

Equipment Specification Writing Guide

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1 General

These notes attempt to establish basic guidelines for equipment specifications suitable for inclusion in the project equipment supply tender. It is important that specification writers comply with the following policies to ensure adherence to EC guidelines.

In order to satisfactorily complete their task, the spec writers should be aware of the general principles of EC procurement before they start developing the equipment lists and specifications.

2 Overview of Principles

- 1) **Fair competition:** The specifications must be written so that more than one supplier can satisfy the requirement. This will increase competition and therefore achieve better value for money.
- 2) **Clear, easy to understand specifications:** It is very important to develop adequate specifications, since it forms the basis of the bidding. Unclear, unnecessarily detailed and biased specifications will decrease the number of suppliers participating the tender and reduce overall quality. Unclear specifications will also confuse bidders, which may cause rejection of bids. This may require the rejection of all bids and rescheduling of the tender with consequent time delays.
- 3) **Language:** All specifications must be written in English.
- 4) **Units of measurement:** Where possible, metric units must be used.
- 5) **Item Codes:** Item codes have been allocated for the items identified in the competency charts. These code numbers are spaced 10 apart to allow new items to be inserted. No code numbers should be changed during the development of the lists. All items will be renumbered once the lists are finalised.
- 6) **Format:** All specifications must be written in a bullet point format, starting with the most important characteristics of the item. Each bullet point should address only one characteristic. Each bullet point should be sequentially numbered starting from 1.
- 7) **Avoid unnecessary details:** Only the key characteristics should be specified. Each characteristic listed should be required for evaluation. For example there is no need to specify the weight of an oscilloscope, although commonly given in manufacturers' specification sheets, since this is not a factor in deciding to purchase this item. 'Bench standing' or 'hand-held' would be sufficient.
- 8) **Using technical literature:** It is usually not possible or in some cases risky to write specifications without using technical literature from manufacturers. Therefore, it is acceptable to use technical literature from manufacturers, but the following should be kept in mind.
 - a) Use literature only as a reference. By using the literature, avoid preparing locked specifications that favour one supplier over others. Check that the specification you have written is general enough to be met by typical suppliers dealing with such products.
 - b) Do not include every specification listed in the literature. Only list the important key characteristics.
 - c) Do not be too specific with the specifications when referring to catalogues. Unless they are standards, do not take measures literally. For example, if an engine power is given as *2325 watts* in the literature, in the specification you may say '*minimum 2300 watts*'.

- d) Be careful when referring to specifications from different catalogues. Avoid mixing them and writing specifications that no manufacturer can meet.
 - e) Always remember that technical literature is prepared in order to sell. The language should be revised to reflect the required characteristics.
- 9) **Subjective statements:** Do not use subjective statements such as “high quality”, “easy to use”, etc. The equipment specifications must be objective and actual. Such statements are open for interpretation and are impossible to evaluate. Be aware that ‘high grade’ may simply indicate more features.
- 10) **Specifications should not be restrictive:** The specifications should be definitive not restrictive. The objective of writing technical specifications is to explain to the suppliers what is required. Even a simple item such as chair requires technical specifications. The bidders need to know what will be the material of the chair (plastic, wood, metal, etc), material of the cushion, if it has arms, if it has adjustable height, if it has rotating wheels and etc. If we don’t give enough detail the bidder may be confused and will probably offer the cheapest available chair (since our selection criteria is to buy the cheapest item that meets our technical specifications).
At the same time the specifications should not be too detailed so as to restrict the bidders unnecessarily. It is important that as many bids as possible are received to improve competition and increase the chances of purchasing equipment that meets the requirements at the best possible price.
In summary, specifications must be detailed enough to leave no question in the bidders mind as to what is required, but should be generic enough to allow multiple manufacturers’ equipment to be offered.
- 11) **Dimensions or weight:** In some cases dimensions and weight may be part of the specifications. For example for a vehicle lift you need to specify the maximum weight and for a projector screen you must specify dimensions. But for a regular television, it is not necessary to specify weight.
- 12) **Model and manufacturer:** If compatibility is an issue then the model and manufacturer can be specified. This is usually acceptable for IT software. For example it is acceptable to specify operating system or specific software if it has to operate with existing systems. But you cannot specify the manufacturer or a model for a computer, however you may identify the processor type so that you either buy an IBM Compatible PC or a Macintosh.
- 13) **Accessories:** All standard accessories and optional accessories required must be listed at the end of the specifications. It is not acceptable to state *full optional accessories required* as different manufacturer’s have different set of optional accessories and this can prevent fair evaluation.

