



education

Department:
Education
REPUBLIC OF SOUTH AFRICADEPARTMENT OF BASIC
EDUCATION

PRIVATE BAG X895, PRETORIA 0001

2023 -11- 17

APPROVED MARKING GUIDELINE

PUBLIC EXAMINATION

ENGINEERING GRAPHICS AND DESIGN (EGD) NOVEMBER 2023 NSC PAPER 1 Marking Standardisation Meeting (MSM)

09 & 10 November 2023 @ DBE, Pretoria

PENALTIES AND NOTES TO THE PRESENTED MARKING GUIDELINE

GENERAL NOTES:

- As **accuracy** is a fundamental and an essential component of EGD drawings, a **deviation of only 1 mm and 1° is permissible on the accuracy of ALL aspects of ALL drawings.**
- The principles of 'mark with the mistake' and 'the learner should be given the benefit of the doubt' must only be applied when the **required level of evidence of knowledge**, as agreed to at the Marking Guideline Standardisation Meeting, **has been displayed.**

NOTE:

- In **most instances**, the ½ mark [⊙ (circle)] or 1 mark [✓ (tick)] on/for a line is for the **position of the line**, and **NOT for the length of the line.** This implies that for **every dimension mistake**, only **ONE specific ½ mark or 1 mark** may NOT be allocated, and **ALL correct 'follow-on' lines/features** must then be 'marked with the mistake'.
- **Exceptions** are usually to be found in **Solid Geometry** and **Interpenetration & Development** questions where, e.g., the **edge/folding lines** must also be the **CORRECT LENGTH** for the ½ mark to be allocated.
- PENALTIES are only applied to concepts and/or aspects of a question/drawing for which marks have NOT been allocated.
- Except for the concessions agreed to during the November 2023 EGD NSC Paper 1 MSM, **ALL other drawings or aspects of drawings drawn in freehand will not be assessed.**
- The marks indicated on the ASSESSMENT CRITERIA and MARKING GUIDELINE (MG) are the **maximum** that may be allocated.
- When applying PENALTIES, the learner cannot get less than '0' (zero) for the specific ASPECT or CRITERIA for which the PENALTY is being applied.
- The "**Afrikaans**" changes and additions in this document are indicated in **ITALIC.**
- ONLY the **final TOTAL** mark of each question must be **circled.**
- The **final TOTAL** of each question must be **signed off** by the person who added up the mark.
- The **rounding-off of the marks may only be applied during the final conversion of the mark from 200 to 100.** The '½' and '¾' must rounded off to the top, i.e., '54½' becomes '55', and '¼' must be rounded off to the bottom, i.e., '62¼' remains 62.

QUESTION 1:

NOTE:

- The TOLERANCE RANGE on the allocation of marks is a **1-mark** deviation only.
- There are **no changes** to the **approved MG.**
- Where the candidates give more than one answer, **ONLY the 1st answer must be marked.**

On the individual questions, **the following must be noted:**

- 'acearc@africa.com'/'acearc@afrika.com' is **also acceptable.**
- "BRICK"/"BAKSTEEN" only is **also acceptable.**

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Cont. of QUESTION 1:

