

Section VII. Technical Specifications

Notes for Preparing the Technical Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (e.g. production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "*or at least equivalent.*" References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

Technical Specifications

Item	Specification	Statement of Compliance
		<p><i>[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i></p>
1	ABC's of Journaling, 2018, Sy	
2	MASS COMMUNICATION, 3G E Learning	
3	3G Handy Guide: Dramatics w/ DVD, 2020, 3G E Learning	
4	Writing and Editing for Digital Media , 4e, 2020, Carroll	
5	Using Film to Understand Childhood and Practice, 2018, Aitken	
6	Careers in Digital Media. 2020, Tucker	

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7	Digital Media Ethics, 3e, 2020, Ess	
8	3G Handy Guide: Film Direction w/ DVD, 2020, 3G E Learning	
9	Applied Communication Research Methods: Getting Started as A Researcher , 2nd, 2020, Michael Boyle	
10	Audio and Video Editing: Professional Techniques, 2020, Boyle	
11	Broadcast Journalism, 2020, Conley	
12	Ethics and Journalism: Principles for the 21st Century, 2020, Martinez	
13	Multimedia Processing and Communications: Audio and Video,,pb, Ophelia Saunders	
14	Future for Public Service Television, A, 2018, Freedman	
15	Introduction to Communication Media w/ DVD, 2020, 3G E Learning	
16	First Aid at Sea,7e,rb, Justin J Berry	
17	Fixed Offshore Platforms: Structural Design for Fire Resistance,,hb, Mavis Okyere	
18	International Safety Management (ISM) Code with Guidelines for its IMO Implementation, 2018 Edition - ID117E,,pb, IMO	
19	Seapower : A Guide for the Twenty-First Century,4e,pb, Geoffrey Till	
20	Symbols related to Escape Route Signs & Equipment Location Markings -2018 IMO Edition - I988E (Poster),,Poster, IMO	
21	Symbols related to Life-Saving Appliances and Arrangements, 2018 Edition - IMO IC981E (Poster),,Poster, IMO	
22	Electrical Engineering: An Introduction,,pb, Max Kirby	

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23	Fundamentals of Electric Circuits,,pb, 3G E-Learning	
24	Fluid Mechanics : Fundamentals & Applications, SI,4e,pb, Yunus Cenge	
25	HVAC and Refrigeration Systems with DVD,2e,pb, 3G E-Learning	
26	Modern Weilding,,pb, Summer Conroy	
27	Principles of Heat and Mass Transfer,,pb, Annika Brayan	
28	Principles of Thermodynamics,,pb, Henry Medina	
29	Strength of Materials with DVD,2e,pb, Summer Conroy	
30	Structural and Stress Analysis,4e,pb, T.H.G. Megson	
31	Vector Mechanics for Engineers : Statics,12e,pb, Beer Johnston	
32	VECTOR MECHANICS FOR ENGINEERS: DYNAMICS, SI,12e,pb, Beer Johnston	
33	Construction Risk in Coastal and Maritime Engineering, Kumar	
34	Fatigue Analysis of Ship Structures, Gupta	
35	Marine Cargo Operations, Sharma	
36	Ship and Operation Management, Kumar	
37	PRINCIPLES OF STEEL MAKING, GREG MAYHEW	
38	TECHNICAL DRAFTING : Intermediate, (w/ DVD), 2e, 2018, 3G E-Learning	
39	Becoming a HVAC Technician: A Professional Guide,,pb Sam Harrington	
40	3G Handy Guide: Electrician, 2019, 3G E Learning	
41	3G Handy guide: Consumer Electronics & IT Hardware with DVD, 3G E Learning	
42	AC/DC principles with DVD, 3G E Learning	