3 Example Specification

Box 1. Example Poor Technical Specification.

DRILLING MACHINE BENCH TYPE

General Detail

- [1] Drilling machine bench type.
- [2] Commonly used product from a recognized company

Technical Detail

- [3] Belt driven with 4 spindle speeds.
- [4] Drilling table can be raised and lowered which can be set at an angle of 0-45° and can be swung sideways.
- [5] Bench dimensions Length: 476 mm, Width: 178 mm
- [6] Distance from spindle to base is 632 mm
- [7] Drilling capacity is min. 13 mm.
- [8] Motor power 0.320 HP
- [9] Electrical supply is 220 V, 50 Hz, 1 phase.
- [10] With chuck and key chuck.
- [11] Complete with drill bits.

Option

- [12] With vice 1 set.
- [13] Complete with standard accessories and set up tools.
- [14] Made in Europe
- [15] Spare parts are distributed in Turkey
- [16] Minimum one year guarantee

Box 2. Corrections...

DRILLING MACHINE BENCH TYPE

~~General Detail~~

[1] ~~Drilling machine bench type.~~

[2] ~~Commonly used product from a recognized company~~

~~Technical Detail~~

[3] Belt driven with 4 spindle speeds.

[4] Drilling table can be raised and lowered which can be set at an angle of 0-45° and can be swung sideways.

[5] Bench dimensions Length: ~~476 mm~~, Width: ~~178 mm~~

[6] Distance from spindle to base is ~~632 mm~~

[7] Drilling capacity is min. 13 mm.

[8] Motor power 0.320 HP

[9] ~~Electrical supply is 220 V, 50 Hz, 1 phase.~~

[10] With chuck and key chuck.

[11] Complete with drill bits.

~~Option~~

[12] With vice 1 set.

[13] ~~Complete with standard accessories and set up tools.~~

[14] ~~Made in Europe~~

[15] ~~Spare parts are distributed in Turkey~~

[16] ~~Minimum one year guarantee~~

Delete. Not necessary

Delete. Already in the title

Delete. Impossible to evaluate

Too specific. Change to minimum 450

Too specific. Change to minimum 150

Too specific. Change to minimum 600

Too specific. Change to minimum 0.3 Hp

Detail the accessories

Delete. In general conditions

Delete. Addressed in the contract conditions

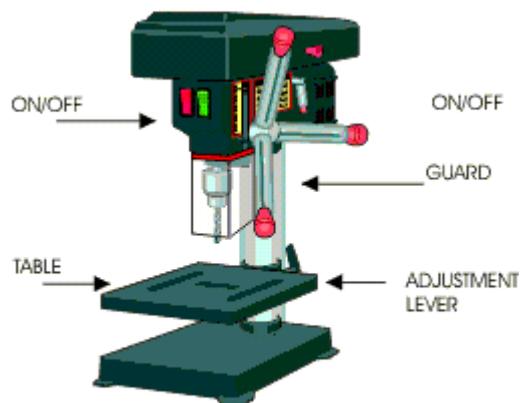
Delete. Not necessary, electrical requirements addressed in the General Technical Specifications

Delete. Addressed in the contract conditions

Box 3. Corrected Technical Specification.

DRILLING MACHINE BENCH TYPE

- [1] Belt driven with 4 spindle speeds.
- [2] Drilling table can be raised and lowered and can be set at an angle of 0-45° and can be swung sideways.
- [3] Bench dimensions Length minimum 450 mm, Width minimum 150 mm
- [4] Distance from spindle to base is minimum 600 mm
- [5] Drilling capacity is min. 13 mm.
- [6] Motor power minimum 0.300 HP
- [7] With chuck and key chuck.
- [8] Complete with 1 set of drill bits 7 pcs.
- [9] With vice 1 set.



