



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DIRECTIVE A3/4

BLASTING CERTIFICATES FOR OPENCAST MINES

APPROVED

ACTING CHIEF INSPECTOR OF MINES

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EFFECTIVE DATE : 01 JUNE 2017

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DMR 306: APPLICATION FORM FOR BLASTING CERTIFICATE FOR OPENCAST MINES

DMR 307: CERTIFICATE OF COMPLIANCE FORM

DMR 308: SCORE SHEET FOR COMPULSORY QUESTIONS

DMR 309: SCORE SHEET FOR CHOICE QUESTIONS

1 INTRODUCTION

Chapter 28 of the Minerals Act, Regulations in force in terms of Schedule 4 of the Mine Health and Safety Act (Act 29 of 1996), as amended (MHSA) deal extensively with all aspects of the issuing of blasting certificates.

This directive contains instructions for the guidance for the examining and issuing authorities as well as rules for the conduct of examinations/assessment, as framed in terms of the Minerals Act Regulation 28.6 in force in terms of Schedule 4 of the MHSA.

2 PURPOSE

The purpose of this directive is to:

- (a) Prescribe the instructions for the guidance for the examining and issuing authority, the rules for conducting the examination/assessment for blasting certificate for opencast mines;
- (b) Specify the syllabus for the subjects/modules of the examination/assessment in terms of the Minerals Act Regulation 28.6;
- (c) Structure the examination/assessment to comply with the rules applicable for the conducting of the examination/assessment for the blasting certificate for opencast mines; and
- (d) Ensure that the examination/assessment for the blasting certificate for opencast mines are conducted in a way that is lawful, fair, transparent, consistent and reasonable.

3 SCOPE

This directive is applicable for blasting certificate for opencast mines.

4 ACCEPTANCE AS A CANDIDATE

4.1 QUALIFYING SHIFTS

Regulation 28.40.8.1 requires that an applicant shall not be accepted as a candidate for examination/assessment for a provisional blasting certificate for opencast mines or for works where no subterranean tunnel operations are in progress unless he has produced evidence satisfactory to the Principal Inspector of Mines that:

- (a) He has attained the age of 20 years; and
- (b) He has had at least 60 shifts of experience acceptable to the Principal Inspector of Mines.

Regulation 28.40.8. 2 requires that an applicant shall not be accepted as a candidate for examination/assessment for a permanent blasting certificate for opencast mines or for works where no subterranean tunnel operations are in progress unless he has produced evidence satisfactory to the Principal Inspector of Mines that:

- (a) He has attained the age of 20 years; and
- (b) Subject to Regulation 28.41.3.2, he has at least the required number of shifts of experience acceptable to the Principal Inspector of Mines.

Regulation 28.41.3.2 requires the following amount of shifts for a permanent blasting certificate:

- | | |
|--|------------|
| (a) University students in mining | 200 shifts |
| i. Chamber of Mines Training College students | 312 shifts |
| ii. Learner Officials | 312 shifts |
| iii. Learner miners attending a training course approved by the Chief Inspector of Mines | 400 shifts |
| (b) Other learners | 400 shifts |

It is of the utmost importance that a proper and reliable record is kept by the mine of the above said shifts in each case.

4.2 FIRST AID CERTIFICATE

Applicants for the blasting certificate for opencast mines must be in possession of a First Aid Certificate issued in terms of the Minerals Act, Regulation 24.7.

4.3 ACADEMIC QUALIFICATIONS

Applicants for blasting certificate for opencast mines must have completed the following academic qualifications:

- (a) Standard 8;
- (b) Grade 10; or
- (c) N1 Certificate, provided that N1 Certificate holders must have six (6) subjects to their credit; or
- (d) ABET Level 3 or equivalent.

4.4 MEDICAL FITNESS

Applicants for blasting certificate for opencast mines must be in possession of a valid certificate of fitness to perform work at the mine issued by an Occupational Medical Practitioner appointed in terms of section 13(3)(a)(i) of the MHSA.