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43	Electric Drives and Electromechanical Systems: Application and Control, Richard Crowder	
44	Electric power Distribution Line Construction: Intermediate with DVD, 3G E-Learning	
45	Electrical Installation and Maintenance, 3G E-Learning	
46	Electrician Advanced Course, Scott Gonzales	
47	Power Electronics with MATLAB, Kumar	
48	Solar Energy: Technologies and Systems, Darren Erickson	
49	Algebra 1 Essential for Dummies, Sterling	
50	Algebra : The Basic of Mathematics, Burke	
51	Calculus: The Basics, Baker	
52	Differential Equations, Lynch	
53	Descriptive Statistics, 3G E-Learning	
54	Discrete Mathematics 2e, 3G E-Learning	
55	Easy Pre-Calculus Step-Buy-Step, 2e, Wheeler	
56	Geometry Essentials for Dummies, Ryan	
57	Linear Algebra, 3G E-Learning	
58	Mathematics in the Modern World, 2e, 3G E-Learning	
59	Modern Geometry, 3G E-Learning	
60	Trigonometry: Review and Workbook, Clark	
61	General Mathematics, 3G E-Learning	
62	Clear English Pronunciation: A Practical Guide , 2020, Dick Smakman	
63	College Writing Skills W/ Readings , 10e, 2019, Langan	
64	Communication Research, 5e, 2019, Keyton	

65	Companion to Greek Literature, A , 2020, Hose	
66	Concise Encyclopedia of Applied Linguistics, The , 2020, Chapelle	
67	Critical Reflections on Research Methods, 2019, Warriner	
68	Developing Chinese Fluency Transitions, 2018, Zhang	
69	English Language Profeciency Testing in Asia , 2020, Su	
70	Experience Spanish: Un Mundo Sin Limites, 3e, 2020, Amores	
71	Invitation to Public Speaking, 6e, 2018, Griffin	
72	Language and Power, 2019, Simpson	
73	Oral Communication w/ DVD, 3e, 2020, 3G E- Learning	
74	Public Speaking: Choices and Responsibility, 3e, 2020, Keith	
75	Schaum's Outlines: Spanish Grammar , 7e, 2020, Schmitt	
76	3GE Collection on Environmental Science: Environmental Change..., 2020, 3G E- Learning	
77	3GE Collection on Physics & Chemistry: Environmental Toxicology..., 2020, 3G E-Learning	
78	Atmospheric Science: An Introduction, 2020, Dean	
79	Earth and Life Science w/ DVD, 3e, 2020, 3G E- Learning	
80	Environmental Science, 15e, 2019, Enger	
81	Fundamentals of Microbiology, 2020, Cooke	
82	Fundamentals of Hydrology, 2020, Rogers	
83	Principles of Environmental Science, 9e, 2020, Cunningham	
84	Principles of Geology, 2020, Taylor	
85	Soil Chemistry, 5e, 2020, Strawn	

86	Coach Education and Development in Sport , 2020, Callary	
87	Contemporary Choreography. 2e, 2018, Butterworth	
88	Nutrition For Sport And Exercise, 4e, 2019, Dunford	
89	Physical Education and Development, 2020, Wagan	
90	Physical Education and Health w/ DVD, 3e, 2020, 3G E- Learning	
91	Physical Education, Exercise Science and Sport, 2020, Owens	
92	Sport Communication, 2018, Onwumehili	
93	Sports Playbook, The, 2018, Gordon	
94	Sports Coaching: A Threoretical and Practical Guide, 2020, Cope	
95	Testing and Evaluation of Strenght and Power, 2020, Mike Mcguigan	
96	A HISTORY OF CHRISTIAN-MUSLIM REALTIONS, HUGH GODDARD	
97	CONTROL CULTURE, F.BECKMAN	
98	CULTURAL HISTORY. G. SWANSON	
99	ETHICS: THEORY AND CONTEMPORARY ISSUES, HARRIET OLSEN	
100	ETHNOGRAPHIC METHODS, K. O'REILLY	
101	FEMINIST PHILOSOPHY, HY. GRASSWICK	
102	METAPHYSICS: A CONTEMPORARY INTRODUCTION, LOUX/CRISP	
103	TEACHING HISTORY, CAFERRO	
104	EARTH AND SCIENCE: WORLD EDITION, 3G E-LEARNING	