4 Other Information Required

Besides the technical specification, there are other items of information to record:

Figure 1. Edit Screen

Details for item 10070 for Computer

Item Name:

Ekipman:

Used?: ▼

Section:

Units:

Specification:

Comments:

Budget €:

Author:

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- Item Name:** Name of the item in English
- Ekipman:** Name of the item in Turkish
- Used:** Should this item be included in the tender? E.g. simple items although listed in the competency sheets may not be tendered (paper, rule, pens etc.)
- Section:** Use this field to divide your list. E.g. Automotive may have '1. Hand-tools', '2. Garage equipment'.
- Units:** The units by which we will purchase the item. By default this is 'each' but may be 'set', 'm', 'kg' etc.
- Specification:** See above

Comments:
(not included in tender dossier)

Record here any special information:
Derogations required
'Used with...' information
'Same as...' information
Catalogues used as reference
Particular training requirements
Health and safety issues
Specification changes history

Budget:

The estimated price of the item, delivered and installed

Author:

Your name.

5 Accessing the Discussion Group

To access the equipment discussion group go to xxxxxxxxxxxx. You should complete the required declaration and register in the discussion group.

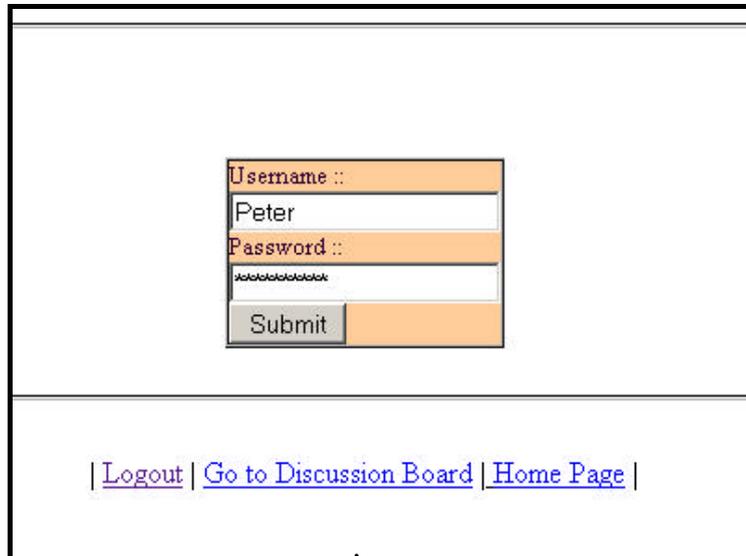


Go to Discussion Group

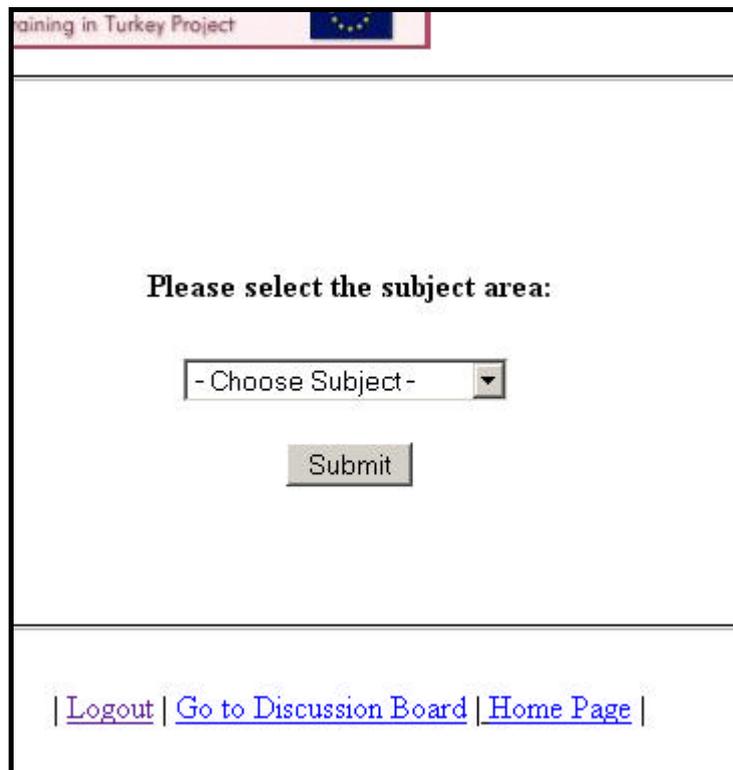


6 Accessing the Database

You will be sent the address for accessing the database by email. Use your discussion group Username and Password to gain access:



A screenshot of a web form for logging in. It features two input fields: "Username ::" containing the text "Peter" and "Password ::" containing a masked password "*****". Below the fields is a "Submit" button. At the bottom of the form, there are three blue links: "[Logout](#) | [Go to Discussion Board](#) | [Home Page](#)".



