

## Chapter 2 Recognition and Benefits of the PS Certification Mark System

### (1) Possession of PS Mark License

To the question "Are you a PS Mark license holder?" (Q201), there were 310 answers, namely,

"A PS Mark license holder"	90 firms (29%)
"Not a PS Mark license holder"	219 firms (71%)
No answer	1 firm (0%)

indicating that about 30% of the firms that answered that they possess PS Mark licenses. The firms that answered this questionnaire being biased for the relatively larger firms as described in (1-(3)) above, it is not conceivable that this percentage will apply to all firms of the Philippines but it is understandable that there is a fair amount of fervor for the PS Certification Mark System among the firms that answered.

Viewed by type of industry, as shown in Table A6-2-1, all 12 firms in the cement industry that answered possessed licenses and the electrical equipment industry with 76% and agricultural products (mainly banana) with 67% have high percentages of license holders. Conversely, in the industries of textile and clothing, miscellaneous products, footwear, etc. there was no firm that possessed a license among those that answered. Also, in the industries of furniture, chemicals, etc. the percentage of firms that possess licenses is extremely low.

### (2) Recognition of PNS

To the question "Did you know the PNS?" (Q202) directed to the firms that answered (or withheld answers) to the preceding question (Q201), the 220 answers were;

"Knew the PNS"	165 firms
"Did not know the PNS"	55 firms

indicating that many of the firms which do not possess PS Mark licenses knew the PNS and since the firms that answered "Possess PS Mark license", naturally would know of PNS, PNS is well-known and 255 firms of the 310 firms, or about 80% of the firms, recognize PNS.

By industries, as shown in Table A6-2-2, PS Mark is particularly well-known in the industries of paper products, electrical and electronic equipment, metalworking, etc., indicating a high level of concern in PNS in these industries.

### (3) Intent to Apply for PS Mark licenses

To the question "Will you apply for the PS Mark license in the future?" (Q203) directed to the firms that answered (or withheld the answer) "Do not possess a PS Mark license" to Q201, the 220 answers were;

"Wish to apply for the PS Mark license in the future" 102 firms (46%)

"No intent to apply for the PS Mark license" 118 firms (54%)

indicating that there are more, although slightly, firms that have no intent to apply for a PS Mark license. (Table A6-2-3)

Q205 "The reason why you will not apply (did not apply) for the PS Mark license" is a question directed to the firms that answered "Have no intent to apply for a PS Mark license" in order to determine the reasons. (Total number of answers was 148 because of multiple choice) (Table A6-2-4)

Those that answered "No PNS applicable to your product" were highest in number with about 37%, and surpassed those that answered "Don't think it necessary" with 28%, indicating a possibility of applying for a PS Mark license when a PNS to which the product of the firm applies should be established. There was no firm that answered "Difficult to meet the PNS requirements".

It is to be noted here that firms that answered "Buyers' specifications are used" and "Foreign standards are used", combined, reached 33%, which may be taken to show the posture of responding to a buyers' market. The main foreign standards used were listed to be MIL by 4 firms, UL by 4 firms, and LIME, VDE by one firm each.

This posture is notable in the electronic industry and the garments industry which are particularly export-oriented.

Nextly, Q206 "Reason why you don't think the PS Mark application necessary?" directed to the 41 firms that answered "Don't think it necessary." to Q205 in order to determine the reasons (total number of answers 34) (Table A6-2-5). Those that answered "Product quality is higher than expected by the PS Mark." were highest in number with 41%. There were 15% that answered "It's costly." and there were 18%, a small number of firms, that answered "Customers are not quality conscious". Other answers included "The firm conforms to buyers' specifications." with 18%, the firms that answered "Product quality is higher than expected by the PS Mark" may be judged to be the group that will apply for the PS Mark license when it becomes mandatory. Many are in the furniture and garment industries.

In anticipation of answers saying "Difficult to meet the PNS requirements" to Q205, question Q207 was provided to determine the reasons but there were no answers.

On the other hand, the answers to the question "The reason why you will apply (or applied) for the PS Mark license" (Q204) directed to the group of firms that is positive and cooperative to PS Mark (firms that are PS Mark license holders) (Q201) or to the firms that wish to apply for the PS Mark license in the future (Q203) were as shown in Table A6-2-6. (There are 237 answers in total because of the multiple choice to this question too.)

As was to be expected, "Aware of necessity to keep product quality good" (66%) and "it is mandatory" (20%) accounted for a large percentage and "Request by customer" (7%) and such reasons as "To fit the machine & equipment being used" (4%), "To fit with the parts and components purchased" (3%) are very few.

#### **(4) Effect of the Promotion of PNS on the Firms**

As measures that the Philippine government may adopt to promote PNS, such measures as "mandatory PNS", "mandatory use of PS Mark affixed materials for purchase by government organizations", "to publicize the good and reliable quality of the PS Mark Commodities and recommend the purchase of such commodities".

The answers to the question "If your product becomes under a mandatory Philippine National Standard, will there arise any problems?" (Q208) directed to all responding firms (total number of answers was 356 because of plural answers) are as shown in Table A6-2-7, that is, 55% of the firms answered "It will not affect your production and sales". On the other hand, 19% of the firms "Will introduce some additional testing facilities" and 13% of the firms "Will introduce some additional manufacturing facilities", indicating that some sort of additional investment is required. The firms that answered "Difficult to meet the standards" were 3%, very few.

Although minority opinions but not to be ignored are the 3% of the firms that are concerned over the "relation with the buyers' specifications" and the 2% of the firms that are concerned over the "troublesomeness of the certification procedures".

The answers to the question "If your products will be required to bear the PS Mark to be purchased by the government offices, will there arise any problems?" (Q209) (Total number of answers was 352, because of the multiple choice) showed a similar tendency as the preceding question, as shown in Table A6-2-8.

The answer to the question "If PS Mark becomes more and more popular among people as a reliable mark for good quality and performance, will there arise any problems?" (Q210) (the total number of answers was 348 because of multiple choice) was "It will not affect your production and sales" by 63% of the firms, as shown in Table A6-2-9. Sixteen per cent of the firms "Will introduce some additional testing facilities", 14% of the firms "Will introduce some additional manufacturing facilities" and 3% of the firms, a very small number, find it "Difficult to meet the standards".

Such a case is similar to Q208.

## Chapter 3 Approach to and Benefits of Quality Control

### (1) Recognition of the Necessity for Quality Control

To the question "Do you think it necessary to make certain kinds of works (=quality control) to keep your product quality good?" (Q211), there were 306 answers which are tabulated as;

(Quality control) is necessary and have practiced it already.	292 firms (95%)
(Quality control) is necessary but have not practiced.	12 firms (4%)
(Quality control) is not necessary.	2 firms (1%)

signifying that roughly all of the firms except 2 firms recognizes the necessity of quality control and that 95% or more of the firms already practice some sort of quality control. (Table A6-3-1)

A question was provided directed to the firms that answered "(Quality control) is not necessary" to find out the reasons (Q212), but one firm in the furniture industry answered "Cheaper products are preferred in the market" and the other firm did not answer this question.

The question "The reasons why you haven't practiced the quality control." (Q213) was provided directed to the 12 firms that do not practice quality control although they recognize the necessity in order to find out the reasons and the obstacles (total number of answers was 23 because of the multiple choice).

"Facility and equipment is insufficient to introduce quality control" accounted for 35% and was the highest in number, "Cost increase" accounted for 30% followed by "It needs more man-power for quality checking" accounting for 26%. There was only one firm that said "Do not know how to introduce quality control." There was no firm that answered "Have no time to introduce quality control", "Little interest from personnel except engineers (especially from the management of the company)", or "Cannot get the cooperation of the employees."

## **(2) Basis for Quality Control**

When the firms were asked on what they set the basis for quality control (296 firms, multiple choice) (Table A6-3-2), the answers were;

Buyers' specifications	210 firms (71%)
Own standards	179 firms (61%)
Philippine industrial standards	73 firms (25%)
Others	26 firms (9%)

indicating that many set their basis on the buyers' specifications, followed by those that set the basis on the company standards, and 73 firms set the basis on the industrial standards of the Philippines. It is known from Q201 that not all of the 90 firms that answered "Possess a PS Mark license" set the basis of quality control on the Philippine industrial standards.

## **(3) Types of Quality Control Practiced**

As types of quality control practiced there are three, namely, to keep records of inspections, to analyze statistically the records of the inspection and uncover the cause of the defects, and to remove the occurrence of defects by feeding back the causes of the defects to the place of the occurrence. The level is higher moving toward the latter.

