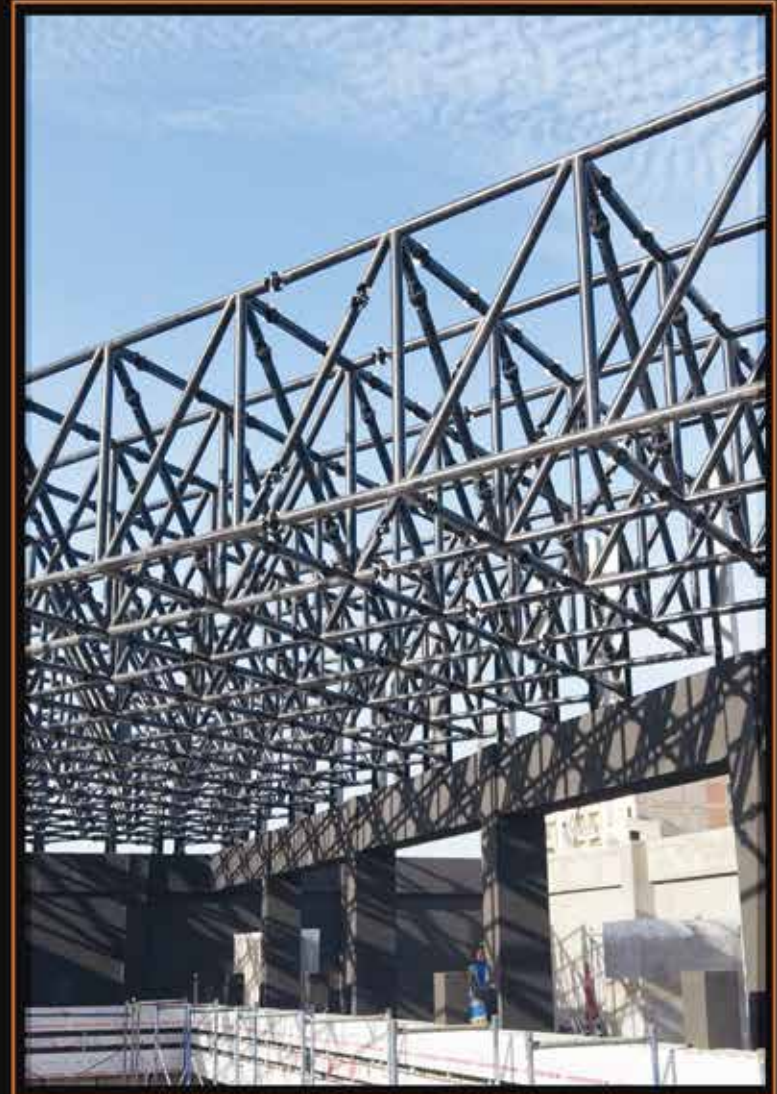
Client

Alshal centre



MAJESTY

TRADING & PLUMBING CONSTRUCTION



Roles & Responsibility



Project Manager



QC & QA Manager



Production Manager



Fabrication Inspector



Construction Manager



Site Engineers



Roles & Responsibility



Project Manager

- 01** Overall execution and administration of the project as per contract requirements, specifications and the PQP
- 02** Liaise with the Head (Quality & HSE) for preparation and updating of PQP.
- 03** Directly control the Site Engineers and Supervisors.
- 04** He is responsible to ensure that all the correct procedures are followed and all necessary permits for the works are obtained in advance



QA/QC Manager

- 01** Responsible for the monitoring and implementing of quality related matters and ensure the works are being executed with the approved Project Quality Plan and requirements of the Contract Documents approved method statement and ITPs.



MAJESTY

STEEL & PLATE WORK CONSTRUCTION

Roles & Responsibility



Construction Manager



Assess manpower, equipment or other resources required to ensure timely completion of the project.



Monitor availability of all materials as per schedule.



Inform the Project Leader for any non availability of materials to take proper action.



Carry out receiving inspection in coordination with the QA/QC Engineer.



Ensure that the drawings and documents are up to date and the latest drawing is available and is being utilized in the project site works.



Fill-up the check-sheet and submit the necessary IR to the QA/QC function when the work is ready for inspection.