A screenshot of a web form for selecting a subject area. At the top left, it says "Training in Turkey Project" next to a small European Union flag. The main text reads "Please select the subject area:". Below this is a dropdown menu with the text "- Choose Subject -" and a small downward arrow. Below the dropdown is a "Submit" button. At the bottom of the form, there are three blue links: "[Logout](#) | [Go to Discussion Board](#) | [Home Page](#)".



Training in Turkey Project

Please select the subject area:

- Choose Subject -
 - Choose Subject -
 1 Computer
 2 Electrical/Electronics
 3 Automotive
 4 Clothing
 5 Hotel
 6 Pedagogy

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MVET Project Equipment Database

MVET MTEM
 Mesleki ve Teknik Eğitim Modernizasyonu Projesi
 Modernization of Vocational Education & Training in Turkey Project

List of items for Computer [Show Details](#) [Add Item](#)

[10010](#) Oscilloscope - Osiloskop - Y
[10020](#) Digital all purpose meter - Multmetre - Y
[10050](#) Voltmeter - Voltmetre - Y
[10030](#) Signal generator - Sinyal jeneratörü - N
[10040](#) All purpose meter - Avometre - N
[10060](#) Ammeter - Ampermetre - N
[10070](#) Frequency meter - Frekansmetre - N
[10080](#) Experiment tables - Deneysel masalar - N
[10090](#) Computer table - Bilgisayar masası - N
[10100](#) Printer table - Yazıcı masası - N

Chosen subject is Computer

	Code	Used	Section	Item Name	Ekipman	Unit	Budget	Specification	Comments	Author
Edt	10070	Y	A	Frequency meter	Frekansmetre	each	0	[1] 5Hz to 1.2GHz frequency range[2] Frequency or period display[3] Frequency resolution 0-00mHz to 10kHz[4] 8 digit LCD display[5] Period, pulse width, ratio and total time modes	Peter 3-Sep-04	Edt
Edt	10010	Y	EE	Oscilloscope	Osiloskop	each	0	[1] Bandwidth per channel DC to 30MHz		Edt
Edt	10020	Y	EE	Digital all purpose meter	Multmetre	each	0	[1] Digital multimeter: hand held [2] Accuracy 0.5% [3] 3.5 digit LCD [4] Auto decimal point, zero adjustment and polarity indication. [5] ranges - DC volts 200mV, 2V, 20V, 200V, 1000V [6] AC volts 200mV, 2V, 10V, 200V, 750V [7] DC current 2uA, 2mA, 20mA, 200mA, 2A, 10A [8] AC current 200uA, 2mA, 200mA, 2A, 10A [9] Resistance 200-20Mohms [10] Diode test [11] Continuity tester to 200ohms [12] Battery operated [13] Supplied complete with leads, battery and operating manual	Peter 3-Sep-04	Edt
Edt	10050	Y	EE	Voltmeter	Voltmetre	each	0			Edt

Details for item 10070 for Computer

Item Name:	<input type="text" value="Frequency meter"/>
Ekipman:	<input type="text" value="Frekansmetre"/>
Used?	<input type="checkbox"/> Y <input type="checkbox"/> N
Section:	<input type="text" value="A"/>
Units:	<input type="text" value="each"/>
Specification:	<input type="text" value="[1] 5Hz to 1.2GHz frequency range
[2] Frequency or period display
[3] Frequency resolution 0.000Hz to 10kHz
[4] 8 digit LCD display
[5] Period, pulse width, ratio and totalize modes"/>
Comments:	<input type="text" value="Peter 3-Sep-04."/>
Budget €:	<input type="text" value="0"/>
Author:	<input type="text"/>

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7 Contract Conditions

Consideration must be given to the following issues:

Acceptance	Procedure for accepting delivery of the equipment. Clear description of system is required
Installation	Timetable, location – who decides
Training	By default, how many people are given training. Operator and service training. What about application training.
Manuals	Do we need extra copies? What about language?
Warranty	The default period. Dealing with extra periods.
Service	Where to find it? Service routines.
Spare Parts	Location, costs?