When the firms were asked by Q215 about the type of quality control practiced (296 firms, multiple choice) (Table A6-3-3), the answers were;

Firms that keep inspection records	209 firms (71%)
Firms that do statistical analysis of the inspection record	118 firms (40%)
Firms that do statistical analysis and feedback of the result to department in charge	190 firms (64%)

More than 70 percent of firms have recorded the inspection data, and 64 percent of firms have practiced to feed back the causes of product defects. There are a very few firms which use the statistical analysis.

#### **(4) Practice of Inspection for Quality Control**

The practice of the acceptance inspection, inspections at each process of manufacturing and the product inspections/shipment inspections were questioned by Q214. Of the 296 firms that responded (Table A6-3-4),

Firms that conduct inspection at raw materials acceptance stage	233 firms (79%)
Firms that conduct inspection at process-to-process stage	268 firms (91%)
Firms that conduct inspection at the end of manufacturing process, or at products shipment stage	249 firms (84%)

indicating that almost all of the firms conduct inspections respectively, but there are somewhat fewer firms that conduct acceptance inspections of the raw materials and supplies.

#### **(5) Person Responsible for Promoting Quality Control Activity**

The level of the person responsible for promoting quality control provides a barometer of the extent of the quality control activity in the firm.

When asked who the person responsible for promoting quality control is by Q216 (296 firms, multiple choice) (Table A6-3-5), the answers were;

Top management	202 firms (68%)
Quality assurance/control manager	230 firms (78%)
Department manager	208 firms (70%)
Operator of manufacturing	40 firms (14%)

indicating that relatively more firms assign the manager of quality control to be responsible for promoting quality control, and in nearly 70% of the firms the top management themselves are responsible for the quality control activity. It shows that the importance of quality control is well recognized by the management.

#### **(6) Method of Educating and Training the Personnel in Charge of Quality Control Activity**

Even if the top management assumes the position responsible for the quality control activity, there is need for a person in charge of the execution, and such personnel will have to be educated and trained.

When asked about the education and training of the personnel in charge of quality control by Q220 (multiple choice) (Table A6-3-6), it was found that;

Training/OJT within the company	282 firms (95%)
Seminar/workshop held by the industry associations/professionals	139 firms (47%)
Education at government organizations and schools	30 firms (10%)
Education and training overseas	17 firms (6%)

indicating that cases are many that education and training are done within the firm or in the industry or specialized educational institutions and that cases of education in governmental organizations and public organizations such as schools is surprisingly few. There are seen cases of education and training done overseas such as at the partners of joint ventures, although few in number.

#### (7) Types of Quality Control Promotional Activities for Employees

When asked what types of quality control promotional activities were conducted for the employees as Q219 (296 firms, multiple choice) (Table A6-3-7), they were in the following order:

Feedback system of claims and complaints	233 firms (75%)
Training course of employees	182 firms (62%)
Suggestion system	127 firms (43%)
QC "Circle" activity or other "small group" activity	116 firms (39%)
Competition of productivity among production lines	86 firms (29%)
Incentives system	9 firms (3%)

indicating that education and training of employees and quality control circle activity are conducted in a fair number of firms.



**(8) Impediment Factors in Quality Control Activity**

Although quality control activity is fairly active as described above, a number of impediment factors are conceivable. When asked what the impediment factors to the quality control activity in the firms were as Q218 (296 firms, multiple choice), the main factors were;

It needs more man-power for quality checking	96 firms (32%)
Cost increase	66 firms (22%)
Facility and equipment is insufficient to introduce quality control	60 firms (20%)
Cannot get cooperation from the employees	39 firms (13%)
Little interest from personnel except engineers	20 firms (7%)

While, on the other hand, 77 firms (26%) answered that these were no impediment factors.

**(9) Benefits Expected from Quality Control Activity**

When asked what benefits the firms expected from the quality control activity as Q221 (269 firms, multiple choice), they were in the following order:

Reduce the reject rate of finished products	269 firms (91%)
Decrease in claims and complaints	248 firms (84%)
Level-up of product quality	238 firms (80%)
Improve efficiency of raw material consumption	181 firms (60%)
Increase in sales revenue	177 firms (60%)
Cost reduction	177 firms (60%)
Increase in morale of employees	163 firms (55%)
Increase in production volume	166 firms (56%)
Shorten the delivery time	115 firms (39%)

**(10) Effectiveness of Quality Control Activity**

When asked how the firms evaluated the effects of the quality control activity as Q223, the answer were;

Quite effective	112 firms
Effective	164 firms (55%)
May be effective in the future	11 firms (4%)
Not clear at the present moment	8 firms (3%)
Not effective	1 firms (0%)

This indicates that 90% or more of the firms recognized the effectiveness of the quality control activity.

#### (11) Support and Assistance Expected from the Government for Quality Improvement

When asked what kind of assistance and support the firms expect from the government for quality improvement as Q224, the answers were;

Increase in the opportunities of quality control education	174 firms (59%)
Nationwide movement educating the importance of quality control	167 firms (56%)
Financial support for investment on testing equipment	127 firms (43%)
Establishment of the PNS system	66 firms (22%)
Increase in number of PNS	44 firms (15%)
Expansion of the certification system	39 firms (13%)
Others	11 firms (4%)

indicating that much is expected from the government. Noticeable opinions under "others", were;

##### 1) Opinions demanding strict observance of the PNS system

"Strengthening of the law against those who do not observe the PNS system" (food industry)

"Effective legislation against manufacturers that do not observe the quality standards" (metal working)

"Strengthening of regulation of FDA on food processors that use tin plated sheets (for cans)" (metal working)

"Strict legislation concerning PNS" (plastic processing)

"Strict monitoring" (cement)

2) Opinions relating to installation of quality testing equipment

"Should install equipment for the rubber industry to test quality" (rubber)

3) Improvement of the educational facilities

"Educational facilities for quality control should be improved at the same time as the equipment to test quality" (rubber)

## **Chapter 4 The State of Installed Testing and Inspection Equipment**

### **(1) Possession of a Testing and Inspection Section**

Whether the firm has a testing and inspection section was asked as Q301.

Of the 310 firms that are the objects of the questionnaire survey, 272 firms that account for 88% have inducted testing and inspection sections. It is seen that, by industries, 100% of the firms in the electrical equipment, electronic equipment, automobile parts etc. and close to 70% of the firms even in the miscellaneous products industry constituted by many handicrafts conduct testing and inspection of their own products. (Table A6-4-1)

The number of inspector/testing engineers was asked as, Q302.

For the 261 firms that answered, there was a variation of from 1 person at the firms that had few to 147 persons at firms that have many. Taking the ratio of the listing and inspection personnel in the total number of employees, there are roughly 3% engaged in testing and inspection as shown in Table A6-4-2.

By industries, the ratio of testing and inspection personnel is relatively high in the wood and wood products, chemicals, electric equipment, electronic equipment, etc.

### **(2) The Adequacy of Testing and Inspection Equipment**

When asked of the adequacy of the testing and inspection equipment in the firms as Q303, less than one-fourth of the firms had all testing and inspection equipment, and on the other hand about one-fourth of the firms conducted testing and inspection with limited equipment.

The firms with inadequate testing and inspection equipment are numerous in the industries of miscellaneous products, furniture, footwear, textile and garment, etc. (Table A6-4-3). It may be said that the need for public testing and inspection equipment is strong in these industries.

Whether the firms used some sort of outside testing and inspection equipment to supplement the testing and inspection equipment of the firms was asked as Q306 (Table A6-4-4).

Of the 224 firms that answered, 101 firms, about 45% of all firms, answered that they used outside testing and inspection equipment, and the frequency was 4 times or less per year in 43% of the firms and once or less per month in 28% of the firms, which is very

intermittent. The main facilities utilized were listed as MIRDC, NIST, FDC, PTRI, etc. Judging from the frequency, the utilization of these public organizations is considered to be testing and inspection contracted according to the requirements of the buyers at the time of export.

### **(3) Calibration of the Testing and Inspection Equipment**

When asked the frequency of calibration of the testing and inspection equipment in the firms as Q304, about 70% of the 220 firms answered that they conducted calibration regularly and about 25% of the firms answered that they conducted calibration although irregularly (Table A6-4-5). However, the characteristics of this question was that these were as many as 90 firms that did not answer, it is suspected that the concept of "calibration" may not be fully recognized.

When the 148 firms that answered "calibration regularly" were asked by the same Q304 what the frequency was, 40% or more answered "monthly", about 30% answered "quarterly", about 10% answered "semi-annually" and about 7% answered "annually", and there were answers that said "daily" suggesting that many of the answers were imaged on "scale check" rather than "calibration" (Table A6-4-6).

