



Atmoco 28/27 October 2010

GRP pipe Field specialists

Personnel certification

Aart den Boer
06 October 2010

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MANAGING RISK 

GRP pipe lines: Quality control by installation on site



*GRP Field specialists:
"Qualified professions?"*



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MANAGING RISK 

Also for GRP pipes: *the QA chain is as strong as the weakest part*

- Product certification
 - GRP/GRE pipe, type approvals ✓ ISO 14629 + .., 1000 hr- 2.5 times design pressure
 - Other like discussed.
 - Joint approvals ✓ ISO 14629 + .., 1000 hr- 2.5 times design pressure
 - Description of Joints, Laminating process etc. : approvable and approved
- Management certification
 - ISO 9001 + .., ✓
- Process certification ✓ ?
- Engineering, subcontracting ✓ ? The entire process ?
- Personnel certification
 - They are well trained and skilled
 - Profession ?
 - According to ? rules
 - Checked by ? Independency, actuality ?

All involved in the entire process, like to perform predictable quality

Goals



Make:

- Quality control GRP pipes **equally** to Steel pipes.
- Reduce problems during and after installation on site
- Quality predictable and reproducible (*Don't go for the lucky ones*)

Focus on:

- Independent certified GRP pipe field specialists

▪ **Personnel certification according to:**

- Global accepted skills and abilities for the job (competence profiles) related to ISO 14692, part IV
- Sanctions by not fulfilling certification/ QA rules
- By independent and global certification body

Start up Certification program GRP pipe Field specialists

- **ISO 14629 part 4**
- **DNV Certification committee for GRP pipe field specialists**
 - Global stakeholders: Aramco, PDO etc., pipe manufacturers, contractors, consultants etc. (15 major global stakeholders active involved)

- Tasks Certification committee:**
- Knowledge for GRP Field specialists
 - Skills for GRP Field specialists
 - Certification conditions
 - Actualizing certification schemes



- **GRP pipe Field specialist: professions**
 - Bonder/ Jointer/ Laminator
 - Spool builder A
 - Spool builder B
 - Pipe fitter
 - Supervisor
 - Inspector



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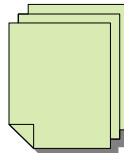


Start up Certification program GRP pipe Field specialists

- **DNV Examination committee**
 - Experienced GRP specialists
- They Examination committee details for
 - Theoretical exam questions
 - Practical exam tasks
 - Exam documents to be used by the exam
 - Evaluation of (pilot) exams
 - Evaluation of test results
 - Preparation documents for exams



- **Testing / assessment procedures**



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Pilot assessments preparation

- Qualified Joint procedures

- Manufacturer specific
- Independent qualification



- Qualified test material

- Manufacturer specific
- Independent qualification



- Trained skilled people

- Trained to be qualified
- Independent tested and certified (Training done by other)



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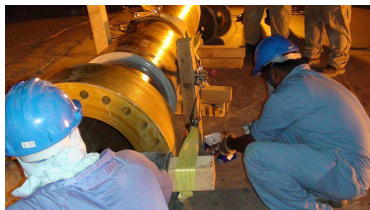
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Pilot assessments

- The exams and tests

Pressure test of 2,5 times design pressure over one hour



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The pilot results.

We discovered:

Joint procedures

- Have to be adjust: *sufficient, well fitted, ?*
 - *make it measurable*
 - *make it reproducible*
- Approved and certified prior to the assessments



Test material (pipes, joints)

- Approved and certified prior to the assessments

Preparation of test equipment

- To be inspected prior to assessment

DNV assessment documents

- To be optimized/ adjust to local conditions and manufacturer specific procedures

Focus = extended to:

- Certification GRP Field specialists to... Qualification and optimizing of all procedures involved.
- Change of attitude for all people involved

The assessment procedures

Today based on:

- Pre qualified joint procedures pipes and materials
- Standardized assessment procedures and documents
- Assessment separated from training
 - Training based on competence profiles (Can be checked prior to the training/ assessments)
- Independent DNV examiner
- Certificate with validity of two year (procedure according to metal welders)



First common results:

- Cooperation between end users, manufacturers, contractors and consultancies.
- Improvements of *quality* and *standardization* in many subjects of GRP pipe installations.
- Improve GRP pipes resistance to mechanical impacts

Results of the common Certification activities

First common results:

- Cooperation between end users, manufacturers, contractors and consultancies.
- Improvements of **quality** and **standardization** in many subjects of GRP pipe installations.
- Improve GRP pipes resistance to mechanical impacts

Next goals:

- Create a common quality standard checked by Global Certification institutes
- Create sanctions for guarantees connected to the approved manufacturers contractors
- Create a quality chain for all involved. (including sanctions)

Finally:

- Predictable quality, recognized by end users.

GRP Field specialists

First results, Certification GRP Field specialists



- It's more as just using a shaver, sanding paper and laminating.
- A training of two days is not sufficient
- Qualification by dependent organizations is **not** acceptable



GRP Field specialists: To be recognized as

“Certified professions”



GRP Field specialists the Certificate



DET NORSKE VERITAS
CERTIFICATE OF COMPETENCE

CERT-10117-2010-GRP-FB-ROT-PdA

DNV Certification B.V. certifies that

Name of the certificate holder : **Rishal Rai Ram Kumar**
 Date of birth : **11 August 1982**
 Place of birth : **Moring**
 Country : **Kingdom of Nepal**

This holder fulfills the conditions to be certified as : **Joiner / Bonder GRP Pipes**

The qualified joint types, installation procedures, diameters and pressure ranges of the certificate holder are:

Joint type	Joining Procedure	Diameter range	Max. Pressure
TR-75	FRP filament winding ISO 11011 (01) rev. 0	150 - 600 mm	21 Bar
Flange joint (yellow box)	FRP filament winding procedure IIP-INS 01003	25 - 300 mm	1500 Psi

Date of examination : 29 August 2010
 Place of examination : **Namam**
 Country of examination : **South Africa**
 Examination organization : **DNV supervision**

This Certificate of Competence is valid only after the certificate holder has signed, on per examination date until 29 August 2012. The validity conditions of this Certificate of Competence are specified in the relevant standard, outlined by the DNV Certification Committee of GRP pipe structures S1 and related to ISO 14002. See reverse side for the information statement by employer and pre-qualification by DNV Certification B.V. Additional information can also be found in the column "supplementary remarks".

This is signed and stamped:
 The certificate holder:
 Signature: *[Signature]*
 Date: **September 20, 2010**
 For DNV Certification B.V.
 Signature: *[Signature]*
 Stamp: *[Stamp]*

DNV Certification B.V. is approved by DNV's Quality Assurance Management System (Certificate No. 10117-2010-GRP-FB-ROT-PdA) under the supervision of DNV's Quality Assurance Department. The validity of this certificate can be verified on our website: www.dnv.com



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Safeguarding life, property and the environment

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Manager Personnel Certification

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