



**higher education  
& training**

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

# **MARKING GUIDELINE**

**NATIONAL CERTIFICATE  
APRIL EXAMINATION  
QUANTITY SURVEYING N6**

**12 APRIL 2016**

**This marking guideline consists of 11 pages.**

**QUESTION 1**

- 1.1 1.1.1 Ditto refers to information in or the same as that of a preceding item.
- 1.1.2 Practical completion means the state of completion where in the opinion of the architect the works are substantially complete.
- 1.1.3 Dotting on means adding similar items.
- 1.1.4 Timesing is the multiplication of sequences.
- 1.1.5 Abstracting is to group similar items together.
- 1.1.6 Reducing is the rounding off of fractional quantities to whole quantities.
- 1.1.7 A drawing register is a form designed to record all drawings received from consultants for a project.
- 1.1.8 Billing is transferring items and quantities from the abstract paper onto the bill paper.
- 1.1.9 Squaring is checking waste calculations, side cast and checking final answers.
- 1.1.10 A query list is a form designed to record issues that need clarification during taking off.

(10 × 1) (10)

- 1.2 Functions:
- Tender documents to estimate (tender)
  - To allow for competitive tendering
  - To know cost in advance
  - Cost control
  - Legal documents in the case of disputes (Any 3 × 1)
- Uses:
- Form the basis for preparation for the tender in the estimating process
  - To work out interim payment
  - To prepare a final account
  - It is a measuring tool for cost control
  - For pricing variation orders
  - Certain material can be ordered (Any 3 × 1)
- Advantages:
- Tendering is fully competitive
  - Tenders need no measuring
  - Less disputes
  - VOs can easily be assessed
  - QS can make a precise estimate
  - Financial control to benefit all parties concerned
  - Can be used for subtendering (by trades) (Any 4 × 1) (10)
- 1.3
- Open tender
  - Selective tendering (2)
- 1.4
- Specification
  - Bill of quantities
  - Conditions of contract
  - Working drawing (Any 3 × 1) (3)
- [25]

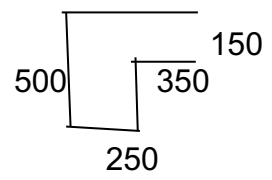
**QUESTION 2**

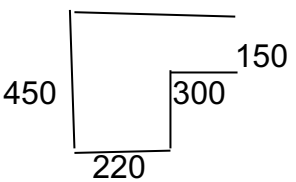
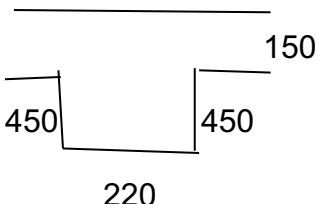
		<u>V O NO. ...</u>				
		330 in lieu of 1BK <u>Garden wall</u>				2.2 <u>Additions</u>
		2.1 <u>Omissions</u>				7 200
		✓ <u>Ddt</u>				<u>330</u>
	6.98	1Bk wl a.b.✓				6 870
	<u>2.40</u> ✓	✓				2/150 300
		✓ <u>Ddt</u>				6 570✓
	6.68	E.o. excav. for c.a. a.b.✓	6.87			✓ <u>Add</u>
	.22	✓	<u>2.40</u> ✓			330 Bk wl in local stock Bks in
	<u>.75</u> ✓	✓				1 : 3 c.m. in stretcher bond✓
2/	6.68	✓ <u>Ddt</u>	6.87			✓ <u>E.o. excav. for c.a.</u>
	.15	Backfill a.b.✓	.33			✓
	<u>.75</u> ✓	✓	<u>.75</u> ✓			✓
		✓ <u>Ddt</u>	2/ 6.57			Backfill from excav. to sides of
	6.98	3-ply dpc a.b.✓	.10			s.f. a.b.✓
	<u>.22</u> ✓	✓	<u>.75</u> ✓			520
		✓ <u>Ddt</u>				<u>330</u>
2/2/	.12	E.o.b. for golden brown	6.87			<u>190 ÷ 2</u>
	<u>1.80</u> ✓	fcgs to attached piers	<u>.33</u> ✓			95✓
		a.b.✓	2/2/ .06			3 ply asphalt d.p.c. a.b.✓
	<u>6.98</u> ✓	✓ <u>Ddt</u>	<u>1.80</u> ✓			✓
		B.o.e. golden brown				E.o.b. for golden brown facgs
		copings t.b.d.(to fit 220 wl)✓				to attached piers a.b.✓
		✓				450
		(12)	<u>6.87</u> ✓			<u>-330</u>
						<u>120 ÷ 2</u>
						60✓
						B.o.e. golden brown faced
						copings' t.b.d. (to fit 330 wl)✓
						15 (ANY 13)
						<b>[25]</b>