This may be surmised from the fact that those firms that answered "In house" to the question "Who performs the calibration?" accounted for about 70% of the firms (Table A6-4-7). In this question (203 answers), 57 firms or 22% of the firms answered, that they commissions organizations in the Philippines for the calibration and 17 firms or 7% of the firms answered that they commit to foreign organizations for the calibration. It is in the advanced technology industries such as the electronic equipment, electrical equipment, metalworking, chemicals, etc. that there are many firms that commit to foreign organizations for the calibration.

## Chapter 5 Other Suggestions for Industrial Standardization and Quality Improvement

### (1) Direction of the Establishment of PNS - For What Types of Products Is There Need for Standardization.

The intent of asking "In what area do you think PNS should be increased/established?" as Q225, was to extract answers on the raw materials and supplies related to firms. However, as the blank was for free write-in, there were not too many answers, and although there were answers that followed the intent, there were many personal answers describing the current thoughts of the respondent, which also may be considered in a sense to suggest the direction of the establishment of the PNS. Picking up key words from the free write-ins, a typification was attempted.

Consumer goods	12
Food, milk	12
Garments, cloths	5
Automobile	3
Pharmaceuticals	2
Wooden furniture	2
Handicraft	2
Raw materials	7
Packaging (sacks, bottles)	7
Wood, lumber	5
Chemicals	4
Plastic products	2
Plywoods	2
Construction goods	5
Metal	4
Steel	2
Electronics	7
Electric	4
Wire & cable	2

In addition, listing up those of 1 answer, paint, dyes, paper, ink, tanning, machinery and fuel oil were given as products that need to have the PNS increased and strengthened. The first product group, ranging from consumer goods to handicraft, group seems to be showing a citizen's dissatisfaction of the quality of the consumer goods.

## **(2) Suggestions on Industrial Standardization and Quality Improvement**

As a summary of the questionnaire suggestions for industrial standardization and quality improvement were requested as Q401. Key words were picked up from the free write-ins and a typification was attempted.

### **1) Education on "quality"**

- Educate the people of the importance of quality through the media. (cement, food processing, garments)
- Educate the consumers to recognize the importance of quality and not to stick only to price. (food processing, metalworking)
- Educate the people to demand good quality products and not only cheap products. (electric equipment)
- The consumers are not aware of the importance of quality. There is a tendency to place more importance on price than quality. (metalworking)

### **2) Thorough education on PNS and QC**

- Further education of the manufacturer on the importance of PNS. (automobile parts)
- Make opportunities to educate PNS. (metalworking)
- Current publicity activity on PNS is inadequate. (metalworking)
- Extend the education on PNS to regions outside of Metro Manila. (food processing)
- Expand the scope of the object products of PNS. (cement)
- Establishment of a library where national and international standards may be perused. (metalworking)
- Educate manufacturers on QC and make them recognize the importance. (textile)
- Education on QC is needed to improve the image of "Made in the Philippines". (electrical equipment)

- An award system such as the "Deming Award" in Japan is necessary. (metalworking)

### 3) Competent government organization

- Establishment of a comprehensive governmental organization to conduct product tests, calibration of testing equipment, and nation-wide education on QC is necessary. (electrical equipment)
- Concentrate all testing and monitoring functions in a single government organization. At the present time one has to go to many organizations. (metalworking)
- Concern about additional red-tape. (chemical)
- Clarify which governmental organization is basically responsible for quality improvement of food. (food)
- Closer linkage is needed between DTI and the Bureau of Food and Drugs.

### 4) Supervision and guidance

- Conduct strict monitoring for observance of PNS and exercise strict punishment on firms that are not observant. (cement, metalworking, paper products, automobile parts)
- Even the observance of the standards of length and width (metric system?) is not checked. (paper products)
- BPS should be authorized to trace the manufacturers. (paper products)
- Prevent firms that are observant of the PNS from unfair competition. (metalworking)
- If the PNS is to aim for assurance of the safety of products and elimination of troubles, any product that does not meet the standards should be withdrawn from the market by force even if it is a product of a PS license holder. (electrical equipment)
- In the case of banana chips, the cottage industry is impairing the image of the entire "banana chips of the Philippines" by exporting cheap products without any quality control. (food processing)
- If mandatory standards are to be enforced, it should be carried out uniformly regardless of the scale of a firm. Otherwise, the large scale firms will not be able to compete against the small scale firms that can make and sell cheap products outside of the



regulation. (food processing)

- If the PNS is not strictly enforced, QC will be a waste. (electric equipment)
- Whether BPS can adequately check the observance of the PNS is questionable. (metal processing)
- BPS should go out to visit firms more often to establish and maintain the PNS. (wood products)

#### 5) Education of QC personnel

- There is a shortage of personnel with knowledge of QC. Development of personnel is necessary. (metalworking, electrical equipment)
- Education on statistical quality control techniques is necessary. (metalworking)
- Opening of seminars to teach how to proceed with the procedures of QC. (food processing, garments, plastic)
- Add QC to the collage curriculum. (metalworking)
- Education on QC for special industries, such as plastics, should be carried out. (plastics)

#### 6) Strengthening of testing equipment

- Strengthening of the public testing equipment. (automobile parts, electric equipment, paper products, chemicals)
- Low cost testing equipment is wanted nearby. (food processing)
- Establishment of nation-wide testing equipment. (metalworking)
- Financial assistant for investment in testing equipment (automobile parts)
- Large scale firms are able to install testing equipment on their own. Support of the small and medium scale firms by such means as lending the testing equipment to the small and medium scale firms is desired. (automobile parts)
- The tax on the testing equipment of the firms is high. (paper products)

- Support of the establishment of testing centers for the trade such as plastics, etc. (plastics products)

7) Calibration centers

- Establishment of public calibration centers and testing equipment. (electrical equipment)
- Establishment of calibration centers for ammeters and voltmeters.
- Establishment of a calibration center such as SISIR of Singapore.
- The calibration equipment of NIST is inadequate.

To promote quality improvement, education of the people on the importance of quality is necessary and a thorough penetration of the PNS and QC to the manufacturers is desired. The necessity of the governmental organization centered on BPS which promotes these activity was also pointed out.

In the administration of the system, a strict check by the supervising and guiding organizations such as BPS is required so that the firms that observe the PNS are not overthrown by those that do not. The point made that "BPS should go out to visit firms more often" may be said to be the first step that is required of the supervising and guiding organizations.

There are a pile of tasks required of BPS, such as education of the quality control personnel, strengthening of the testing equipment, establishment of the calibration centers, etc., which the BPS staff are expected to study.

Table A6-2-1 Q201: ARE YOU A PS LICENCE HOLDER?

Industry	(Unit: Number of Response)					
	Yes	% of Total	No	% of Total	No Res- ponse	% of Total
Textile/Garment	0	0.0	45	100.0	0	0.0
Cement	12	100.0	0	0.0	0	0.0
Food Processing	7	23.3	23	76.7	0	0.0
Metal Working	19	43.2	25	56.8	0	0.0
Electric	25	75.8	7	21.2	1	3.0
Electronics	1	6.7	14	93.3	0	0.0
Footwear	0	0.0	6	100.0	0	0.0
Paper Goods	5	26.3	14	73.7	0	0.0
Furniture	3	12.0	22	88.0	0	0.0
Wood Processing	5	41.7	7	58.3	0	0.0
Agriculture	8	66.7	4	33.3	0	0.0
Sundry	0	0.0	19	100.0	0	0.0
Automotive	2	40.0	3	60.0	0	0.0
Chemicals	3	9.1	30	90.9	0	0.0
Total	90	29.0	219	70.7	1	0.3
						310

Table A6-2-2 Q202: DID YOU KNOW THE PS?

(Unit: Number of Response)

Industry	Yes	% of Total	No	% of Total	Total
Textile/Garment	29	64.4	16	35.6	45
Cement	0	0.0	0	0.0	0
Food Processing	18	78.3	5	21.7	23
Metal Working	22	88.0	3	12.0	25
Electric	7	87.5	1	12.5	8
Electronics	12	85.7	2	14.3	14
Footwear	3	50.0	3	50.0	6
Paper Goods	13	92.9	1	7.1	14
Furniture	17	77.3	5	22.7	22
Wood Processing	5	71.4	2	28.6	7
Agriculture	3	75.0	1	25.0	4
Sundry	12	63.2	7	36.8	19
Automotive	2	66.7	1	33.3	3
Chemicals	22	73.3	8	26.7	30
Total	165	75.0	55	25.0	220

Table A6-2-3 Q203: WILL YOU APPLY FOR THE PS IN THE FUTURE?

