

RTR specialist certification

Middle east

1. Introduction

RTR/GRP piping systems have many important advantages over steel piping, including corrosion resistance, long life-time, low maintenance, etc. During its life-time RTR/GRP piping seldom shows any failures. The failures which do occur are mostly in the commissioning phase. It is no surprise, then, that end-users and contractors seek to overcome this hurdle.

Failures can usually be attributed to the installers, particularly on account of a lack of proper knowledge regarding RTR/GRP procedures and a lack of skills and experience.

A group of end-users, pipe manufacturers and contractors decided to tackle this problem, and jointly with DNV drew up a competence profile for every RTR/GRP specialist working in the field.

The requirements set out in the competence profiles are demanding, but the overall aim is simple: a reduction of installation failures.

2. Example: inspector

The first Middle East inspector's training and exam for RTR/GRP pipe systems was recently conducted. The 15 candidates were all employees of a large Middle Eastern oil company with several years of general inspector's experience. The main focus was on high pressure threaded joints. The course, given by Mr. Shadab (Future Pipe Industries),

also covered laminated, flanged and adhesive bonded joints.

3. Course content

The course content was in compliance with the DNV requirements for Inspector of RTR/GRP pipe systems. The following topics were addressed in the course



"instruction"

- Safety, handling, transportation and storage procedures to be followed during installation.
- Basics of fiberglass pipe and connections, such as threaded, adhesively bonded (TB/TS) and lamination.
- Best techniques to be followed while assembling connections and the do's and don'ts of site installation and site hydrotesting.
- Understanding of executing recommendation's from pipe system design.
- The acceptance / rejection criteria (Quality Control) for pipe and fittings.
- Basic repair and corrective techniques, mainly for threaded line pipe.

4. Theoretical exam

The theoretical exam was administered under supervision of DNV. The available time was 60 minutes for open and multiple choice questions and 2.5 hours for a theoretical case.

5. Practical exam

The practical assessment took about 8 to 10 hours. The candidates had to make up a so-called threaded high pressure joint, exactly according to the FPI procedure. This joint was subsequently hydrotested at 3000 Psi (all joints proved leak-tight).

The second assignment was for each candidate to individually manage a crew (= the other candidates) for a real assembly of an 8" 30 ft length pipe. During the assessment many mistakes were made deliberately, while the candidates had to report their findings and devise solutions.



"full scale assembly"

Finally, the candidates had to examine 3 random samples with errors and to report their findings in writing. Complete in line with a welding inspector's exam.



"sample investigation by inspectors"

6. DNV Certification

DNV has drawn up competence profiles for professionals working on RTR/GRP pipe systems, in close cooperation with renowned stakeholders.

The DNV Certification programme contains the competence profiles for bonder, spoolbuilder, pipe fitter, supervisor and inspector.

6.1. Bonder

A Bonder is a skilled worker, specialised in jointing RTR/GRP pipes, whose competences are certified in respect of one or more different types of joints (e.g. laminated joints, adhesive joints, threaded joints, "O"-rings, locking keys etc.)

6.2. Spool builder

A spool builder is a certified bonder who is additionally certified to assemble the RTR/GRP

RTR specialist certification

Middle east

spools and fabricate RTR/GRP (mitered) Tee's and mitered Elbows

6.3. Pipe fitter

A Pipe fitter is certified to lay out, assemble, build, maintain and repair piping systems.

6.4. Supervisor

A certified supervisor monitors and carries responsibility for the execution of the work done by the bonders, spool builders and pipe fitters.

6.5. Inspector

A certified inspector independently monitors the installation of RTR/GRP piping systems. He controls and verifies that bonders, spool builders, pipefitters, supervisors and other personnel have performed in compliance with the job specifications..

7. Training

The candidates are trained by (local) training institutes to achieve the competence requirements, up to the desired certification level.

These institutes can be listed on the DNV website for RTR/GRP pipe systems. To accommodate potential clients searching for recognised training institutes, DNV can provide trainers and training institutes with "workshops for RTR/GRP-examination".



"adhesive bonded joint, Bondstrand/Amiantit"

8. Overall certification process

The certification schemes may require prior training qualifications as a condition for admission to or application for the examination phase.

During the examination phase, a certification candidate will have to demonstrate his/her knowledge, skills and performance in a theoretical and practical exam. The exam pieces will be tested according to specific DNV-criteria. More information about the personnel certification of RTR/GRP can be found on this page.

9. General test criteria for exam pieces

- All joints/connections have to pass a hydro test.
- Test spools must pass a hydro test, using a 2.5 times higher pressure than the design pressure for over one hour.
- For high-pressure joints, specific test protocols are available.

The performance of the tests is supervised by a DNV-authorized examiner, using control equipment compliant with DNV specifications.

