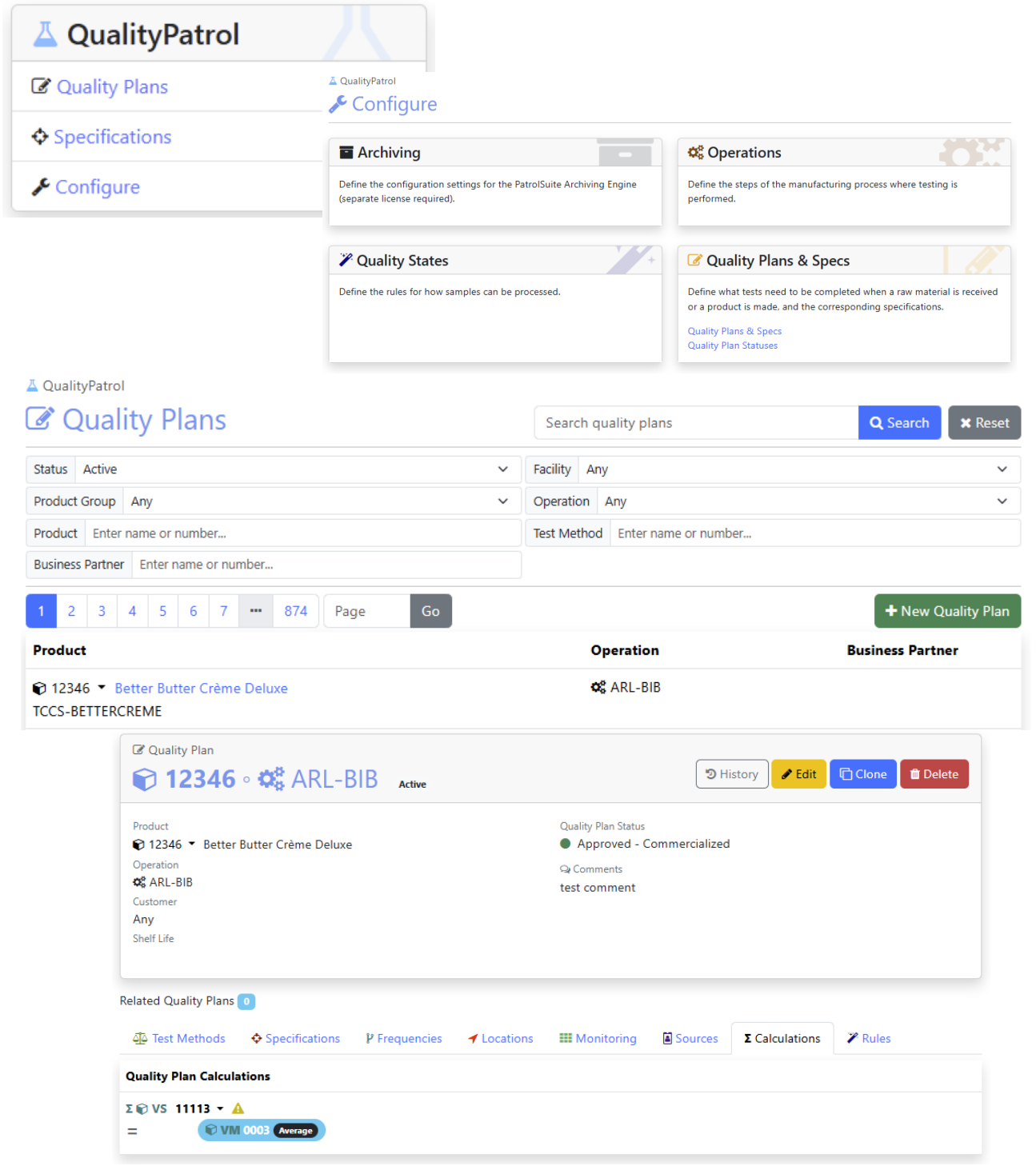
QualityPatrol – Quality Plans & Specs User Guide

Version 2025-10



QualityPatrol – Quality Plans & Specs
User Guide
Version 2025-10

Contents

Chapter 1: Introduction

NEW Introduction

QualityPatrol™ is a PatrolSuite™ module that facilitates:

- The definition of the product quality plan, including process conditions and product testing requirements and the corresponding targets and specifications. In regulated industries such as medical devices, this is the design transfer step from the device master record (DMR) to manufacturing.
- The capture and storage of the information required by the quality plan (e.g. the test results) and the subsequent determination of the product's quality state. In regulated industries such as medical devices, this is the device history record (DHR).

This user guide covers the creation of a product **quality plan** and the corresponding **specifications**. The remainder of the QualityPatrol configuration settings is covered in the "QualityPatrol – Configure" user guide.

Access

To access the PatrolSuite homepage, obtain the URL and login credentials from your IT department.

PatrolSuite module access is governed by both PatrolSuite and Active Directory security protocols. Therefore, users will see different homepage content and will have different access levels based on assigned roles. For assistance with security or permissions, contact your IT department.

Browser

PatrolSuite™ is accessed through a web browser. The platform and all its applications are certified for use with Google Chrome, Microsoft Edge, and Safari. To ensure full functionality and the best user experience, MAP strongly recommends using one of these supported browsers.

NEW Definitions

Business Partner – Customers and Suppliers.

Business Unit – Grouping of manufacturing facilities according to the market to which their products are sold.

Comprehensive Testing – If an administrator has turned comprehensive testing "on" for a given test location, then all test results must be recorded before the user is allowed to save/close the edit test results window. This feature can be used to help ensure that all tests are performed as required.

Cost of Quality (CoQ) – The total cost of ensuring and maintaining product quality. It includes all costs involved in preventing defects, appraising product quality, and dealing with failures. CoQ is divided into four categories:

1. Prevention Costs (Quality Assurance)
    - Costs to prevent defects before they happen such as training, process design, quality planning, policy and procedure documentation, and preventive maintenance.
2. Appraisal Costs (Quality Control)
    - Costs of measuring and monitoring product quality such as product inspection and testing, audits, calibration of instruments, statistical process control (SPC).
3. Internal Failure Costs (Nonconforming Product)
    - Costs of defects **found before** the product reaches the customer such as scrap, rework, downtime, re-inspection.
4. External Failure Costs (Customer Complaints)
    - Costs of defects **found after** the product is delivered to the customer such as customer complaints, warranty claims, returns, product recalls, loss of reputation.

Cost of Poor Quality (CoPQ) – Avoidable costs that result from delivering a substandard product or service. CoPQ = Internal Failure Costs + External Failure Costs. Accordingly, CoPQ is a subset of the CoQ often referred to as "the cost incurred when things go wrong."

Currency – A system of money in common use within a particular country or economic region, used as a medium of exchange, store of value, and unit of account in financial transactions.

Defect – Flaws, faults, or deviations in a manufactured item that prevent it from meeting design specifications, quality standards, or customer expectations.

Defect Category – Grouping of defects to help identify, analyze, and correct issues systematically. Common defect categories include:

- Aesthetic or Cosmetic Defects - Visual imperfections that do not affect the product's functionality but can impact customer perception and marketability.
- Design Defects - Flaws inherent in the product's design that make it unsafe, ineffective, or prone to failure, even if manufactured perfectly.
- Documentation/Labeling Defects - Inaccurate or missing product information, which may lead to misuse, safety issues, or regulatory non-compliance.
- Functional Defects - The product does not perform as intended or fails under specific conditions.
- Manufacturing Defects - Flaws introduced during the production or assembly process, even when the design is correct.
- Material Defects - Deficiencies in raw materials or components that affect product performance, safety, or durability.
- Packaging Defects - Issues related to how the product is packaged for shipping, storage, or display.
- Process Defects - Defects caused by errors in the manufacturing process settings, procedures, or conditions.

Department – An organized unit within a company that is responsible for managing a specific set of functions, processes, or activities that contribute to the organization's overall goals and operations.

Disposition – The remediation instructions assigned to a product with a rejected quality state. The goal of the remediation is to minimize the financial loss due to making product that does not meet quality requirements.

Enterprise Resource Planning (ERP) – Software system that enables management of the day-to-day business activities such as accounting/finance, procurement, supply chain, human resources, sales order conversion to manufacturing orders, distribution, project management, compliance, and others.

Facility – A physical location where raw materials are converted into finished or semi-finished products through various production processes, machinery, labor, and technology.

Manufacturing Execution System (MES) – Software system that tracks and documents the transformation of raw materials into finished goods, including inventory consumption and product genealogy. In a world class manufacturing environment, the MES is integrated to communicate bi-directionally with the ERP and the Quality System (PatrolSuite).

Market ("Customer Market") – Groups of consumers that a company targets to sell its products or services, based on shared needs, characteristics, or behaviors. These markets help companies focus their marketing, product development, and sales strategies by understanding who their customers are and what they need.

Operation – Location where a sample originates for which testing is performed.

Order – A set of data with a unique order number (typically originating from the MES or ERP) to identify a:
- Inbound Receiving order (often a "purchase order") for raw materials
- Manufacturing order and its related product and customer
- Outbound Shipping order for finished goods being shipped to customers

Product – A tangible output or item that is created through a controlled process involving raw materials, labor, machinery, and other inputs, intended for use, sale, or further processing. Types of products include:
- Finished Goods: Ready for sale to end users (e.g. computers, bicycles, paper).
- Semi-Finished Goods: Used as components in other products (e.g. engine parts, circuit boards).
- Raw Materials: Basic inputs for production (e.g., glue, steel, plastic pellets, lumber).

Product Group – A collection of related products that share common characteristics, functions, markets, manufacturing processes, or branding, and are managed together for strategic, operational, or marketing purposes.

Quality Assurance (QA) – A proactive process that focuses on preventing defects by ensuring that the processes used to manage and create deliverables are effective and followed correctly.
- Focus: Process-oriented
- Goal: Prevent defects before they happen
- When: Throughout the product development and prior to the manufacturing process
- Methods: Process audits, training, standard operating procedures (SOPs), continuous improvement
- Responsibility: Business management, quality management, and process engineers

Quality Control (QC) – A reactive process that focuses on identifying defects in the finished product through inspection and testing.
- Focus: Product-oriented
- Goal: Detect and fix defects after they occur
- When: After production or at specific checkpoints during production
- Methods: Inspections, measurements, product testing, sampling, statistical process control (SPC)
- Responsibility: Laboratory technicians, quality inspectors, or testing personnel

Quality Plan – A formal set of electronic files or settings that define the specific quality practices, resources, standards, procedures, responsibilities, and inspection or testing methods to be applied to a particular product or process during manufacturing.

Quality State – The assessment of a sample's conformance to quality requirements. For example, a sample for which all tests are completed, and all are in spec, might have a quality state of "Approved."

Raw Material – A basic, unprocessed, or minimally processed substance that is used as the starting input in the production or manufacturing of goods and products.

Reasonable Data Limit (RDL) – The range in which all test results would normally be expected to fall. If an RDL is defined, and a test result is entered that exceeds the RDL, the user will get a warning message.

Sample – A QualityPatrol record reflecting a point in time at which product characteristics (i.e. test results) or process parameters (i.e. process conditions) are recorded. Samples are related to the Operation and Workcenter where they are being manufactured.

Sample Status "Incomplete" – A sample that has one or more data yet to be collected. For example, if a Sample requires 5 tests to be performed, but only 4 tests have been completed, then the sample is incomplete.

Sample Status "Completed" – A sample for which all tests are completed. Note that complete/incomplete has nothing to do with whether the results are in spec or out of spec.

Sample Location – A physical location on a single sample from which tests are performed for X-bar testing.

Sample Type "Start Up" – Identifies a sample of product that is not intended to be sold to a customer or used in further processing. Use Case: When a manufacturing line begins producing "Product 123," the first few samples are identified as Start Up and are used to determine when the product meets quality requirements. Once quality requirements are met, then the next sample is identified with the sample type "Production." Note: Start Up samples can be and are typically omitted from statistical analysis (DataPatrol & DashPatrol).

Sample Type "Production" – Identifies a sample of product that is expected to meet quality requirements and be sold to a customer or used in further processing.

Specification Limit – The product measurements within which confirm the acceptability of a product, or the process conditions within which likely result in the production of acceptable product. Product specification limits are typically defined by the customer. Process specification limits are typically defined by the manufacturer.

Specification Limit "Upper" – The highest value that a test result can be and still be considered acceptable to the customer.

Specification Limit "Lower" – The lowest value that a test result can be and still be considered acceptable to the customer.

Test Location – A physical location within the Facility where tests are completed.

Unit – The smallest measurable or sellable quantity of a product. Units are typically used for production, inventory, pricing, sales, and distribution purposes.

Unit of Measure – A standard quantitative unit used to specify, track, and manage the amount of a product,

material, or resource in the manufacturing, inventory, sales, or procurement processes.

Warning Limit – A numerical value that, when exceeded, raises a flag prompting a timely, proactive response to eliminate or minimize the possibility of the parameter from reaching an alarm limit such as a specification.

Workcenter – A sub-division of an Operation. An Operation can have one or more Workcenters. Often, a workcenter reflects a unique manufacturing machine or asset.

Symbol Key

The following symbols are used in this user guide.

Typeface	Description
	Indicates a “required” data entry field within a UI.
	Indicates a new feature, or new information regarding existing functionality.
	Indicates rules regarding access security.
	Click the help icon to view additional information.

Chapter 2: Security

Introduction

See the “QualityPatrol – Configure” user guide for information regarding QualityPatrol security.

Chapter 3: Quality Plan Search

NEW Introduction

For each **Product** (or raw material) and its associated **Operation**, a **Quality Plan** defines the following:

Required Tests - Specifies which quality tests must be conducted to ensure compliance with product and process standards.

Timing of Tests - Indicates when each test must be performed (e.g., before processing, during production, post-production, at receiving).

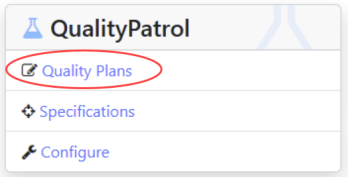
Location of Tests - Specifies where each test should take place, such as:

- At the point of manufacture (on-line or in-process)
- In a laboratory
- At receiving or final inspection areas

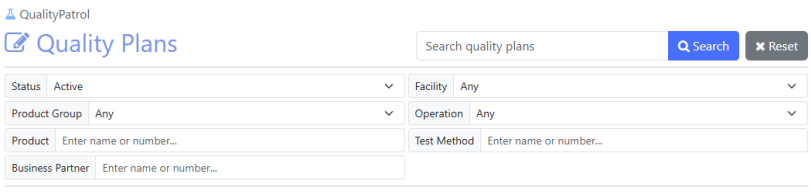
Applicable Specifications - Lists the standards or specifications (e.g., ASTM, ISO, internal company specs) that the product or material must meet.

View

1. To view the existing quality plans, click on the Quality Plans hyperlink in the QualityPatrol card on the PatrolSuite homepage.

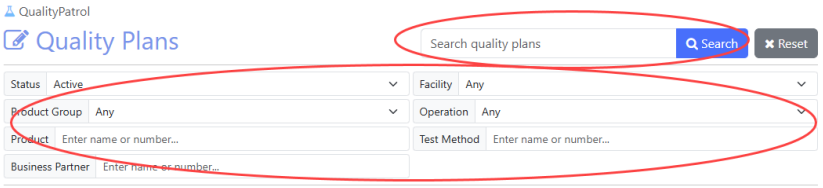


The quality plan search page will appear.



Search

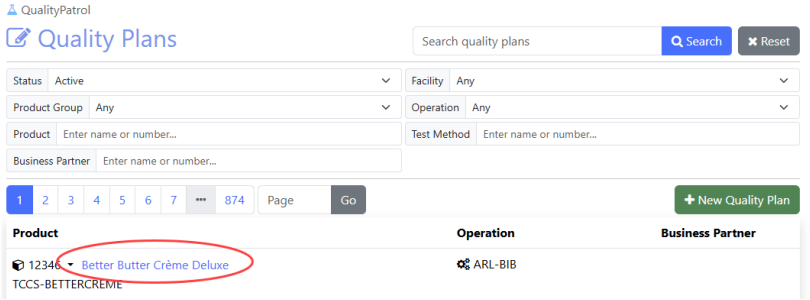
2. To find a quality plan of interest, click on the Quality Plans hyperlink in the QualityPatrol card on the PatrolSuite homepage, use the filters, or the Search field and click on the 'Search' button.