(Unit: Number of Response)

Industry	Yes	% of Total	No	% of Total	Total
Textile/Garment	13	28.9	32	71.1	45
Cement	0	0.0	0	0.0	0
Food Processing	14	60.9	9	39.1	23
Metal Working	14	56.0	11	44.0	25
Electric	5	62.5	3	37.5	8
Electronics	3	21.4	11	78.6	14
Footwear	5	83.3	1	16.7	6
Paper Goods	5	35.7	9	64.3	14
Furniture	11	50.0	11	50.0	22
Wood Processing	2	28.6	5	71.4	7
Agriculture	2	50.0	2	50.0	4
Sundry	9	47.4	10	52.6	19
Automotive	1	33.3	2	66.7	3
Chemicals	18	60.0	12	40.0	30
Total	102	46.4	118	53.6	220

Table A6-2-4 Q205: THE REASON WHY YOU WILL NOT APPLY FOR THE PS

Industry	(Unit: Number of Response)										
	No PS Applicable (%)	Not Necessary (%)	Using Buyers' Spec. (%)	Using Std. of Other Countries (%)	Using Own Standards (%)	Total					
Textile/Garment	14	31.8	10	22.7	8	18.2	10	22.7	2	4.6	44
Cement	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Food Processing	3	33.3	5	55.6	1	11.1	0	0.0	0	0.0	9
Metal Working	7	53.8	3	23.1	0	0.0	3	23.1	0	0.0	13
Electric	2	66.7	0	0.0	0	0.0	1	33.3	0	0.0	3
Electronics	1	6.7	1	6.7	4	26.6	9	60.0	0	0.0	15
Footwear	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	2
Paper Goods	5	45.4	3	27.3	0	0.0	3	27.3	0	0.0	11
Furniture	4	30.8	9	69.2	0	0.0	0	0.0	0	0.0	13
Wood Processing	1	20.0	2	40.0	1	20.0	1	20.0	0	0.0	5
Agriculture	2	66.74	0	0.0	1	33.3	0	0.0	0	0.0	3
Sundry	3	30.0	4	40.0	1	10.0	0	0.0	2	20.0	10
Automotive	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	2
Chemicals	10	55.5	3	16.7	3	16.7	2	11.1	0	0.0	18
Total	54	36.5	41	27.7	20	13.5	29	19.6	4	2.74	148

Table A6-2-5 Q206: REASON WHY YOU DON'T THINK THE PS APPLICATION NECESSARY?

Industry	(Unit: Number of Response)					
	Customers are not Quality Conscious	Product Quality is Higher than Expected by the PS	Costly	Others	Total	
	(%)	(%)	(%)	(%)	(%)	
Textile/Garment	0	37.5	0	5	62.5	8
Cement	0	0.0	0	0	0.0	0
Food Processing	0	50.0	0	2	50.0	4
Metal Working	0	50.0	0	1	50.0	2
Electric	0	0.0	0	0	0.0	0
Electronics	0	0.0	0	1	100.0	1
Footwear	0	0.0	0	0	0.0	0
Paper Goods	0	50.0	1	0	0.0	2
Furniture	0	57.1	2	1	14.3	7
Wood Processing	0	33.3	1	1	33.3	3
Agriculture	0	0.0	0	0	0.0	0
Sundry	2	25.0	1	0	0.0	4
Automotive	0	0.0	0	0	0.0	0
Chemicals	1	33.3	0	1	33.3	3
Total	3	8.8	5	12	35.3	34

Table A6-2-6 Q204: THE REASON WHY YOU WILL APPLY FOR THE PS

Industry	Request by Customer (%)	Aware of Necessity (%)	To Fit the M/E (%)	To Fit the Parts (%)	(Unit: Number of Response)		
					It's Mandatory (%)	Total	
Textile/Garment	1	5.6	72.1	2	11.1	1	5.6
Cement	1	5.9	58.8	1	5.9	0	29.4
Food Processing	3	12.0	64.0	1	4.0	1	16.0
Metal Working	2	5.1	61.5	1	2.6	11	28.2
Electric	2	4.9	58.5	0	0.0	12	29.3
Electronics	2	40.0	40.0	0	0.0	1	20.0
Footwear	0	0.0	100.0	0	0.0	0	0.0
Paper Goods	1	10.0	80.0	1	10.0	0	0.0
Furniture	0	0.0	92.3	0	0.0	1	7.7
Wood Processing	1	12.5	50.0	0	0.0	3	37.5
Agriculture	1	11.2	44.4	0	0.0	4	44.4
Sundry	0	0.0	80.0	1	10.0	1	10.0
Automotive	0	0.0	100.0	0	0.0	0	0.0
Chemicals	2	8.3	70.8	1	4.2	3	12.5
Total	16	7.0	66.1	8	3.5	46	20.3
				7	3.1		227



Table A6-2-7 Q208: IF YOUR PRODUCT BECOMES UNDER A MANDATORY PNS,  
WILL THERE ARISE ANY PROBLEMS?

Industry	No Problem	(Unit: Number of Response)					Difficult to Meet the Std. (%)	Others (%)	Total
		Add. Manufactur- ing Facilities (%)	Add. Testing Facilities (%)						
Textile/Garment	29	59.2	4	8.2	8	16.3	1	2.0	49
Cement	12	100.0	0	0.0	0	0.0	0	0.0	12
Food Processing	22	59.5	6	16.2	6	16.2	1	2.7	37
Metal Working	29	58.0	5	10.0	10	20.0	3	6.0	50
Electric	25	67.6	1	2.7	8	21.6	2	5.4	37
Electronics	8	44.4	1	5.6	3	16.7	1	5.6	18
Footwear	1	11.1	3	33.3	5	55.6	0	0.0	9
Paper Goods	8	38.1	5	23.8	7	33.3	0	0.0	21
Furniture	12	42.9	6	21.4	3	10.7	1	3.6	28
Wood Processing	8	72.7	1	9.1	0	0.0	1	9.1	11
Agriculture	9	56.2	2	12.5	4	25.0	0	0.0	16
Sundry	9	45.0	3	15.0	4	20.0	1	5.0	20
Automotive	4	80.0	0	0.0	1	20.0	0	0.0	5
Chemicals	20	46.5	9	20.9	10	23.3	1	2.3	43
Total	196	55.1	46	12.9	69	19.4	12	3.3	356

Table A6-2-8 Q209: IF YOUR PRODUCTS WILL BE REQUIRED TO BEAR THE PS MARK TO BE PURCHASED  
BY THE GOVERNMENT OFFICES, WILL THERE ARISE ANY PROBLEMS?

Industry	No Problem (%)	Add. Manufactur- ing Facilities (%)	Add. Testing Facilities (%)	Difficult to Meet the Std. (%)	(Unit: Number of Response)		
					Others (%)	Total	
Textile/Garment	29	58.0	4	8.0	3	16.0	6
Cement	12	100.0	0	0.0	0	0.0	0
Food Processing	20	55.5	6	16.7	2	13.9	3
Metal Working	30	61.2	5	10.2	8	16.3	4
Electric	25	69.4	5	13.9	5	13.9	0
Electronics	6	31.6	2	10.5	1	2.8	0
Footwear	1	11.1	3	33.3	0	0.0	0
Paper Goods	10	47.6	5	23.8	0	0.0	1
Furniture	14	51.9	5	18.5	1	3.7	3
Wood Processing	8	66.8	1	8.3	1	8.3	1
Agriculture	9	56.3	2	12.5	0	0.0	1
Sundry	8	38.1	5	23.8	1	4.8	3
Automotive	3	60.0	0	0.0	0	0.0	1
Chemicals	22	56.5	7	17.9	1	2.6	2
Total	197	56.0	50	14.2	13	3.7	33
							9.3
							352

Table A6-2-9 Q210: IF PS MARK BECOMES MORE POPULAR AS A RELIABLE MARK FOR GOOD QUALITY AND PERFORMANCE, WILL THERE ARISE ANY PROBLEMS?

