

STEM	Inspections, Testers, Sorters, Samplers, and Weighers
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TEA Industry Cluster	STEM
SOC Code	51-9061
Identified by	TWC LMCI
Projected Growth (2018)	0 %
BISD Magnet School Available	No

Source: Demand Occupations by Cluster, updated *June 27, 2012*

Description

What Information Quality Control Inspectors Do

Quality control inspectors examine products and materials for defects or deviations from manufacturers' or industry specifications.

Duties

Quality control inspectors typically do the following:

- Read and understand blueprints and specifications
- Monitor or observe operations to ensure that they meet production standards
- Recommend adjustments to the process or assembly
- Inspect, test, or measure materials or products being produced
- Measure products with rulers, calipers, gauges, or micrometers
- Accept or reject finished items
- Remove all products and materials that fail to meet specifications
- Discuss inspection results with those responsible for products
- Report inspection and test data

Quality control inspectors ensure that your food will not make you sick, that your car will run properly, and that your pants will not split the first time you wear them. These workers monitor quality standards for nearly all manufactured products, including foods, textiles, clothing, glassware, motor vehicles, electronic components, computers, and structural steel. Specific job duties vary across the wide range of industries in which these inspectors work.

Quality control workers rely on a number of tools to do their jobs. Although some still use hand-held measurement devices, such as calipers and alignment gauges, they more commonly operate electronic inspection equipment, such as coordinate-measuring machines (CMMs). Inspectors testing electrical devices may use voltmeters, ammeters, and ohmmeters to test potential difference, current flow, and resistance, respectively.

Quality control workers record the results of their inspections and prepare test reports. When they find defects, inspectors notify supervisors and help to analyze and correct the production problems.

In some firms, the inspection process is completely automated, with advanced vision inspection systems installed at one or several points in the production process. Inspectors in these firms monitor the equipment, review output, and do random product checks.

The following are types of quality control inspectors:

Inspectors mark, tag, or note problems. They may reject defective items outright, send them for repair, or fix minor problems themselves. If the product is acceptable, the inspector certifies it. Inspectors may further specialize:

- **Materials inspectors** check products by sight, sound, or feel to locate imperfections such as cuts, scratches, missing pieces, or crooked seams.
- **Mechanical inspectors** generally verify that parts fit, move correctly, and are properly lubricated. They may check the pressure of gases and the level of liquids, test the flow of electricity, and do test runs to ensure that machines run properly.

Testers repeatedly test existing products or prototypes under real-world conditions. Through these tests, manufacturers determine how long a product will last, what parts will break down first, and how to improve durability.

Sorters separate goods according to length, size, fabric type, or color.

Samplers test or inspect a sample for malfunctions or defects during a batch or production run.

Weighers weigh quantities of materials for use in production.

Training Opportunities Linked to Those Jobs

(Degree Types and Colleges/Universities)

How to Become a Quality Control Inspector

Although a high school diploma is enough for the basic testing of products, complex precision-inspecting positions are filled by experienced workers.

Education and Training

Prospective quality control inspectors improve their chances of finding work by studying industrial trades, including computer-aided design (CAD), in high school or in a postsecondary vocational program. Laboratory work in the natural or biological sciences also may improve analytical skills and increase the chances of finding work in medical or pharmaceutical labs, where many of these workers are employed.

Education and training requirements vary with the responsibilities of the quality-control worker. For inspectors who do simple pass/fail tests of products, a high school diploma and some in-house training are generally enough.

Training for new inspectors may cover the use of special meters, gauges, computers, and other instruments; quality-control techniques; blueprint reading; safety; and reporting requirements. Some postsecondary training programs exist, but many employers prefer to train inspectors on the job.

As manufacturers use more automated inspection techniques that need less inspection by hand, workers in this occupation will have to learn to operate and program more sophisticated equipment and software applications. Because these operations require additional skills, higher education may be necessary. To address this need, some colleges are offering associate's degrees in fields such as quality control management.

