# **COURSE OVERVIEW ME0702** RTRP Piping System (GRE, GRV or GRP) Manufacture, Design, Installation & Inspection

#### **Course Title**

RTRP Piping System (GRE, GRV or GRP) Manufacture, Design, Installation and Inspection

#### **Course Date/Venue**

September 08-12, 2024/Meeting Plus 8, City Centre Rotana, Doha, Qatar

#### Course Reference ME0702

# **Course Duration/Credits**

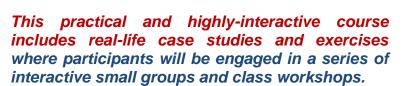
Five days/3.0 CEUs/30 PDHs











This course is designed to provide participants with a detailed and up-to-date overview of RTRP Piping System (GRE, GRV or GRP) Manufacture, Design, Installation and Inspection. It covers the applications and advantages of GRE, GRV and GRP; the composition of RTRP materials including properties of mechanical and thermal; the standards and specifications, manufacturing process, design principles and safety and environmental considerations; the pressure rating and temperature limitations; and the design for different fluid types.

Further, the course will also discuss the structural analysis covering finite element analysis (FEA) and failure modes and prevention; the support and anchoring systems, hydraulic design, and stress and fatigue analysis; the pre-installation planning, jointing installation techniques and techniques; inspection and testing during installation, repairs, modifications and safety protocols during installation: and the visual and dimensional inspection, advanced NDT methods, hydrostatic and pneumatic testing and long-term performance testing.

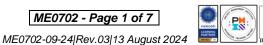


















During this interactive course, participants will learn the QA/QC plans and documentation, traceability and record-keeping, defect identification and defect analysis; the maintenance plans and frequency and methods of inspection; preparing regulatory and compliance audits; the advanced materials and technologies and integrating RTRP with other systems; the eco-friendly practices in RTRP manufacturing; the sustainability in design and installation; and the emerging technologies and innovations in RTRP piping systems.

#### **Course Objectives**

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a comprehensive knowledge on RTRP piping system (GRE, GRV or GRP) manufacture, design, installation and inspection
- Discuss the applications and advantages of GRE, GRV and GRP
- Identify the composition of RTRP materials including the properties of mechanical and thermal
- Recognize the standards and specifications, manufacturing process, design principles and safety and environmental considerations
- Discuss the pressure rating and temperature limitations and the design for different fluid types
- Carryout structural analysis covering finite element analysis (FEA) and failure modes and prevention
- Recognize support and anchoring systems as well as illustrate hydraulic design, and stress and fatigue analysis
- Apply pre-installation planning, jointing techniques and installation techniques
- Employ inspection and testing during installation, field repairs, modifications and safety protocols during installation
- Carryout visual and dimensional inspection, advanced NDT methods, hydrostatic and pneumatic testing and long-term performance testing
- Apply QA/QC plans and documentation, traceability and record-keeping, defect identification and defect analysis
- Develop maintenance plans and review the frequency and methods of inspection
- Prepare regulatory and compliance audits, discuss advanced materials and technologies and integrate RTRP with other systems
- Explain the eco-friendly practices in RTRP manufacturing, sustainability in design and installation and emerging technologies and innovations in RTRP piping systems

#### Exclusive Smart Training Kit - H-STK®



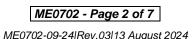
Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK**®). The **H-STK**® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.















#### **Who Should Attend**

This course provides an overview of all significant aspects and considerations of piping system (GRE, GRV or GRP) manufacture, design, installation and inspection for facility managers, water resource managers, civil engineers, environmental engineers, municipal engineers, plumbing contractors and regulatory compliance officers.

#### **Course Certificate(s)**

Internationally recognized certificates will be issued to all participants of the course completed a minimum of 80% of the total tuition hours.

#### **Certificate Accreditations**

Certificates are accredited by the following international accreditation organizations:-

• ACCREDITED TO THE PROVIDER

The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.



