

DESIGN
VISUALIZATION,
COMMUNICATION
AND
DOCUMENTATION

INDS 323

CONSTRUCTION DOCUMENTS

Preparation of drafted, working drawings and/or contract documents.



BILL OF QUANTITY

The bill of quantities (sometimes referred to as 'BOQ') is a document prepared by the cost consultant (often a quantity surveyor) that provides project specific measured quantities of the items of work identified by the drawings and specifications in the tender documentation.

NATURE OF BILLS

Bills of Quantities consist a **list of items of work** which are briefly **described**.

The Bills also provide a **measure** of the extent of work, and this allows the **work** to be **priced**. The work included in the item is defined in detail by the rules in the Method of Measurement. The item descriptions are therefore a shorthand to allow the relevant rules of the Method to be identified. The measure may be a single item or number, dimension (linear metre, square metre, cubic metre), time (hrs, weeks) or weight.

FUNCTION OF BILLS

The Bills of Quantities may serve several functions as:

- A **breakdown** of the tendered price, with no contractual status, but providing information for the selection from tenderers.
- An **estimate** measure of the work for the tendered price, to be used to arrive at a revised contract price once the actual **quantities** of **work** carried out are **measured**. This is the re measure form of contract.
- A schedule of rates as the contract basis for valuing variations in the work.
- A basis for measure of the value of work completed for **interim payments**.

STANDARDS FOR BILLS OF QUANTITIES

It is very important that bills of quantities are prepared according to a standard, widely recognized methodology. This helps avoid any misunderstandings and so helps avoid disputes arising through different interpretations of what has been priced.

In the UK, bills of quantities for general construction works were until recently most prepared in accordance with the Standard Method of Measurement

THIS IS ALSO THE CATEGORISATION OF WORK THAT IS USED FOR THE
NATIONAL BUILDING SPECIFICATION (NBS):

A - Preliminaries and general conditions.

B - Complete buildings, structures and units.

C - Existing site, buildings and services.

D - Groundwork.

E - In situ concrete and large precast concrete.

F - Masonry.

G - Structural carcassing, metal and timber.

H - Cladding and covering.

J - Waterproofing.

K - Linings, sheathing and dry partitioning.

L - Windows, doors and stairs.

M - Surface finishes.

N - Furniture and equipment.

▶ P - Building fabric sundries.

▶ Q - Paving, planting, fencing and site furniture.

▶ R - Disposal systems.

▶ S - Piped supply systems.

▶ T - Mechanical heating, cooling
and refrigeration systems.

▶ U - Ventilation and air conditioning systems.

▶ V - Electrical systems.

▶ W - Communications, security, safety and protection
systems.

▶ X - Transport systems.

▶ Y - General engineering services.

▶ Z - Building fabric reference specification.

PREPARING BILLS OF QUANTITIES

Bills of quantities can be prepared elementally or in works packages, by a process of 'taking off' which involves identifying elements of construction works that can be measured and priced.

- ▶ The term 'taking off' refers to the process of identifying elements of construction works that can be measured and priced. This is necessary to produce bills of quantities and requires that the design is complete and a specification has been prepared.
- ▶ Analysis of drawings and specifications allows the cost consultant (usually a quantity surveyor) to prepare a taking off list, which lists all of the individual elements that comprise the works.
- ▶ These elements can then be measured in number, length, area, volume, weight or time then collated and structured to produce an unpriced bill of quantities. This process is sometimes referred to as 'working up'.

Bills of quantities are most useful to the contractor when they are prepared in work sections that reflect likely sub-contract packages. This makes it easier for the contractor to obtain prices from sub-contractors and is more likely to result in an accurate and competitive price.

The bill of quantities should identify the different kinds of work required but should not specify them as this can lead to confusion between information in the bill of quantities and information in the specification itself.

