

Metrics & Reports

User Guide

Version 2025-10



Order Capability & Performance

21251

Get Order

View All

Operation All

View Manufacturing History

Product Capability

Operations

CRH-Line-3-Mixer

CRH-Line-3-Pkg

CRH-Line-3-Proof-Cutter

CRH-Line-3-Sheeting-Table

Manufacturing Order

21251

Production Date

2019-04-12

Facility

CrestHill

0070020504

17020

FNR SIGN 7"

Capability & Performance Colors

Great Good Acceptable Poor Bad Very Bad

Capability

Capability Average

Cp 2.02

Cpk 1.46

Dimensions

VM CRH-3002-Diameter-X-Finished-Product-n6

CRH_Line_3_Pkg

X (n = 60)

Cp 3.15

Cpk 1.19

VM CRH-3003-Diameter-Y-Finished-Product-n6

CRH_Line_3_Pkg

Performance

Performance Average

Pp 1.11

Ppk 0.77

Dimension

VM CRH-3

CRH_Line_3_Pkg

X (n = 60)

Pp 2.18

Ppk 0.82

VM CRH-3

CRH_Line_3_Pkg

Capability & Performance

Test Plan Subscriptions

Product Family (All)

Product Number or Name

Customer Number or Name

My Subscriptions

View Test Plans

Reset Filters

1 2 3 4 5 6 7 ... 895 Page Go

Product

Customer

Operation

Unsubscribe

760 R CHOCOLATE

Cake Round Layer

5244971

Walmart

Malvern

Cake Line 1

Subscribe

760 R CHOCOLATE

Cake Round Layer

7113882

Kroger

Malvern

Cake Line 1

Unsubscribe

760 R VANILLA

Cake Round Layer

Subscribe

761 R CHOCOLATE WS

Cake Round Layer

Unsubscribe

761 R CHOCOLATE WS

Cake Round Layer

Subscribe

761 R CHOCOLATE WS

Cake Round Layer

Unsubscribe

818245

Cust Creme Boston

Subscribe

818246

Cust Creme Boston Dix

Metrics & Reports

Manufacturing Orders

Manufacturing Order Results

Genealogy by Order | Genealogy by Unit

Capability & Performance

By Order

By Product

Subscriptions

Configure

Testing Standards

Product Capability & Performance

170

Get Product

View All

Max Orders 10

Product Family

PIZZA

Product

17020 FNR SIGN 7"

Capability & Performance Colors

Great Good Acceptable Poor Bad Very Bad

Data

Insufficient

No Data

Dimensions

VM CRH-3002-Diameter-X-Finished-Product-n6

CrestHill

CRH-Line-3-Pkg

CRH_Line_3_Pkg

X

Cp 2.43

Cpk 1.57

Pp 1.59

Ppk 1.09



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Chapter 1: Introduction

Introduction

The Metrics & Reports card contains links to manufacturing order information, the Capability & Performance module, and the Testing Standards Report. The Capability & Performance module is a web-based app that enables users to subscribe to products of interest. Every time a product of interest is manufactured, the user receives a notification. The notification contains a hyperlink to a multi-layered series of metrics (graphical representations of data) and statistical analyses to provide the subscriber with insight as to how well the manufacturing order met manufacturing and product quality criteria, and how the order compared to previous orders of the same product. An advanced understanding of statistics is not required to interpret the metrics, but a basic understanding of the capability and performance indices (Cp/Cpk and Pp/Ppk) is recommended. This module is a read-only activity, so users cannot edit or change the native quality data.

Access

Contact your IT department for URL and login credential information to access the PatrolSuite homepage.

 Access to PatrolSuite modules is managed by a combination of PatrolSuite and Active Directory security. Accordingly, **not all users will see the same PatrolSuite homepage contents, and not all users will have read-write or edit capability for all modules.** Contact your IT department with questions regarding security and permissions.

Browser

All PatrolSuite™ modules are accessed via a browser. PatrolSuite, and all its apps such as Metrics & Reports, are certified to the following browsers: Google Chrome, Microsoft Edge, or Safari. MAP strongly recommends using only these browsers. Contact your IT department to obtain the URL to access the PatrolSuite homepage from where the Ecosystem app can be accessed.

NEW Definitions

Business Partner – Customers and Suppliers.