4.5 LANGUAGE PROFICIENCY

Applicants for blasting certificate for opencast mines must be able to communicate both orally and in writing.

5 SYLLABI

5.1 SURFACE MINE LEGAL KNOWLEDGE AND APPLICATION

- (a) Mine Health and Safety Act and Regulations;
- (b) Minerals Act and Regulations;

- (c) Explosives Act and Regulations;
- (d) Definitions;
- (e) Responsibilities of the Employer/Manager;
- (f) Duties of a Miner;
- (g) Accident Reporting/Investigation; and
- (h) Hazard Identification/Risk Assessment.

5.2 VENTILATION AND DUST PREVENTION AND GASES

- (a) Ventilation;
- (b) Dust Prevention; and
- (c) Gases.

5.3 SURFACE MINE PRACTICES AND PROCEDURES

- (a) Rock Engineering and Slope Stability;
- (b) Protection of Workings;
- (c) Surface Mine Procedures; and
- (d) Drilling.

5.4 SURFACE MINE MACHINERY

- (a) General;
- (b) Mobile Mechanical Equipment; and
- (c) Conveying Equipment.

5.5 INTRODUCTION TO EXPLOSIVES

- (a) Types and properties of explosives;
- (b) Types of initiation systems; and
- (c) Manufacture of explosives.

5.6 TRANSPORT, STORAGE AND SECURITY OF EXPLOSIVES

- (a) Permits;
- (b) Transport;
- (c) Magazines and boxes; and
- (d) Security.

5.7 BASIC BLASTING DESIGNS

- (a) Design factors;
- (b) Patterns;
- (c) Priming and initiation; and
- (d) Environmental Effects.

5.8 BLASTING PROCEDURES

- (a) Preparation of Explosives;
- (b) On site use/storage;
- (c) Charging procedures;
- (d) Treatment of misfires; and
- (e) Destruction of old explosives.

5.9 PRACTICAL BLAST LAYOUTS AND CALCULATIONS

- (a) Open Pits;
- (b) Opencast mines (Overburden and Coal);
- (c) Quarries; and
- (d) Dimensional Stone.

6 APPLICATION FORMS

- 6.1 Application to be examined for provisional blasting certificate for opencast mines or permanent blasting certificate for opencast mines must be done on a DMR 306 form.
- 6.2 The application form DMR 306 must be accompanied by:
- (a) Certified copy of the record of service on company letterhead with contact details as proof of the number of qualifying shifts attained;
 - (b) Certified copy of First Aid Certificate;
 - (c) Certified copy of identity document (ID) or Passport;
 - (d) Certified copy of minimum academic qualification; and
 - (e) Certified copy of a Medical Fitness Certificate;
- 6.3 The certified copies referred to in paragraph 6.2 above must be not be older than a period of three (3) months and must be certified by the South African Police Service (SAPS).
- 6.4 The application form must be endorsed by the Mine Manager appointed in terms of section 3(1)(a) of MHSa and a copy of the appointment letter of the Mine Manager must be attached to the application form.
- 6.5 Notwithstanding anything stated to the contrary, the issuing authority in exceptional circumstances, may accept an application for a provisional or for a permanent blasting certificate for opencast mines without the application being endorsed by the Mine Manager.
- 6.6 Application for the exchange of a provisional blasting certificate for opencast mines for a permanent blasting certificate for opencast mines must be made on form DMR 314.

- 6.7 The application for the exchange of a provisional blasting certificate for opencast mines for a permanent blasting certificate for opencast mines must comply with the requirements as stipulated in paragraph 6.2 above.
- 6.8 The application for the exchange of a provisional blasting certificate for opencast mines for a permanent blasting certificate for opencast mines must be accompanied by the applicant's original copy of provisional blasting certificate for opencast mines.
- 6.9 Applicants for the blasting certificate for opencast mines must pay an application fee as required by Minerals Act Regulation 28.10 in force in terms of schedule 4 of the MHSA.
- 6.10 Applicants may pay the required application fee:
- (a) Directly into the Department of Mineral Resources bank account at any ABSA Bank, Account Number 4061769154, and Reference Number. 01019426 OT 12. The original bank deposit slip must be attached to the application form as proof of payment; or
 - (b) To the cashier at any Regional Office of the Department of Mineral Resources (DMR). The cashier must be informed that the payment is for examination/assessment purposes. The original payment receipt must be attached to the application form as proof of payment.
- 6.11 Incomplete application form will not be considered.