Note: The Product, Business Partner, and Test Method fields are partial search fields.

Note: The Test Method field will return all quality plans that contain the entered test method.

3. Click on the quality plan name hyperlink to open the quality plan.



Chapter 4: Quality Plan Overview

NEW Quality Plans - Overview

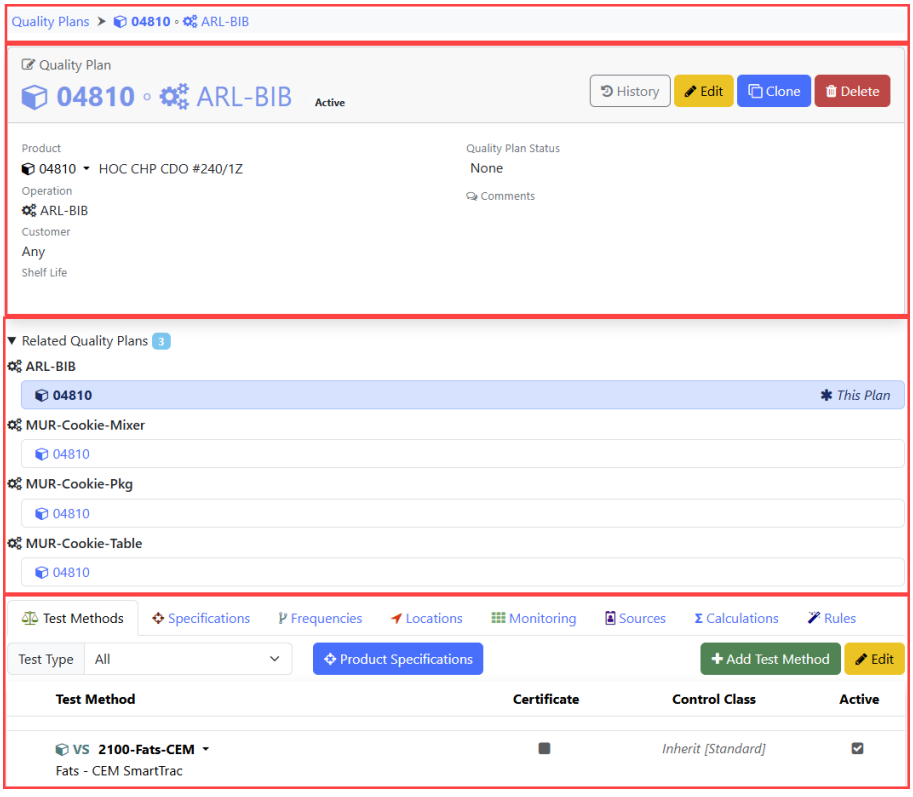
5. A quality plan is organized into four areas:

   Breadcrumb Menu. A navigational aid used to show users their current location within a hierarchical structure of a website. Helps users understand the path they have taken and how to navigate back to previous pages.

   Quality Plan Information = Associates the quality plan with a product, operation, and, if applicable, a customer.

   Related Quality Plans. Shows plans for the same product, but different operations or customers.

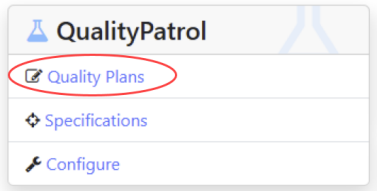
   Quality Plan Tabs = Defines the applicable test methods, specifications, and corresponding configuration settings.



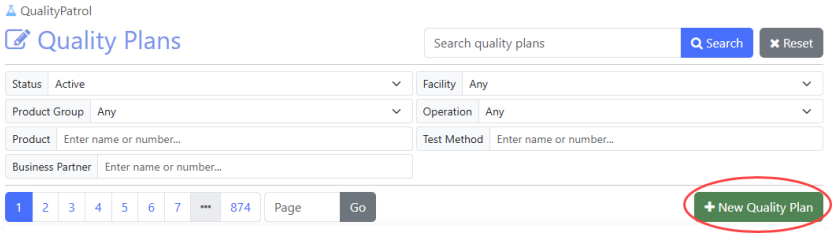
Chapter 5: Quality Plan - Create New

NEW Create New Quality Plan

6. To create a new quality plan, click on the Quality Plans hyperlink in the QualityPatrol card on the PatrolSuite homepage.



   a. Click on the 'New Quality Plan' button.



   b. Add the required information and click the 'Save Changes' button.

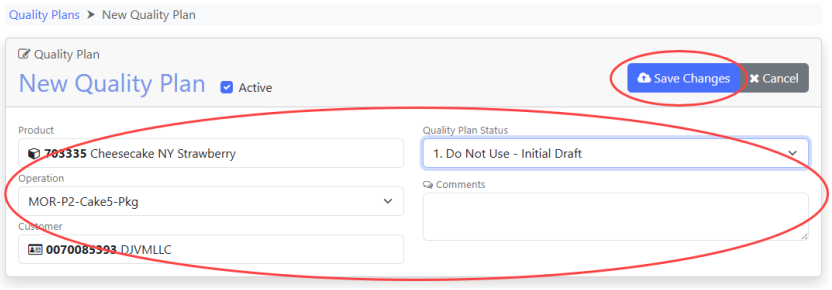
      Note: Click into the Product field and select the applicable product from the product picker.

      Note: Select the applicable Operation from the dropdown.

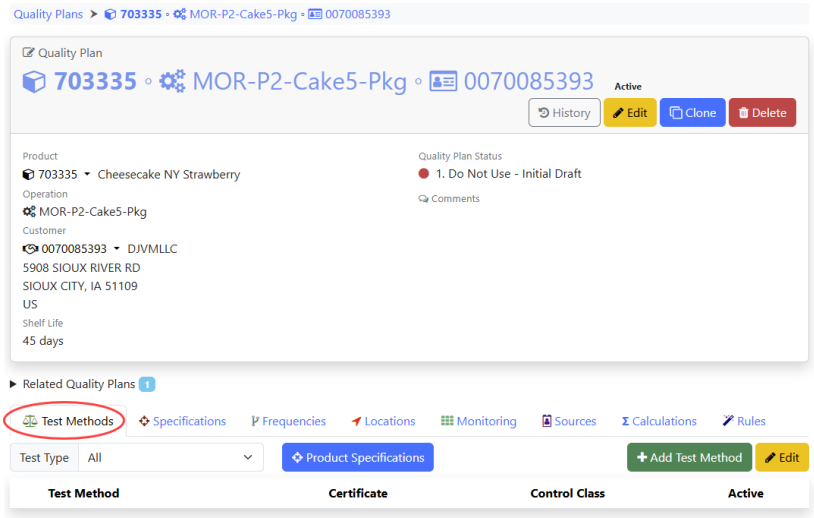
      Note: Click into the Customer field and select the applicable customer from the customer picker. If the product, as tested via the quality plan and corresponding specifications, can be shipped to any customer, then leave the Customer field blank.

      Note: Enter applicable Quality Plan Comments. These comments are visible to the user performing testing on the sample.

      Note: The quality plan status is typically first set to "Do not use – Initial Draft" so that it does not get consumed before it has been completed. The status can be changed at any time while managing the details of the plan.



The new quality plan will be displayed with the Test Methods tab selected.



Chapter 6: Quality Plan - Edit

NEW History

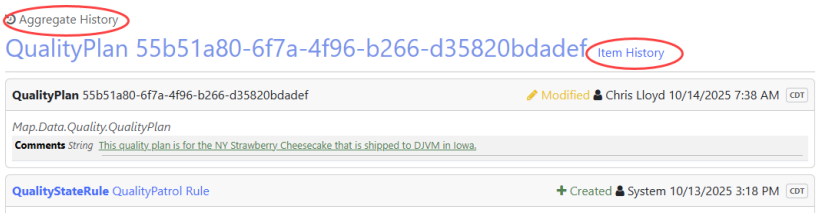
7. To view the audit trail of changes to the quality plan information, open the desired quality plan and click on the ‘History’ button.

   a. The “Aggregate History” of changes will be displayed. Click on the ‘Item History’ hyperlink to view the item history.

      Aggregate History is the audit trail of changes to the “Quality Plan Information” (the Active/Inactive checkbox, the Quality Plan Status, and the Comments) plus changes to the contents of the “Quality Plan Tabs.”

      Item History is the audit trail of changes to only the “Quality Plan Information” (the Active/Inactive checkbox, the Quality Plan Status, and the Comments).

      Note: Specifications are not included in this audit trail because they have their own audit trail application.



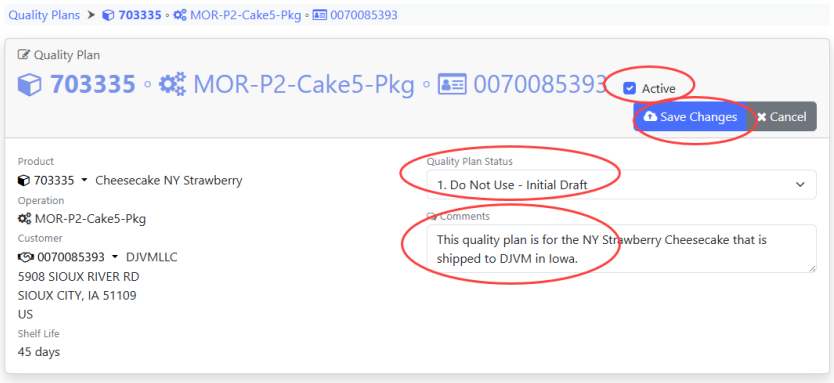
NEW Edit Quality Plan Information

8. To edit the quality plan information, open the desired quality plan, and click on the ‘Edit’ button.

a. Edit the Active/Inactive checkbox, the Quality Plan Status or the Comments as desired, and click the 'Save Changes' button.

   Note: The Product, Operation, and Customer are defined during quality plan created and cannot be changed thereafter.

   Note: Shelf Life is defined at the product level.



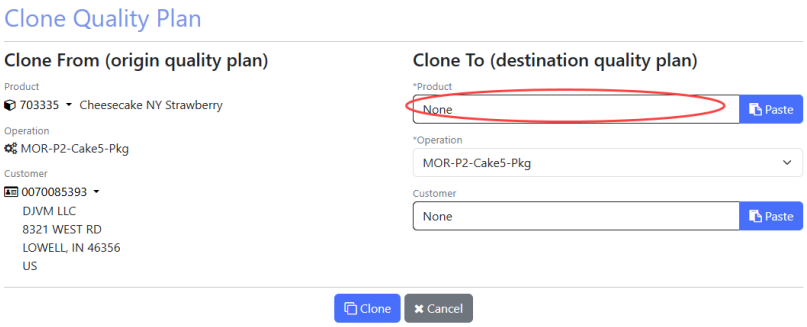
NEW Clone Quality Plan

Cloning a quality plan is an efficient way to create a new quality plan based on an existing, similar quality plan. When cloning, the following data is copied exactly as configured in the quality plan being cloned:

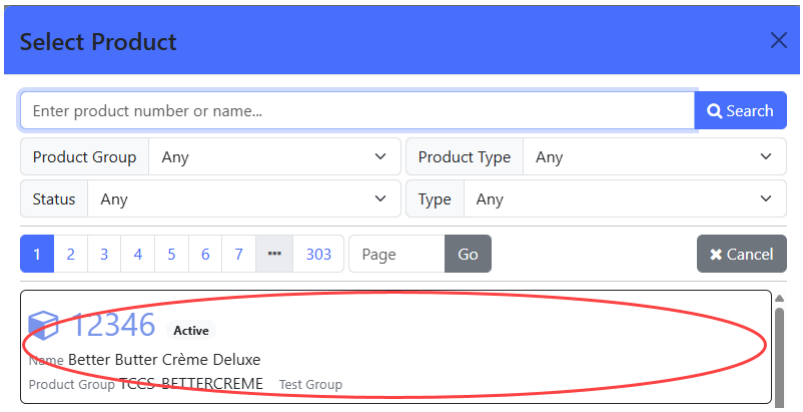
- Quality plan comments.
- Attribute, VSI, and VMI test methods including the frequency, location, and CoA applicability.
- Alphanumeric inputs including the frequency, locations, and start-up criteria.
- Product and customer specifications.
- DashPatrol settings.
- Quality State rules and conditions.

9. To clone a quality plan, open the quality plan that most closely reflects the desired quality plan and click the 'Clone' button.

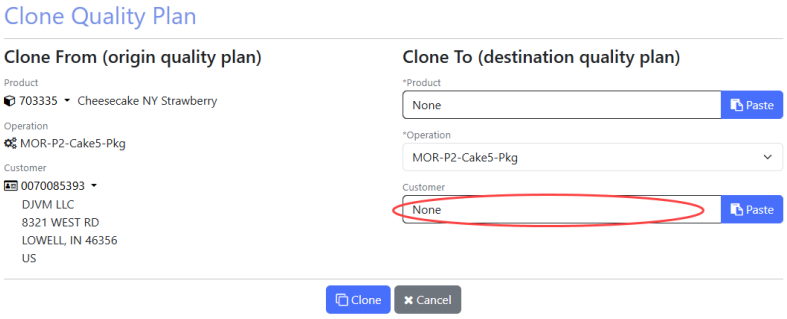
a. Click on the Product field.



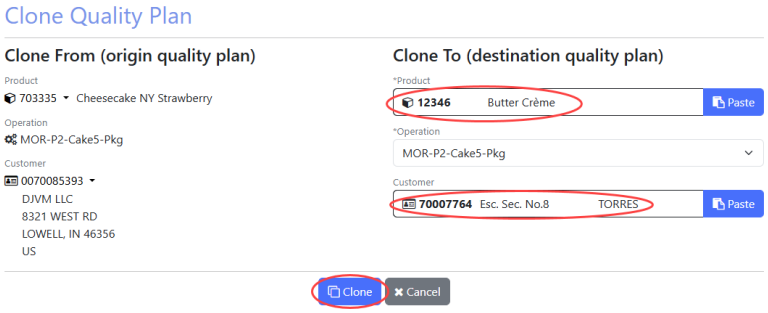
b. Use the Search and filters in the product picker to locate the desired product and then click on the desired product card.



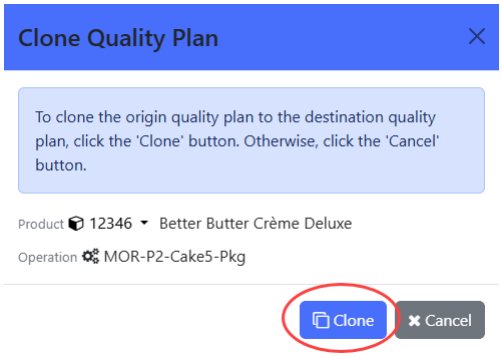
c. If the quality plan is for a specific customer, click on the Customer field, search for the desired customer in the customer picker, and then click on the desired customer card.



d. Review the product and customer to confirm they are accurate and click on the ‘Clone’ button.



e. Click the ‘Clone’ button in the confirmation window.



Note: If restricted test methods are found that conflict with the new operation or workcenter, then a conflict message will appear advising that such test methods will be excluded from the clone.

NEW Delete Quality Plan

10. To delete a quality plan, open the desired quality plan, and click on the ‘Delete’ button and click on the ‘Delete’ button in the confirmation window.

Note: Quality plans cannot be deleted if the plan has test methods in it, or if a sample that uses the quality plan has been initiated. If either is the case and the quality plan is no longer in use, deactivate the plan and change the plan status as appropriate.

