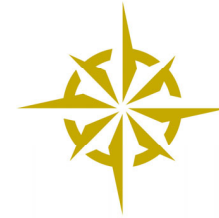




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# Technical Competency Assessment for Drilling & Completions personnel



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**Protrust has developed a web-based competency assessment and verification system designed for the following purposes:**

- Technical screening of applicants before hiring (mature hires).
- Competency Assessment of existing staff for the purpose of identifying competency gaps, developing training programs and allocating the right people to critical positions.
- Knowledge assessment to support promotion processes.

# Technical Competency Assessment for Drilling & Completions personnel

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## **Business drivers (new hires):**

- A CV may not tell the full story and is not an assurance for technical competency.
- There are limited options available for formal and systematic technical competency assessment systems – Protrust is the only provider for D&C personnel.
- A large number of experienced staff have left the industry.
- Hiring staff without the required competency may turn out very costly and may have catastrophic consequences.

# Technical Competency Assessment for Drilling & Completions personnel



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## **Business drivers (existing employees):**

- Many companies do not have a formal competency assessment system in place.
- Managers have insufficient knowledge of the skillset of their team members.
- Personnel may be assigned to jobs they are not qualified for, resulting in incidents, NPT events, poor performance, incomplete projects and financial overruns.



## **The COMPASS test:**

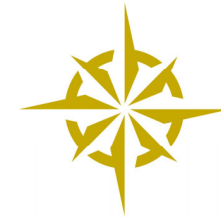
- Quiz based questionnaires with a large pool of multiple-choice questions and True/False statements.
- Questions are developed by industry experts and focused on what should have been learned through experience – not at university.
- Answers are aimed to be non-disputable and not company or location specific.
- Time limit per quiz - no time to Google the answers.



## The COMPASS Modules:

- Module 1: Drilling Equipment
- Module 2: Drilling Operations
- Module 3: Well Control
- Module 4: Fluids
- Module 5: Cement
- Module 6: Barriers & Well Integrity
- Module 7: Completions
- Module 8: ERD
- Module 9: HPHT
- Module 10: Acronyms

> 600 questions with > 1500 answer options in the quiz database.



## **Example process for new hires:**

- The client screens the applicant's CV and shortlist candidates with apparent similar background.
- The client advises the shortlisted applicants to complete the Protrust COMPASS test (the cost should be reimbursed to the client).
- The applicants complete the COMPASS test online and receives a COMPASS report from Protrust.
- The applicant forwards the report to the client.
- The client calls the candidates with best score for F2F interview (and re-test if desired).



## **Example process for existing employees:**

- Employees completes the COMPASS test online and forward the COMPASS report to management.
- Management may use this to:
  - Identify competency gaps.
  - Assign staff to projects that fit the competency profile.
  - Develop individual training programs.
  - Relocate or terminate staff.

# Examples – Drilling Equipment



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45. What kind of tool is this?



- ☐ Overshot
- ☐ Wash-over shoe
- ☒ Reverse circulation junk basket
- ☐ Core barrel

49. What type of equipment is this?



- ☐ Diverter
- ☒ Rotating Control Device
- ☐ Annular preventer
- ☐ Riser connector

# Examples – Drilling Operations



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4. What parameters contributes to the ECD?

- ☒ Mud weight plus the pressure loss from TD of string to surface
- ☐ Mud weight plus total system pressure loss
- ☐ Mud weight plus the bit pressure loss
- ☐ Mud weight plus the bit's jet impact force

6. What are the most important fann reading for controlling ECD?

- ☐ 60 - 600 RPM
- ☐ 30 - 60 RPM
- ☒ 3 - 6 RPM
- ☐ 300 - 600 RPM

10. A bit has an IADC code of 4-4-5, describe the bit

- ☐ A diamond bit with 4" gauge, 4 blades and 5 nozzles
- ☐ A PDC bit with 4" gauge, 4 blades and 5 nozzles
- ☒ A TCI bit with sealed bearings
- ☐ A Milled tooth bit with open bearings

22. How can you reduce the presence of angular cavings caused by shear failure of the wellbore?

- ☐ Improve mud rheology
- ☐ Balance mud activity with formation activity
- ☐ Improve mud inhibition
- ☒ Increase the mud weight

# Examples – HPHT



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1. What is understood by 'wellbore breathing' or 'ballooning'?
- ☐ Mudloss into- and flowback from faults
  - ☐ Casing balloons due to ECD effects
  - ☐ Incorrect interpretation of flowback on connections
  - ☒ Mudloss into- and flowback from micro fractures
9. What is understood by 'finger printing' connections?
- ☐ Determining flow back behavior through DP during connections
  - ☒ Determining flow back behavior to active when pumps are shut off
  - ☐ Evaluation of connection procedures
  - ☐ Determining optimum connection timing
11. What negative effect may a mud cooler have?
- ☐ Reducing mud viscosity
  - ☐ Reducing mud weight
  - ☒ Reducing wellbore integrity
  - ☐ Increased overall well cost
17. Increasing connection gas is always a signal of increasing pore pressure
- ☒ False
  - ☐ True