RTR specialist certification

Middle east

10. Examination details

DNV enforces and monitors the quality and independence of all DNV-licensed examination organisations and authorised examiners.

The examinations are supervised by a DNV-authorized examiner using control equipment compliant with DNV specifications.

During the theoretical and practical exams, the DNV examination regulations apply.

10.1. For Bonder:

Theoretical test: (multiple-choice) questions.
Available time: 60 minutes.

Practical test: the candidate must produce a joint in accordance with the desired certification level and range.



“laminated joint, Bondstrand/Amiantit, SA”

10.2. For spool builder:

Theoretical test: (multiple-choice) questions.
Available time: 60 minutes.

Practical test: the candidate

- must produce a joint in accordance with the desired certification level and range, including making calculations based on manufacturing literature and listing the tools needed.

- must make a report about his own exam spool
- must make a report about a prepared exam spool.

10.3. For pipe fitter:

Theoretical test: (multiple-choice) questions and 1 extra case in addition to the examination for a spool builder

Practical test: the candidate must produce a joint in accordance with the desired certification level and range, including making calculations based on manufacturing literature and listing the tools needed. In addition, the candidate must calculate and perform a hydro test.

11. Examination and test facilities

DNV has licensed local independent examination organisations to organise certification exams and tests, and has authorised local examiners to supervise these examinations and tests. Although the exams and tests are strictly independent of any particular training institute, they can be efficiently organised and scheduled in cooperation with local training institutes.

12. Certification decision

All exam and test results will be assessed for each candidate by DNV, preceding the certification decision by the Manager Personnel Certification of DNV. Once a positive certification decision has been taken, a DNV Competence Certificate will be issued to the successful candidate.

RTR specialist certification

Middle east



“aftermath’s”

13. DNV Certificate of Competence

The DNV certificate of competence for RTR/GRP field specialists states the following essential information:

- Name, initials and picture of the certificate holder
- Date of certification and expiry date
- Place of the exam
- Any specific norms or classes
- Range of certification
- Diameter of the RTR/GRP pipe by test and certified diameter range
- Design pressure and certified range
- Manufacturer’s rules/specification if applicable
- Other information, if applicable
- DNV Certification rules

All certificates of competence for RTR/GRP field specialists have a validity period of two years. Every six months, both the certificate holders and the employer/contractor shall validate the work experience of the certificate holder within his certification range. At the end of the two-year validity period, the

certificate holder is required to take and pass the recertification exam, similar to the conditions of the initial exam.

All certificate holders are expected to perform in compliance with their certified competences and certification conditions. Complaints received by DNV concerning incompetence on the part of the certificate holder may lead to sanctions for the certificate holder.

The DNV certification committee for GRP, comprising renowned stakeholders from across the world, advises DNV on the maintenance of the competence profiles and certification rules, taking into account market developments, technological developments, products and assembly developments, and their own valuable experiences. The DNV examination committee for RTR/GRP will approve and monitor the examination methods and evaluate the validity of the exams through statistical analyses.

How to request for certification (Middle East)

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note :

GRP=Glass Reinforced Plastic
RTR=Reinforced Thermohard Resin
GRP=RTR

DET NORSKE VERITAS

CERTIFICATE OF COMPETENCE

CERT-12345

DNV Certification B.V. certifies that

Name of the certificate holder : D.N.V. Nederland
 Date of birth : 22/11/1955
 Place of birth : The Hague
 Country : The Netherlands



Has fulfilled the conditions to be certified as :

INSPECTOR RTR Pipe installations

Competence scheme: DNV Certification program for GRP/RTR Pipe Installations & Inspections

The qualified joint types, involved procedures (see page 2), diameters and pressure ranges of the certificate holder are:

Specialized in		
Joint type	Diameter range	Max Pressure
Threaded	25,800 mm	1500 Pst
Yellow Box		

Date of examination : 29 January -1 February 2012
 Place of examination : Dammam
 Country of examination : Kingdom of Saudi Arabia
 Examination organization : DNV / Real Vision Technical Services (SA)

This Certificate of Competence is valid only after the certificate holder has signed, as per examination date until 1 February 2014. The validity conditions of this Certificate of Competence are specified in the relevant standard, endorsed by the DNV Certification Committee of GRP pipes Attachment D1. See page 3 for the information statement by employer and prolongation by DNV Certification B.V. Additional information can also be stated in the column "supplementary remarks".

Thus agreed and signed,

@@@@@@

The certificate holder:

BV

Signature

Barendrecht,

For DNV Certification

Signature

DNV Certification BV is registered at the Dutch College Bescherming Persoonsgegevens ("Protection of personal data") by number n1012137. DNV Certification B.V., P.O. Box 6999, 1007 AN Rotterdam, The Netherlands. Tel +31(0)10 2922810 Fax +31(0)10 4979622, E-mail: info@dnv.com