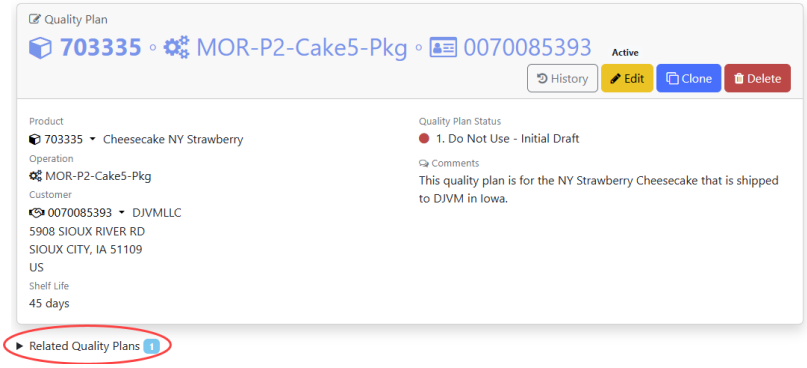
Chapter 7: Related Quality Plans

NEW View

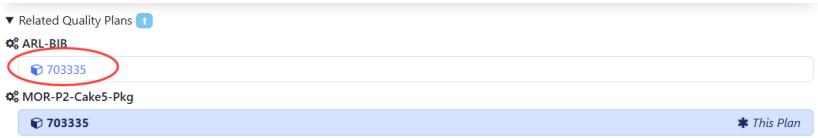
11. To view related quality plans, click the “Related Quality Plans” text to expand the contents.

    Note: The number of related quality plans is shown in the number icon.

    Note: A related quality plan is a plan that has the same product, but a different operation or customer. Related plans are not user definable; they are determined by QualityPatrol logic.



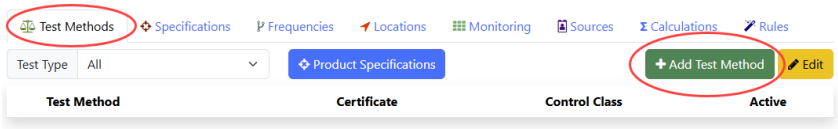
    a. Click on the product number hyperlink to view a related quality plan.



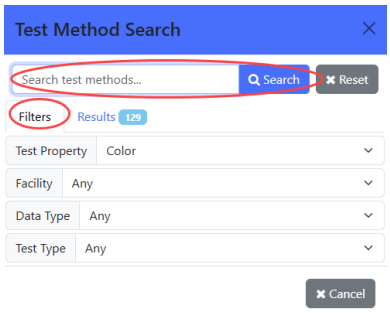
Chapter 8: Test Methods

NEW Add Test Methods

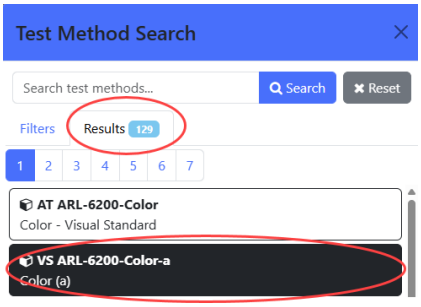
12. To add a test method to a quality plan, open the desired quality plan, click on the Test Methods tab, and click on the ‘Add Test Method’ button.



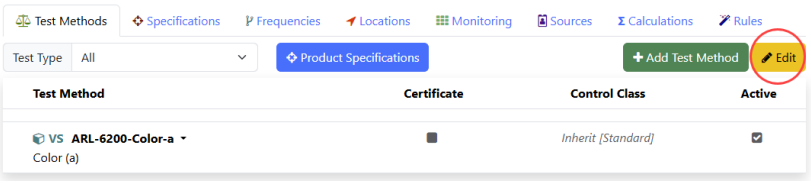
a. Enter a test method number and click the ‘Search’ button, or use the desired filters to locate the desired test method.



b. The “Results” tab will display the number of test methods that align with the search or filter criteria. Click on the “Results” tab, scroll to locate the desired test method, and click on the test method card.



c. The selected test method will appear in the test methods data grid. To edit the test method settings, click on the ‘Edit’ button.



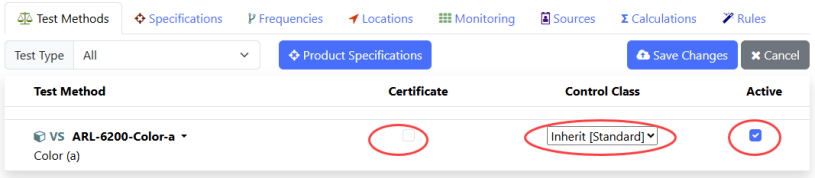
d. Edit the Certificate, Control Class, and Active information as desired and click the 'Save Changes' button.

Note: To make the test method appear on certificates (CoAs), check the Certificate checkbox.

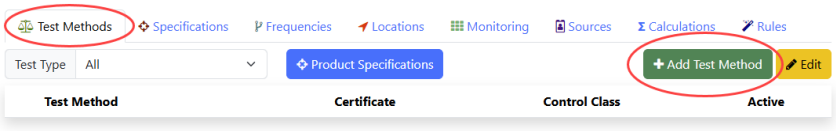
Note: Select the applicable Control Class.

- **Inherit [class]** means the test method is inheriting the class defined at the test property or test method. The actual class that is being inherited is shown in the [ ].
- **Not Considered** means the test method is not considered when determining the quality state. This is often called "run and record" because the test results, even if they are out of spec, will not result in a "Hold" or "Rejected" quality state.
- **Standard** means the results of the test method are considered when determining the quality state. If a test result for this test method is out of spec, the sample's quality state will be set to "Hold" or "Rejected" depending on the defined quality state rules.
- **Essential** means the test method is essential to the performance of the product and elevated scrutiny should be applied when determining the quality state of a sample with out of spec test results. If a test result for this test method is out of spec, the sample's quality state will be set to "Hold" or "Rejected" depending on the defined quality state rules.
- **Preventive** means that this test method is preventive control as defined by food safety regulations and is a core component of the facility's overall food safety plan. Elevated scrutiny should be applied when determining the quality state of a sample with out of specification test results. If a test result for this test method is out of spec, the sample's quality state will be set to "Hold" or "Rejected" depending on the defined quality state rules.

Note: Check the "Active" checkbox to make the test method active or inactive. Checked = Active. Unchecked = Inactive.



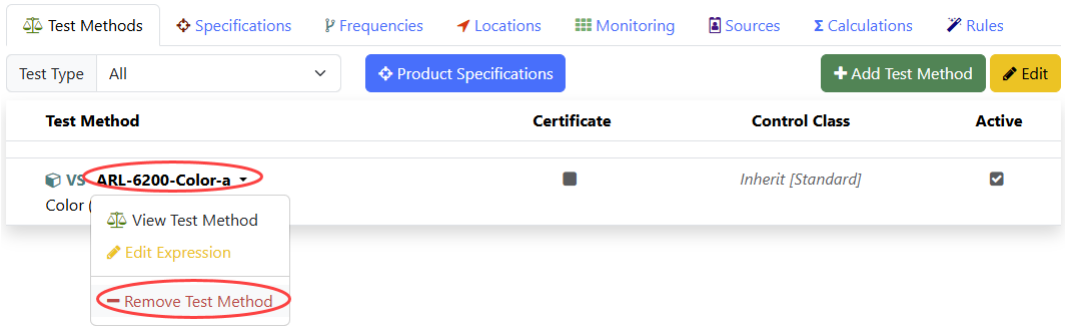
13. To add another test method to the quality plan, click on the 'Add Test Method' button. Repeat the steps as outlined above.



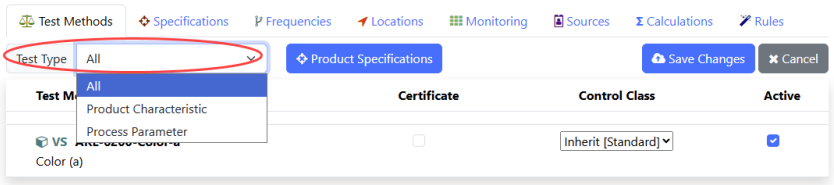
14. To remove a test method from a quality plan, click on the test method name dropdown and select

"Remove Test Method" from the submenu. Click the 'Remove' button in the confirmation window.

Note: Removing a test method from a plan has no effect on historical test results data. However, the subsequent QualityPatrol samples that are created will not include the test method as a required test.



15. To filter the test methods displayed, select the desired test type in the Test Type filter.



Chapter 9: Specifications

NEW Specification Levels

Specifications apply only to variable test methods. Alphanumeric and attribute data types do not have specifications. QualityPatrol supports specification management at the following levels:

i. ⊘ **None:** No specifications have been defined.

ii. ⚖ **Test Method Specifications**: For a given quality plan, the test method spec is used when: (i) a test method spec is defined; and (ii) no specification is defined at the product, customer, or ship-to address level.

iii. **Product Specifications**: For a given quality plan, the product spec is used when: (i) a product spec is defined; and (ii) no specification is defined at the customer or the ship-to address level. Accordingly, if both a test method spec and a product spec exist, the product spec is used.

iv. **Customer Specifications**: For a given quality plan, the customer spec is used when: (i) a customer spec is defined; and (ii) no specification is defined at the ship-to address level. Accordingly, if both a product spec and a customer spec exist, the customer spec is used.

At the customer level, specifications for the applicable customer can be further defined for the unique ship-to locations that are associated with the customer.

v. **Customer Ship-To Specifications**: For a given quality plan, the customer ship-to spec is used for all test plans that contain a test method with a defined customer ship-to spec, regardless of what other specifications exist.

NEW Specification Types

The following specification types can be defined:

i. **Individual Specification:** An Individual Specification defines the acceptable tolerance for a single measurement taken from a process, product, or component.
- Used when every unit must meet the specification on its own.
- Ensures that no out-of-spec parts are produced or accepted.

ii. **Average Specification:** An Average Specification sets the allowable range for the average value of multiple measurements — typically from a sample taken during a production run.
- Common in statistical process control (SPC).
- Allows for minor variation between individual parts as long as the process average is stable and within spec.

iii. **Range Specification:** A Range Specification defines the maximum allowable difference between the largest and smallest values in a set of measurements.
- Focuses on consistency and process control.
- High range values may indicate variation or instability in the process, even if averages are in spec.

NEW Specification Tolerance Limits

The following specification tolerance limits can be defined:

📌 **Upper Reasonable Data Limit** (URDL): The upper boundary of data values for a given process. Measurements beyond this limit are considered statistically unreasonable, potentially due to measurement error, data entry mistakes, or process failure.

☑ **Upper Specification Limit** (USL): The highest value a product characteristic or process parameter can have and still meet design or customer requirements.

⚠ **Upper Warning Limit** (UWL): A threshold set below the upper specification limit (USL) to provide an early warning that a process may be drifting out of control or approaching an unacceptable condition even though it's still within spec.

🎯 **Target**: The desired value that a measurement should achieve under optimal manufacturing conditions. It is typically the center point between the upper and lower specification limits and represents the goal for process or product performance.

⚠ **Lower Warning Limit** (UWL): A threshold set above the lower specification limit (LSL) to provide an early warning that a process may be drifting out of control or approaching an unacceptable condition even though it's still within spec.

☑ **Lower Specification Limit** (USL): The lowest value a product characteristic or process parameter can have and still meet design or customer requirements.

📌 **Lower Reasonable Data Limit** (URDL): The lower boundary of data values for a given process. Measurements beyond this limit are considered statistically unreasonable, potentially due to measurement error, data entry mistakes, or process failure.

NEW Test Method Specifications

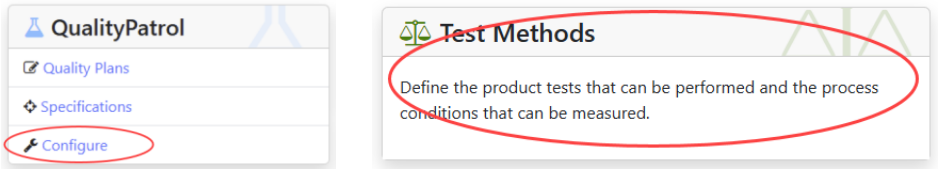
⚖ **Test Method Specifications** Apply to test methods with a defined test method spec provided that a specification is not defined at the product, customer, or ship-to address level.

Use Case: If a test method always has the same specification regardless of the product or customer, then a test method level specification should be considered. This way, if the specification limits need to be edited, then this can be done in only one place (the test method spec) and the new spec will cascade to all test plans using the test method.

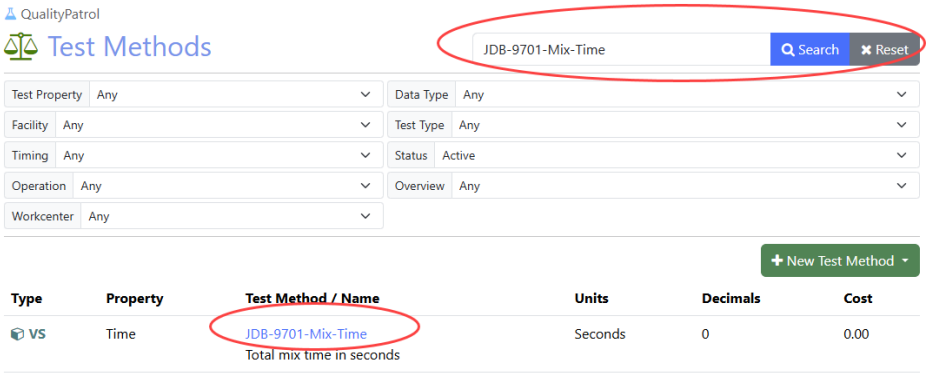
There are two ways to create a test method specification.

Method #1

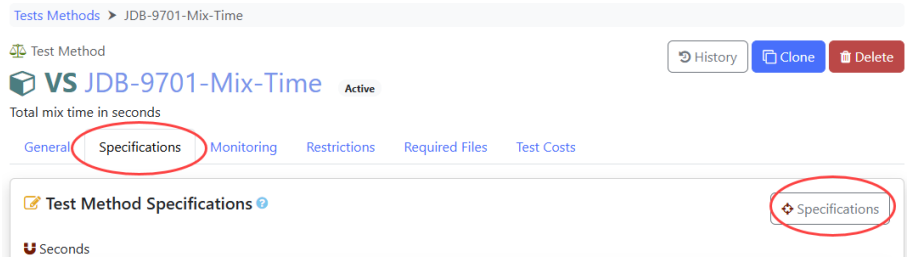
16. From the PatrolSuite homepage, click on the Configure hyperlink in the QualityPatrol card and then click on the Test Methods card.



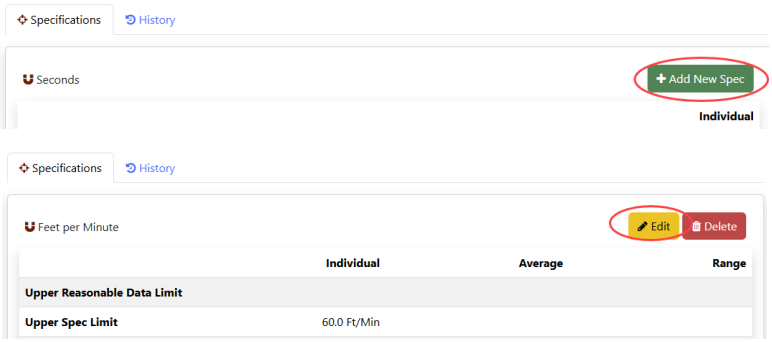
a. Use the Search feature or the filters to locate the desired test method and click on the test method name hyperlink.



b. Click on the “Specifications” tab then click on the ‘Specifications’ button.



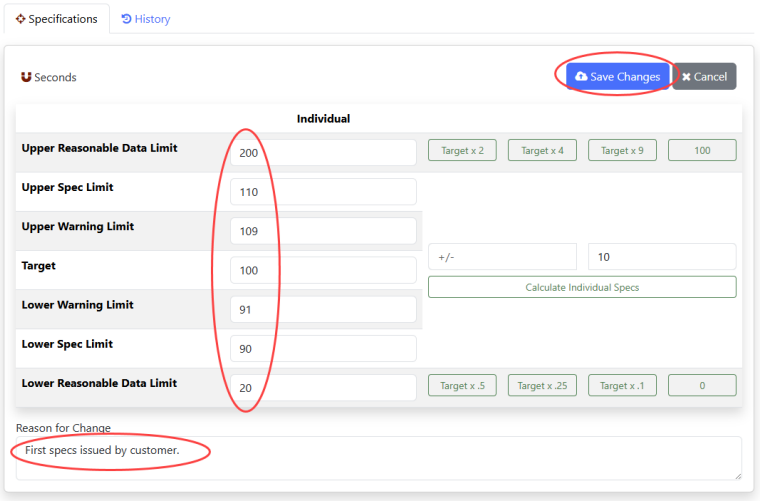
c. Click on the ‘Add New Spec’ button, or the ‘Edit’ button if the test method already has a specification.



d. Enter the desired target, warning, specification, reasonable data limit values, and the Reason for Change, and click the ‘Save Changes’ button.