# Examples – ERD



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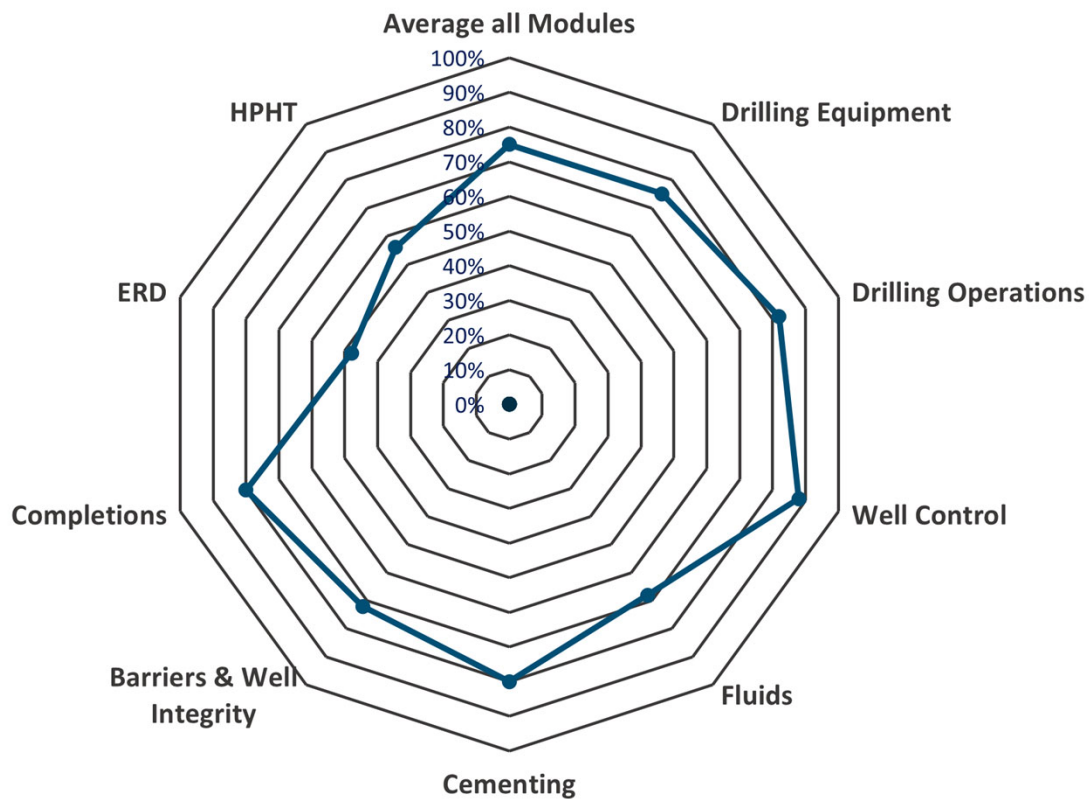
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1. What parameters are the most important for good hole cleaning?
- ☐ High end rheology and ROP
  - ☐ Fluid type and pipe rotation
  - ☐ High end rheology, flow rate and pipe rotation
  - ☒ Low end rheology, flow rate and pipe rotation
5. What is SAG correction?
- ☐ Adding special chemicals to the drilling fluid to prevent barite SAG
  - ☒ A survey correction due to misalignment of the survey sensor
  - ☐ A mud weight correction due to barite SAG
  - ☐ A survey correction from Grid to True North
17. Jars have the same effect in vertical and horizontal wellbores
- ☒ False
  - ☐ True
20. Helical buckling is three dimensional
- ☒ True
  - ☐ False
24. YP has no impact on hole cleaning or ECD
- ☒ True
  - ☐ False

# COMPASS Competency Profile



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Technical Competency Profile - Example



Guidance on the results:

Score	Grade	Result	Level
> 85 %	A	<p>Technical: A vast experience on the subject. Qualified to deliver and review complex tasks.</p> <p>Managerial: Sufficient experience to lead studies, task forces and technical teams.</p>	<p>Senior Engineer</p> <p>Specialist</p> <p>SME</p> <p>Engineering Team Leader/Manager</p>
75 – 85%	B	<p>Technical: Sufficient experience to deliver technical tasks of simple to medium complexity.</p> <p>Managerial: Sufficient understanding of the subject to manage on senior level.</p>	<p>Engineer</p> <p>Drilling Supervisor</p> <p>Superintendent</p> <p>Drilling Manager</p> <p>Vice President</p>
60 – 75%	C	<p>Technical: Large gaps in knowledge – can contribute under qualified supervision.</p> <p>Managerial: Insufficient experience to manage D&amp;C operations.</p>	<p>Trainee level</p>
< 60%	D	<p>Insufficient working knowledge – significant training and exposure required.</p>	<p>Entry level</p>



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For more information - contact us on

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**Thank You!**

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