7 CERTIFICATE OF COMPLIANCE

- 7.1 On receipt of applications, the applicant's names and other relevant details of the applicant who meets the acceptance requirements must be entered on a certificate of compliance form DMR 307 and the certificate of compliance form must be submitted to the Office of the Principal Inspector of Mines.

- 7.2 When an Inspector of Mines has satisfied himself or herself that all the necessary documentation has been submitted and is acceptable, he or she must sign the certificate of compliance form DMR 307 and forward same to the Principal Inspector of Mines.
- 7.3 When the Principal Inspector of Mines is satisfied that all the necessary documentation has been submitted and is acceptable, he or she must sign the certificate of compliance form attached as DMR 307 as proof of compliance with the requirements for admission as a candidate.
- 7.4 A candidate or applicant must not be examined until the certificate of compliance form DMR 307 has been signed by the Principal Inspector of Mines.

8 EXAMINATIONS/ASSESSMENTS

- 8.1 Examinations/Assessments are to be conducted in accordance with the *‘Learners/Examiners Guide for the Assessment and Certification of Blasting Certificate Holders for Opencast Mines.’*
- 8.2 The examination/assessment consists of two types of questions namely compulsory questions and choice questions.
- 8.2.1 **Compulsory Questions**
- (a) The score sheet to compulsory questions attached as form DMR 308 must be used in preparing for, and assessing a candidate.
- (b) The examiner must assess the candidate on a minimum of five (5) compulsory questions in each subject/module (All candidates must be examined/assessed on equal number of questions).
- (c) The pass mark on compulsory questions is 100%.

- (d) Questions asked in the compulsory section relate to core knowledge that a miner is required to have.
- (e) The intention of the compulsory question is to ascertain whether the candidate has the knowledge of issues that may impact on the health and safety of employees under his/her control.
- (f) Questions and Model answers can be found under section 5 of the "Learners/Examiners Guide for the Assessment and Certification Holders for Opencast Mines".
- (g) The candidate must answer all questions asked that may impact on the health and safety of employees by demonstrating an understanding of the associated risks to the satisfaction of the examiner in the abovementioned part of the examination/assessment.
- (h) The examiner must record all questions asked and complete the 'Assessor Remarks' section on the score sheet if the candidate gives an unsatisfactory answer.

8.2.2 Choice Questions

- (a) The score sheet for choice questions attached as form DMR 309 must be used in preparing for, and assessing a candidate.
- (b) The examiner must assess the candidate on a minimum of five (5) choice questions in each subject/module (All candidates must be examined/assessed on equal number of questions).
- (c) The pass mark on choice questions is 60%.

- (d) Questions and model answers can be found under section 5 of the ‘Learners/Examiners Guide for the Assessment and Certification of Blasting Certificate Holders for Opencast Mines’.
- (e) The examiner is not restricted to only the abovementioned questions, provided that the question he/she may ask are still within the boundaries of the syllabi and remain relevant to the blasting certificate for opencast mines.
- (f) The examiner must record all the questions asked and completes the “Assessor Remarks” section on the score sheet if the candidate gives an unsatisfactory answer.