Industry	(Unit: Number of Response)										
	No Problem (%)	Add. Manufacturing Facilities (%)	Add. Testing Facilities (%)	Difficult to Meet the Std. (%)	Others (%)	Total					
Textile/Garment	31	63.3	5	10.2	8	16.3	2	4.0	3	6.2	49
Cement	11	91.7	0	0.0	1	8.3	0	0.0	0	0.0	12
Food Processing	20	52.6	6	15.8	9	23.7	1	2.6	2	5.3	38
Metal Working	32	65.4	5	10.2	9	18.3	2	4.1	1	2.0	49
Electric	30	88.3	1	2.9	2	5.9	1	2.9	0	0.0	34
Electronics	10	55.6	1	5.6	2	11.1	1	5.6	4	22.1	18
Footwear	1	11.1	3	33.3	5	55.6	0	0.0	0	0.0	9
Paper Goods	13	65.0	5	25.0	2	10.0	0	0.0	0	0.0	20
Furniture	16	59.3	5	18.5	3	11.1	1	3.7	2	7.4	27
Wood Processing	8	66.7	0	0.0	2	16.7	1	8.3	1	8.3	12
Agriculture	9	52.9	3	17.6	4	23.6	0	0.0	1	5.9	17
Sundry	12	63.2	3	15.8	3	15.8	0	0.0	1	5.2	19
Automotive	3	60.0	1	20.0	0	0.0	0	0.0	1	20.0	5
Chemicals	22	56.4	10	25.6	7	18.0	0	0.0	0	0.0	39
Total	218	62.7	48	13.8	57	16.3	9	2.6	16	4.6	348

Table A6-3-1 Q210: DO YOU THINK TO KEEP YOUR PRODUCT QUALITY GOOD?

Industry	(Unit: Number of Response)								
	Necessary and have Practiced	Necessary, but have not Practiced	Not Necessary	No Response	Total				
Textile/Garment	44	97.8	0	0.0	1	2.2	45		
Cement	11	91.7	0	0.0	0	0.0	12		
Food Processing	29	96.7	1	3.3	0	0.0	30		
Metal Working	40	90.9	3	6.8	1	2.3	44		
Electric	30	90.9	2	6.1	0	0.0	1	3.0	33
Electronics	15	100.0	0	0.0	0	0.0	0	0.0	15
Footwear	5	83.3	1	16.7	0	0.0	0	0.0	6
Paper Goods	18	94.7	0	0.0	1	5.3	0	0.0	19
Furniture	24	96.0	1	4.0	0	0.0	0	0.0	25
Wood Processing	12	100.0	0	0.0	0	0.0	0	0.0	12
Agriculture	12	100.0	0	0.0	0	0.0	0	0.0	12
Sundry	18	94.74	0	0.0	0	0.0	1	5.3	19
Automotive	5	100.0	0	0.0	0	0.0	0	0.0	5
Chemicals	29	87.9	4	12.1	0	0.0	0	0.0	33
Total	292	94.2	12	13.9	2	0.6	4	1.3	310

Table A6-3-2 Q217: WHAT ARE THE BASIS TO UNDERTAKE QC?

Industry	PNS	% of Total	Custom- ers Spec.	(Unit: Number of Response)			% of Total	Others	% of Total	No. of Companies
				% of Total	Company's Stds.	% of Total				
Textile/Garment	1	2.2	38	84.4	33	73.3	2	4.4	45	
Cement	12	100.0	4	33.3	10	83.3	0	0.0	12	
Food Processing	8	27.6	22	75.9	13	44.8	1	3.4	29	
Metal Working	15	37.5	22	55.0	25	62.5	5	12.5	40	
Electric	19	61.3	15	48.4	16	51.6	10	32.3	31	
Electronics	1	6.7	12	80.0	9	60.0	3	20.0	15	
Footwear	0	0.0	4	80.0	2	40.0	0	0.0	5	
Paper Goods	3	16.7	14	77.8	11	61.1	1	5.6	18	
Furniture	1	4.2	21	87.5	16	66.7	0	0.0	24	
Wood Processing	3	25.0	8	66.7	7	58.3	0	0.0	12	
Agriculture	3	25.0	10	83.3	5	41.7	2	16.7	12	
Sundry	1	5.3	13	68.4	11	57.9	0	0.0	19	
Automotive	2	40.0	4	80.0	4	80.0	0	0.0	5	
Chemicals	4	13.8	23	79.3	17	58.6	2	6.9	29	
Total	73	24.7	210	70.9	179	60.5	26	8.8	296	

Note: Percentage is calculated on number of companies.

Table A6-3-3 Q215: WHAT TYPE OF QC ARE YOU DOING?

Industry	Keeping Inspection Record	% of Total	Statistical Analysis	% of Feed back Total	of the Result	(Unit: Number of Response)	
						% of Total Companies	No. of Companies
Textile/Garment	30	66.7	17	37.8	28	62.2	45
Cement	9	75.0	7	58.3	10	83.3	12
Food Processing	23	79.3	12	41.4	17	58.6	29
Metal Working	32	80.0	19	47.5	26	65.0	40
Electric	21	67.7	11	35.5	22	71.0	31
Electronics	10	66.7	10	66.7	12	80.0	15
Footwear	3	60.0	2	40.0	3	60.0	5
Paper Goods	12	66.7	6	33.3	10	55.6	18
Furniture	16	66.7	3	12.5	12	50.0	24
Wood Processing	8	66.7	5	41.7	6	50.0	12
Agriculture	9	75.0	10	83.3	11	91.7	12
Sundry	12	63.2	4	21.1	10	52.6	19
Automotive	2	40.0	3	60.0	5	100.0	5
Chemicals	22	75.9	9	31.0	18	62.1	29
Total	209	70.6	118	39.9	190	64.2	296

Note: Percentage is calculated on number of companies.

Table A6-3-4 Q214: WHAT TYPE OF INSPECTION ARE YOU DOING?

Industry	Raw Mate- rials	% of Total	Process to Process	(Unit: Number of Response)		
				% of Total	Product Shipment Stage	% of Total Companies
Textile/Garment	37	82.2	41	91.1	40	88.9
Cement	12	100.0	12	100.0	11	91.7
Food Processing	22	75.9	23	79.3	19	65.5
Metal Working	34	85.0	39	97.5	35	87.5
Electric	28	90.3	31	100.0	30	96.8
Electronics	14	93.3	15	100.0	14	93.3
Footwear	5	100.0	5	100.0	4	80.0
Paper Goods	15	83.3	15	83.3	16	88.9
Furniture	15	62.5	23	95.8	16	66.7
Wood Processing	8	66.7	9	75.0	11	91.7
Agriculture	8	66.7	9	75.0	12	100.0
Sundry	12	63.2	15	78.9	14	73.7
Automotive	5	100.0	5	100.0	5	100.0
Chemicals	18	62.1	26	89.7	22	75.9
Total	233	78.7	268	90.5	249	84.1
						296

Note: Percentage is calculated on number of companies.

Table A6-3-5 Q216: WHO ARE IN CHARGE OF QC?

Industry	Top Management	(Unit: Number of Response)				
		% of Total	QC Manager	% of Total	Dept. Management	% of Total
Textile/Garment	32	71.1	37	82.2	35	77.8
Cement	11	91.7	12	100.0	11	91.7
Food Processing	17	58.6	22	75.9	18	62.1
Metal Working	32	80.0	32	80.0	26	65.0
Electric	20	64.5	25	80.6	22	71.0
Electronics	10	66.7	13	86.7	10	66.7
Footwear	2	40.0	5	100.0	3	60.0
Paper Goods	13	72.2	10	55.6	11	61.1
Furniture	17	70.8	18	75.0	18	75.0
Wood Processing	7	58.3	10	83.3	7	58.3
Agriculture	6	50.0	8	66.7	10	83.3
Sundry	9	47.4	11	57.9	12	63.2
Automotive	5	100.0	5	100.0	5	100.0
Chemicals	21	72.4	22	75.9	20	69.0
Total	202	68.2	230	77.7	208	70.3
					40	13.5
						296

Note: Percentage is calculated on number of companies.



Table A6-3-6 Q220: WHAT MEASURES HAVE YOU USED FOR TRAINING OF YOUR PERSONNELS?

Industry	Gov't Organiza- tion	(Unit: Number of Response)				% of Total	% of Train'g/ OJT	% of Total	Foreign	% of Total Companies	No. of Companies
		% of Total	Seminar/ Work Shop	% of Total	% of Total						
Textile/Garment	2	4.4	15	33.3	43	95.6			0	0.0	45
Cement	2	16.7	12	100.0	12	100.0			1	8.3	12
Food Processing	9	31.0	17	58.6	27	93.1			2	6.9	29
Metal Working	5	12.5	21	52.5	35	87.5			4	10.0	40
Electric	4	12.9	15	48.4	31	100.0			2	6.5	31
Electronics	1	6.7	9	60.0	15	100.0			1	6.7	15
Footwear	0	0.0	0	0.0	5	100.0			0	0.0	5
Paper Goods	1	5.6	5	27.8	17	94.4			1	5.6	18
Furniture	2	8.3	5	20.8	23	95.8			0	0.0	24
Wood Processing	0	0.0	4	33.3	11	91.7			0	0.0	12
Agriculture	1	8.3	8	66.7	11	91.7			0	0.0	12
Sundry	2	10.5	7	36.8	18	94.7			0	0.0	19
Automotive	1	20.0	4	80.0	5	100.0			2	40.0	5
Chemicals	0	0.0	17	58.6	29	100.0			4	13.8	29
Total	30	10.1	139	47.0	282	95.3			17	5.7	296

Note: Percentage is calculated on number of companies.