105	ENVIRONMENTAL PHYSICS, NELSON BOLIVAR	
106	Classical Mechanics,,pb, Edwin Roman	
107	ISE College Physics,5e,pb, Alan Giambattista	
108	Physics for Scientists and Engineers, Volume 1,10e,hb, Serway Jewett	
109	Schaum's Outline of Physics for Engineering and Science,4e,pb, Michael E. Browne	
110	Developing Agility and Quickness,2e,pb, Jay Dawes	
111	Essentials of Physical Education,,pb, Aria Kramer	
112	Essentials of Teaching Physical Education with DVD,2e,pb, 3G E-Learning	
113	Exercise Physiology: Theory & Application to Fitness & Performance,10e,pb, Powers, Scott K.	
114	Physical Education, Exercise Science and Sport,,pb, Liam Owens	
115	Music: An Appreciation,12e,pb, Kamien	
116	Promoting Active Lifestyles in Schools,,pb, Harris Cale	
117	The Warm-Up : Maximize Performance and Improve Long- Term Athletic Development,,pb, Ian Jeffreys	
118	100 Questions (and Answers) About Research Ethics,,pb, Anderson Corneli	
119	A Step-By-Step Introduction to Statistics for Business,2e,pb, Richard Landers	
120	ADVANCED RESEARCH METHODS FOR THE SOCIAL AND BEHAVIORAL SCIENCES,,pb, EDLUND	
121	Communication Research: Asking Questions, Finding	

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	Answers, ISE,5e,pb, Joann Keyton	
122	Data Collection Research Methods in Applied Linguistics,,pb, Rose McKinley	
123	Designing and Conducting Mixed Methods Research,3e,pb, Creswell Clark	
124	Doing Educational Research : Overcoming Challenges In Practice,,pb, Marit Honerod Hoveid	
125	Media and Communication Research Methods - International Student Edition : An Introduction to Qualitative and Quantitative Approaches,,pb, Arthur Asa Berger	
126	Qualitative Comparative Analysis in Mixed Methods Research and Evaluation,,pb, Leila Kahwati	
127	Quantitative Analysis of Questionnaires : Techniques to Explore Structures and Relationships,,pb, Steve Humble	
128	RESEARCH METHODS, STATISTICS, AND APPLICATIONS,2E,PB, ADAMS / LAWRENCE	
129	Social Research Methods : Qualitative, Quantitative and Mixed Methods Approaches,,pb, Sigmund Gronmo	
130	Illustrated Dictionary of Automotive Engineering,,pb, 3G E-Learning	
131	Illustrated Dictionary of Communication and Soft Skills,,pb, 3G E-Learning	
132	Illustrated Dictionary of Information Technology ,,pb, 3G E-Learning	
133	Illustrated Dictionary of Mechanical Engineering,,pb, 3G E-Learning	

134	Illustrated Dictionary of Electrical & Electronics Engineering,,pb, 3G E-Learning	
135	What is Quantitative Longitudinal Data Analysis?,,pb, Gayle Lambert	
136	Illustrated Dictionary of Calculus,,pb, 3G E-Learning	
137	Oxford Primary Thesaurus,,hb, Susan Rennie	
138	Qualitative Research Methods : Collecting Evidence, Crafting Analysis, Communicating Impact,2e,pb, Sarah Tracy	
139	Illustrated Dictionary of Biology,,pb, 3G E-Learning	
140	ADDITIVE MANUFACTURING CHANGE MANAGEMENT, D. DIETRICH	
141	BASIC THERMODYNAMICS, 3G E LEARNING	
142	AN INTRODUCTION TO MECHANICAL ENGINEERING, J. WICKERT/K.LEWIS	
143	CLASSICAL MECHANICS, E. ROMAN	
144	COMPUTATIONAL CONTINUUM MECHANICS, AHMED A. SHABAN	
145	CORE CONCEPTS IN ENGINEERING: INDUSTRIAL ENGINEERING WITH DVD, 3G E-LEARNING	
146	CORE CONCEPTS IN ENGINEERING: MECHANICAL ENGINEERING WITH DVD, 3G E-LEARNING	
147	ENGINEERING GRAPHICS ESSENTIALS WITH AUTOCAD 2019 INSTRUCTION, K. PLANTENBERG	
148	ENGINEERING MECHANICS, FISCHER	