Certification

The [American Society for Quality](#) (ASQ) offers many different certifications for workers in quality control. These certifications may help workers advance in the occupation. They generally require a certain number of years of experience in the field and passing an exam.

Important Qualities

Dexterity. Quality control inspectors should be able to quickly remove sample parts or products during the manufacturing process.

Math skills. Knowledge of basic math and computer skills are important because measuring, calibrating, and calculating specifications is a major part of quality control testing.

Mechanical skills. Quality control inspectors must be able to use specialized tools and machinery when testing products.

Physical strength. Because workers sometimes lift heavy objects, inspectors should be in good physical condition.

Stamina. Quality control inspectors must be able to stand for long periods on the job.

Technical skills. Quality control inspectors must understand blueprints, technical documents, and manuals, ensuring that products and parts fully meet quality standards.

Texas Southmost College	South Texas College	Texas State Technical College	The University of Texas at Brownsville	The University of Texas - Pan American
	Precision Manufacturing Technology (CERT)			
	Precision Manufacturing Technology (AAS)			

Local Employers

A Specialist Transit	Brownsville	Kemet Electronics Corp	Brownsville
Agency Nurses	Harlingen	Manpower Temporary Svc	Brownsville
Ambiotec Civil Engineering Grp	Brownsville	Nrs Consulting Engineers	Harlingen
Centerline Surveying	Harlingen	Southmost Management Corp	Brownsville
Chavez Automated Design	Brownsville	Unique Molded Products Inc	Brownsville

Career Options

(Specific Job Types)

- Inspector
- Quality Inspector
- Quality Technician
- Quality Assurance Inspector
- Quality Control Inspector
- Quality Auditor
- Picker/Packer
- Quality Assurance Auditor
- Quality Control Supervisor
- Quality Control Technician

Salary Ranges

Wages for Inspectors, Testers, Sorters, Samplers, and Weighers

Location	Pay Period	2011				
		10%	25%	Median	75%	90%
United States	Hourly	\$9.80	\$12.44	\$16.36	\$21.49	\$27.82
	Yearly	\$20,400	\$25,900	\$34,000	\$44,700	\$57,900
Texas	Hourly	\$8.98	\$11.72	\$15.77	\$21.78	\$28.96
	Yearly	\$18,700	\$24,400	\$32,800	\$45,300	\$60,200
Brownsville-Harlingen, TX MSA	Hourly	\$7.67	\$8.12	\$8.86	\$10.62	\$14.31
	Yearly	\$16,000	\$16,900	\$18,400	\$22,100	\$29,800
McAllen-Edinburg-Mission, TX MSA	Hourly	\$8.19	\$9.43	\$11.45	\$15.95	\$23.30
	Yearly	\$17,000	\$19,600	\$23,800	\$33,200	\$48,500

Professional Associations linked to the Careers

For more information about quality control inspectors, including certification, visit [American Society for Quality](#) (ASQ)

For more information about quality control training, visit [Quality Assurance Association](#)
[The International Society of Automation](#) (ISA)

Sources

The information provided in this document was collected from the following sources:

- Occupational Outlook Handbook (<http://www.bls.gov/ooh/>)
- O*NET OnLine (<http://www.onetonline.org/>)
- Texas CARES (<http://www.texascaresonline.com/>)
- CareerOneStop (<http://www.careeronestop.org/>)

Local Employers

A Specialist Transit	Brownsville	Kemet Electronics Corp	Brownsville
Access Consulting	Brownsville	Key Safety Systems Inc	Los Indios
Acosta/Muniz Rio Grande Phrmcy	Harlingen	L & S Supervisory Engrg Inc	Brownsville
Agency Nurses	Harlingen	L&S Supervisory Engrg Inc	Brownsville
Agh Consultants	Brownsville	Labunski Associates Architects	Harlingen
All Valley Communications	LA Feria	Lockheed Martin Corp	Harlingen