Table A6-3-7 Q219: WHAT TYPE OF QC PROMOTIONAL/ACTIVITIES ARE CONDUCTED IN YOUR COMPANY?

Industry	QC Circle	(Unit: Number of Response)									
		% of Total	Train's Course	% of Total	Suggest'n System	% of Total	Compet'n Total	% of Total	Feed Back System	% of Total	No. of Comp's
Textile/Garment	18	40.0	24	53.3	14	31.1	15	33.3	35	77.8	45
Cement	5	41.7	11	91.7	5	41.7	6	50.0	10	83.3	12
Food Processing	9	31.0	17	58.6	7	24.1	8	27.6	20	59.0	29
Metal Working	15	37.5	25	62.5	17	42.5	9	22.5	30	75.0	40
Electric	11	35.5	19	61.3	16	51.6	8	25.8	26	83.9	31
Electronics	10	66.7	13	86.7	8	53.3	6	40.0	11	73.3	15
Footwear	1	20.0	2	40.0	3	60.0	2	40.0	4	80.0	5
Paper Goods	5	27.8	9	50.0	9	50.0	6	33.3	14	77.8	18
Furniture	8	33.3	14	58.3	12	50.0	4	16.7	18	75.0	24
Wood Processing	7	58.3	7	58.3	4	33.3	1	8.3	7	58.3	12
Agriculture	7	58.3	7	58.3	7	58.3	8	66.7	9	75.0	12
Sundry	6	31.6	8	42.1	9	47.4	4	21.1	13	68.4	19
Automotive	4	80.0	5	100.0	4	80.0	2	40.0	5	100.0	5
Chemicals	10	34.5	21	72.4	12	41.4	7	24.1	21	72.4	29
Total	116	39.2	182	61.5	127	42.9	86	29.1	223	75.3	296

Note: Percentage is calculated on number of companies.

Table A6-4-1 Q301: DO YOU HAVE INSPECTION/TESTING SECTION?

Industry	Yes	% of Total	No	% of Total	(Unit: Number of Response)		
					No Response	% of Total	Total
Textile/Garment	39	86.7	6	13.3	0	0.0	45
Cement	12	100.0	0	0.0	0	0.0	12
Food Processing	28	93.3	2	6.7	0	0.0	30
Metal Working	39	88.6	5	11.4	0	0.0	44
Electric	33	100.0	0	0.0	0	0.0	33
Electronics	15	100.0	0	0.0	0	0.0	15
Footwear	5	83.3	1	16.7	0	0.0	6
Paper Goods	14	73.7	5	26.3	0	0.0	19
Furniture	21	84.0	4	16.0	0	0.0	25
Wood Processing	11	91.7	1	8.3	0	0.0	12
Agriculture	11	91.7	1	8.3	0	0.0	12
Sundry	13	68.4	5	26.3	1	5.3	19
Automotive	5	100.0	0	0.0	0	0.0	5
Chemicals	26	78.8	7	21.2	0	0.0	33
Total	272	87.8	37	11.9	1	0.3	310

Table A6-4-2 RATIO OF INSPECTORS/TESTING ENGINEERS  
TO TOTAL EMPLOYEES

(Unit: Number of Response)

Industry	Ave. No. of Employees (A)	Ave. No. of Inspectors (B)	Ratio of Inspectors (B/A, %)	Number of Companies
Textile/Garment	856	27	2	39
Cement	360	12	3	12
Food Processing	788	12	2	27
Metal Working	346	7	4	36
Electric	315	15	5	29
Electronics	1,181	60	5	15
Footwear	366	6	2	5
Paper Goods	547	10	2	14
Furniture	289	6	3	20
Wood Processing	447	7	7	11
Agriculture	1,238	21	2	10
Sundry	235	7	3	13
Automotive	279	9	3	5
Chemicals	242	14	6	25
Total	535	15	3	261

Table A6-4-3 Q303: HOW ADEQUATE ARE THE QUALITY INSPECTION/TESTING FACILITIES IN YOUR COMPANY?

Industry	(Unit: Number of Response)							
	All are Available (%)	More than 80% (%)	More than 50% (%)	Limited Number (%)	No Response (%)	No. of Companies		
Textile/Garment	10	22.2	31.1	14	31.1	1	2.3	45
Cement	4	33.3	66.7	8	0.0	0	0.0	12
Food Processing	9	30.0	26.7	8	30.0	0	0.0	30
Metal Working	10	22.7	38.6	17	25.1	0	0.0	44
Electric	10	30.3	48.5	16	12.1	1	3.0	33
Electronics	8	53.4	33.3	5	13.3	0	0.0	15
Footwear	1	16.7	16.7	1	16.7	0	0.0	6
Paper Goods	3	15.8	21.1	4	21.1	0	0.0	19
Furniture	6	24.0	0.0	0	16.0	0	0.0	25
Wood Processing	2	16.7	33.3	4	33.3	0	0.0	12
Agriculture	3	25.0	41.7	5	0.0	1	8.3	12
Sundry	2	10.5	10.5	2	0.0	1	5.3	19
Automotive	1	20.0	40.0	2	20.0	0	0.0	5
Chemicals	6	18.2	39.4	13	18.2	0	0.0	33
Total	75	24.2	31.9	99	16.8	4	1.3	310

Table A6-4-4 9306: DO YOU USE ANY TESTING/INSPECTING FACILITIES OUTSIDE YOUR COMPANY?

Industry	(Unit: Number of Response)					
	Yes	% of Total	No	% of Total	No Res- ponse	% of Total
Textile/Garment	11	24.4	18	40.0	16	35.6
Cement	9	75.0	3	25.0	0	0.0
Food Processing	17	56.7	9	30.0	4	13.3
Metal Working	22	50.0	16	36.4	6	13.6
Electric	11	33.3	19	57.6	3	9.1
Electronics	4	26.7	11	73.3	0	0.0
Footwear	2	33.3	1	16.7	3	50.0
Paper Goods	6	31.6	5	26.3	8	42.1
Furniture	1	4.0	8	32.0	16	64.0
Wood Processing	3	25.0	7	58.3	2	16.7
Agriculture	1	8.3	8	66.7	3	25.0
Sundry	2	10.5	1	5.3	16	84.2
Automotive	4	80.0	0	0.0	1	20.0
Chemicals	8	24.2	17	51.5	8	24.2
Total	101	32.6	123	39.7	86	27.7
						310

Table A6-4-5 Q304: HOW OFTEN DO YOU CHECK, MAINTAIN AND CALIBRATE THE FACILITIES  
FOR TESTING/INSPECTION?

Industry	Regularly	(Unit: Number of Response)				
		% of Total regularly	% of Total	Do not do it	% of Total Response	No. of Compn's
Textile/Garment	14	31.1	13.3	5	11.1	20
Cement	10	83.3	16.7	0	0.0	0
Food Processing	16	53.3	26.7	1	3.3	5
Metal Working	27	61.4	27.3	0	0.0	5
Electric	20	60.6	30.3	1	3.0	2
Electronics	13	86.7	13.3	0	0.0	0
Footwear	2	33.3	16.7	0	0.0	3
Paper Goods	8	42.1	15.8	0	0.0	0
Furniture	3	12.0	16.0	1	4.0	17
Wood Processing	9	75.0	8.3	0	0.0	2
Agriculture	4	33.3	0.0	4	33.3	4
Sundry	4	21.1	0.0	0	0.0	15
Automotive	4	80.0	0.0	0	0.0	1
Chemicals	14	42.4	24.2	3	9.1	8
Total	148	47.7	18.4	15	4.8	90
						310