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

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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, 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 from defects **found before** the product reaches the customer such as scrap, rework, downtime, re-inspection
4. **External Failure Costs** (Customer Complaints) – Costs from 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) – $\text{CoPQ} = \text{Internal Failure Costs} + \text{External Failure Costs}$. Accordingly, CoPQ is a subset of the CoQ often referred to as “the cost incurred when things go wrong.” These are avoidable costs that result from delivering a substandard product or service.

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.

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

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.

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

Order – A unique number (typically originating from the MES or ERP) that identifies 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

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.

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

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.

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 may be 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: Definitions

Capability & Performance Definitions

Cp – Process Capability. Numerical indicator of the ability of a process to produce product within specifications (e.g. USL and LSL). Cp answers the question, “Is the process *capable* of making product that meets specification?”

- a. Use: Existing process under statistical control. Cp is a predictive analysis used to predict what the process is capable of doing in the near future (short term) assuming the process remains in a state of statistical control.
- b. Calculation: Cp is calculated as the ratio of the specification spread (the voice of the customer) divided by the 6-sigma spread of the process (the voice of the process).
- c. Standard Deviation: Cp uses sampling to calculate an estimated standard deviation of the sample (\bar{R}/d_2).
- d. Centering: Cp does not take into account whether the process is centered between the specifications.
- e. Interpretation: Higher Cp values indicate a process that is more capable.
- f. Comparison: Cp values are typically more liberal (larger) than the more conservative (smaller) Pp values.
- g. Prerequisites: The Cp index is meaningless if the process is not in control.

Cpk – Process Capability index that takes into account where the process is centered. Numerical indicator of the ability of a process to produce product within specifications. Cpk answers the question, “Is the process likely to make product that meets specification?” Accordingly, this index is sometimes named the “Process Acceptability” index.

- a. Use: Existing process under statistical control. Cpk is a predictive analysis used to predict what the process is capable of doing in the near future (short term) assuming the process remains in a state of statistical control.
- b. Calculation: The Cpk index uses the Cp index as a starting point, but then applies a penalty if the process is not centered between the specifications.
- c. Standard Deviation: Cpk uses sampling to calculate an estimated standard deviation of the sample (\bar{R}/d_2).
- d. Centering: Cpk takes centering into account. Accordingly, Cpk can be used to determine if a process is *acceptable*.
- e. Interpretation: Higher Cpk values indicate a process that is more capable. If the Cp value is equal to the Cpk value, then the process is perfectly centered. The Cpk value can be negative, which means



that the process average is outside of specifications.

- f. Comparison: Cpk values are typically more liberal (larger) than the more conservative (smaller) Ppk values.
- g. Prerequisites: The Cpk index is based on the assumption that the data is normally distributed, and is meaningless if the process is not in control.
- h. One-sided Specs: If a test method has one-sided specs (i.e. only an upper or only a lower spec), then PatrolSuite will calculate and display Cpk reflective of the Cpu (Cp upper) or Cpl (Cp lower).

Pp – Process Performance. Numerical indicator of how a process performed in the past relative to specifications.

- h. Use: New processes or existing processes that are not yet under statistical control. Pp is a historical analysis to determine how the process actually performed. Pp should not be used to predict future process capability.
- i. Calculation: Pp is calculated as the ratio of the specification spread (the voice of the customer) divided by the 6-sigma spread of the process (the voice of the process).
- j. Standard Deviation: Pp calculates the standard deviation using all the data in the sample.
- k. Centering: Pp does not take into account whether the process is centered between the specifications.
- l. Interpretation: Higher Pp values indicate a process that performed better.

Ppk - Process Performance Index. Numerical indicator of how a process performed in the past, relative to specifications, that takes into account where the process is centered.

- m. Use: New processes or existing processes that are not yet under statistical control. Ppk is a historical analysis to determine how the process actually performed. Ppk should not be used to predict future process capability.
- n. Calculation: The Ppk index uses the Pp index as a starting point, but then applies a penalty if the process is not perfectly centered between the specifications.
- o. Standard Deviation: Pp calculates the standard deviation using all the data in the sample.
- p. Centering: Ppk takes centering into account. Accordingly, Ppk can be used to determine if the process performance was acceptable.
- q. Interpretation: Higher Ppk values indicate a process that performed better. If the Pp value is equal to the Ppk value, then the process is perfectly centered. The Ppk value can be negative, which means that the process average is outside of specifications.
- r. One-sided Specs: If a test method has one-sided specs (i.e. only an upper or only a lower spec), then PatrolSuite will calculate and display Ppk reflective of the Ppu (Pp upper) or Ppl (Pp lower).