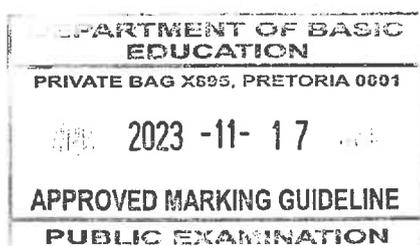
- 7 "HUMP"/"HOBDEL" only is **also acceptable**.
- 10 '2,5 m' = ½ mark only
- 11 "RIOOL" only is **also acceptable**
- 12 "TREE"/"BOOM" only = ½ mark only
- 13 ● Reference to any relevant CIVIL STRUCTURE/"SIVIELE STRUKTUUR" is **acceptable**, however, the **answer must include** 'ADJACENT ("AANGRENSENDE")/PLOT 24 ("PERSEEL 24")/NEXT DOOR' ("LANGSAAN"), **and** a CIVIL STRUCTURE/SIVIELE STRUKTUUR for the **1 mark**.
 ● If **ONLY** a relevant CIVIL STRUCTURE/"SIVIELE STRUKTUUR" is mentioned, = ½ mark only.
- 14 'EXISTING SEWER LINE"/"BESTAANDE RIOOLLYN" are the **ONLY acceptable answers**
- 15 '150 mm' or '150 ÷ 1000' = ½ mark only
- 17 'SE"/"SO", and 'EAST SOUTH-EAST (ESE)"/"OOS SUID-OOS (OSO)" is **also acceptable**.
- 18 '1,8 m' or '4800 (or 4,8) – 3000 (or 3)' = **1 mark** only, but '1,8' only = **0 marks**.
- 19 ● '163,4' **without** the 'm' also = **2 marks**, as conversion to 'metres' has been done
 ● '163400' = **1 mark only** for the 'ANSWER'
- 20 **1 mark** for '141,44', and **1 mark** for 'm²', which, in this case, **must be shown**.
NOTE: The **answer must** however be '141,44' for the 'm²' to be allocated
- 21 ● (a) If NOT in FAOP (e.g., swapped around, not alignment and/or not same size) = – ½ mark
 ● (a) Any additional FEATURE and/or LINE = – ½ mark for each
 ● (b) **1 mark** for a SOCKET OUTLET. Any other ELECTRICAL SYMBOL, including a SWITCH SOCKET OUTLET, = **0 marks** for the SYMBOL.

QUESTION 2:**NOTE:**

- The TOLERANCE RANGE on the allocation of marks is a **1-mark** deviation only.
- There are **no changes** to the **drawings** on the MG.
- There are **no changes** to the **mark allocation** on the **approved MG**.
- Ensure that the **mask/transparency of the MG** has been **printed the correct size**.

PENALTIES:

- If NOT drawn to 'SCALE 1 : 1' = – **2 marks** and then 'mark with the mistake'.
- For ANY 'FIRST ANGLE' mistake, i.e., the TOP VIEW and FRONT VIEW swapped around, and/or a LEFT VIEW drawn to the left of the FRONT VIEW, = – **2 marks**, and then 'mark with the mistake'. Each individual view must however then still be marked as indicated on the MG.
- If a RIGHT VIEW, instead of a LEFT VIEW, has been drawn to the left of the FRONT VIEW, = – **2 marks**, and then 'mark with the mistake'.
 The RIGHT VIEW must however then be marked as a 'FIRST ANGLE' RIGHT VIEW!
- If an arrow(s) and/or text is used to indicate the FIRST ANGLE placement mistake, = – **1 mark** only, instead of – **2 marks**.
- If **everything above the CUTTING PLANE has been removed in the FRONT VIEW**, = – **1 mark**, and then 'mark with the mistake'.



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Cont. of QUESTION 2:

- The following **PENALTIES** for **SIZES, SHAPES** and **POSITION** must be applied according to what has been drawn in the **TOP VIEW**:
 - If the **overall SIZE** of the **HEXAGON** is **NOT correct**, , i.e., **ALL sides NOT 40 mm**, = - 1 mark
 - If the **HEXAGON** consists of **SIX sides**, but the **SHAPE** is **NOT regular (correct)**, = - 1 mark
 - If the **overall SIZE** of the **PENTAGON** is **NOT correct**, , i.e., **ALL sides NOT 40 mm**, = - 1 mark
 - If the **PENTAGON** consists of **FIVE sides**, but the **SHAPE** is **NOT regular (correct)**, = - 1 mark
 - If the **CENTRE** of the **PENTAGON** is **NOT in the correct position (centre)** = - ½ mark
 - If the **overall SIZE** of the **SQUARE** is **NOT correct**, , i.e., **ALL sides NOT 40 mm**, = - 1 mark
- NOTE:** If **only ONE, or TWO, side(s)** of either the **HEXAGON, PENTAGON** or **SQUARE** is **NOT in the correct POSITION**, then simply **do NOT allocate** the ½ mark for that **specific side(s)**.
- If the **HATCHING** is **NOT compliant with mechanical drawing hatching**, e.g., civil hatching, or **NO** differentiation between the **HEXAGON** and the **PENTAGON**, = - 1 mark **ONLY** for **ALL the errors**.