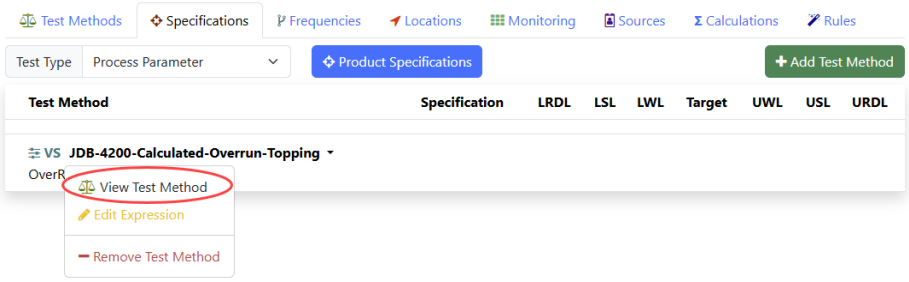
Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the ‘Calculate Individual Specs’ button.

Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the ‘Target x 2,’ ‘Target x 4,’ ‘Target x 9,’ or the “100’ button.

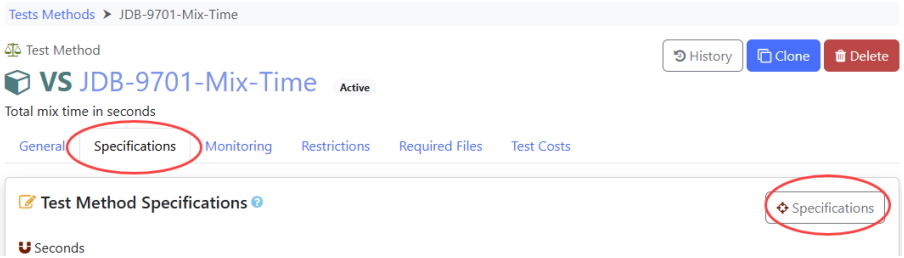


Method #2

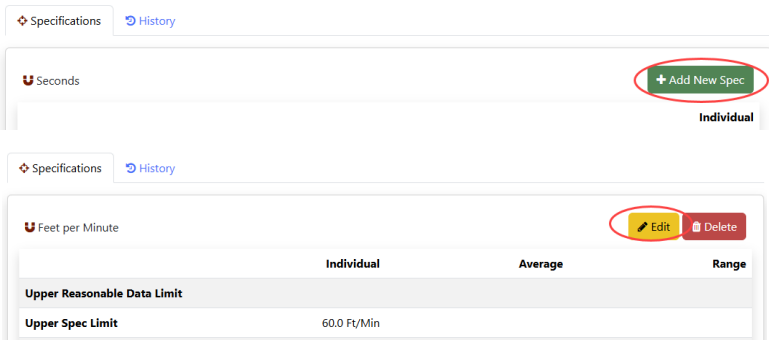
17. From a quality plan, click on the desired test method dropdown and click on “View Test Method” submenu option.



a. Click on the “Specifications” tab then click on the ‘Specifications’ button.



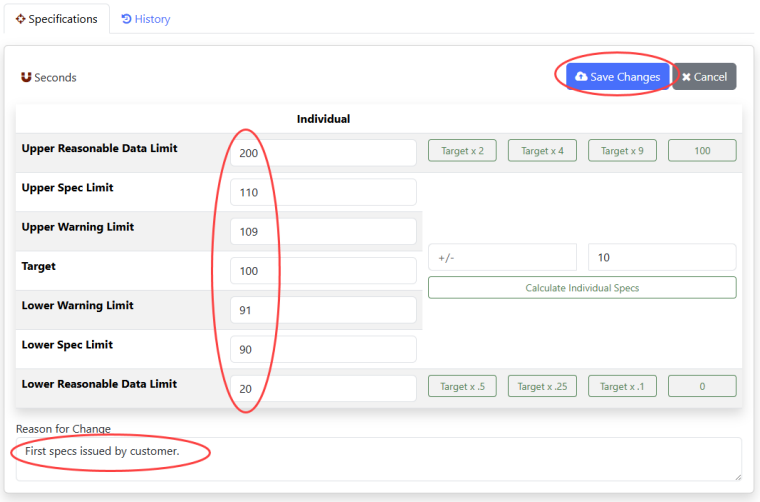
b. Click on the ‘Add New Spec’ button, or the ‘Edit’ button if the test method already has a specification.



c. Enter the desired target, warning, specification, reasonable data limit values, and the Reason for Change, and click the 'Save Changes' button.

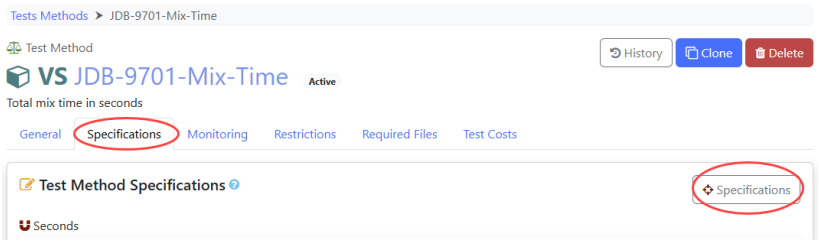
Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the 'Calculate Individual Specs' button.

Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the 'Target x 2,' 'Target x 4,' 'Target x 9,' or the "100' button.

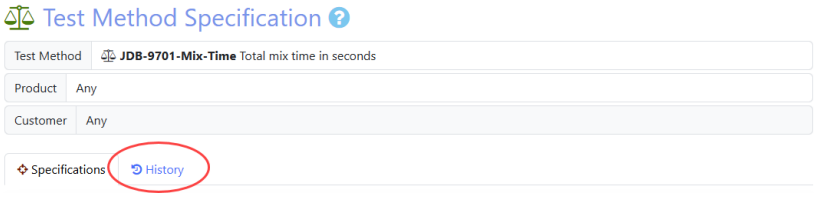


NEW Specifications Audit Trail

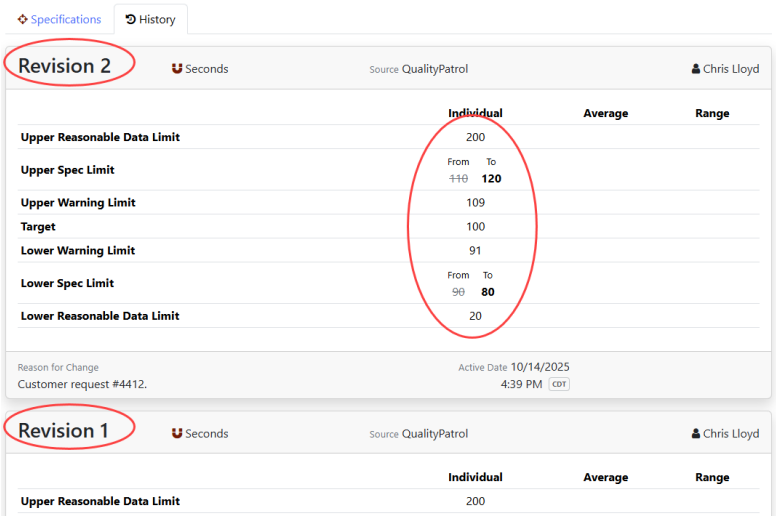
18. To view the audit trail of specification changes to a test method, open the desired test method, click on the 'Specifications' tab, and then click the 'Specifications' button.



a. Click on the “History” tab.



b. The most recent revision will be displayed at the top. The spec value “From and To” changes are displayed in the Individual, Average, and Range columns as applicable.



Chapter 10: Specification Editor

NEW Introduction

The Specification Editor enables the management of the specifications for test methods that are already part of a Quality Plan. Additional test methods cannot be added to a Quality Plan via the Specification Editor.

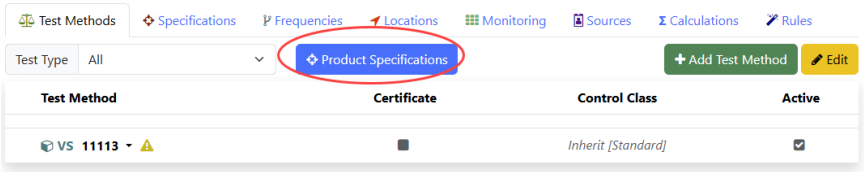
Specifications apply only to variable test methods. Alphanumeric and attribute data types do not have specifications. QualityPatrol

The specification level for each test method is identified with the following symbols.

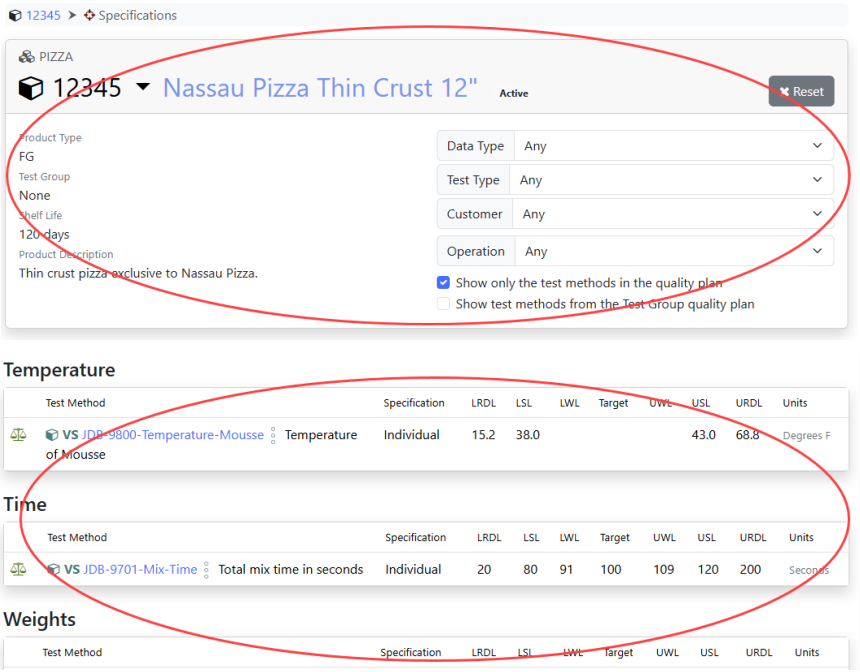
- No specification
- Test method specification
- Product specification
- Product/Customer specification
- Product/Customer Ship-To specification

NEW View

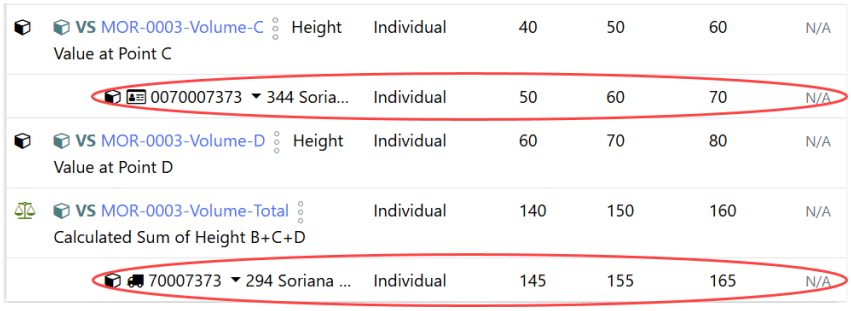
19. To view all the specifications associated with a product quality plan, open the quality plan, and click on the ‘Product Specifications’ button.



a. The specification editor will open, pre-filtered for the applicable product, operation, and customer. This page is organized into two sections: (i) Product information and filters; and (ii) The test methods which are organized by Test Property.



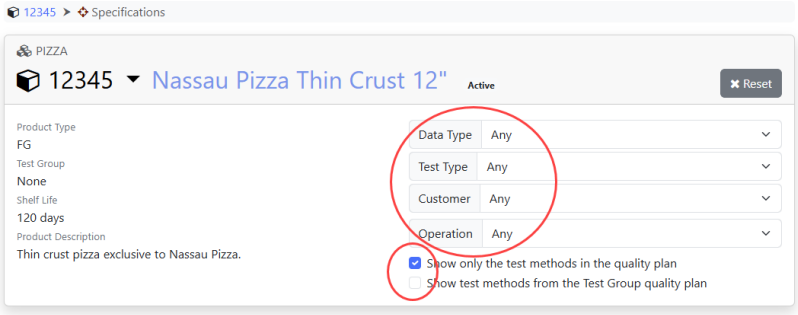
Note: Customer specifications are indented below the applicable test method. These specs are displayed as or because they technically apply to a product/customer combination.



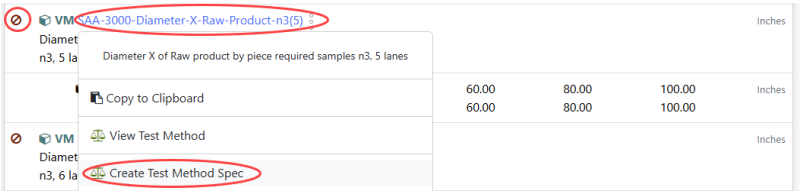
NEW Define New Test Method Spec

⚖ **Test Method Specifications**: For a given quality plan, the test method spec is used when: (i) a test method spec is defined; and (ii) no specification is defined at the product, customer, or ship-to address level.

20. To define a new specification at the test method level, open a quality plan, click on the 'Product Specifications' button, and use the filters and the checkboxes to locate a test method of interest.



a. Click on the desired test method name with the ⊘ icon and click on “Create Test Method Spec” in the submenu.

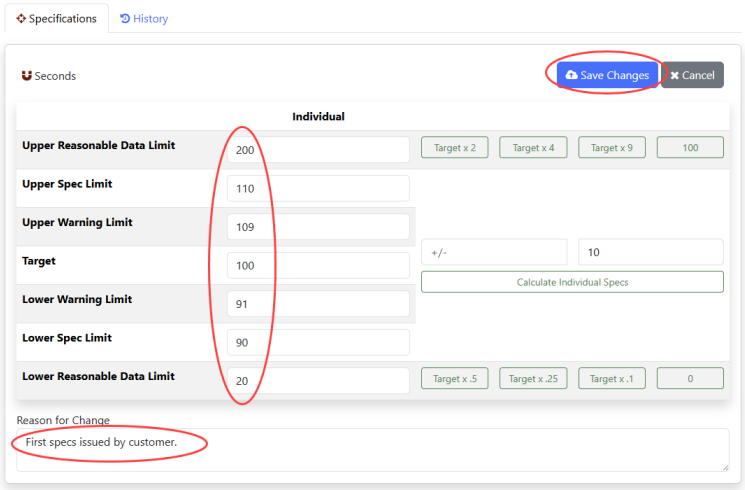


b. Click on the ‘Add New Spec’ button.

c. Enter the desired target, warning, specification, and reasonable data limit values, record the Reason for Change, and click the ‘Save Changes’ button.

Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the ‘Calculate Individual Specs’ button.

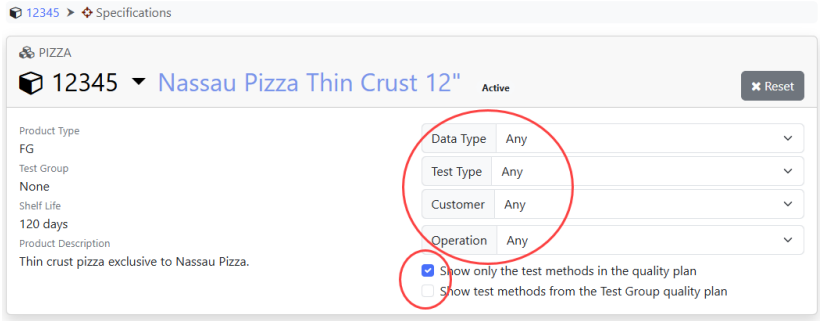
Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the ‘Target x 2,’ ‘Target x 4,’ ‘Target x 9,’ or the “100’ button.