Statistical Control – As noted above, Cpk and Ppk have no meaning if the process is not in statistical control. However, one can (and should) use the capability and performance indexes as an indicator of whether the process is in statistical control:

- s. If Cpk is approximately equal to Ppk, then the process is in control.
- t. If Cpk is not approximately equal to Ppk, then the process is not in control, and Cpk and Ppk should not be used to assess past performance and to predict future capability.



Chapter 3: Security

NEW Introduction

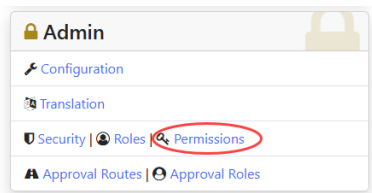
PatrolSuite security is integrated with Microsoft Active Directory. Each PatrolSuite Role must be associated with an Active Directory group.



NEW Permissions

Permissions are located on Page: {PatrolSuite URL}/Security/Permissions

1. To access the Metrics & Reports permissions, click on the Permissions hyperlink in the Admin card on the PatrolSuite homepage.



2. Scroll down to the Metrics & Reports section. There are two permissions that apply to Metrics & Reports. Read the description to learn what each permission enables.

Note: Permissions cannot be created; they are pre-defined. Please contact MAP if you have justification that supports adding a new permission.

Metrics and Reports		
Edit Capability Settings	Allows users to view the Metrics and Reports/Capability and Performance/Configure hyperlink on the PatrolSuite homepage and to edit capability and performance report settings. These settings are global and affect all facilities.	Quality.CapabilitySetup
View	Allows users to view all Metrics & Reports pages.	Reports.View

3. To view the users who have been granted a permission, click on the permission name.

NEW Roles

To grant a user a permission, the user must be placed into a Role that has the permission activated. Roles are user defined.

Metrics & Reports

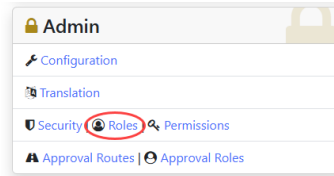
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Roles are located on Page: {PatrolSuite URL}/Security/Roles

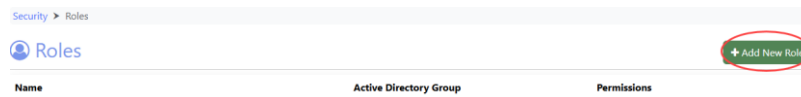
- To access the PatrolSuite Roles, click on the Roles hyperlink in the Admin card on the PatrolSuite homepage.



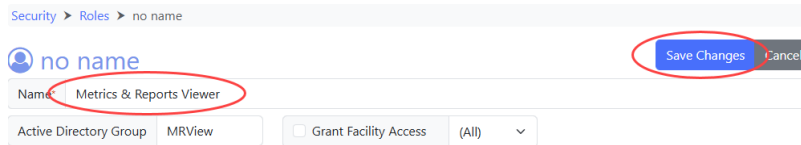
Note: MAP recommends creating the following Metrics & Reports Roles:

- Metrics & Reports Admin**
- Metrics & Reports Viewer**

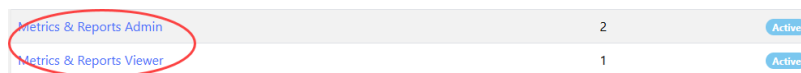
- To create a Role, click on the 'Add New Role' button.



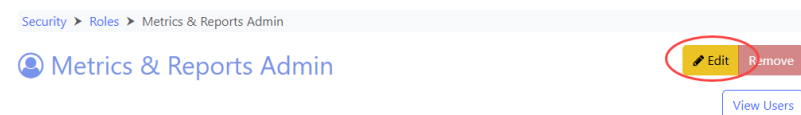
- Enter the name of the role and click 'Save Changes'.



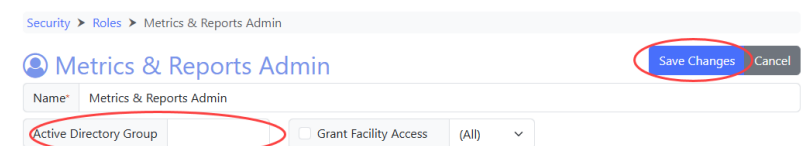
- Contact your IT department and request creating an Active Directory group for each PatrolSuite Role. The Active Directory group names are typically the same as the PatrolSuite Role name.
 - Provide the IT department with the names of all users who need to be added into each Active Directory group.
- To associate the Active Directory group with the Role:
 - Click on the desired Role name.