**QUESTION 3**

REINF. CONC. STRUCTURE

		Msd from NGL upwards	2/	2.00	Do. to L-shaped do✓	
		<u>Cols</u>	2/	<u>3.00</u> ✓	4/500	2 000
		20 MPa conc. in rect cols✓		0.97	3 050	500
				<u>0.05</u>	<u>3 000</u>	220
2/	0.25				50✓	<u>250</u>
	0.60					970✓
	<u>3.00</u> ✓	3 500				
		<u>-500</u>				
	0.20	3 000✓				
	0.60			<u>1</u> ✓	Do. Circl. Col. 300 mm dia	
	<u>2.90</u> ✓	3 500			2,9 m high.✓	
		<u>-600</u>				
	0.60	2 900✓				
	0.22					
	<u>3.05</u> ✓	3 500				
		<u>-450</u>				
		3 050✓				
			2/	10.00	<u>Beams</u>	
				0.25✓	20 MPa conc. in slab	
				<u>0.35</u>	inclusive beams✓	
2/	0.50	Do. In L-shaped col.✓	2/	9.10	500	600
	0.22✓			0.22✓	<u>-150</u>	slab <u>150</u>
	<u>3.05</u>			<u>0.30</u>	350✓	450✓
2/	0.25					
	0.28			9.56		
	<u>3.00</u> ✓			0.22✓	450	
				<u>0.45</u>	<u>150</u>	
					300✓	
π/	0.15	Do. In circle col.✓		10.00		
	0.15	$A = \pi r^2$		9.60	2/4 800	9 600
	<u>2.90</u> ✓	300 ÷ 2		<u>0.15</u>	2/250	<u>500</u>
		150✓				9 100✓
2/	1.70	Fmwk to rect cols n.e 3,5 m	2/	10.00	Fmwk to s.+ s. of bms n.e	
	<u>3.00</u> ✓	hi		<u>1.10</u> ✓	3,5 hi.✓	
					500	
	1.60	220 250 220			250	
	<u>2.90</u> ✓	<u>600</u> <u>600</u> <u>600</u>			<u>350</u>	
		820✓ 2/850✓ 820✓			1 100✓	
	1.64	2/820				
	<u>3.05</u> ✓	1 640✓ 200				
		<u>600</u>				
		2/800 1 600✓				



<p>2/</p>	<p>9.60✓ <u>0.97</u></p>		 <p style="text-align: right;">300 450 <u>220</u> 970✓</p>			
	<p>9.56✓ <u>1.12</u></p>		 <p style="text-align: right;">450 450 <u>220</u> 1 120✓</p>			
	<p>10.00 9.60✓ <u>0.15</u></p>		<p style="text-align: center;"><u>Slab</u></p> <p>20 MPa conc. In slab and beam a.b.✓</p>			
	<p>9.56 <u>8.88</u>✓</p>		<p>Fmwk to u/s of slab n.e. 250 mm thick✓</p> <p style="text-align: right;">10 000 2/220    <u>-440</u> 9 560✓</p> <p style="text-align: right;">9 600 -2/250    500 <u>-220</u> 8 880✓</p> <p>50 ÷ 2 = [25]</p>			

**QUESTION 4****PLUMBING AND DRAINAGE**

<b>1. SQUARING</b>		
Number column/pages	✓	
Check side casts	✓	
Lines, decimals	✓	
Timesing	✓	
<b>2. ABSTRACTING</b>		
Check squaring	✓	
Run-through (must be done correctly)	✓	
Ticked off (must be done correctly)	✓	(7)
Correct items	✓	
Order (as S/S)	✓	
Trade	✓	
Abbreviations copied correctly	✓	
Line and cols	✓	
Units and references	✓	
Copy exactly	✓	
No dittos	✓	
One sheet	✓	
Reducing	✓	
Run-through abstract	✓	(11)
<b>3. BILLING</b>		
Heading	✓	
Unit ... → ...Amount	✓	
Columns (ref: No rates etcl)	✓	
No abbreviations. do ALL/ONLY what is asked	✓	
No decimals	✓	
Dittos	✓	
Summary	✓	(7)