MAJESTY

STEEL & PLATE WORK CONSTRUCTION

Health & Safety



Safety is at the core of Majesty's operation.



Majesty's advantage relies on its highly specialized team, the company therefore attaches the utmost importance to the health and safety of every individual.



MAJESTY

STEEL & PLATE WORK CONSTRUCTION



MAJESTY

STEEL & PLATE WORK CONSTRUCTION

SECTION 16

WELDING BOOK & CERTIFICATES

We maintain highest quality standards with approved welding procedures and certified by international bodies.





Welder Performance Qualification (WPQ)

WELDER Name: Ahmed Hiba Abd Elslam
 WELDER Stamp No: MAJ-5003
 WPS Reference: MAJ-WPS-001
 Date: Oct-25



TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding variables (QW-350)	Actual values	Range of qualification
Process	SMW	SMW
Type	Manual	Manual
Transfer mode	NA	NA
GTAW Current/polarity	NA	NA
Base metal P or S or no (material specification) (QW-425)	S235JR	P No. 1 To P No. 1
Filler metal Specification (SFA)	SFA 5.1	
Filler metal Classification	E 7018	Up to F No. 4
P No. (QW-425)	8	
Backing (metal, weld metal, double welded)	Without backing (With Gouging)	With Backing/Gouging
Fillet type (QW-426, metal, weld metal, or backing) (QW-426)	NA	NA
Deposit weld metal thickness (E) (QW-427)	15 mm	3mm-Unlimited
Position (QW-428)	2G	F, V
Pipe outside diameter (QW-429)	NA	≥ 24" outside dia
Welding progression	UP	UP
Consumable insert	NA	NA
Gouge/Flare type	NA	NA
Shield gas backing	NA	NA

VISUAL INSPECTION (QW-302.4)

Acceptable: YES ☒ NO ☐

GUIDED BEND TEST RESULTS (QW-402) NA

Sample	Type	Result	Inspected by
			Organization
			Date

FILET TEST RESULTS (QW-100) NA

Fracture test	Marketch (QW-104)
Fillet size	Concavity/Convexity
Inspected by	Organization
Report no.	Date

ULTRASONIC TEST RESULTS (QW-101)

Ser	Report no.	Inspected by	Level	Result	Date	Remarks
1	MAJ-JUT-011	Rada Gomaa	8	AC		

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of ASME IX.

Prepared by: Signature Date
 Reviewed by: Signature Date



Welder Performance Qualification (WPQ)

WELDER Name: Ali Hassan Abdulh Abdel Salam
 WELDER Stamp No: MAJ-5003
 WPS Reference: MAJ-WPS-001
 Date: Oct-25



TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding variables (QW-350)	Actual values	Range of qualification
Process	SMW	SMW
Type	Manual	Manual
Transfer mode	NA	NA
GTAW Current/polarity	NA	NA
Base metal P or S or no (material specification) (QW-425)	S235JR	P No. 1 To P No. 1
Filler metal Specification (SFA)	SFA 5.1	
Filler metal Classification	E 7018	Up to F No. 4
P No. (QW-425)	8	
Backing (metal, weld metal, double welded)	Without backing (With Gouging)	With Backing/Gouging
Fillet type (QW-426, metal, weld metal, or backing) (QW-426)	NA	NA
Deposit weld metal thickness (E) (QW-427)	15 mm	3mm-Unlimited
Position (QW-428)	2G	F, V
Pipe outside diameter (QW-429)	NA	≥ 24" outside dia
Welding progression	UP	UP
Consumable insert	NA	NA
Gouge/Flare type	NA	NA
Shield gas backing	NA	NA

VISUAL INSPECTION (QW-302.4)

Acceptable: YES ☒ NO ☐

GUIDED BEND TEST RESULTS (QW-402) NA

Sample	Type	Result	Inspected by
			Organization
			Date

FILET TEST RESULTS (QW-100) NA

Fracture test	Marketch (QW-104)
Fillet size	Concavity/Convexity
Inspected by	Organization
Report no.	Date

ULTRASONIC TEST RESULTS (QW-101)

Ser	Report no.	Inspected by	Level	Result	Date	Remarks
1	MAJ-JUT-011	Rada Gomaa	8	AC		

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of ASME IX.