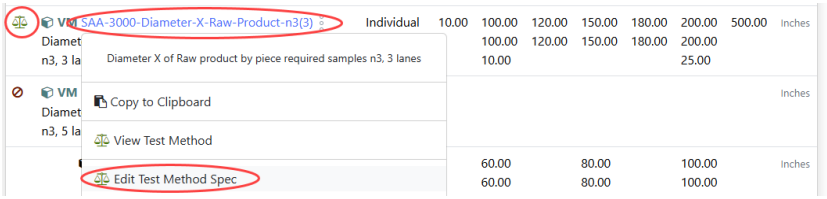
NEW Edit Existing Test Method Spec

⚖ **Test Method Specifications**: For a given quality plan, the test method spec is used when: (i) a test method spec is defined; and (ii) no specification is defined at the product, customer, or ship-to address level.

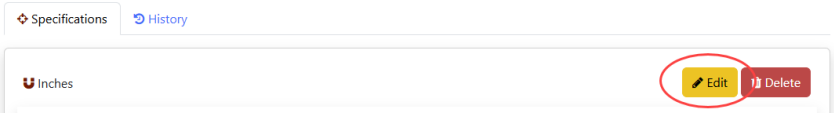
21. To edit an existing specification at the test method level, open a quality plan, click on the 'Product Specifications' button, and use the filters and the checkboxes to locate a test method of interest.



a. Click on the desired test method name with the ⚖ icon and click on "Edit Test Method Spec" in the submenu.



b. Click on the 'Edit' button.

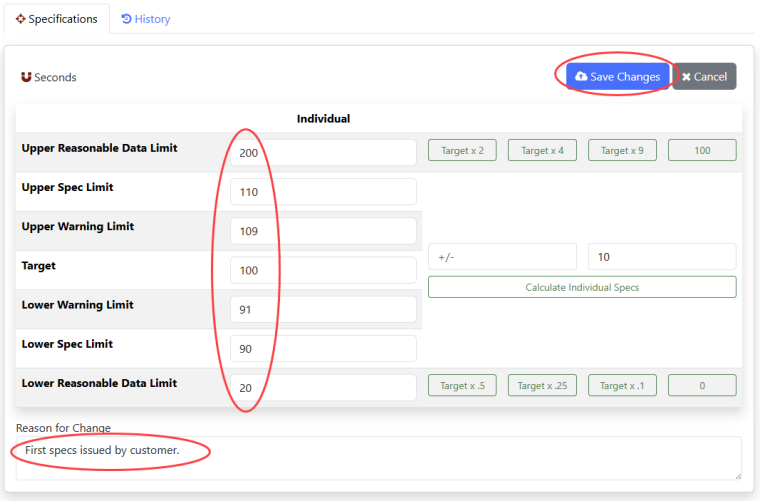


c. Edit the desired target, warning, specification, and reasonable data limit values, record the Reason for Change, and click the 'Save Changes' button.

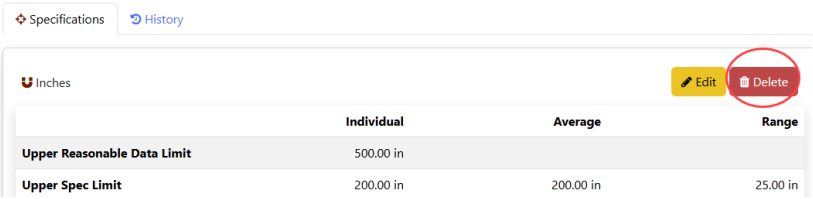
Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the 'Calculate Individual Specs' button.

Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the 'Target x 2,' 'Target x 4,' 'Target x 9,' or the "100' button.

Note: PatrolSuite can be integrated with an external system such as PLM software where specs are defined and managed. Specs defined and managed outside of QualityPatrol will not be editable from within QualityPatrol and will have an Externally Managed Data warning.



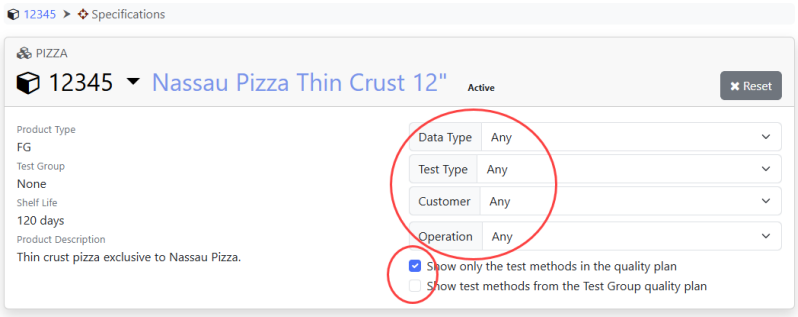
d. To delete an existing test method specification, click the ‘Delete’ button and click the ‘Delete’ button in the confirmation widow.



NEW Define New Product Spec

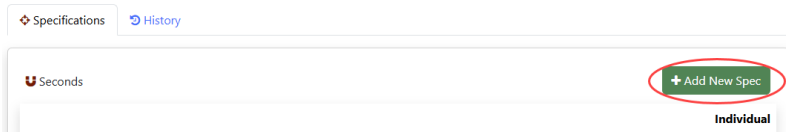
Product Specifications: For a given quality plan, the product spec is used when: (i) a product spec is defined; and (ii) no specification is defined at the customer or the ship-to address level. Accordingly, if both a test method spec and a product spec exist, the product spec is used.

22. To define a new specification at the product level, open a quality plan, click on the ‘Product Specifications’ button, and use the filters and the checkboxes to locate a test method of interest.



a. Click on the desired test method name and click on “Create Product Spec” in the submenu.

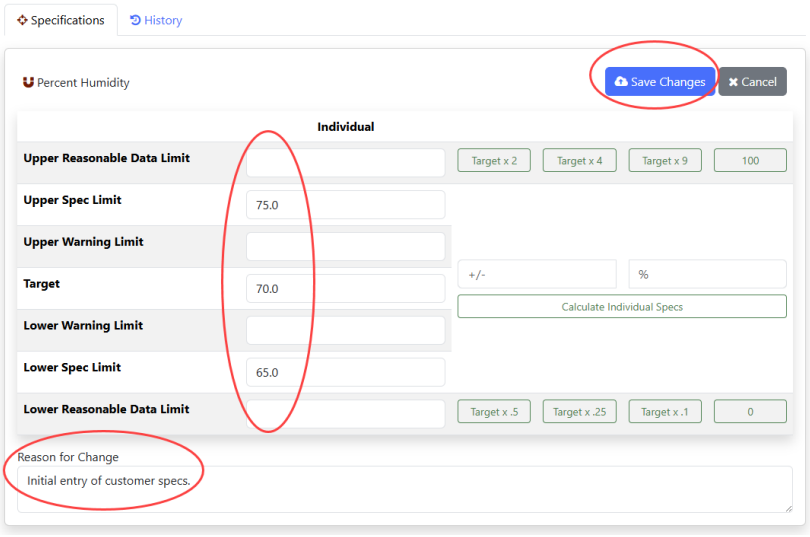
b. Click on the ‘Add New Spec’ button.



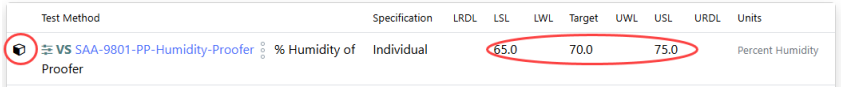
c. Enter the desired target, warning, specification, and reasonable data limit values, record the Reason for Change, and click the ‘Save Changes’ button.

Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the ‘Calculate Individual Specs’ button.

Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the ‘Target x 2,’ ‘Target x 4,’ ‘Target x 9,’ or the “100’ button.



d. The new specs will appear marked with the product icon.

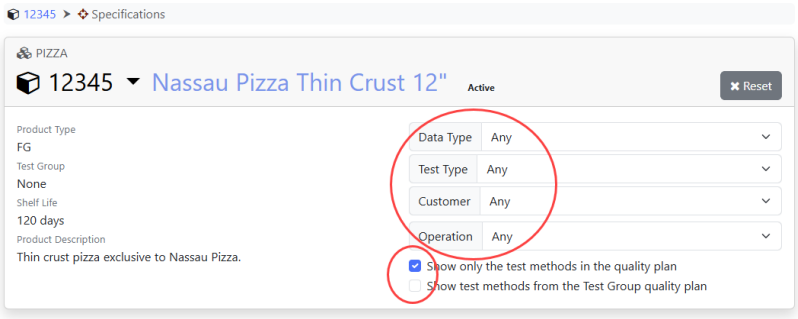


NEW Edit Existing Product Spec

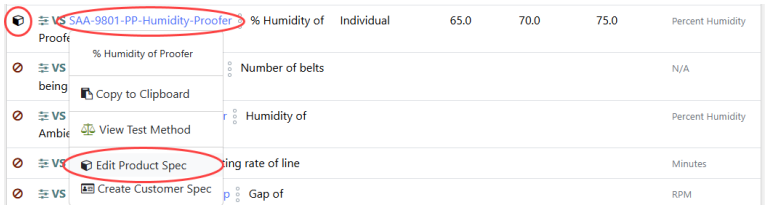
Product Specifications: For a given quality plan, the product spec is used when: (i) a product spec is

defined; and (ii) no specification is defined at the customer or the ship-to address level. Accordingly, if both a test method spec and a product spec exist, the product spec is used.

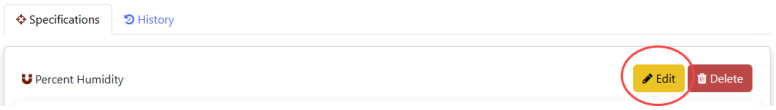
23. To edit an existing specification at the product level, open a quality plan, click on the 'Product Specifications' button, and use the filters and the checkboxes to locate a test method of interest.



a. Click on the desired test method name with the ◆ icon and click on "Edit Product Spec" in the submenu.



b. Click on the 'Edit' button.'

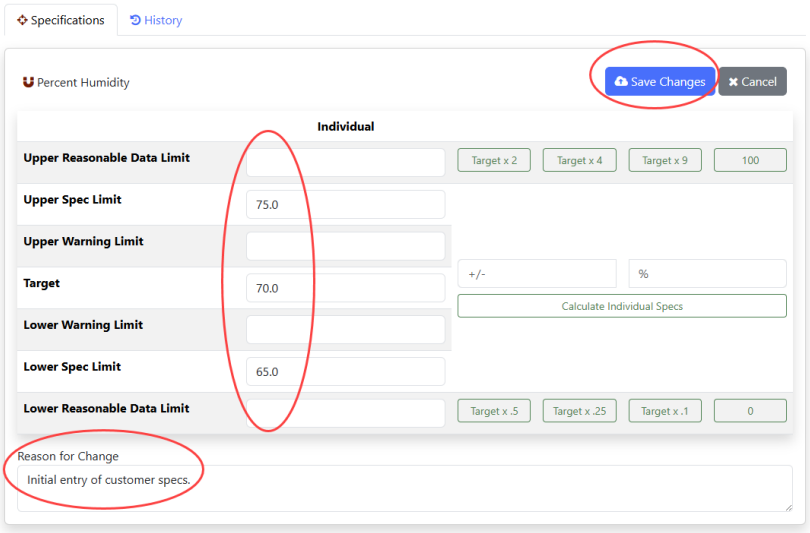


c. Enter the desired target, warning, specification, and reasonable data limit values, record the Reason for Change, and click the 'Save Changes' button.

Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the 'Calculate Individual Specs' button.

Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the 'Target x 2,' 'Target x 4,' 'Target x 9,' or the "100' button.

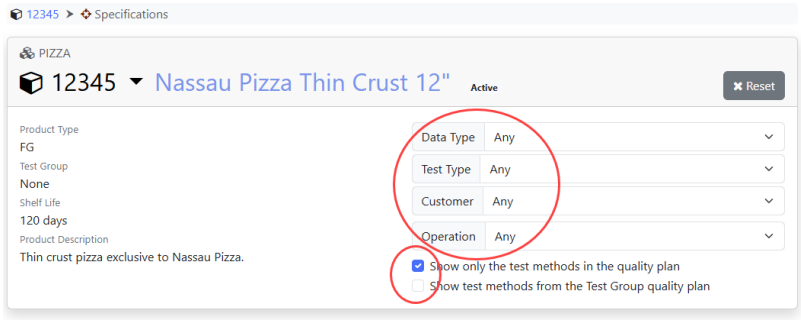
Note: PatrolSuite can be integrated with an external system such as PLM software where specs are defined and managed. Specs defined and managed outside of QualityPatrol will not be editable from within QualityPatrol and will have an Externally Managed Data warning.



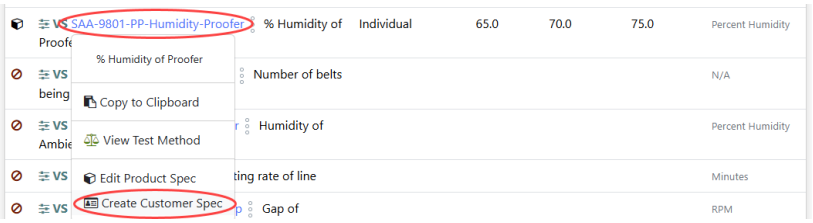
NEW Define New Customer Spec

Customer Specifications: For a given quality plan, the customer spec is used when: (i) a customer spec is defined; and (ii) no specification is defined at the ship-to address level. Accordingly, if both a product spec and a customer spec exist, the customer spec is used.

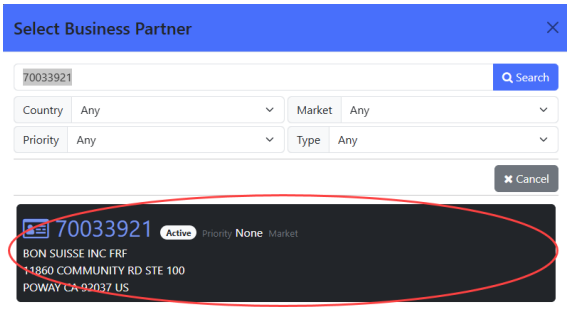
24. To define a new specification at the customer level, open a quality plan, click on the 'Product Specifications' button, and use the filters and the checkboxes to locate a test method of interest.



a. Click on the desired test method name and click on "Create Customer Spec" in the submenu.

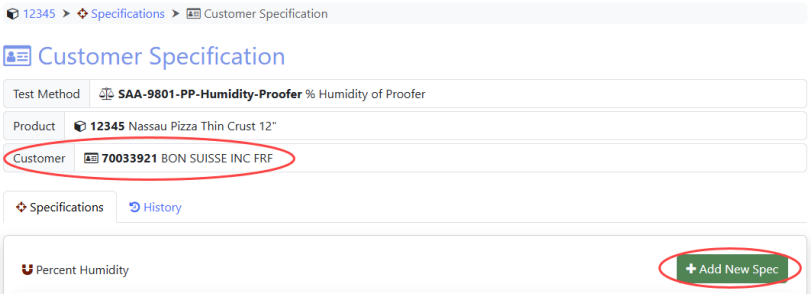


b. Select the desired customer from the business partner picker. Use the Search and filters as needed to locate the business partner.



c. Click on the ‘Add New Spec’ button.