NOTE:

- If the **HEXAGON** has been drawn as a **polygon or shape that does NOT have SIX sides**, **do NOT allocate the 6 x ½ mark for the HEXAGON in the TOP VIEW**, and then 'mark with the mistake'.
- If the **PENTAGON** has been drawn as a **polygon or shape that does NOT have FIVE sides**, **do NOT allocate the 3 x ½ mark for the PENTAGON in the TOP VIEW**, and then 'mark with the mistake'.
- If the **SQUARE HOLE** is **NOT CENTRALLY PLACED**, or is **NOT ROTATED 30°**, **do NOT allocate the specific ½ mark** under **SQUARE** in the **TOP VIEW**.
- If the **HEIGHT** of the **PYRAMID** is **not 70 mm in the FRONT VIEW**, **ONE of the ½ marks** for the **receding lines to the apex** must **NOT be allocated**.
- If a **'SOLID LINE'** or **'HIDDEN DETAIL/BROKEN LINE'** **extends beyond the point where it should end** or if it is **incomplete** (i.e., too long or too short), i.e., if it does not show the required knowledge, = **'0'(zero) marks for the specific line!**

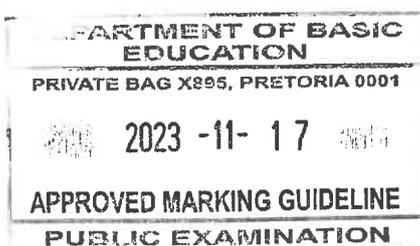
QUESTION 3:

NOTE:

- **TOLERANCE RANGE** on the allocation of marks is a **1-mark** deviation only.
- There are **no changes** to the **drawings** on the **MG**.
- Ensure that the **mask/transparency of the MG** has been **printed the correct size**.

PENALTIES:

- If a learner moved the **'GL'** or draws through the **'GL'** = - 2 marks, and then 'mark with the mistake'.
- The **following PENALTIES** are **ONLY applicable** to the **8 x ½ marks** for the **VANISHING POINTS**:
 - If a learner created and used his/her own **'HL'** = - 2 marks, and then 'mark with the mistake'.
 - If a learner used the **'PP'** as the **'HL'**, the **2 x ½ marks** for the **vertical lines from the 'PP' to the 'HL'** may **NOT be allocated**, even if shown! The **2 x ½ marks** for **POSITION** of **VPs** must **still be allocated**, if correct on the **new 'PP'**. The learner could therefore **effectively lose 3 marks**.



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Cont. of QUESTION 3 PENALTIES:

- If the learner **uses a new/different 'PP'**, e.g., the 'HL', = **- 2 marks**, and then 'mark with the mistake'.
- If a learner **created his/her own 'SP(s)'** = **- 2 marks**, and then 'mark with the mistake'.
The **answer/drawing** can however be **assessed according to ONLY ONE 'SP'**

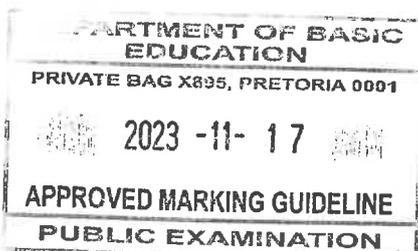
Take note of the following:

- If a VANISHING POINT(S) is determined incorrectly, e.g., at 45° instead of 30° and 60°, **do NOT allocate the ½ mark for the 'initial 30° and 60° receding lines'**, and the ½ mark for the **actual/final 'POSITION'**, i.e., the learners will lose **2 x ½ marks** for each INCORRECT VANISHING POINT, and then 'mark with the mistake'.
- The **maximum tolerance range on the horizontal location** of the LEFT VANISHING POINTS (LVP) on the 'HL' = **±3 mm**, and of the RIGHT VANISHING POINTS (RVP) on the 'HL' = **±5 mm**, if there is evidence that a 30°/60° set square was used.
- To avoid a congestion of too many lines, learners often do not draw in all the construction and/or projection lines when drawing a perspective drawing. If there is **clear evidence** that the **correct construction/projection was used/applied**, e.g., the correct position to the VPs on the HL or the vertical projection from the PP, the **marks must still be allocated, even if all the lines/projections are not visible**, i.e., if the required level of evidence of knowledge has been displayed.
- For the ½ mark for a **correctly placed vertical line to be allocated**, there **must be CLEAR EVIDENCE that a 'relevant' section of the line is 'DARKER'**. If the line is therefore just a PROJECTION/CONSTRUCTION LINE, the mark may NOT be allocated.
- Please **NOTE** that although the 'mask/transparency' of the MG could line-up with some of the LINES of the candidate's perspective answer, the ½ mark for each LINE may **ONLY be allocated** if there is **clear evidence** that the **specific LINE was constructed/determined correctly!**
- For the CURVE CONSTRUCTION, the ½ mark in the TOP VIEW is for the **correct division** of the SEMI CIRCLES, and the **1 (full) mark** on the **right-side ELEVATION** is for **clear evidence** of the **construction applied** to determine the CURVE in the perspective.
NOTE: The **clear evidence of the construction applied** can also be on the **left-side ELEVATION!**
- Please **NOTE** that although the 'mask/transparency' of the MG could line-up with some 'sections' of the CURVE, the ½ mark for each 'point' of the CURVE may **ONLY be allocated** if there is **clear evidence** that the **specific 'point' of the CURVE was correctly constructed/determined!**

QUESTION 4:

NOTE:

- The TOLERANCE RANGE on the allocation of marks is a **1-mark** deviation per view, i.e., a **3-mark** deviation for the entire question.
- There are **no changes** to the **drawings** on the MG.
- Ensure that the **mask/transparency of the MG** has been **printed the correct size**.



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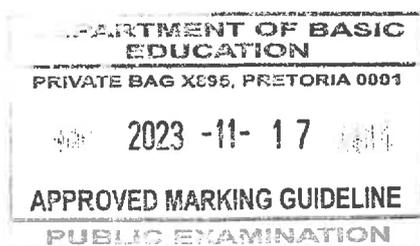
Cont. of QUESTION 4:

PENALTIES:

- If the NORTH-EAST ELEVATION is NOT to 'SCALE 1:50' = – 2 marks, and 'mark with the mistake'.
- If the DETAILED SECTION is NOT to 'SCALE 1:20' = – 2 marks, and then 'mark with the mistake'.
- If **more than ONE SCALE** is used on any one VIEW, and one of the SCALES is correct, mark the section using the correct SCALE as per the MG, and then do not allocate marks for incorrectly measured features on the other section, i.e., **see it as dimensioning mistakes**.
- However, if **more than ONE SCALE** is used on any of the VIEWS, and **neither of the SCALES are correct**, = – 2 marks, and then **mark with only one of the SCALES** using the principle of 'mark with the mistake', and do not allocate marks for features that are drawn to the other SCALE.
- If NOT correctly drawn in 'FIRST ANGLE', i.e., FLOOR PLAN and SOUTH ELEVATION **not correctly aligned**, = – 2 marks, and then 'mark with the mistake'.
- If the ROOF COMPONENTS **do NOT continue to the BREAK LINES** = – ½ mark on each side, and if the FOUNDATION/SLAB FEATURES **do NOT continue to the BREAK LINES** = – ½ mark on each side.
- If the DETAILED SECTION has been 'rotated' = – 2 marks.
However, if the '–2 marks' has been applied for 'rotation', the 'mask/transparency' of the MG must be turned around, and marks may then ONLY be allocated to the features that are correct according to the turned around 'mask/transparency'.
- **If only a part of the VIEW is 'rotated'**, e.g., only the ROOF, **establish for which part**, i.e., either the ROOF or the FOUNDATION AND SLAB, **the candidate will get more marks**. The marks for that section may then be allocated, and '0'/NO marks may be allocated for the other section.
It must however be remembered that the **penalty of – 2 marks must still be applied if the 'rotated' section is used for the allocation of marks**.
- If **printing/writing/labelling** is NOT in 'NEAT PRINTED CAPITAL LETTERS', or NOT HORIZONTAL or VERTICAL and NOT readable from the BOTTOM or the RIGHT = – 1 mark for ALL the **printing/writing/labelling** in the **entire question**.