Amaya Surveying CO	Brownsville	Loera Customs Brokerage Inc	Brownsville
Ambiotec Civil Engineering Grp	Brownsville	Manpower Temporary Svc	Brownsville
Ambiotec Environmental Conslnt	Harlingen	Manpower Temporary Svc	Harlingen
Ambiotec Group	Brownsville	Maquillogistics Inc	Brownsville
American Engineering Svc	Harlingen	Medina Forwarding Corp	Brownsville
Angelo International	Brownsville	Megamorphosis Architecture	Harlingen
Blair Axiom Engineering	Harlingen	Mejia & Rose Inc	Brownsville
Boeing CO	Harlingen	Mgm Engineering Group Llc	Harlingen
Border Customs Svc	Brownsville	Montemayor Hansen Garcia/Assoc	Brownsville
Brittain International Inc	Brownsville	Mundo Engineering	LA Feria
Brown Leal & Assoc	Harlingen	National Electric Coil	Brownsville
Brownsville Custom Brokers	Brownsville	Net1 Payments	Brownsville
Brownsville Mineral Warehouse	Brownsville	Nrs Consulting Engineers	Harlingen
C D Express	Brownsville	Parker & CO Custom Brokers	Brownsville
Cameron County Irrigation	San Benito	Parker & CO Ftz	Brownsville
Cameron County Works	Harlingen	Paseo DE LA Resaca	Brownsville
Cameron Works Inc	San Benito	Pete Garza Jr Consulting Inc	Harlingen
Cameron Works Workforce Ctr	Brownsville	Philip T Cowen Customhouse	Brownsville
Cameron Works Workforce Ctr	Brownsville	Protrans International Inc	Brownsville
Casa Engineering	Harlingen	Psi	Harlingen
Cec Consulting Engineers	Harlingen	Q C Onics	Harlingen
Centerline Surveying	Harlingen	Reef Industries Inc	San Benito
Chavez Automated Design	Brownsville	Ricardo Gonzalez Customs	Brownsville
Chavez Automated Design	Brownsville	Rike-Ogden-Figueroa Architects	Harlingen
Chicken Stop	Brownsville	Rios Surveying CO	San Benito
Choice Plus Benefits	San Benito	Roser & J Cowan Logistical Svc	Brownsville
Cobblestone Engineering Inc	Harlingen	Roser Customs Svc	Brownsville
Control Engineering Assoc	Harlingen	Rpm Intl	Brownsville
Corona Engineering & Surveying	Brownsville	Rudolph Miles & Sons Inc	San Benito
Corrigan Dispatch	Brownsville	Safetynet Motor Carrier Svc	Brownsville
Cts Corp	Brownsville	Sempco X-Ray	Harlingen
Daniel B Hastings Inc Custom	Brownsville	South Texas Tropical Weather	Brownsville
Exel Bobbins & Plastic Cmpnts	Brownsville	Southmost Management Corp	Brownsville
Ferris & Flinn	Harlingen	System Engineering & Atmtn	Harlingen
Gomez Mendez Saenz Inc	Brownsville	Taylor Craft Aviation	Brownsville
Gonzalez Engineering & Srvyng	Brownsville	Texas American Consultants	Brownsville
Green & Rubliano Assoc	Harlingen	Transmigrantes	San Benito
Guzman & Munoz Engineering Inc	Harlingen	Transmigrantes Aguila	Los Indios
Hicks Oil & Butane CO	Brownsville	Transmigrantes Groupo Cobra	Los Indios
Holdar Engineering CO	Brownsville	Transmigrantes LA Union	San Benito
Homeland Surveying CO	Brownsville	Triangle Textile Ltd	Combes
Huerta Customs Brokers	Brownsville	Trico Products	Brownsville
Industrial Consultants	Harlingen	Unique Molded Products Inc	Brownsville
Innovative Medical Svc	Brownsville	United Commodities	Brownsville
Intertek Testing Svc	Brownsville	Ups Supply Chain Solutions	Brownsville
J E Saenz & Assoc Inc	Brownsville	Ups Supply Chain Solutions	Brownsville
J F Fontaine & Assoc	Harlingen	Vasquez Surveying	Brownsville
J&H Surveying CO	Harlingen	Xtreme Xport Llc	Brownsville
Jamestown Plastic Inc	Brownsville	-	-



Inspections, Testers, Sorters, Samples, and Weighers

Cluster Overview: Planning, managing, and providing scientific research and professional and technical services including laboratory and testing services, and research and development services.