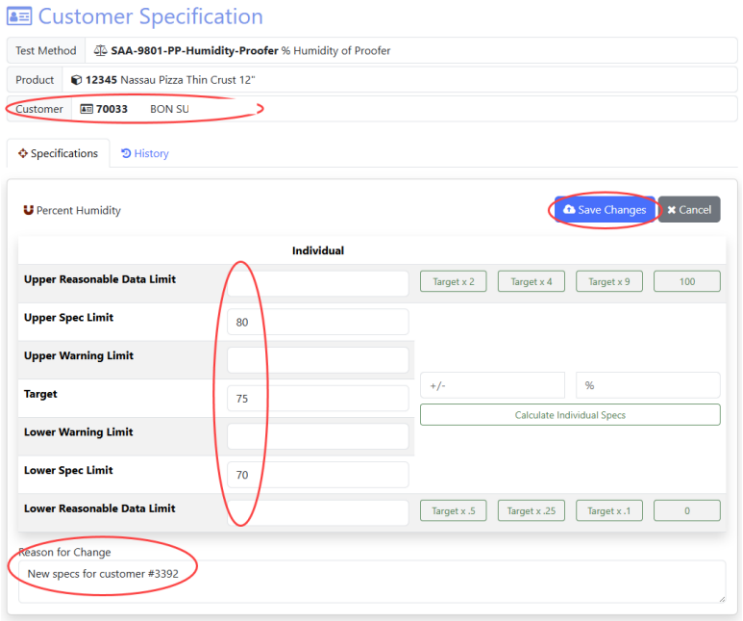
Note: The applicable customer will be displayed.



d. Enter the desired target, warning, specification, and reasonable data limit values, record the Reason for Change, and click the ‘Save Changes’ button.

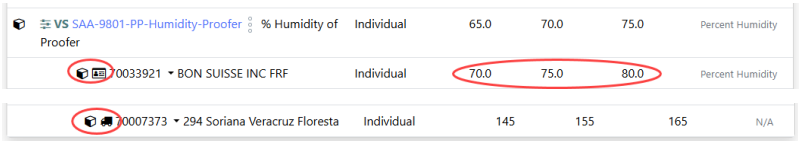
Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the ‘Calculate Individual Specs’ button.

Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the ‘Target x 2,’ ‘Target x 4,’ ‘Target x 9,’ or the “100’ button.



The new specs will appear indented from the test method and marked with the applicable customer icon.

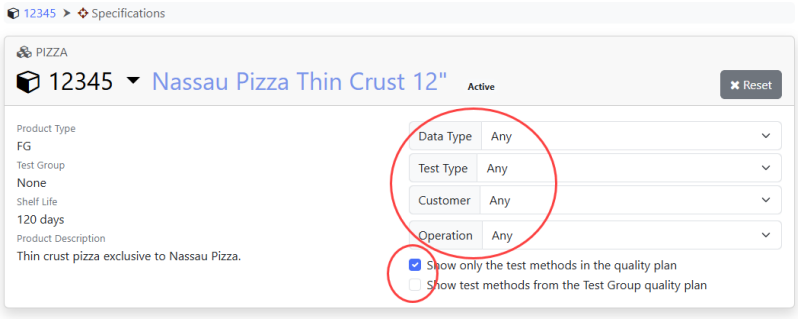
- = Product/Customer
- = Product/Customer Ship-To



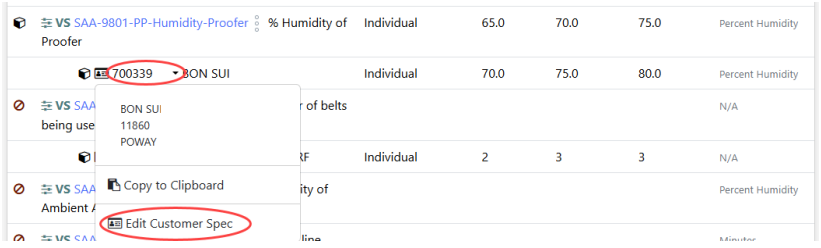
NEW Edit Existing Customer Spec

Customer Specifications: For a given quality plan, the customer spec is used when: (i) a customer spec is defined; and (ii) no specification is defined at the ship-to address level. Accordingly, if both a product spec and a customer spec exist, the customer spec is used.

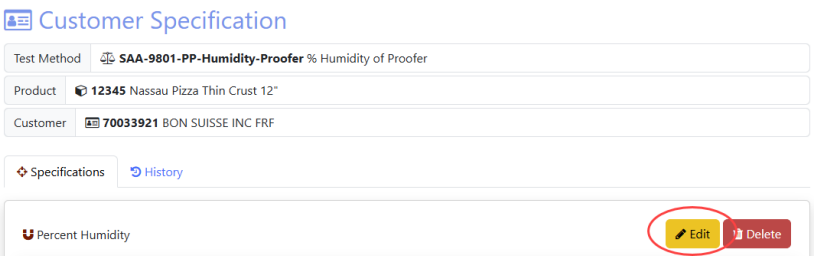
25. To edit an existing specification at the customer level, open a quality plan, click on the 'Product Specifications' button, and use the filters and the checkboxes to locate a test method of interest.



a. Click on the customer number dropdown for the desired test method name and click on "Edit Customer" in the submenu.



b. Click on the 'Edit' button.'



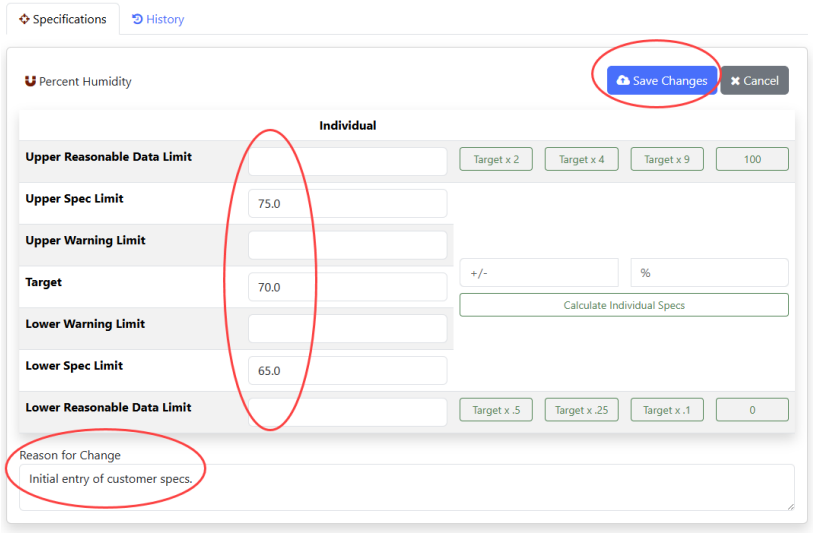
c. Enter the desired target, warning, specification, and reasonable data limit values, record the Reason

for Change, and click the ‘Save Changes’ button.

Note: To enter the upper and lower specs based on a calculation from target, enter the target, then enter either the +/- numerical value or the %, then click the ‘Calculate Individual Specs’ button.

Note: To enter the URDL and LRDL based on a calculation from target, enter the target then click on the ‘Target x 2,’ ‘Target x 4,’ ‘Target x 9,’ or the “100’ button.

Note: PatrolSuite can be integrated with an external system such as PLM software where specs are defined and managed. Specs defined and managed outside of QualityPatrol will not be editable from within QualityPatrol and will have an Externally Managed Data warning.



Chapter 11: Search Specifications

NEW Introduction

The Search Specification page provides a broad view of specifications associated with any test method/product/customer combination including:

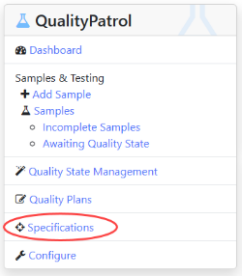
i) Any test method regardless of the product or customer

ii) Any product regardless of the test method or customer

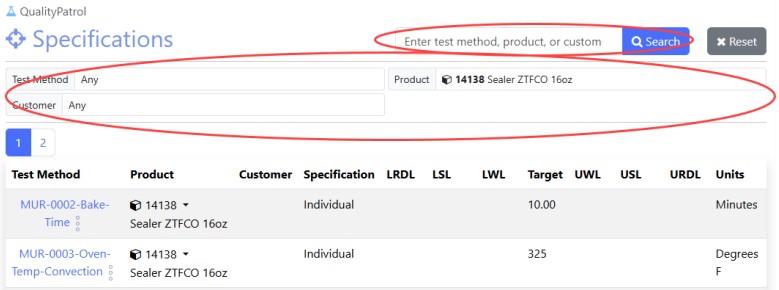
iii) Any customer regardless of the test method or product

NEW Search

26. To search for specifications, click the “Specifications” hyperlink in the QualityPatrol card.

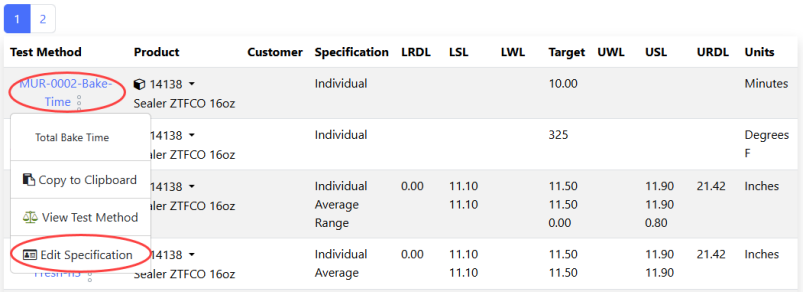


a. Use the Search feature or the filters to locate the desired specifications.

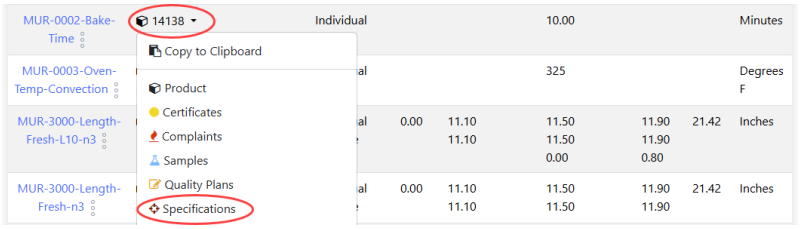


NEW Edit

27. To edit a specific specification for a test method/product/customer, click on the desired test method name and select “Edit Specification” from the submenu.



a. Alternatively, to open the Specification Editor for a desired product, click on the product number dropdown and select “Specifications” from the submenu.



Chapter 12: Sample Frequencies

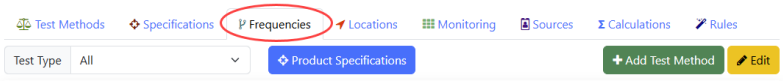
NEW Introduction

Within the context of a Quality Plan, sample frequencies define how often a sample is taken to measure product characteristics or process parameters. Sample frequencies are either “time based” (e.g. Every 30 minutes) or “event based” (i.e. Every time a product unit is produced).

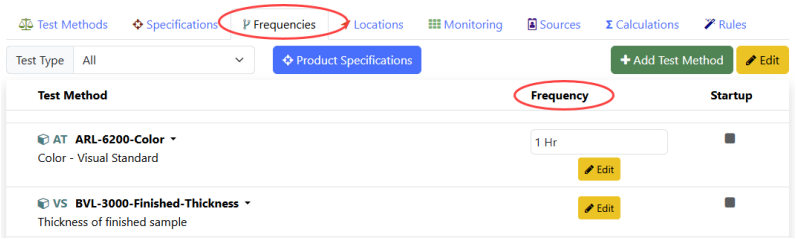
The population of sample frequencies that can be consumed in any quality plan is defined on page: {PatrolSuite URL}/Quality/Setup/SampleFrequencies

NEW View

28. To view the frequencies associated with the test methods of a quality plan, open the quality plan and click on the “Frequencies” tab.



a. The existing frequencies and the Startup condition for each test method will be displayed.

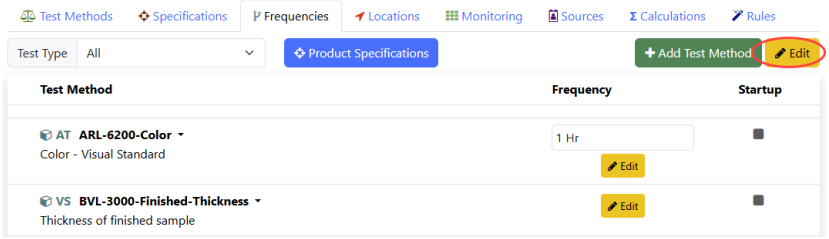


NEW Startup

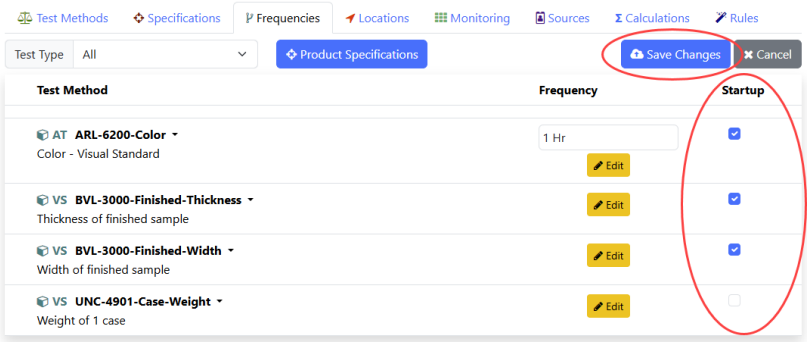
“Startup” is a sample type used in QualityPatrol to distinguish manufacturing “startup” samples from “production” samples and has implications for how such data is used in CoAs, DashPatrol, DataPatrol, and Metrics & Reports. Startup is not a frequency. Do not create a frequency called “Startup.” If this mistake has been made, then the Startup frequency should be deleted. If it cannot be deleted because it has been consumed in test plans or samples have been created, then it should be deactivated. Once deleted or deactivated, consider re-training the users regarding the difference between sample types (Production and Startup) and frequencies.

Nonetheless, whether or not a test method is performed on Startup samples is defined on the Frequency tab.

29. To select which test methods need to be completed on Startup samples, click the ‘Edit’ button.

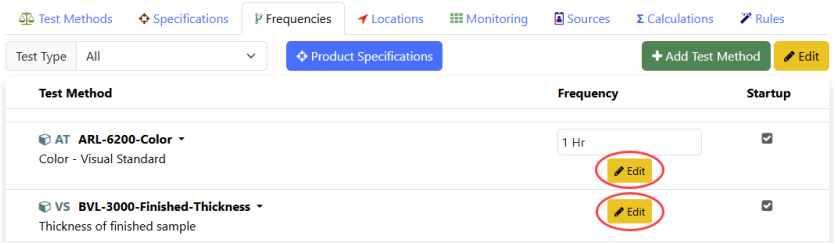


a. Check the checkbox(es) that correspond to the tests that need to be completed when Startup samples are taken and click the ‘Save Changes’ button.



NEW Frequency Selection

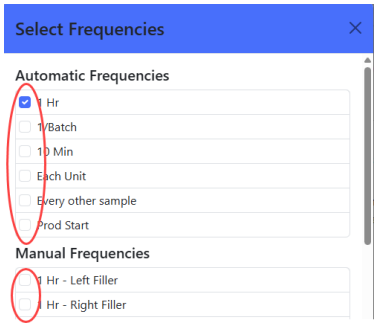
30. To define how often samples need to be taken (and accordingly how often a test is performed), click on the ‘Edit’ button for the desired test method.



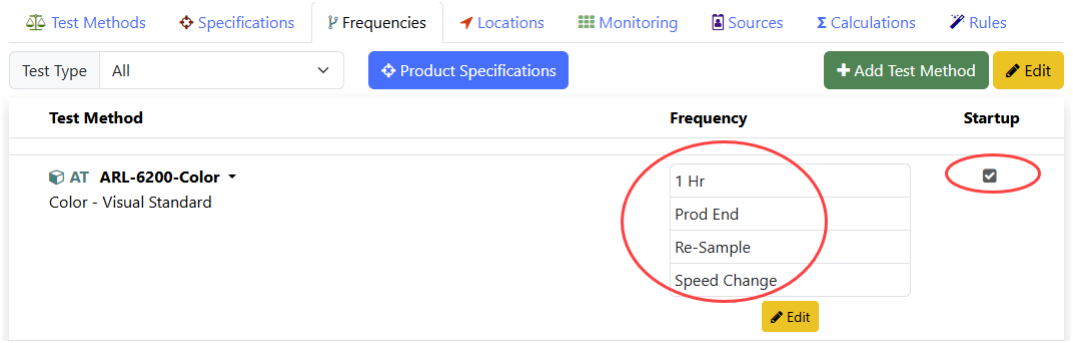
a. In the Frequency Picker, use the scroll bar to locate the desired frequency, select the checkbox, and click the ‘Save Changes’ button.

Note: Checked = The frequency applies. Unchecked = The frequency does not apply.