Notes on the FLOOR PLAN:

- Note the following on the **WINDOWS**:
 - If a window is **not the correct length**, ONE ½ mark on either side **may NOT be allocated**.
 - The WINDOW-SILL must protrude beyond the outer wall for the ½ mark to be allocated.
However, if the WINDOW-SILL protrudes **more than 2 mm** from the WINDOW-SILL on the MARKING GUIDELINE, = '0'/NO marks for the WINDOW-SILL.
 - If there is any additional line between the two lines of the WINDOW FRAME and the WINDOWSILL, the ½ mark for the WINDOW-SILL **may NOT be allocated**.
 - The WINDOW FRAMES must be **minimum TWO lines** and '**between**' the inner and outer lines of the WALL for the ½ mark to be allocated.
 - If the WINDOW is not correctly placed in the wall, e.g., only halfway into the wall or in front of the wall = '0'/NO marks for the **entire WINDOW**, as it is then effectively **NOT a WINDOW**.




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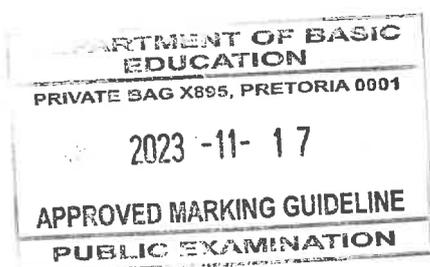


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Cont. of QUESTION 4 FLOOR PLAN:

- Note the following on the **DOORS**:
 - If DOORS are drawn **on the wrong side of the wall** according to the DOOR FRAMES, e.g., on the inside instead of the outside, = $\frac{1}{2}$ mark for the 'line(s)' of the DOOR may **NOT** be allocated.
 - The 'HINGED SIDE' (swing side) of the DOORS **can**, however, **be on either side**.
 - DOORS may be **single lines**, and at any visible angle between the DOOR FRAME and the 90°.
 - The length of the DOOR, which should be determined by the RADUIS of the ARC, may **not exceed the maximum distance**, or **be less than the minimum distance indicated by the DOOR FRAME!**
 - If the DOOR 'swing/arc' is done in **FREEHAND** or as a STRAIGHT LINE = '0/NO mark(s) for the 'swing/arc'. The 'swing/arc' must have been drawn with a COMPASS or a CIRCLE STENCIL.
 - The arrow for the SLIDING DOOR **must be on, or in line with the right-side PANEL**, or at least **include the right-side PANEL** for the $\frac{1}{2}$ mark to be allocated.
- Fluorescent light = $\frac{1}{2}$ mark for symbol and $\frac{1}{2}$ mark for '4 x 40w'.
If 'n x 40w' is indicated, the $\frac{1}{2}$ mark may **NOT** be allocated.
- Neat FREEHAND circles and arcs for ELECTRICAL SWITCHES and WIRING are acceptable.
The **ELECTRICAL SWITCHES** must however be **draw correctly**, i.e., **clearly recognisable, and NOT into the wall**.
- The WIRING (CONNECTING) **curves** from the LIGHTS **must be joined to the 'CIRCLES' of the SWITCHES**, and **NOT the 'line [flag(s)]' indicating the no. of POLES**, for the $\frac{1}{2}$ mark to be allocated.
- Note the following on **FIXTURES**:
 - If the TOILET (WC) **was drawn in the corner**, the $\frac{1}{2}$ mark for the **side against the WALL**, may **NOT** be allocated.
 - The answer of each fixture **must be a GRAPHICAL SYMBOL**, i.e., right angled corners etc.
 - **Any additional feature or line(s)** on a FIXTURE = - $\frac{1}{2}$ mark for **each**. It must however be noted that if the additional feature consists of more than ONE line, e.g., draining/vertical lines on the SINK, the - $\frac{1}{2}$ mark must NOT be applied for each line, but for the feature as a whole!
 - If a FIXTURE is **simply a copy of the given CAD drawing**, = '0/NO marks for the FIXTURE.
 - The **sizes (scale)** of the GRAPHIC SYMBOLS **must be correct** for each $\frac{1}{2}$ mark to be allocated.
- Note the following on **HATCHING**:
 - The HATCHING must be **SANS compliant**, i.e., 'double lines – space - double lines – space ...', for the 'SANS COMPLIANT (TYPE)' mark to be allocated.
 - For each of the following, = - $\frac{1}{2}$ mark from 'HATCHING CORRECTLY APPLIED':
 - Closing-up of internal wall connections with a line
 - Inconsistent spacings of the HATCHING
 - Incomplete HATCHING of the 'OUTER/LOADBEARING WALLS'
 - 'INNER WALLS', or some of the 'INNER WALLS' NOT HATCHED
 - The 'STEP' of the 'PORCH' HATCHED
 - If HATCHING has been done in FREEHAND, the **2 marks for 'HATCHING CORRECTLY APPLIED'** may **NOT** be allocated.