NO.	DESCRIPTION	UNIT	QUANTITY
CIVIL WORKS			
A- Earth Works			
1	Cleaning and grubbing	Sqm	
2	Excavation works	M³	46,214.26
3	Filling works	M³	65,643.88
B- Concrete Works			
4	Lean concrete	M³	1,118.60
5	C35 Concrete	M³	15,304.90
6	C35 Brut Concrete	M³	51,882.17
7	Steel	ton	6,110.04
8	Wire Mesh (BRC)	ton	3,133.18
C- Form Works			
9	Tunnel Form works	Sqm	191,377.99

D- Masonry Works

10	8.5 cm Brick walls	Sqm	16,607.03
11	13,5 cm Brick walls	Sqm	153,361.77
12	19 cm Brick walls	Sqm	10,095.47

E- Finishing Works

13	Gypsum plastering on brick surface	M2	136,211.32
14	Gypsum plastering on concrete surface	M2	224,993.25
15	Interior Cement plastering	M2	76,116.23
16	Faced cement plastering	M2	30,452.70
17	MANTOLAMA YAPILMASI (Mineral siva ve boya dahil) TUĞLA	M2	13,751.60
18	MANTOLAMA YAPILMASI (Mineral Siva ve Boya Dahil) BETON	M2	10,110.97
19	Painting (Wall and ceiling)	M2	291,168.57
20	Stair Marble	MT	9,292.02

21	Sill and Parapet Marble	MT	14,327.17
22	MERMER DÖŞEME KAPLAMASI YAPILMASI İŞÇİLİĞİ	M2	13,144.90
23	SERAMİK SÜPÜRGELİK YAPILMASI İŞÇİLİĞİ	MT	54,583.94
24	Wall Ceramic	M2	36,081.18
25	Floor Ceramic	M2	49,326.85
26	MİNERAL SIVA YAPILMASI (Boya dahil) (MANTOLAMA YOK.BALKON PRPET VE TAVAN)	M2	40,668.66
27	False ceiling	M2	23,641.57
28	False ceiling band	MT	17,386.25
29	Screed	M2	124,599.65
30	ISLAK HACİMLERE SÜRME YALITIM YAPILMASI 2 KAT	M2	27,383.77
31	EPS and Geotextile on Membrane surface	M2	7,204.38
32	Alumimun windows works	M2	15,671.06
33	Core drill works Q40-Q70 mm	PEC	3,127.73
34	Core drill works Q100 mm	PEC	2,576.82
35	Façade Betopan works	M2	40,398.62
36	Marble sill	MT	5,826.13
37	Stair Handrail	MT	2,901.29

36	Marble sill	MT	5,826.13
37	Stair Handrail	MT	2,901.29
38	Balcoony Handrail	MT	7,047.82
39	Laminate Parquet	M2	59,527.64
40	Wall paper	M2	76,803.78
41	Kitchen glass ceramic	M2	2,566.20
42	Interior woden doors	PEC	6,340.00
43	Appartment steel doors	PEC	702.00
44	FIRE DOORS	PEC	654.00
45	Kitchen Cuoboard	PEC	1,400.00

F- Sanitary Works

1- GLV pipes and fittings

46	4" GLV Pipe	MT	183.00
47	3" GLV Pipe	MT	183.00
48	2 1/2" GLV Pipe	MT	1,421.00
49	2" GLV Pipe	PCB	437.00
50	1 1/2" GLV Pipe	PCB	55.00
51	1 1/4" GLV Pipe	PCB	55.00
52	2" / 1 1/2" GLV Reducer	PCB	19.00

G - ELECTRICAL WORKS

230	1X1.5mm NYA	MT	301,000.00
231	1X2.5mm NYA	MT	790,000.00
232	1X4mm NYA	MT	99,700.00
233	1X10mm NYA	MT	22,330.00
234	4X10mm NYY	MT	22,100.00
235	4X16 mm NYY	MT	45,300.00
236	4X25mm NYY	MT	8,325.00
237	2X1.5mm NHXMH	MT	16,200.00
238	2X1.5mm N2XH	MT	4,800.00
239	1X50mm Copper for Earth	MT	600.00
240	1X150mm Copper for Earth	MT	1,895.00
241	RG6/U6	MT	75,000.00
242	RG11/U6	MT	20,800.00
243	2X0.8+0.8 FIRE ALARM CABLE	MT	37,000.00