Note: More than one frequency can be selected.



b. The updated quality plan will display the applicable frequencies and the applicability of the test method to Startup samples.



Chapter 13: Test Locations

NEW Introduction

Within the context of a Quality Plan, a test location is a physical location within the facility where tests are performed. For example, when a product sample is taken, 5 tests may need to be completed in the quality control lab, and 3 tests may need to be completed on the shop floor.

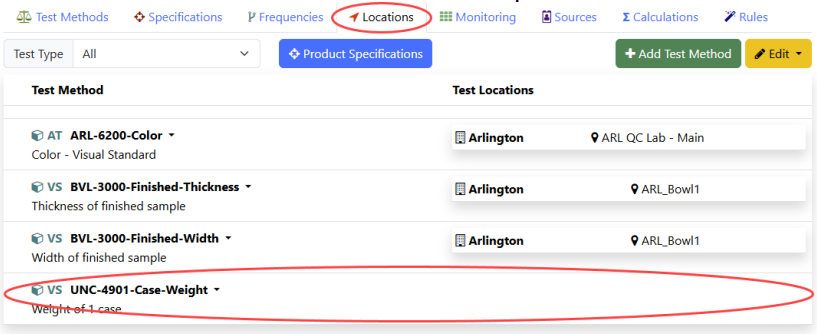
Additionally, since a product can be made at multiple facilities, and an operation can exist at multiple facilities, the quality plan for product XYZ may apply to multiple facilities. Accordingly, when the test location is selected, we need to identify the applicable facility. For example, Test Method 123 may be performed in the QC lab at facility #1 but is performed on the shop floor in Facility #2.

Test locations are defined for each facility on page: {PatrolSuite URL}/Manufacturing/TestLocations/{FacilityCode}

NEW View

31. To view the test locations for each test method within a quality plan, open the desired quality plan and click on the “Locations” tab.

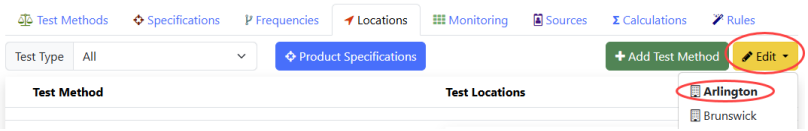
    Note: In the image below, Case Weight has no defined test location. In such cases, QualityPatrol will apply the facilities’ “Default” test location when a sample is initiated at such a facility.



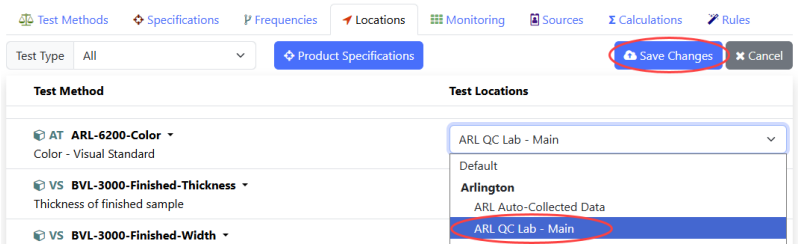
NEW Edit

32. To edit the test locations for each test method within a quality plan, click on the ‘Edit’ button and select

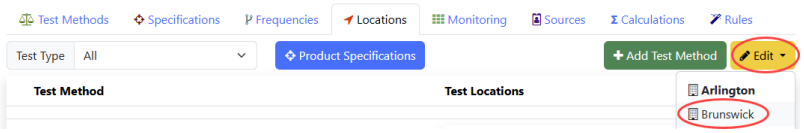
the desired Facility in the submenu.



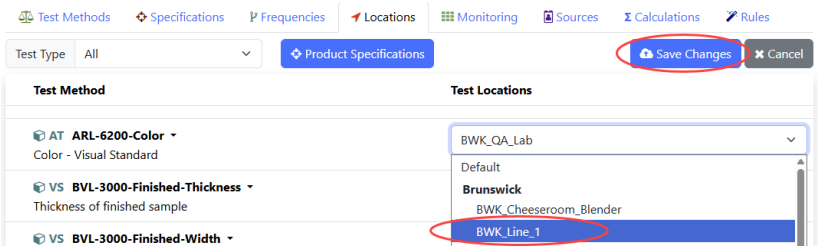
a. Click the dropdown for the desired test method and select the test location where the test is performed. Then click the 'Save Changes' button.



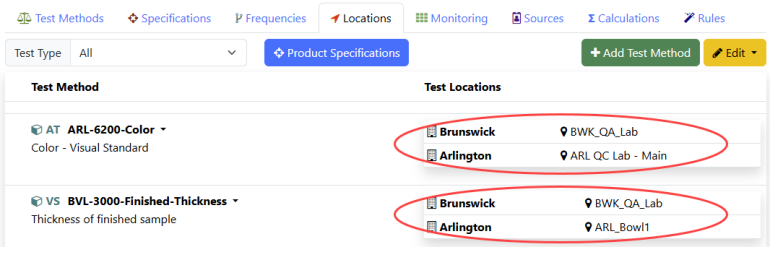
33. To define the test method test locations for another facility within a quality plan, click on the 'Edit' button and select the desired Facility in the submenu.



a. Click the dropdown for the desired test method and select the test location where the test is performed. Then click the 'Save Changes' button.



b. The applicable test locations will be displayed by facility.



Chapter 14: Monitoring

NEW Introduction

DashPatrol provides real-time visibility, via a Status Panel and live SPC charts, into the current manufacturing activities within a plant. DashPatrol is organized into two pages that provide content aimed at different audiences.

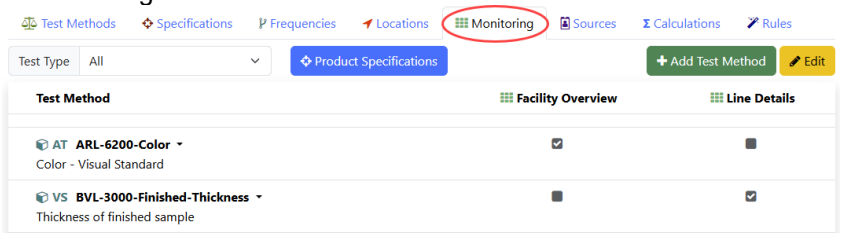
Facility Overview – The intended audience of the Facility Overview page is engineers and managers responsible for manufacturing and product quality who need to see the status of only the most important test results.

Line Details – The intended audience of the Line Details page is shop floor operators who need to see the status of a broader set of Critical to Quality (CTQ) test results for the purpose of maintaining process control and ensuring product quality.

The Monitoring tab defines which test methods within a test plan are displayed on the DashPatrol Facility Overview and Line Details pages.

NEW View

34. To view the monitoring settings for each test method within a quality plan, open the desired quality plan and click on the “Monitoring” tab.



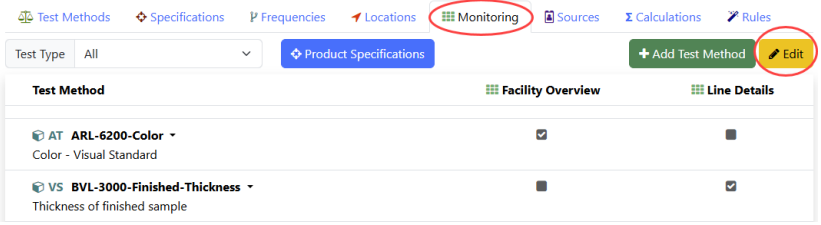
NEW Facility Overview

Note: The facility overview monitoring setting is controlled in the applicable test method. However, if the setting is changed here in the quality plan, then it is also changed in the test method, and that change

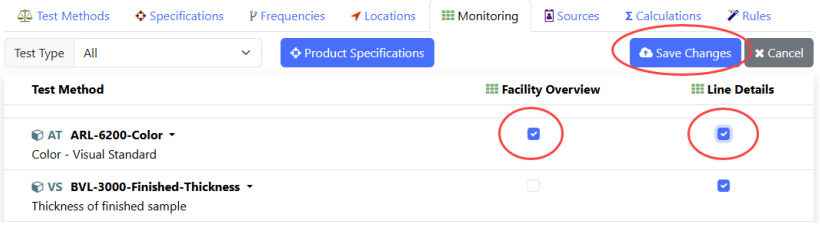
applies to every quality plan that contains that test method.

Note: As second criteria must be met for a test method to appear on the DashPatrol facility overview page: The test method must also be checked as Line Details in the quality plan.

35. To edit the Facility Overview setting for a test method using the quality plan, open the desired quality plan and click on the “Monitoring” tab and then click on the ‘Edit’ button.

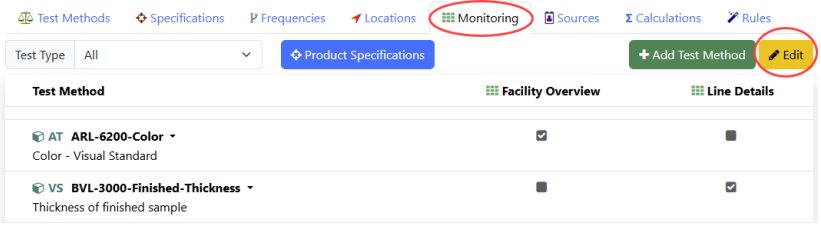


a. Check the desired checkbox and click the ‘Save Changes’ button. Remember that for a test method to appear in Facility Overview, the Line Details checkbox must also be checked.

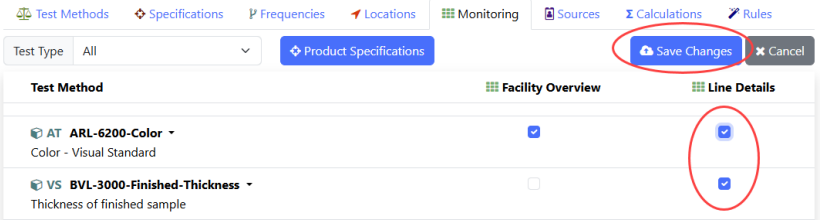


NEW Line Details

36. To edit the Line Details setting for a test method using the quality plan, open the desired quality plan and click on the “Monitoring” tab and then click on the ‘Edit’ button.



a. Chek the desired Line Details checkbox and click the ‘Save Changes’ button.

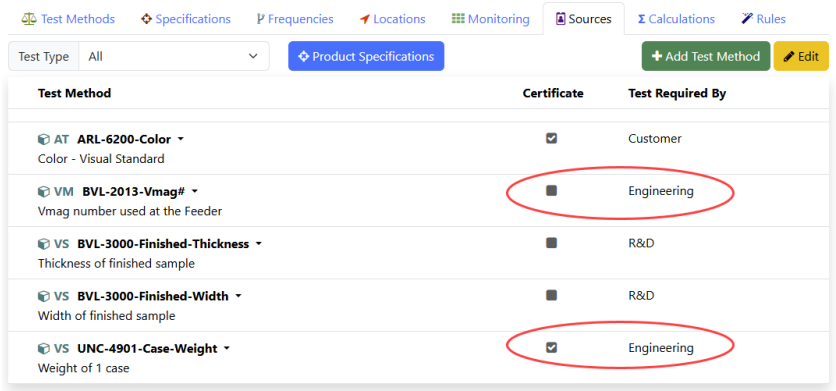


Chapter 15: Sources

NEW Introduction

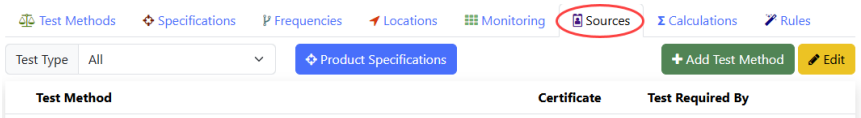
The Sources tab identifies who requested that the test method be added to the quality plan. Additionally, whether the test appears on the certificate of analysis is also manageable on this tab.

Case Study: Quality plans inherently grow as people ask for additional testing for a product. Over the course of many years, test methods are added, but those added test are rarely removed. Accordingly, the Cost of Quality increases, often needlessly, as unnecessary testing is performed. It is a best practice to review and critique quality plans on a periodic basis. As part of this review, the test sources should be evaluated. As examples regarding the image below, one might question why the case weight is on the CoA if it is being measured at the request of engineering? Regarding the Vmag# requested by Engineering, does this test still need to be performed?

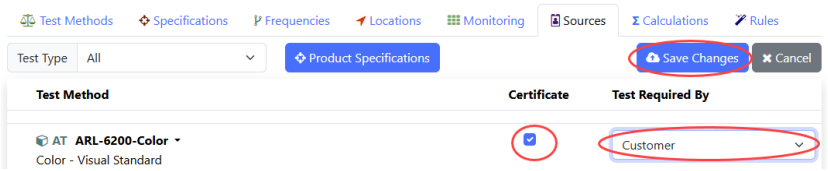


NEW View & Edit

37. To view the test sources for each test method within a quality plan, open the desired quality plan and click on the “Sources” tab.



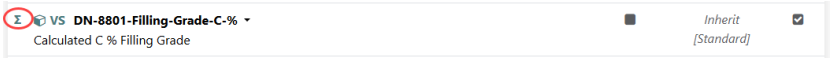
    a. To edit the Source information , click the ‘Edit’ button, check the certificate checkbox to place the test method test results onto the CoA, select the Required By entity, and click the ‘Save Changes’ button.



Chapter 16: Calculations

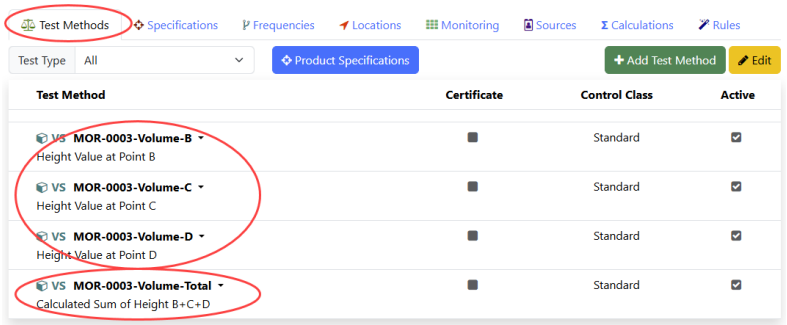
NEW Introduction

Test methods can have “calculated results” based on other test method results **within the same test plan** *and* **within the same sample** (i.e. the frequencies have to match in order for the calculated test method to consume the “input” test methods). The quality plan identifies calculated test methods with the Sigma icon.

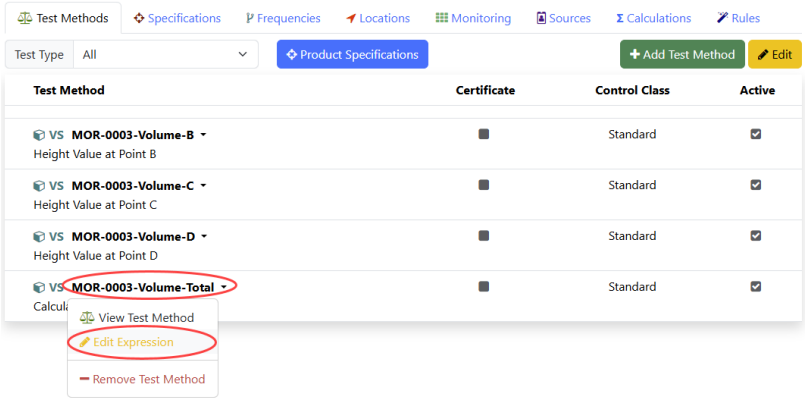


NEW Create Expression

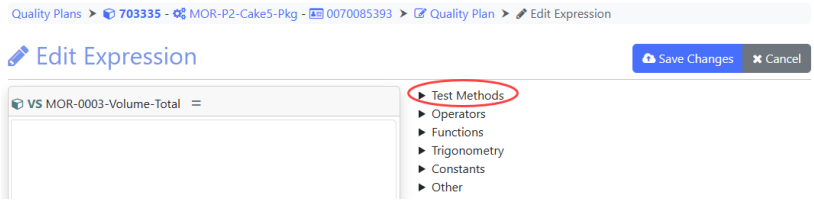
38. To create a calculated test method, first add all the test methods consumed in the calculation into the quality plan, then add the test method that reflects the calculation.