#### British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

#### **Course Fee**

**US\$ 6,000** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

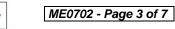
















#### Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Steve Magalios, CEng, PGDip (on-going), MSc, BSc, is a Senior Mechanical & Maintenance Engineer with almost 40 years of extensive Onshore/Offshore experience in the Oil & Gas, Construction, Refinery and Petrochemical industries. His expertise widely covers in the areas of RTRP Piping Systems, Hydraulic Design, RTRP Pipe Repair & Maintenance, Preventive & Predictive Maintenance, Reliability Centered Maintenance, Applied Maintenance Management, Reliability Modelling, Reliability Techniques, Reliability Design Techniques, Advanced Root Causes Analysis

& Techniques, Reliability Management, Pipeline Hot Tapping, Hot Tapping Equipment, Hot Tapping Operation, Boiler Inspection & Maintenance, Boiler Systems, Boiler instrumentation & Controls, Boiler Start-up & Shutdown, Boiler Operation & Steam System Management, Pipe Cuttings, Flange Bolt Tightening Sequence, Hydro Testing, Pump Technology, Fundamentals of Pumps, Pump Selection & Installation, Centrifugal Pumps & Troubleshooting, Reciprocating & Centrifugal Compressors, Screw Compressor, Compressor Control & Protection, Gas & Steam Turbines, Turbine Operations, Gas Turbine Technology, Valves, Process Control Valves, Bearings & Lubrication, Advanced Machinery Dynamics, Rubber Compounding, Elastomers, Thermoplastic, Industrial Rubber Products, Manufacturing Systems, Heat Transfer, Vulcanization Methods, Welding Engineering, Fabrication & Inspection, Welding Techniques, Practical Welding Technology, Welding Inspection, Welding & Machine Shop, Welding & Machining, Welding Types & Applications, Welding Safety, Welding Defects Analysis, TIG & Arc Welding, Shielded Metal Arc Welding, Gas Tungsten & Gas Metal Arc Welding, Welding Procedure Specifications & Qualifications (WPS & WPQ), Aluminium Welding, Safe Welding, International Welding Codes, Welding Procedure Specifications, Welding & Brazing, Welder Performance Qualification, Pipeline Operation & Maintenance, Pipeline Systems, Pipeline Design & Construction, Pipeline Repair Methods, Pipeline Engineering, Pipeline Integrity Management System (PIMS). Currently, he is the Chartered Professional Surveyor Engineer & Urban-Regional Planner wherein he is deeply involved in providing exact data, measurements and determining properly boundaries. He is also responsible in preparing and maintaining sketches, maps, reports and legal description of surveys.

During his career, Mr. Magalios has gained his expertise and thorough practical experience through challenging positions such as a Project Site Construction Manager, Supervision Head/Construction Manager, Construction Site Manager, Project Manager, Deputy PMS Manager, Head of the Public Project Inspection Field Team, Technical Consultant, Senior Consultant, Consultant/Lecturer, Construction Team Leader, Lead Pipeline Engineer, Project Construction Lead Supervising Engineer, Lead Site Engineer, Senior Site Engineer Lead Engineer, Senior Site Engineer, Mechanical Engineer, R.O.W. Coordinator, Site Representative, Supervision Head, Contractor, Client Site Representative and Acting Client Site Representative for international Companies such as the Public Gas Corporation, Penspen International Limited, Eptista Servicios de Ingeneria S.I., J/V ILF Pantec TH. Papaioannou & Co. – Emenergy Engineering, J/V Karaylannis S.A. – Intracom Constructions S.A., Ergaz Ltd., Alkyonis 7, Palaeo Faliro, Piraeus, Elpet Valkaniki S.A., Asprofos S.A., J/V Depa S.A. just to name a few.

Mr. Magalios is a Registered Chartered Engineer and has Master and Bachelor degrees in Surveying Engineering from the University of New Brunswick, Canada and the National Technical University of Athens, Greece, respectively. Further, he is currently enrolled for Postgraduate in Quality Assurance from the Hellenic Open University, Greece. He has further obtained a Level 4B Certificates in Project Management from the National & Kapodistrian University of Athens, Greece and Environmental Auditing from the Environmental Auditors Registration Association (EARA). Moreover, he is a Certified Instructor/Trainer, a Chartered Engineer of Technical Chamber of Greece and has delivered numerous trainings, workshops, seminars, courses and conferences internationally.

















#### Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

## **Training Methodology**

All our Courses are including Hands-on Practical Sessions using equipment, Stateof-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures

20% Practical Workshops & Work Presentations

30% Hands-on Practical Exercises & Case Studies

20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

#### **Course Program**

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Sunday, 08th of September 2024 Day 1