**[25]**

**QUESTION 4**

			<p><u>HOT &amp; COLD WATER</u></p> <p><u>Note:</u> ALL work msd prov.</p> <p><u>EXTERNAL</u></p> <p>15 Ø cu in ground incldg excav. &amp; backf.</p> <p>15 Ø Do. to wls etc.</p> <p>15 Ø Do. in chase, wrapped in 2 layers brown paper</p>				<p>E.o. cu pipe for fittings n.e. 30 mm</p> <p>5✓ -bend 4✓ 9✓ -tee</p> <p>5✓ Ex. For adapter n.e. 30 mm</p> <p>3✓ 15 brass s.c.</p>
	8.50			5/	1/		
	0.45			4/	1/		
	0.33						
	2.59						
	1.00						
	2.50						
	1.00						
	5.00	12.87✓					
2/	0.75	1.50✓					
	0.50	.50✓					
		14.87✓					
	2.00						
	1.20						
	1.50						
		4.70✓		3/	1/		

(1)

(2)



<p><u>1</u></p> <p><u>2.00</u> <u>1.00</u> <u>0.50</u></p> <p><u>3.50</u>✓</p> <p><u>0.50</u> <u>3.00</u></p> <p><u>3.50</u>✓</p> <p><u>2.00</u> <u>1.00</u> <u>1.50</u></p> <p><u>4.50</u>✓</p> <p><u>2.00</u></p> <p><u>2.00</u></p> <p><u>3.00</u></p>	<p><u>INTERNAL</u></p> <p>150 L. electr. comb. geyser wi. 1,2 mm galv. m.s. tray</p> <p>15 Ø cu. to w/s etc.</p> <p>20 Ø Do. do.</p> <p>15 Ø Do. in chase, wrapped in 2 layers brown paper</p> <p>20 Ø Do. do.</p> <p>Expanded polystyrene lagging secured wi. adhesive tape ar. 15 Ø pipe</p> <p>Do. ar 20 Ø pipe</p>	<p>1.1 <u>2</u> 2 <u>1</u> 1 <u>1</u></p> <p>3/ <u>1</u> <u>1</u></p>	<p>E.o. cu pipe for fittings n.e. 30 mm</p> <p>4✓ -15 bend 3✓ -20 bend 2✓ -20 red-tee <u>9</u>✓</p> <p>Ex. For adapter n.e 30 mm</p> <p>3✓ <u>1</u>✓ -15 <u>4</u>✓ -20</p> <p>20 brass s.c.</p>
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(3)

(4)

**HOT AND COLD WATER**

PLUMBING

M  
15 Ø cu to w/s etc  
14.87 1  
3.50 3  
18.37 18 m

M  
20 Ø cu. to w/s etc  
3.50 3  
4 m

M  
15 Ø cu. In chase,  
wrapped in 2 layers  
brown paper  
4.70 1  
4.50 3  
9.20 9 m

M  
20 Ø cu. In chase,  
wrapped in 2 layers  
brown paper  
2.00 3  
2m

M  
15 Ø cu. In ground  
indlg excav. & backf  
8.50 1  
9 m

No  
e.o. cu pipe for fittings  
n.e. 30 mm  
9 2  
9 4  
18

No  
Ex. for adapter n.e.  
30 mm  
5 2  
4 4  
9

M  
Expanded polystyrene  
lagging sourced wi.  
adhesive tape ar. 15 Ø  
pipe  
2.00 3  
2 m

M  
expanded polystyrene  
lagging scored wi.  
adhesive tape as 20 Ø  
pipe  
3.00 3  
3 m

No  
150 L electro.comb.geyser  
Wi 1,2 mm gal.m.s. tray  
1 3

No  
15 brass s.c.  
3 2

No  
20 brass s.c  
1 4

**HOT AND COLD WATER**

		Unit	Qty	Rate	R	C
<b><u>BILL NO. 20: PLUMBING</u></b>						
<u>WATER</u>						
1.	15 Ø copper pipe to walls, etc.	m	18			
2.	20 ditto ditto	m	4			
3.	15 ditto in chase, wrapped in 2 layers brown paper	m	9			
4.	20 ditto ditto	m	2			
5.	15 ditto in ground including the necessary excavation and backfilling	m	9			
6.	Extra over copper pipe for fittings not exceeding for 30 mm pipe	no	18			
7.	Extra for pipe connectors from copper to steel fittings, not exceeding 30 mm	no	9			
8.	Expanded polystyrene lagging secured with adhesive tape around 15 Ø pipe	m	2			
9.	Ditto around 20 Ø pipe	m	3			
10.	Allow the provisional item of R3 000 – for the connection to the municipal main	item				
11.	Allow for attendance	item				
12.	Allow for profit	item				
<u>Sanitary fittings, etc.</u>						
13.	150 litre electric combination geyser with 1,2 mm galvanised mild steel tray	no	1			
14.	15 brass stopcock	no	3			
15.	20 ditto	no	1			
<u>Bill no. 20: Plumbing</u>						
<u>Carried to summary:</u>					<b>R</b>	