Prepared by: Signature Date
 Reviewed by: Signature Date



Welder Performance Qualification (WPQ)

WELDER Name: Sameh Ahmed Fouad Ibrahim Abdel Goward
 WELDER Stamp No: MAJ-5003
 WPS Reference: MAJ-WPS-001
 Date: Oct-25



TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding variables (QW-350)	Actual values	Range of qualification
Process	SMW	SMW
Type	Manual	Manual
Transfer mode	NA	NA
GTAW Current/polarity	NA	NA
Base metal P or S or no (material specification) (QW-425)	S235JR	P No. 1 To P No. 1
Filler metal Specification (SFA)	SFA 5.1	
Filler metal Classification	E 7018	Up to F No. 4
P No. (QW-425)	8	
Backing (metal, weld metal, double welded)	Without backing (With Gouging)	With Backing/Gouging
Fillet type (QW-426, metal, weld metal, or backing) (QW-426)	NA	NA
Deposit weld metal thickness (E) (QW-427)	15 mm	3mm-Unlimited
Position (QW-428)	2G	F, V
Pipe outside diameter (QW-429)	NA	≥ 24" outside dia
Welding progression	UP	UP
Consumable insert	NA	NA
Gouge/Flare type	NA	NA
Shield gas backing	NA	NA

VISUAL INSPECTION (QW-302.4)

Acceptable: YES ☒ NO ☐

GUIDED BEND TEST RESULTS (QW-402) NA

Sample	Type	Result	Inspected by
			Organization
			Date

FILET TEST RESULTS (QW-100) NA

Fracture test	Marketch (QW-104)
Fillet size	Concavity/Convexity
Inspected by	Organization
Report no.	Date

ULTRASONIC TEST RESULTS (QW-101)

Ser	Report no.	Inspected by	Level	Result	Date	Remarks
1	MAJ-JUT-011	Rada Gomaa	8	AC		

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of ASME IX.

Prepared by: Signature Date
 Reviewed by: Signature Date

  		Form No. QCC-005 PQR No. MAJ-PQR-001 Page No. 1 Date 21-Oct-25
PROCEDURE QUALIFICATION RECORD (PQR)		Quality Control Department
PQR No.: MAJ-PQR-001		
Weld Layer(s)	Process	Filler Metal
Second Side 1 (Root)	SMAW	E7018 3.6mm
Second Side 2 (Hot)	SMAW	E7018 3.6mm
Second Side 3 (FW)	SMAW	E7018 3.25mm
Second Side 4 (FW)	SMAW	E7018 3.25mm
Second Side 5 (Cap)	SMAW	E7018 3.25mm
Second Side 6 (Cap)	SMAW	E7018 3.25mm
Second Side 7 (Cap)	SMAW	E7018 3.25mm
TENSILE TEST (QW-150)		
Specimen No.	Width,mm	Thickness,mm
1	15.64	15.88
2	15.89	16.7
GUIDED BEND TESTS (QW-160)		
Type Of Test	Result	
Side Bend 1	Acceptable	
Side Bend 2	Acceptable	
Side Bend 3	Acceptable	
Side Bend 4	Acceptable	
Macro etching		
 The macro-etched cross-section of the weld joint reveals no visible cracks, porosity or slag inclusions which confirm sound quality of the weld joint		
Result: Satisfactory Yes ☒ No ☐ Penetration in to Parent Metal Yes ☒ No ☐		
Macro Results: N/A		
OTHER TESTS		
Type of Test	N/A	
Support of Analysis	N/A	
Tests conducted by: Central Metallurgical Research & Development Institute (CMRDI)		
Laboratory test No.: MAJ-PQR-001		
We certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of ASME Code Sec.IX and were found to be within the specification.		
Prepared by	Approved by	Approved by
Welding Engineer	QA/QC Manager	
Name		
Signature		
Date		