Career Goal (O*NET Code): (51-9061) -Quality control inspectors examine products and materials for defects or deviations from manufacturers' or industry specifications. These workers monitor quality standards for nearly all manufactured products, including foods, textiles, clothing, glassware, motor vehicles, electronic components, computers, and structural steel. Specific job duties vary across the wide range of industries in which these inspectors work.

Student Name: _____
Grade: _____
School: _____

SUGGESTED COURSEWORK

EXTENDED LEARNING EXPERIENCES

Middle School	8th	HS Courses:	(Local districts may list high school credit courses here)		<p>Curricular Experiences***:</p> <p>BEST Robotics, Inc. FIRST Robotics Competition Project Lead the Way Skills USA Technology Student Association The Infinity Project</p> <p>Career Learning Experiences:</p> <p>Career Preparation Job Shadowing Internship</p>	<p>Extracurricular Experiences:</p> <p>Destination ImagiNation International Bridge Building Contest Marine Advanced Technology Education Center National Engineering Design Competition UIL Academic Competitions VEX Robotics Competition</p> <p>Service Learning Experiences:</p> <p>Campus Service Organizations Community Service Volunteer Peer Mentoring/Peer Tutoring</p>	
	High School	9th	Courses*:	English I Algebra I or Geometry Biology			World Geography Foreign Language I Physical Education or Athletics
Courses:			English II Geometry or Algebra II Chemistry	World History Foreign Language II Elective			
10th		Career-Related Electives:	Engineering Design & Presentation				
		Core Courses:	English III Algebra II or Pre-Calculus Physics	United States History Foreign Language III ** Professional Communications or Speech			
11th		Career-Related Electives:	Advanced Engineering Design & Presentation				
		Core Courses:	English IV Pre-Calculus or Calculus 4th Science	Government/Economics Elective Elective			
12th	Career-Related Electives:	Practicum in STEM					
	<p>How to Become a Quality Control Inspector Although a high school diploma is enough for the basic testing of products, complex precision-inspecting positions are filled by experienced workers. As manufacturers use more automated inspection techniques, higher education may be necessary. To address this need, some colleges are offering associate's degrees in fields such as quality control management.</p>						<p>COLLEGE CREDIT OPPORTUNITIES -- High School</p> <p>Students should take Advanced Placement (AP), International Baccalaureate (IB), dual credit, Advanced Technical Credit (ATC), or locally articulated courses (Tech Prep), if possible. List those courses that count for college credit on your campus.</p>
Postsecondary	<p>Texas Southmost College South Texas College Texas State Technical College</p>			<p>Career Options:</p> <ul style="list-style-type: none"> Inspector Quality Inspector Quality Technician Quality Assurance Inspector Quality Control Inspector Quality Auditor Picker/Packer Quality Assurance Auditor 			
	<p>Precision Manufacturing Technology (CERT) Precision Manufacturing Technology (AAS)</p>						
	<p>The University of Texas at Brownsville The University of Texas - Pan American</p>						
	<p>Career Options:</p> <ul style="list-style-type: none"> Quality Control Supervisor Quality Control Technician 						

* Students must meet local & state high school graduation requirements. ** Required course for the Distinguished Graduation Plan (in addition to other measures). *** Based on campus availability. Students may select other elective courses for personal enrichment purposes.

This plan of study serves as a guide, along with other career planning materials, for pursuing a career path and is based on the most recent information as of 2009. All plans meet high school graduation requirements as well as college entrance requirements.