

**PRE-ANNUAL GENERAL MEETING WORKSHOP ON COST MANAGEMENT OF MECHANICAL AND ELECTRICAL SERVICES INSTALLATIONS IN BUILDING PROJECTS
ORGANISED BY THE NIQS, KADUNA STATE CHAPTER**

GENERAL INFORMATION PROVIDED

- Drawings; that must accompany this section of measurement include the following:
- 1 Floor and site plans detailing layout of systems
 - 2 System Schematics
 - 3 Cross section and elevation
 - 4 Detail layouts for plant room and principal services installation areas
 - 5 Specific installation details for equipment and fittings
 - 6 Equipment Schedules

Mandatory Information to be provided

- 1 Type, quality, size or thickness of the materials
- 2 Method of Fixing
- 3 Location

Where the mandatory information is available, measurement of pipework and or ductwork will be fully detailed with the measurement of fittings identified & measured separately according to alternative 1. But if the mandatory informations are not given, then pipework or duct work & associated insulation & fire protections to be measured inclusive of fittings

<u>29th September, 2021</u>					<u>Pipes</u>		
1.38 MECHANICAL SERVICES							<i>Length</i>
Measurement of Pipeworks in connection to gas piping							
Equipment							
1/	1	1	Primary Equipment; Off-load O ₂ bottle; 1104m ³ O ₂ capacity; 2025ltrs net liquid capac. mount. In plnt rm 1.38: 1.2.0.0	26.20	26.20	oxygen bottl to bend	1200
2/	1	2	Primary Equipment; Off-load vacuum pump; blower, free air disp. 2763 ltr /min capac., 500mm Hg, 380v rating, 1140rpm rating, V-Belt 7.5kw motor drive, 1 nbr 1000 ltr capc. Reservoir mounted on roof 1.38: 1.2.0.0.1	97.44	389.76	bend 1 to bend 2	4500
44/	1	44	Primary Equipment; Off-load O ₂ cylinders; 6.82m ³ / 6820 ltrs O ₂ net liquid capac. mount. In plnt rm 1.38: 1.2.0.0.2	37.21	74.42	bend 2 to bend 3	1900
44/	1	44	Primary Equipment; Assemble all Composite items of primary eqt; Oxygen Cylinder; 6820ltrs capacity 1.38: 1.3.0.0		490.38	bend 3 to bend 4	7500
2/	1	2	Ditto; Vacuum pump 1.38: 1.3.0.0.1	0.49	25.48	bend 4 to bend 5	10200
1/	1	1	Ditto; Oxygen bottle 1.38: 1.3.0.0.2	1.06	34.98	bend 5 to bend 6	900
				0.77	13.09		26200
						Pipework; Straight; Corrugated Stainless Steel Tubing, 25mm dia. jointed with relative connectors, clipped and fixed to wall & Ceil. Surf. from the Gas Cylinder in risers to d 1st, 2nd, 3rd & 4th ward; in accord. to d Engr's detailed specs & Inst. 1.38: 3.1.1.1	
				73.55			
						Pipework; Curved; Corrugated Stainless Steel Tubing, 25mm dia. jointed with relative connectors, clipped and fixed to wall & Ceil. Surf. from the Gas Cylinder in risers to d 1st, 2nd, 3rd & 4th ward; in accord. to d Engr's detailed specs & Inst. 1.38: 3.2.1.1	
				0.30	2.10		
				0.90	4.50	Pipework; Flexible; Stainless Steel Flexible Hose, 25mm dia. comprising flange nut, Gasket & retainer ring fixed to adjoining pipes running from the Modular in risers to d 1st, 2nd, 3rd & 4th ward; in accord. to d Engr's detailed specs & Inst. 1.38: 3.3.1.1	
				1.15	12.65		
				0.45	1.35		
					20.60		

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98/	1	98	Alternative 1- Pipe Fittings; Unions; 25mm dia. Stainless Steel screwed to edges of pipe 1.38: 4.1.2.0	Item	Identification; symbols or nbrs for identification of pipes, valves, ducts and gas cylinders 1.38: 14.5.0.0
14/	1	14	Alternative 1- Pipe Fittings; reduc. Unions; 50mm dia. Stainless Steel screwed to edges of pipe 1.38: 4.8.2.0	Item	Testing; Allow for testing of all wrks carried out in this sect. 1.38: 17.0.0.0
23/	1	23	Alternative 1- Pipe Fittings; Tees; 25mm dia. Stainless Steel screwed to edges of pipe 1.38: 4.5.2.0	Item	Commissioning; Allow for comms. of wrks carried out in this sect. 1.38: 18.0.0.0
16/	1	16	Alternative 1- Pipe Fittings; Test point; 25mm dia. Stainless Steel screwed to edges of pipe 1.38: 4.9.2.0		1.41 Builder's Work in connection with gas piping and supply system
3/	1	3	Pipe ancillaries; safety valves, 2stage regulator 200/20/10 bar opening at 60 bar, 25mm dia. 1.38:5.1.1.0	Item	General Bldr's work in connec. with; gas piping & supp. Syst.; making good of all points with c/s mortar 1.41:1.1.0.0
5/	1	5	Pipe ancillaries; chng over valve pressure falls to 12.5 bar, safety valve opens at 5.85 bar, 25mm dia. 1.38:5.1.1.0.1	Item	marking position of holes, mortices & chases in the struct.; walls & flrs to the Eng'rs instr. 1.41:2.1.0.0
5/	1	5	Ditto; isolating valve; 25mm dia. 1.38:5.1.1.0.2		
8/	1	8	Pipe ancillaries; pipe sleeves, stainless steel; 50mm diameter, butt weld only 1.38:5.11.1.0		

1.40 TRANSPORTATION

Drawings; That must accompany this section of measurement

- 1 Location Plans

Mandatory Information to be provided

- 1 Kind, quality and size or thickness of materials
- 2 Location
- 5 Earth Connectors, straps and links

Minimum information that must be shown on the drgs that accompany the sect. of meas.

- 1 Overall dimensions of items or system.

2/	1	2	System; OTIS Lift, 1800 x 2200mm size, 8 passengers, 1200kg capacity, 10 stops & 10 openings with shaft, 8 storey; complete with accessories, controls, indicators, speakers and other components 1.40:1.1.0.0	Item	identification; symbols or numbers at the openings of the Lift 1.40:3.5.0.0
2/	1	2	System; Offload & position of OTIS lift, according to the Engr's instruction 1.40:1.2.0.0	Item	Testing and commissioning; allow for testing of lift system 1.40:4.0.0.0
2/	1	2	System; Assembly of compl. items of OTIS lift, according to the manufacturer's and Engr's inst. & specs. 1.40:1.3.0.0	Item	1.41 Builder's Work in connection to transportation installations General Bldr's work in connec. with; lifts; making good of all points with c/s mortar 1.41:1.1.0.0
2/	1	2	System; Free issue fixing, steelwork & other components for the OTIS lift installation by others as may be directed by the engineer 1.40:1.4.0.0	Item	marking position of holes, mortices & chases in the struct.; block and concrete walls to the Engr's instr. 1.41:2.1.0.0
	Item		System; Allow for interface with & connec. to OTIS lift supplied & installed to power by others as may be directed by the engineer 1.40:1.5.0.0		