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149	ENGINEERING MECHANICS, 3G E LEARNING	
150	ENGINEERING STATISTICS WITH DVD, 3G E-LEARNING	
151	ENGINEERING TECHNOLOGIES, TOOLEY	
152	FLUID MECHANICS AND HYDRAULIC MACHINES, FORMATO	
153	FUNDAMENTALS OF ENGINEERING THERMODYNAMICS (HB), BABU	
154	FUNDAMENTALS OF MACHINE COMPONENT DESIGN, JUVINALL	
155	INDUSTRIAL DESIGN ENGINEERING:INVENTIVE PROBLEM SOLVING, J.WANG	
156	INDUSTRIAL ENGINEERING AND MANAGEMENT, OCAMPO	
157	INDUSTRIAL MAINTENANCE; MECHANICAL FUNDAMENTALS AND PRACTICES, 9781632386854	
158	PRINCIPLES OF HEAT AND MASS TRANSFER, A. BRAYAN	
159	SOLIDWORKS 2017 REFERENCE GUIDE, D. PLANCHARD	
160	SOLIDWORKS 2017 IN 5 HOURS WITH VIDEO INSTRUCTION, D. PLANCHARD	
161	STATICS AND MECHANICS OF MATERIALS, B. GOODNO/J. GERE	
162	COMPUTER PROGRAMMING FOR BEGINNERS, M. CHEMUTURI	
163	Basic Computer coding C++, 3G E-Learning	

164	Management Information Systems, 3G E-Learning	
165	Using computers in small Business, 3G e-Learning	
166	Computer Basics: The Beginner's Guide.,pb, Stan Cox	
167	Database Systems : Design, Implementation, & Management,13e,hb, Coronel Morris	
168	Database System Concepts, ISE,7e,pb, Abraham Silberschatz	
169	Professional Graphic Designing.,pb, Philip Frost	
170	Adobe Photoshop CC for Photographers, Martin Evening	
171	CEH Certified Ethical Hacker All-in-One Exam Guide.4e,pb, Matt Walker	
172	CCSP Certified Cloud Security Professional All-in-One Exam Guide,2e,pb. Daniel Carter	
173	DevOps for Dummies.,pb, Emily Freeman	
174	System Forensics. Investigation, and Response,3e,pb, Chuck Easttom	
175	CompTIA A+ Guide to IT Technical Support (MindTap Course List),10e,hb, Andrews, Jean	
176	Python Programming for Beginners.,pb, Dexter Hudson	
177	M: Information Systems, ISE,5e,pb, Paige Baltzan	
178	Introduction to Human-Computer Interaction.,pb, Mark McFadden	
179	Systems Analysis and Design,12e,hb, Scott Tilley	
180	Security Strategies in Windows Platforms and Applications,3e,pb, Michael Solomon	
181	IT Auditing Using Controls to Protect Information Assets,3e,pb, Mike Kegerreis	

182	Fundamentals of Python: Data Structures (MindTap Course List),2e,pb, Kenneth Lambert	
183	Machine Learning with Spark and Python : Essential Techniques for Predictive, Michael Bowles	
184	Mobile App Development: A Career Guide,,pb, Olivia Vaughn	
185	Principles of Database Management : The Practical Guide to Storing, Managing and Analyzing Big and Small Data,,hb, Lemahieu Broucke	
186	PROFESSIONAL JAVASCRIPT FOR WEB DEVELOPERS, FRISBIE	
187	PHP, MYSQL, & JAVASCRIPT ALL-IN-ONE FOR DUMMIES, BLUM	
188	SOFTWARE ENGINEERING; THEORY AND PRACTICE, CERSEI PAGE	