9 GENERAL RULES FOR EXAMINATION/ASSESSMENT

- 9.1 Every examination/assessment must be recorded in writing by the Secretary to the Commission of Examiners for blasting certificate for opencast mines.
- 9.2 Where possible, record kept for the previous examination/assessment, must be read out and confirmed during the current examination/assessment.
- 9.3 The examination/assessment must be conducted orally and/or in writing.
- 9.4 No reference material must be allowed during the examination/assessment.
- 9.5 Examiners are required to complete the assessment score sheets accurately and comprehensively, as the assessment score sheets are required to be kept on file for the following reasons:
 - (a) Documentation proof as a pass or fail.
 - (b) Provide a feedback to a candidate in case of a fail.
 - (c) Appeal purposes.

- 9.6 Examiners should ask questions clearly.
- 9.7 Examiners to ascertain the candidate has a clear understanding of the question before the candidate answer the question.
- 9.8 Examiners/assessors should ask questions aimed at clarifying understanding or potential confusion relating to the answers provided by the candidate. The assessor's score sheet should reflect this notion.
- 9.9 Examiners/Assessors are encouraged, when posing questions, to ask the candidate why the candidate needs to know in order to enhance the understanding of practical application.
- 9.10 The candidate will be allowed three (3) attempts to pass all subjects/modules of the examination/assessment.
- (a) The candidate will be examined/assessed on all nine (9) subjects/modules during the first attempt;
 - (b) Should the candidate fail any subject(s)/module(s) during the first attempt, the failed subjects/modules will be examined/assessed during the second attempt and the passed subjects/modules will be credited;
 - (c) Should the candidate fail any of the subjects/modules during the third attempt, that candidate will be considered as having failed the examination/assessment;
 - (d) The candidate will forfeit all the credited subjects/modules and must re-apply to be examined/assessed on all subjects/modules; and
 - (e) The application for examination/assessment referred to in paragraph 9.10(d) above, must be made by the candidate after a period of one (1) year has lapsed from the date of the third attempt examination/assessment. This means that the candidate will not be allowed to sit for examination/assessment for a period of one (1) year from the date of the third attempt examination/assessment.

10 COMMISSION OF EXAMINERS

- 10.1 The constitution of a Commission of Examiners for a blasting certificate must remain in accordance with Minerals Act, Regulation 28.39 in force in terms of schedule 4 of the MHSA. In terms of this Regulation the qualifying certificates of the member of the Commission shall be appropriate to the examination/assessment being conducted.
- 10.2 The Commission of Examiners must consist of:
- (a) An officer in the service of the Department, who is a holder of a Mine Manager's Certificate of Competency (the Chairman), representing the State;
 - (b) A member, who is a holder of a Mine Manager's Certificate of Competency representing the employers in the mining industry; and
 - (c) A member, who is a holder of a permanent blasting certificate for opencast mines, representing employees in the mining industry.
- 10.3 The member representing the employers must be:
- (a) A practising holder of a Mine Manager's Certificate of Competency at a mine; and
 - (b) Appointed in terms of section 3(1)(a) of MHSA or appointed in terms of section 7(4) of MHSA read with Minerals Act, Regulation 2.6.1 in force in terms of schedule 4 of the MHSA.
- 10.4 The member representing the employees must:
- (a) Be a practising holder of a blasting certificate; and
 - (b) Exercising control over explosives to be used for blasting at a mine, for a minimum period of three (3) years in an opencast mining environment.
- 10.5 The allocation of subjects/modules to be examined/assessed by examiners will be at the discretion of the Chairperson of the examination/assessment board.

- 10.6 In the event whereby a member of the Commission of Examiners for blasting certificate for opencast mines, failing to attend the examinations/assessments, the Principal Inspector of Mines may use an additional appropriate qualified officer in the service of the Department to replace the unavailable examiner/assessor.
- 10.7 One person per stakeholder may attend the examination/assessment as an examiner in training until such time that the relevant examination/assessment authority is satisfied that the examiner/assessor in training may conduct blasting certificate for opencast mines examinations/assessments.
- 10.8 The Principal Inspector of Mines must ensure that the Commission of Examiners for blasting certificate for opencast mines conducts the examinations/assessments in accordance with this directive for consistency, uniformity, feedback, record and appeal purposes.