- Click on the 'Edit' button.



- Enter the name of the applicable Active Directory group and click 'Save Changes.'



Note: Granting facility access is typically not done for an Metrics & Reports Role. Accordingly, MAP

Metrics & Reports

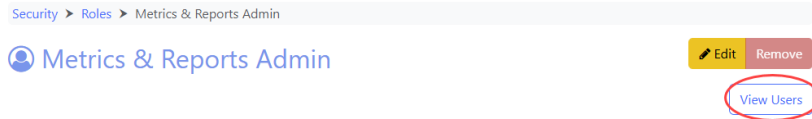
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recommends leaving the Grant Facility Access checkbox unchecked.

9. To see the users who are in the Active Directory group associated with the Role, click the 'View Users' button.



10. To grant permissions to a PatrolSuite Role:

- a. Click on the desired Role name.

Metrics & Reports Admin	2	Active
Metrics & Reports Viewer	1	Active

- b. Scroll down to the Metrics & Reports section and click on the 'No' button for the desired permission. This will change the button to read 'Yes' which means the permission has been granted to the Role, and therefore to all users in the Role.

The **Metrics & Reports Admin** Role typically includes the following permissions:

Metrics and Reports		
<input checked="" type="checkbox"/> Yes	Edit Capability Settings	Allows users to view the Metrics and Reports/Capability and Performance/Configure hyperlink on the PatrolSuite homepage and to edit capability and performance report settings. These settings are global and affect all facilities.
<input type="checkbox"/> No	View	Allows users to view all Metrics & Reports pages.


The **Metrics & Reports Viewer** Role typically includes the following permissions:

Metrics and Reports		
<input type="checkbox"/> No	Edit Capability Settings	Allows users to view the Metrics and Reports/Capability and Performance/Configure hyperlink on the PatrolSuite homepage and to edit capability and performance report settings. These settings are global and affect all facilities.
<input checked="" type="checkbox"/> Yes	View	Allows users to view all Metrics & Reports pages.



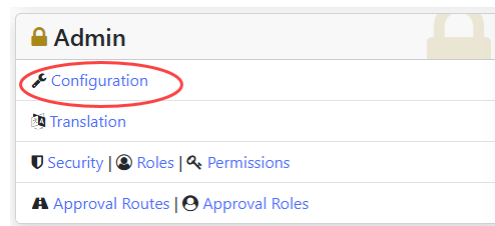
NEW Chapter 4: Configuration

Minimum Samples

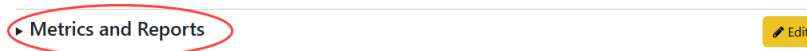
 A user with the Configuration/Edit Capability Settings permission as shown above and the Configuration/Manage permissions as shown below will be able to define and edit the minimum number of samples required to calculate capability and performance indices.

Configuration		
Deploy	Allows users to deploy PatrolSuite software updates.	Configuration.Deploy
Manage	Allows users to view the Admin/Configuration hyperlink on the PatrolSuite homepage and to edit PatrolSuite configuration settings.	Configuration.Modify
View	Allows users to view the Admin/Configuration hyperlink on the PatrolSuite homepage and to view PatrolSuite configuration settings.	Configuration.View

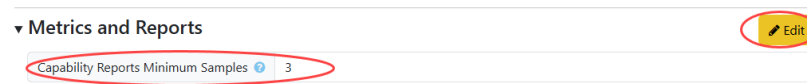
11. To define and edit the minimum number of samples required to calculate capability and performance indices, click on the “Configuration” hyperlink on the Admin card on the PatrolSuite homepage.



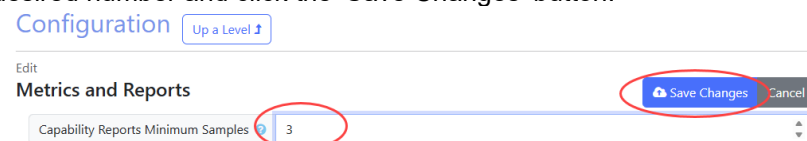
12. Click on Metrics and Reports to view its contents.