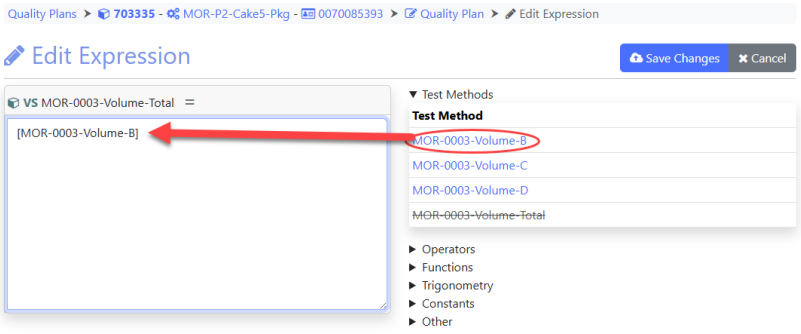
a. Click on the test method that reflects the calculation and select “Edit Expression” from the submenu. In this example, we are editing the test method that’s the result of calculating test methods Point B + Point C + Point D.



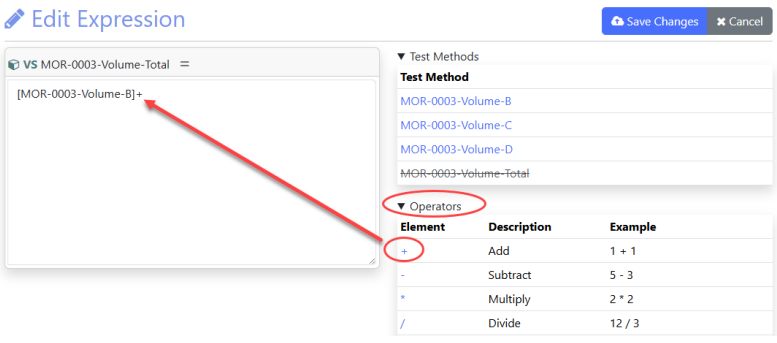
b. The quality plan Expression Editor will open. Click on the Test Methods text to expand its contents.



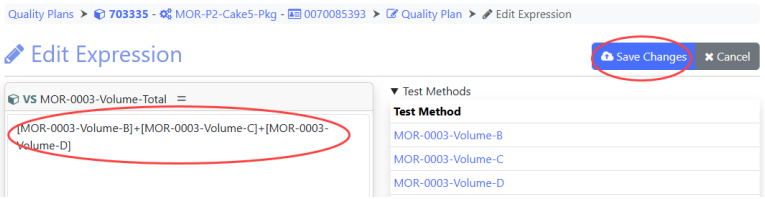
c. Click on the first test method that comprises the calculation. The test method will be placed into the expression window on the left.



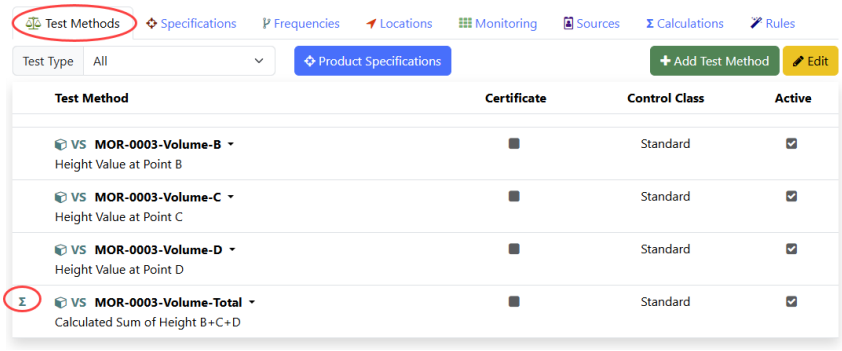
d. Click on the “Operators” test to expand the mathematical operators. Click on the desired operator element on the right or simply click into the expression on the left and type the operator from your keyboard.



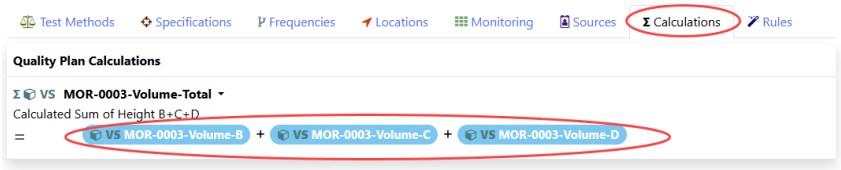
e. Choose the next test method (Volume C) add the “plus” operator element, and choose the last test method (Volume D) add click the ‘Save Changes button.



f. On the Test Methods tab, the test method will be identified as “calculated.”

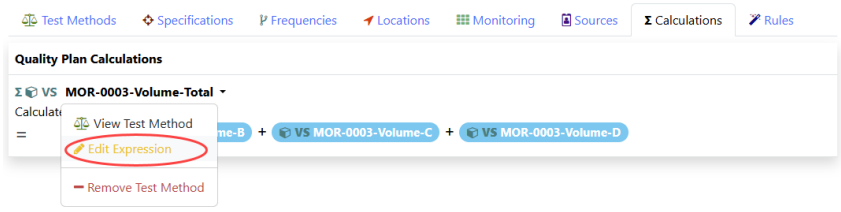


g. On the Calculation stab, the calculation expression will be displayed.



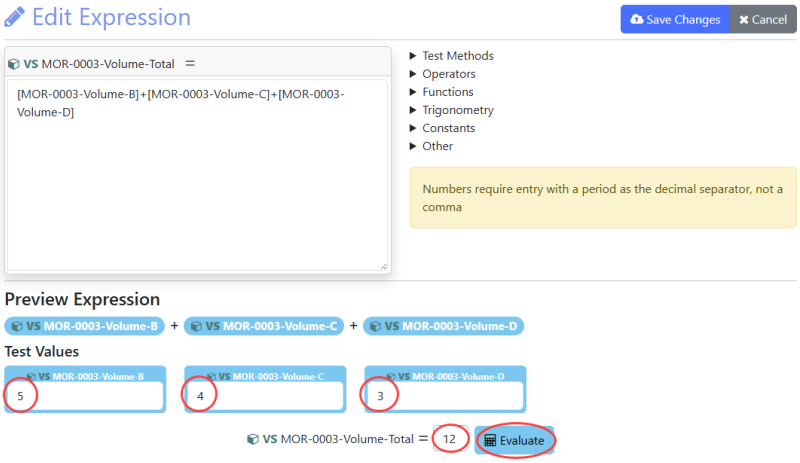
NEW Test Expression

39. To test a calculation expression, click on the test method name and select “Edit Expression” from the submenu.



a. Locate the Preview Expression area at the bottom of the Expression Editor. Click into each Test Value field and enter a numerical value and click on the ‘Calculate’ button. Evaluate the result to determine if the calculation produced the value that is expected. If not, click into the Edit Expression window, edit

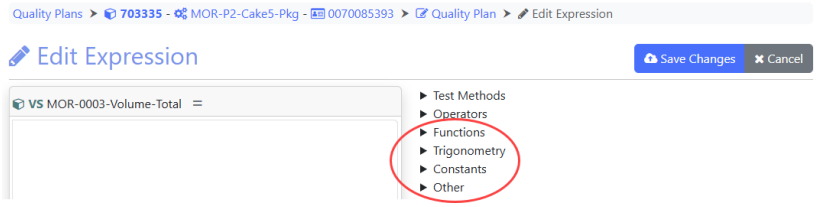
the expression, and re-test.



40. There are numerous other highly technical expression possibilities, including if/then statements (e.g. “If the absolute value of the Auger Feed is greater than 2.0, then make the result of the TI-9400 attribute test method Pass. Otherwise, make the TI-9400 result Fail”). It would not be reasonable to document them all here. Contact MAP if you need assistance creating an expression

    Note: In the example above, the if/then expression might look something like:

    If(abs([AUGERFEED]) >2.0, ‘Pass’, ‘Fail’)



Chapter 17: Quality State Rules

NEW Introduction

The Rules tab enables the management of quality state rules that govern when and how a quality state is assigned to a sample for the applicable test plan. Additionally, these rules govern what is communicated to integrated business systems such as the ERP or MES. Note: For the communication to take place (i.e. QualityPatrol sending data to the local ERP or MES), the related integration work has to be performed.

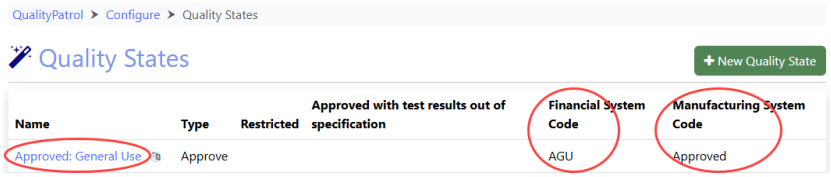
A quality state rule consists of a:

Name. The name of the rule is user-defined and has no effect on logic.

Condition. The condition has to do with the test methods within a QualityPatrol sample, whether they are complete or not, and whether the result is within specifications or not. The conditions are not user definable. Contact MAP if a new condition will benefit your quality control process.

Assigned Quality State. This is the quality state that is assigned to the QualityPatrol sample if the conditions are met.

Notification. Once the quality state has been assigned, QualityPatrol can send a code to the financial system (e.g. ERP) or the manufacturing system (e.g. MES). The actual code that is sent is user definable in QualityPatrol/Configure/QualityStates. Contact MAP to request a quote to complete integration to enable this code to be sent to the ERP or MES.



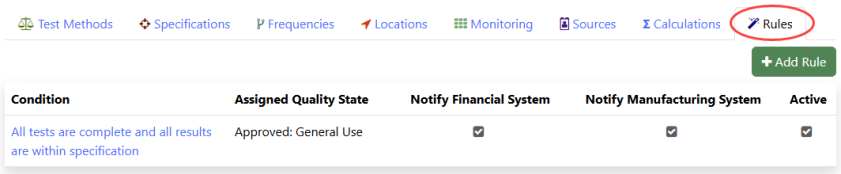
Note: One default quality state rule exists called "**All tests complete and all results in spec**." This rule results in a quality state of "Approved" being assigned to a sample if:

i) All tests are complete; and
ii) All results are within specifications.

Note: The above rule cannot be deleted and cannot be deactivated. However, the assigned quality state can be changed.

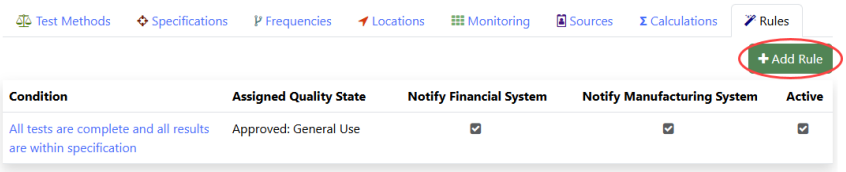
NEW View

41. To view the quality state rules associated a quality plan, open the quality plan and click on the “Rules” tab.

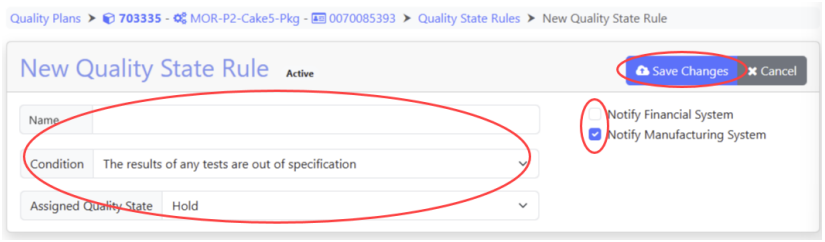


NEW New Rule

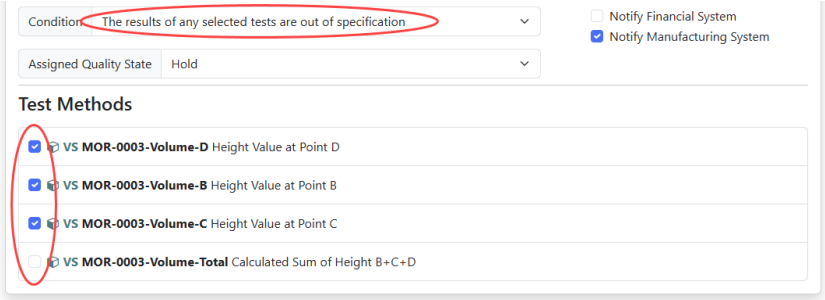
42. To add a new rule, click on the ‘Add Rule’ button.



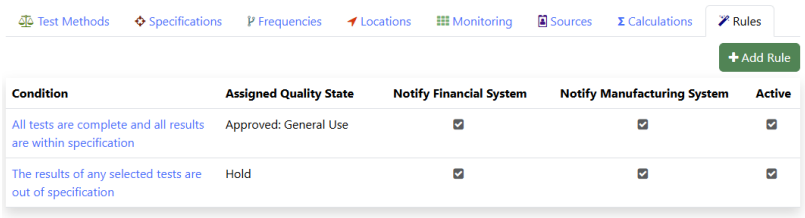
a. Enter the rule Name, select the rule Condition and Assigned Quality State, check the Notifications checkboxes as desired, and click the ‘Save Changes’ button.



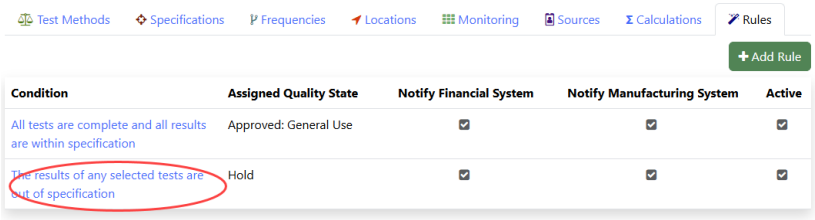
Note: Some of the Conditions are dependent on selected test methods in the quality plan. In such cases, select the desires test methods in addition to selecting the other setting noted above.



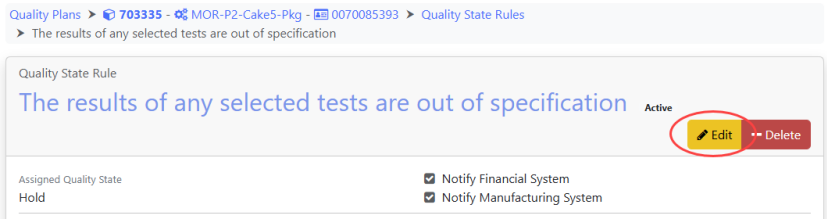
Note: Multiple quality state rules can be defined in one test plan.



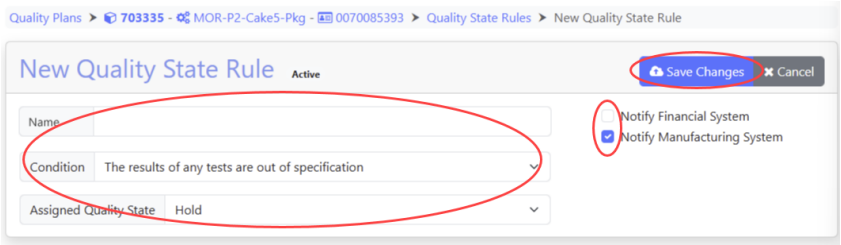
43. To edit a quality state rule, click on the desired rule name/condition.



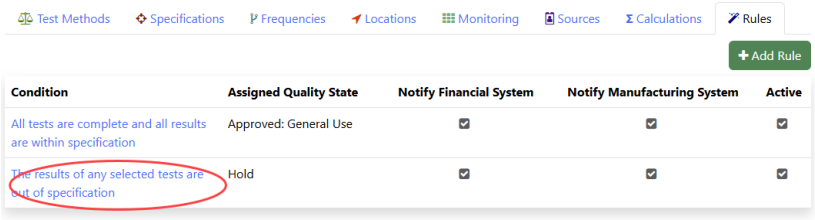
a. Click on the ‘Edit’ button.



b. Check or uncheck the Active checkbox, make other setting changes as desired, and click on the ‘Save Changes’ button.



44. To delete a quality state rule, click on the desired rule name/condition.



a. Click on the ‘Delete’ button and click on the ‘Delete’ button in the confirmation window.