Table A6-4-6 FREQUENCY OF THE CALIBRATION AMONG COMPANIES WHO DO IT REGULARLY

Industry	(Unit: Number of Response)									
	-1 Month	% of Total	-3 Months	% of Total	-6 Months	% of Total	-1 Year	% of Total	No Response	% of Total Compn's
Textile/Garment	8	57.1	2	14.3	0	0.0	1	7.1	3	21.4
Cement	4	40.0	1	10.0	1	10.0	3	30.0	1	10.0
Food Processing	6	37.5	5	31.3	1	6.3	0	0.0	4	25.0
Metal Working	10	37.0	9	33.3	1	3.7	2	7.4	5	18.5
Electric	4	20.0	8	40.0	5	25.0	2	10.0	1	5.0
Electronics	2	15.4	4	30.8	5	38.5	0	0.0	2	15.4
Footwear	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Paper Goods	5	62.5	0	0.0	1	12.5	1	12.5	1	12.5
Furniture	1	33.3	2	66.7	0	0.0	0	0.0	0	0.0
Wood Processing	5	55.6	1	11.1	1	11.1	1	11.1	1	11.1
Agriculture	4	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Sundry	2	50.0	2	50.0	0	0.0	0	0.0	0	0.0
Automotive	1	25.0	3	75.0	0	0.0	0	0.0	0	0.0
Chemicals	8	57.1	3	21.4	1	7.1	1	7.1	1	7.1
Total	62	41.9	40	27.0	16	10.8	11	7.4	19	12.8
										148



Table A6-4-7 Q305: WHO PERFORMS THE CALIBRATION

Industry	Inhouse	(Unit: Number of Response)			
		% of Total	Filipino Center	% of Total	Foreign Center
					No. of Response
Textile/Garment	15	93.8	1	6.3	0
Cement	9	50.0	9	50.0	0
Food Processing	25	92.6	2	7.4	0
Metal Working	36	70.6	13	25.5	2
Electric	23	50.0	17	37.0	6
Electronics	13	54.2	3	12.5	8
Footwear	3	100.0	0	0.0	0
Paper Goods	11	78.6	3	21.4	0
Furniture	7	100.0	0	0.0	0
Wood Processing	9	90.0	1	10.0	0
Agriculture	5	83.3	1	16.7	0
Sundry	4	80.0	1	20.0	0
Automotive	4	80.0	1	20.0	0
Chemicals	22	78.6	5	17.9	1
Total	186	71.5	57	21.9	17
					260

**Attached Information: Questionnaire Sheet for Industrial Standardization and  
Quality Improvement Survey**

- Manufacturing
- Calibration Center
- Testing Laboratory

## QUESTIONNAIRE : FOR MANUFACTURER

Please provide information on each of the following items concerning your Company. It would be appreciated if you attach to your kind reply a copy of your brochure.

1. Name of your Company

2. Number of Employee

3. Outline of Production

(1) Name of products

(2) Amount of production for each main category in past 3 years

(3) Rate of supply to domestic market

4. Outline of Inspection and/or Testing Conducted in your Factory

(1) Number of inspection and/or testing engineers

(2) Inspection and/or testing major facilities:

Please enter your reply in the following table.

<u>Name</u>	<u>Model</u>	<u>Quantity</u>	<u>Specification</u>	<u>Year of</u> <u>Manufacture</u>	<u>Calibration</u> <u>Frequency</u>
-------------	--------------	-----------------	----------------------	--------------------------------------	--

(3) Inspection and/or testing standards

a. Name of standard applicable to the products for exportation

b. Standards applicable to the products for domestic market

(4) Brief explanation of your inspection and/or testing

5. Problems on your Inspection and/or Testing

Please inform any problems or difficulties which may be faced concerning the followings.

(1) Inspection and/or testing technical level

(2) Inspection and/or testing facilities

6. Countermeasures to Follow

Please describe your counterplan against the problems pointed out in above Article 5.

INDUSTRIAL STANDARDIZATION AND QUALITY IMPROVEMENT SURVEY

The information provided here will be kept strictly confidential and used solely for the study purpose.

\* Please encircle the number of appropriate items, or specify your answer, if necessary.

101 Name of Company: \_\_\_\_\_

Address : \_\_\_\_\_

Telephone: \_\_\_\_\_

102 Name of person in charge, in case of contact

Name : \_\_\_\_\_

Position: \_\_\_\_\_

103 Location(region) of Factory

- |                       |                         |                     |
|-----------------------|-------------------------|---------------------|
| 1. Ilocos             | 2. Cagayan Valley       | 3. Central Luzon    |
| 4. Southern Tagalog   | 5. Bicol                | 6. Western Visayas  |
| 7. Central Visayas    | 8. Eastern Visayas      | 9. Western Mindanao |
| 10. Northern Mindanao | 11. Southern Mindanao   |                     |
| 12. Central Mindanao  | 13. Metropolitan Manila |                     |

104 Established in the year (            )

105 Number of Employees as of December, 1988: \_\_\_\_\_ persons

106 Category of Industry

- |                     |                                    |                    |
|---------------------|------------------------------------|--------------------|
| 1. Textiles/Garment | 2. Cement                          | 3. Food Processing |
| 4. Metal Working    | 5. Electric's                      | 6. Electronics     |
| 7. Footwear         | 8. Paper Goods                     | 9. Furniture       |
| 10. Wood Processing | 11. Others (please specify: _____) |                    |

107 Approximate Annual Sales in 1988: \_\_\_\_\_ Pesos/year  
(Indicative figure is sufficient)

Major products: \_\_\_\_\_

108 Do you have any foreign companies which have close connection with your company such as joint venture partner, exclusive material supply or sales partner, etc. ?

1. Yes                      2. No

If yes, what are their functions to your company ?

- |  |                           |
|--|---------------------------|
| 1. Raw material supply                     | 2. Product purchase       |
| 3. Export marketing (non-commitment basis) |                           |
| 4. Technical guidance                      | 5. Others(specify: _____) |

109 Major Market (please indicate the approximate percent

composition sold to the following markets out of total sales)

1. Export sales: \_\_\_\_\_ %
2. Domestic sales (excl. those destined eventually to market abroad) : \_\_\_\_\_ %
  - a. As final products ( \_\_\_\_\_ %)
  - b. As manufacturing materials ( \_\_\_\_\_ %)
3. Domestic sales, but eventually destined to market abroad : \_\_\_\_\_ %
  - a. As final products ( \_\_\_\_\_ %)
  - b. As manufacturing materials ( \_\_\_\_\_ %)

110 Major source of raw material purchase (please indicate the approximate percent purchased from the following)

1. Import : \_\_\_\_\_ %
2. Domestic source: \_\_\_\_\_ %

The Philippine Standard (PS) Certification Mark is affixed on products manufactured by companies that comply with national or internationally accepted standards, after passing rigid factory assessment and product testing requirements of the Bureau of Product Standards. The PS mark assures product quality, safety and reliability to consumers, and enhances acceptance of products in domestic and export markets, eventually improves company sales and profitability.

201 Are you a PS license holder ?

1. Yes
2. No

If yes, skip to 204.

202 Did you know the PS ?      1. Yes      2. No

203 Will you apply for the PS in the future ?

1. Yes
2. No

If no, skip to 205.

If yes, continue to 204.

204 The reason why you will apply (or applied) for the PS:

1. Request by customer
2. Aware of necessity to keep product quality good
3. To fit the machine & equipment being used
4. To fit with the parts and components purchased
5. It's mandatory
6. Other reason ( \_\_\_\_\_ )

Skip to 208.

205 The reason why you will not apply (did not apply) for the PS:

1. No PS applicable to your products
2. Don't think it necessary
3. Using other quality standards (please specify: )
4. Difficult to meet the PS requirements
5. Other reason ( )

If (2) go to 206.

If (4) skip to 207.

Otherwise skip to 208.

206 Reason why you don't think the PS application necessary ?

1. Customers are not quality conscious
2. Product quality is higher than expected by the PS
3. It's costly
4. Others( )

Skip to 208.

207 The reason why you feel it difficult to meet the PS requirements ?

1. Appropriate technology is not available
2. Raw material quality is unstable
3. Manufacturing facility is obsolete.
4. No eligible staff is available
5. Cost increase
6. No testing facility available
7. PS standard level is too high
8. Others( )

208 If your product becomes under a mandatory Philippine National Standard, will there arise any problems ?

1. It will not affect your production and sales.
2. Will introduce some additional manufacturing facilities.
3. Will introduce some additional testing facilities.
4. Difficult to meet the standards.
5. Others ( )

209 If your products will be required to bear the PS mark to be purchased by the government offices, will there arise any problems ?

1. It will not affect your production and sales.
2. Will introduce some additional manufacturing facilities.
3. Will introduce some additional testing facilities.
4. Difficult to meet the standards.
5. Others ( )

210 If PS mark becomes more and more popular among people as a

reliable mark for good quality and performance, will there arise any problems ?