11 APPEAL PROCEDURE

- 11.1 A candidate for blasting certificate for opencast mines may appeal against any decision of any examining authority for blasting certificate for opencast mines, to the Chief Inspector of Mines.
- 11.2 Each appeal must be lodged in writing within a period of 31 days, after the date of the examination/assessment authority's decision.
- 11.3 Each appeal must state the reasons or grounds of appeal.
- 11.4 The appeal case must be heard within a period 60 days from the date of lodging the appeal.
- 11.5 The appeal case must be heard by the Principal Inspector of Mines in the Region where the examination/assessment took place or his/her designated alternate, as

long as such Principal Inspector of Mines or his/her designated alternate was not involved in the examination/assessment of the candidate.

11.6 After considering the grounds or reasons for the appeal and the Chairperson for the Commission of Examiners' reasons for the decision, the Principal Inspector of Mines or his/her designated alternate may:

- (a) Confirm the decision of the Chairperson of the Commission of Examiners; or
- (b) Set aside the decision of the Chairperson of the Commission of Examiners and pass the candidate; or
- (c) Set aside the decision of the Chairperson of the Commission of Examiners and directs another Commission of Examiners who were not part of the initial examination/assessment to re-examine/re-assess the applicant.

11.7 The appeal process must:

- (a) Be fair, transparent and credible;
- (b) Have reasonable time frames; and
- (c) Allow the right to representation by the candidate.

11.8 The candidate will not be allowed to be examined/assessed on the subject(s)/section(s) the candidate has appealed on, unless the outcome of the appeal has been determined and communicated to the parties concerned.

12 GENERAL

12.1 EXAMINATION/ASSESSMENT VENUES

- (a) The Principal Inspector of Mines is required at any venue that is suitable for the conduct of the blasting certificate for opencast mines examinations/assessment;
- (b) The Principal Inspector of Mines is required to make arrangements necessary for the examinations/assessments; and

- (c) Candidates must be examined/assessed in Regional offices where their mines are located. A candidate may change Regional offices of examination/assessment under the following conditions.
- i. An application has been made via a signed letter to the Region of examination/assessment for candidate's file to be moved to a different Region stating reasonable grounds for such transfer request;
 - ii. The candidate has been advised by the Regional office of approved request;
 - iii. The candidate's file plus application for examination/assessment is forwarded to the new Regional office of examination/assessment; and
 - iv. The candidate has been advised of the examination/assessment by the new Region of assessment.

12.2 EXAMINATION/ASSESSMENT BOARDS

- (a) The blasting certificate for opencast mines examination/assessment boards will take place at least once a month;
- (b) The number of the blasting boards for opencast mines examinations/assessment boards must not exceed five per scheduled date;
- (c) The number of candidates per blasting certificate for opencast mines examinations/assessment board must not exceed 10 per blasting certificate for opencast mines examination/assessment board;
- (d) Candidates who failed the examination/assessment on a particular examination/assessment board will not be re-examined in the next examination/assessment board, i.e., in the second month, after the date he/she failed the examination/assessment but will be examined in the third month after the date he/she failed the examinations.

12.3 ABSENCE FROM THE EXAMINATION/ASSESSMENT

A candidate absent from an examination/assessment, or withdrawing from such examination/assessment within seven (7) days of the date on which the examination/assessment is to take place, will forfeit his/her examination/assessment fee and will be required to re-apply for

examination/assessment unless such candidate can either furnish the examination/assessment authority with:

- (a) A medical certificate to the effect that the candidate was/is medically unfit for the examination/assessment; or
- (b) A letter signed by the candidate's Mine Manager on company letterhead with contact details stating circumstances of a sufficiently important and urgent nature involving the candidates work on the mine that prevented the candidate from attending the examination/assessment.

12.4 TRAINING

The Principal Inspector of Mines is required to forward the syllabus, as described in this directive, for blasting certificate for opencast mines to the relevant training service providers on request, for the purpose of ensuring uniformity and consistency of training in all the Regions established by the Minister in terms of section 47(2) of MHSA.