0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 - 0900	Introduction to RTRP Piping Systems
0030 - 0300	Overview of GRE, GRV, & GRP • Applications & Advantages
0900 - 0930	Materials & Properties
0900 - 0930	Composition of RTRP Materials • Mechanical & Thermal Properties
0930 - 0945	Break
	Standards & Specifications
0945 - 1100	Key Industry Standards (e.g., ASTM, ISO) • Compliance & Certification
	Requirements
	Manufacturing Process
1100 – 1230	Filament Winding & Hand Lay-Up Techniques • Quality Control in
	Manufacturing
1230 - 1245	Break
1245 – 1330	Design Principles
1243 - 1330	Basic Design Considerations • Load & Stress Analysis
	Safety & Environmental Considerations
1330 - 1420	Handling & Storage of RTRP Materials • Environmental Impact & Safety
	Measures
1420 – 1430	Recap
1430	Lunch & End of Day One

Monday, 09th of September 2024 Day 2

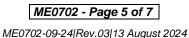
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Ī	0730 - 0830	Detailed Design Criteria
		Pressure Rating & Temperature Limitations • Design for Different Fluid Types
	0830 - 0930	Structural Analysis
		Finite Element Analysis (FEA) • Failure Modes & Prevention
ĺ	0930 - 0945	Break



















	Support & Anchoring Systems
0945 - 1100	Types of Supports & their Design • Thermal Expansion & Contraction
	Considerations
1100 – 1230	Hydraulic Design
1100 - 1230	Flow Dynamics & Friction Loss Calculations • Designing for Optimal Flow
1230 - 1245	Break
1245 – 1330	Stress & Fatigue Analysis
1243 - 1330	Long-Term Performance Considerations • Fatigue Life Prediction
1330 – 1420	Case Studies & Design Examples
1550 - 1420	Real-World Examples & Problem-Solving
1420 - 1430	Recap
1430	Lunch & End of Day Two

Tuesday, 10th of September 2024

Day 3.	ruesuay, ro or september 2024
0730 - 0830	Pre-Installation Planning
0730 - 0630	Site Preparation & Logistics • Tools & Equipment Required
0830 - 0930	Jointing Techniques
0030 - 0930	Types of Joints & their Applications • Bonding, Lamination, & Mechanical Joints
0930 - 0945	Break
0045 1100	Installation Techniques
0945 – 1100	Step-by-Step Installation Process • Handling & Positioning of Pipes
	Inspection & Testing During Installation
1100 - 1230	Visual Inspection & Non-Destructive Testing (NDT) • Pressure Testing & Leak
	Detection
1230 - 1245	Break
1245 - 1330	Field Repairs & Modifications
1243 - 1330	Techniques for Field Repairs • Modifying Existing Installations
1330 - 1420	Safety Protocols During Installation
1550 - 1420	Personal Protective Equipment (PPE) • Hazard Identification & Mitigation
1420 - 1430	Recap
1430	Lunch & End of Day Three

Wednesday, 11th of September 2024 Day 4:

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0730 - 0830	Inspection Techniques Visual & Dimensional Inspection • Advanced NDT Methods (e.g., Ultrasonic, Radiographic)
0830 - 0930	Testing Methods Hydrostatic & Pneumatic Testing • Long-Term Performance Testing
0930 - 0945	Break
0945 – 1100	Quality Assurance Procedures         QA/QC Plans & Documentation • Traceability & Record-Keeping
1100 – 1230	Defect Identification & Analysis Common Defects & their Causes ● Methods for Defect Analysis
1230 – 1245	Break
1245 – 1330	Maintenance & Inspection Schedules Developing Maintenance Plans • Frequency & Methods of Inspection
1330 - 1420	Regulatory & Compliance Audits Preparing for Audits • Ensuring Ongoing Compliance
1420 – 1430	Recap
1430	Lunch & End of Day Four

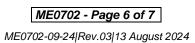




















Day 5	Thursday, 12 <sup>th</sup> of September 2024
0730 - 0830	Advanced Materials & Technologies
0730 = 0030	New Developments in RTRP Materials • Enhanced Manufacturing Techniques
0830 - 0930	Integration with Other Systems
0030 - 0930	Compatibility with other Piping Systems • Hybrid Systems & their Applications
0930 - 0945	Break
	Environmental & Sustainability Considerations
0945 - 1045	Eco-Friendly Practices in RTRP Manufacturing • Sustainability in Design &
	Installation
1045 - 1200	Case Studies & Lessons Learned
1043 - 1200	Analysis of Past Projects • Lessons from Failures & Successes
1200 – 1215	Break
	Future Trends in RTRP Piping Systems
1215 - 1345	Emerging Technologies & Innovations • Predictions for the Future of RTRP
	Systems
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

### **Practical Sessions**

This practical and highly-interactive course includes real-life case studies and exercises:-



# **Course Coordinator**

Jaryl Castillo, Tel: +974 4423 1327, Email: jaryl@haward.org