		PROCEDURE QUALIFICATION RECORD (PQR)		Form No. QCC-005 PQR No. MAJ-PQR-001 Page No. 1 Date 21-Oct-25
Procedure Qualification No.: MAJ-PQR-001		Quality Control Department		
WELDING PROCESS: SMAW		Type: ☒ Manual ☐ Semi-Auto ☐ Auto ☐ Machine		
Code: ASME IX (QW22)				
JOINTS (QW-403)		 $h1 = h2 = (t - c) / 2$ $b = 2, c = 2$		
Backing: ☒ Without				
Type: ☐ Base metal ☒ Weld metal				
Retainers: ☐ Yes ☒ No				
BASE METAL (S) (QW-405)		POST WELD HEAT TREATMENT (QW-407)		
Material Spec. type or Grade: 323JL8 To Material Spec. type or Grade: 323JL8 P.N. 1: Gr No. 1 To P.N. 1: Gr No. 1 Thickness of Test Coupon: 15 mm Diameter of Test Coupon: 16 mm Other: (PLATE)		Type: N/A Temperature: N/A Time: N/A Other: N/A		
FILLER METAL (S) (QW-404)		GAS (QW-406)		
Process: SMAW Root Metal Analysis & No.: 1 Size Of Filler Metal: 3.6, 3.25 Filler Metal P.N.: 4 GMA Specification: BFA 5.1 AWS Classification: E7018 Trade Name: APAL 10 Product Name: 018 Deposited Metal Thickness: 15 mm with or without base metal: N/A Flux type class: N/A Alloy Name: N/A Alloy Elements: N/A Flux Type: N/A Supplemental: N/A Recycled flux: N/A Others: N/A		Gas: ☒ Shielding Filler metal (mm): N/A Flux Rate (mm): N/A Shielding: N/A Backing: N/A Trailing: N/A		
POSITION (QW-405)		TECHNIQUE (QW-410)		
Position Of Groove: 3G Weld Progression (Back/Forehand): Up hill Others: N/A		Travel Speed: 10 mm/min Shielding or Vapour Shield: N/A Oscillation: N/A Multistroke or Single stroke per Bead: N/A Single Or Multiple Electrode: N/A Chamber Welding: N/A Use of thermal processes: N/A Groove gas size: N/A Initial & Intergroove Chipping: N/A		
PREHEAT (QW-406)		ELECTRICAL CHARACTERISTICS (QW-408)		
Preheat Temperature: 20°C Interpass Temperature: 180°C Others: N/A		Tensile Electrode size and type: N/A Size as per Appendix 1		
Tests conducted by: Central Metallurgical Research & Development Institute (CMRDI)		Laboratory test No.: MAJ-PQR-001		
We certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of ASME Code Sec.IX and were found to be within the specification.				
Prepared by Welding Engineer		Approved by QA/QC Manager		Approved by
Name		Name		Name
Signature		Signature		Signature
Date		Date		Date

WELDING PROCEDURE SPECIFICATION (WPS)		Form No.	CQC-006
		PQR No.	MAL-PQR-001
		Page No.	2
		Date	20-Oct-23
Quality Control Department			
WELDING PROCESS: SMAW		TYPE: ☒ Manual ☐ Semi-Auto. ☐ Auto. ☐ Machine	
CDI-WPS-M-005			
fully supporting welded			

Prepared By	Reviewed By	Review /Approval
Welding Engineer	QA/QC Manager	Client / TPI
Position	Position	Position
Name	Name	Name
Signature	Signature	Signature

Majesty Resport Mech.-Macro 22-1-025



Central Metallurgical Research and Development Institutes (CMRDI)
Manufacturing Technology Institute
Welding Technology and NDT Department

Results of Tensile, Guided Side Bend, Hardness, and Macrostructural Examinations of SMAW-Welded EN10025 S235JR Steel Plate (16 mm Thickness) Using E7018 Electrode

Prepared by
Mohamed M. Ghanem
Prof. Dr. Mohamed M. Ghanem
Principal Investigator

Approved By
Ibrahim Ghayad
Prof. Dr. Ibrahim Ghayad
President of CMRDI



Submitted to
Majesty for Construction Company

October 21, 2025

مركز بحوث وتطوير الفولاذ
المكتب الفني

(Page 1 of 6)



Central Metallurgical Research and Development Institutes (CMRDI)
Manufacturing Technology Institute
Welding Technology and NDT Department

1. Introduction

An EN10025 S235JR steel plate sample, approximately 16 mm thick, was received by CMRDI from Majesty Construction Company. The plate was welded using the Shielded Metal Arc Welding (SMAW) process with a 3 mm ϕ E7018 electrode. The sample was submitted for mechanical testing, including tensile testing, guided side bend testing, hardness measurements, and macro-etch examination. The as-received sample is shown in Figure 1.