1. It will not affect your production and sales.
2. Will introduce some additional manufacturing facilities.
4. Will introduce some additional testing facilities.
5. Difficult to meet the standards.
6. Others ( )

"Quality Control (QC)" is an integrated activity widely accepted and performed among the manufacturers especially in industrialized countries to keep product quality sufficiently good and improve production efficiency. The manufacturers in the Philippines also have increasingly become aware of the necessity of the QC in recent years. The QC is sometimes known as QI (Quality Improvement) in the Philippines.

211 Do you think it necessary to make certain kinds of works to keep your product quality good ?

1. Necessary, and have practiced it already.
2. Necessary, but have not practiced.
3. Not necessary.

If (1), skip to 214.

If (2), skip to 213.

If (3), continue to 212.

212 The reason why you don't think it necessary:

1. Product quality acceptable to customers without quality control
2. Cheaper products are preferred in the market
3. Others( )

Skip to 301.

213 The reasons why you haven't practiced the quality control.

1. Don't know how to introduce quality control
2. Facility and equipment is insufficient to introduce quality control
3. No time to introduce
4. Cost increase
5. Little interest from personnel except engineers (especially from the management of the company).
6. Can't get the cooperation by the employees.
7. It needs more man-power for quality checking.
8. Others ( )

Skip to 301.

214 What types of inspection are you doing to keep your product quality good ? (encircle all the applicable items)



1. Inspection at raw materials acceptance stage.
2. Inspection at process-to-process stage.
3. Inspection at the end of manufacturing process, or at products shipment stage.

215 What types of quality control are you doing ?

1. Keeping inspection record
2. Statistical analysis of the inspection record
3. Statistical analysis and feedback of the result to department in charge
4. Others ( )

216 Among the followings, who are in charge to implement/promote/mandate the quality control ?

(Encircle all the applicable personnels)

1. Top-management.
2. Quality assurance/control manager.
3. Department manager.
4. Others ( )

217 What are the basis to undertake quality control ?

1. Philippine National Standards
2. Customer's specifications requirement
3. Company's manual/standards
4. Others(please specify: )

218 What are the impediment factors in conducting the QC ?

1. Don't know how to introduce quality control
2. Facility and equipment is insufficient to introduce quality control
3. No time to introduce
4. Cost increase
5. Little interest from personnel except engineers (especially from the management of the company).
6. Can't get the cooperation from the employees.
7. It needs more man-power for quality checking.
8. Others ( )

219 What type of QC promotional activities are conducted in your company ?

(Encircle all items you think appropriate)

1. QC "Circle" activity or other "small group" activity
2. Training course of employees
3. Suggestion system
4. Competition of productivity among production lines
5. Feed back system of claims and complaints.
6. Others ( )

220 What measures have you used for training of your personnels for QC activity ?

1. Government organization/school.
2. Seminar/workshop held by the industry associations/professionals
3. Training/OJT within the company.
4. Others ( )

221 What benefits do you expect from QC activities ?

(Encircle all items you think appropriate)

1. Increase in production volume.
2. Improve efficiency of raw material consumption.
3. Reduce the reject rate of finished product
4. Level-up of product quality.
5. Increase in sales revenue.
6. Cost reduction.
7. Shorten the delivery time.
8. Decrease in claims and complaints.
9. Increase in morale of employees.
10. Others ( )

222 What kind of claims/complaints did you have from the customers in the recent three years ?

Please write down typical examples, and its cause.

(Claims/complaints: )  
- Cause:

(Claims/complaints: )  
- Cause:

(Claims/complaints: )  
- Cause:

223 Have QC activities been effective in quality and productivity improvement ?

1. Quite effective
2. Effective
3. Maybe effective in the future
4. Not clear at the present moment
5. Not effective
6. Others ( )

224 What kind of assistance or support do you expect for quality improvement from the government ?

1. Finance support for investment on testing equipments.
2. Increase in the opportunities of QC education.
3. Nationwide movement educating the importance of QC.
4. Increase in number of Philippine National Standards.
5. Prompt establishment of Philippine National Standards.
6. Expansion of the Certification System.
7. Others ( )

225 In what area do you think Philippine National Standards should be increased/established ?

( )

=====  
Section 3  
=====

301 Do you have inspection/testing section ?

1. Yes                      2. No

If no, skip to 303.

302 How many inspectors/testing engineers do you have ? \_\_\_\_\_

303 How adequate are the quality inspection/testing facilities in your company ?

1. All are available.  
2. More than 80% of the necessary facilities.  
3. More than 50% of the necessary facilities.  
4. Very limited number of required facilities only.

If (4), skip to 401.

304 How often do you check, maintain and calibrate the facilities for testing/inspecting your products in your company ?

1. Regularly at every (        ) months.  
2. Doing it but irregularly.  
3. Do not do it at all.

305 Who performs the calibration ?

1. Inhouse.  
2. Calibration center in the Philippines.  
3. Calibration center abroad.

306 Do you use any testing/inspecting facilities outside your company ?      1. Yes                      2. No

If yes, what facility was it ? (Please indicate:                      )  
How often did you use it last year ? \_\_\_\_\_ times.

=====  
Section 4  
=====

401 If you have any comments on industrial standardization and quality improvement, please use the following space.

=====  
END : THANK YOU FOR YOUR COOPERATION !!  
=====

## CALIBRATION CENTER

It would be appreciated if you attach a copy of your company brochure to this survey sheet.

1. Name of your Organization
2. Date of Foundation
3. Number of Employee and Inspection Metrological Engineers.
4. Organization Chart
5. Activities of your Organization
6. Name of Laws or Regulations, in case your activities are based on laws or regulations
7. Metrological Standards being used:  
Please enter your reply in the following table.

<u>Name</u>	<u>Model</u>	<u>Metrological</u> <u>Grade</u>	<u>Quantity</u>	<u>Specification</u>	<u>Year Manu-</u> <u>factured</u>	<u>Frequency of</u> <u>International</u> <u>Comparison</u>
-------------	--------------	-------------------------------------	-----------------	----------------------	--------------------------------------	--

8. Maintenance of Metrological Standards:  
Please make brief explanation concerning maintenance of Metrological standards owned by your organization.

9. Calibration Services:

- (1) Actual number of calibration services conducted in past 3 years by Metrological quantity

<u>Meteorological</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
<u>Quantity</u>			

- (2) Average number of calibration days by Metrological quantity

- (3) Calibration fee by Metrological quantity

10. Problems

Please inform any problems or difficulties which may be faced on the followings.

- (1) Calibration technical level
- (2) Calibration facilities
- (3) Management of your organization

11. Countermeasures to Follow

Please describe your counterplan against the problems pointed out in above Article 10.

## TESTING LABORATORY

It would be appreciated if you attach a copy of your organization brochure to this survey sheet.

1. Name of your organization:
2. Date of Foundation
3. Number of Employee and Inspectors and/or Testing Engineers  
Employee:  
Inspectors and/or testing engineers:
4. Organization Chart
5. Activities of your Organization
6. Name of Laws or Regulations, in case your activities are based on laws or regulations
7. Inspection and/or Testing:
  - (1) Name of items to be inspected and/or tested
  - (2) Applicable standards by items
  - (3) Actual number of inspection and/or testing conducted in past 3 years by item

<u>Item</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
-------------	-------------	-------------	-------------

(4) Capacity

<u>Item</u>	<u>Expected maximum</u> <u>per day</u>	<u>Actual attained</u> <u>per day</u>
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(5) Average number of inspection and/or testing days by item

- Bottleneck for shortening the required time for inspection/testing:

(6) Inspection/testing items not available but needed in your labo:

- Reasons not facilitated the above functions:

(7) Inspection and/or testing fee by item

8. Inspection and/or Testing Facilities:

Please enter your reply in the following table.

<u>Name</u>	<u>Model</u>	<u>Quantity</u>	<u>Specification</u>	<u>Year of</u> <u>Anufacture</u>	<u>Calibration</u> <u>Frequency</u>
-------------	--------------	-----------------	----------------------	-------------------------------------	--

9. Operation Cost(Peso/year)

Variable costs

- Reagent/chemicals/materials
- Utility costs
  - Water
  - Electricity
  - Fuels
  - Others

Fixed costs

- Wages/salaries
  - Direct
  - Indirect
- Overheads
- Maintenance
- Insurance
- Taxes
- Depreciation

10. Problems

Please inform any problems or difficulties which may be faced concerning the followings.

- (1) Inspection and/or testing technical level
- (2) Inspection and/or testing facilities
- (3) Management of your organization

11. Countermeasures to Follow

Please describe your counterplan against the problems pointed out in above Article 9.