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Cont. of QUESTION 4:

Notes on the NORTH-EAST ELEVATION:

- If the **bottom** of the FACIA BOARD is NOT at 55 mm, only the ½ marks for the bottom of the FACIA BOARD must NOT be allocated, and then 'mark with the mistake'.
- The outer TWO ½ marks on the MAIN ROOF are for the 20° angle. If both sides are the same 'incorrect' angle, as determined/projected from the FLOOR PLAN, the ½ mark for only ONE angle/side must NOT be allocated, i.e., 'mark with the mistake'.
- BREAK LINES, as indicated on the given 'INCOMPLETE NORTH-EAST ELEVATION' on page 5 of the question paper, may NOT be used on the answer of the ROOF. Each ½ marks for the ROOF may therefore ONLY be allocated if the specific line(s) is complete, and correct.
- The 3 x ½ marks grouped together in the 'middle' of the roof are for the bottom of the FACIA, the GUTTER, and the top of the FACIA. The GUTTER can however be placed in any position, i.e., top, middle, or bottom, on the FACIA.
- The top of the WINDOW FRAME must be in-line the with the top of the DOOR FRAME.
- DOOR and WINDOW FRAMES may be single lines.
- The OPENING LINES for the window can be solid lines, but must meet in the middle of the FRAME. If the OPENING LINES are the wrong way around, = only ONE ½ mark.

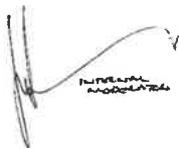
Notes on the DETAILED SECTIONAL ELEVATION:

- It must be NOTED that the entire SECTIONAL ELEVATION could have been drawn (moved) **further to the left** between the BREAK LINES to be aligned, or to be more aligned to the ellipse, i.e., in accordance with the instruction "*the area in the ellipse shown on the incomplete floor plan*". The WALL could therefore have been placed in-line with the left-side of the given FOUNDATION, or a new FOUNDATION could have been drawn to the left of the given FOUNDATION, with NO PENALTY for either, and the SECTION must then be 'marked according to the adjustment'. The PURLINS and BRANDERING must also NOT be penalised, even if only ONE of each was draw.
- The WALL PLATE may be in-line with the WALL, but NOT less than or inside the line of the WALL.
- For 'THE MARK ALLOCATION FOR ROOF COMPONENTS', the specific component(s) must be drawn to the correct size and/or at the correct distances for the FULL mark(s) to be allocated.
- The GUTTER may be open at the top, but must be orientated as given under ROOF COMPONENTS.
- Although the SUBSTRUCTURE HATCHING may be done in FREEHAND, it must be done correctly for the mark(s) to be allocated. The hatching for the EARTH must therefore be at 45°.
- The second ½ mark for the 'HATCHING' for the 'ROUGH TIMBER' may only be allocated if ALL the 'ROUGH TIMBER' drawn has been HATCHED correctly.



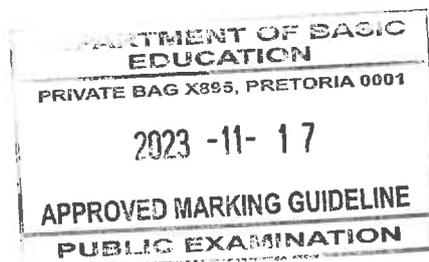
EXTERNAL MODERATOR

Sarel de Bruin



INTERNAL MODERATOR

Jacques van Leeuwen



External Moderator

Achmat Bagus



INTERNAL
MODERATOR

Johan Steynberg