Figure 1: Close up views of the as-received welded sample are showing both front and back views of the joint.

2. Experimental Work

Two tensile test specimens and four guided side bend test coupons were cut and machined from the as-received sample. Additionally, specimens were sectioned, ground, and polished with emery papers, then etched with a 5% Nital solution for macrostructural and hardness examinations. The tensile and guided side bend tests were performed using a SHIMADZU UH-F1000KN universal testing machine. Hardness measurements were conducted using a digital Vickers hardness tester under a 2 kg. load.

3. Results

3.1 Tensile and Guided Side Bend Test Results

Close-up views of the prepared test specimens after the tensile and guided side bend tests are shown in Figures 2 and 3, respectively. The tensile test results for the two welded specimens are summarized in Table 1. The welded joint exhibited an

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average ultimate tensile strength of approximately 405 MPa. Both specimens fractured within the base metal, displaying a ductile fracture mode, which confirms the satisfactory quality of the weld joints. The results of the guided side bend tests for the four specimens showed no cracks exceeding 3 mm and no evidence of porosity or slag inclusions, as illustrated in Figure 3, further confirming the acceptable quality of the welded joints.



Figure 2: Close up views of the two tensile tested samples reveal that fracture occurred in base metal away from weld zone which confirming good quality of the welded joint.



Figure 3: Close up views of the Four guided side bend test samples reveal no cracks more than 3mm existed which is accepted according to ASME IX code.

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Majesty Resport Mech.-Macro 22-1-025



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Table 1: Results of tensile test

Specimen No	Thickness, mm	Width, mm	Area, mm ²	Ultimate tensile strength, MPa	Fracture location	Remarks
1	15.890	19.440	308.902	403	Base metal	accepted
2	15.700	19.500	305.208	407	Base metal	accepted

3.2 Hardness Test Results

The results of the Vickers hardness test for the welded specimens are presented in Table 2. The average hardness values for the base metal (BM), heat-affected zone (HAZ), and weld zone (WZ) are 148 HV, 166 HV, and 202 HV, respectively.

Table 2: Results of Vickers hardness test, Hv

Specimen No	Base metal, Hv	HAZ, Hv	Weld zone, Hv	Remarks
1	148	166	202	

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3.3 Macro etching

The macro-etched cross-section of the weld joint is shown in Figure 4. No visible cracks, porosity or slag inclusions are observed in weld zone.

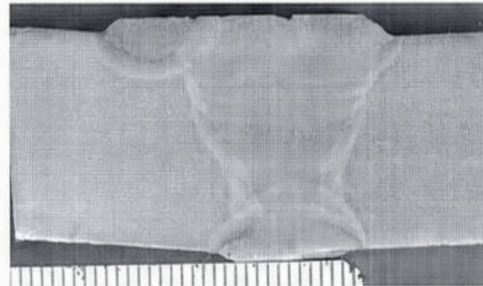


Figure 4: The macro-etched cross-section of the weld joint reveals no visible cracks, porosity or slag inclusions which confirm sound quality of the weld joint

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4 Conclusions

Based on results of this study, the following conclusions could be submitted:

1. Tensile and guided side bend tests, along with hardness measurements and macro-etch examinations, were conducted on the received SMAW-welded EN10025 S235JR steel plate with a thickness of 16 mm.
2. Average ultimate tensile strength of the welded joint is 405 MPa and fracture in the tested specimens occurred in the base metal, indicating acceptable weld joint.
3. Average measured hardness values for the base metal (BM), heat-affected zone (HAZ), and weld zone (WZ) are 148 HV, 166 HV, and 202 HV, respectively.
4. No visible cracks, porosity or slag inclusions were observed in the guided side bend or macro-etched test specimens.

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Thank You

We appreciate your time and consideration.



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