13. To change the minimum number of samples required to calculate capability and performance indices, click on the ‘Edit’ button,



- a. Enter the desired number and click the ‘Save Changes’ button.





Chapter 5: Manufacturing Order Results

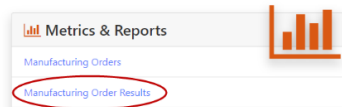
Introduction

For a given manufacturing order, the Manufacturing Order Results page enables a user to:

- I. **Review summarized data** regarding the test results, including the capability and performance for each test method.
- II. Identify test methods with **specification excursions**. This is helpful for troubleshooting customer complaints, making quality state decisions, and supporting continuous improvement projects.
- III. Evaluate quality **performance by shift** (requires integration to acquire the “Shift ID” from the ERP or MES).
- IV. Access the corresponding **SPC page** containing the control chart and histogram.

View & Search Order Results

14. Click on the Manufacturing Order Details link on the PatrolSuite homepage.

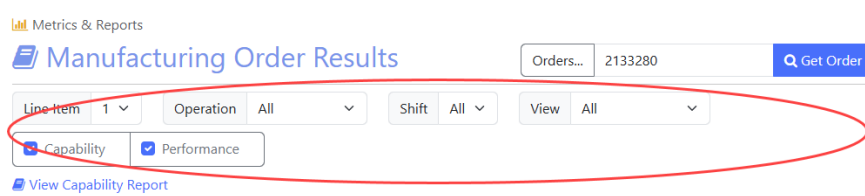


15. Type the desired manufacturing order number into the Manufacturing Order cell and click the 'Get Order' button. The test results data will be returned.



Note: The order results page displays *all* variable test methods in the applicable test plan (not just the CTQ and Overview test methods).

16. Use the filters to view the desired test results for the order.



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- a. **NEW** Line Item – If the manufacturing has more than one line item, select the desired line item. If the order has only one line item (which is typical), then line item #1 will be selected by default.
 - b. Operation – If the manufacturing spans more than one operation, select the desired operation.
 - c. Shift – Select the desired shift to view results from only that shift.
 - d. View – Select the desired test methods.
 - i. All data.
 - ii. Only test methods marked as “overview.”
 - iii. Only test methods that contain excursions (results that exceed specification limits).
 - e. Click on the Capability and Performance checkboxes to view the capability or performance statistics.
17. The results grid is organized by Test Property and Test Method, and displays the test results in columns as follows:
- a. Operation.
 - b. Workcenter.
 - c. Sample Location (for x-bar test methods).
 - d. N = The total number of tests performed.
 - e. LSL = Lower spec limit.
 - f. Target = Target.
 - g. USL = Upper spec limit.
 - h. Avg = Average of all test results.
 - i. Avg VFT = The average variance from target of all test results.
 - j. Exc = Number of specification excursions.
 - k. Capability and Performance = Cp, Cpk, Pp, and Ppk indices.
18. Click on the “View Capability Report” hyperlink to access the capability report for the corresponding manufacturing order.
19. Click on the desired “N” hyperlink to open the corresponding test method’s SPC page containing the control chart and histogram.

Manufacturing Order Results

Orders... 2123458

Get Order

OperationAll

ShiftAll

ViewOverview Only

Capability

Performance

View Capability Report

CrestHill

Pizza Line 1

All Shifts

Production Date

2019-04-10

Manufacturing Order

2123458

Product Number

0700430

Product

12" TNB WIP CRUST

Customer Number

0070020504

Customer

ACME Corporation

Test Property / Test Method

Quality Specifications

Capability Performance

Operation

Workcenter

Location

N

LSL

Target

USL

Avg

Avg VFT

Exc

Cp

Cpk

Pp

Ppk

VM Dimensions / CRH-3000-Diameter-X-Oven-Product-n3

CRH-Line-1-Oven

CRH_Line_1_Oven

Multi

72

11.50

12.00

12.50

12.16

0.16

2.46

1.66

0.92

0.62

Average

24

1.50

12.00

12.50

12.16

0.16

1.36

0.92

0.99

0.67

Range

24

0.11

Lane A

24

11.50

12.00

12.50

12.14

0.14

1.15

0.83

0.90

0.64

Lane B

24

1.50

12.00

12.50

12.18

0.18

1.38

0.89

0.92

0.59

Lane C

24

11.50

12.00

12.50

12.17

0.17

1.19

0.78

0.91

0.59



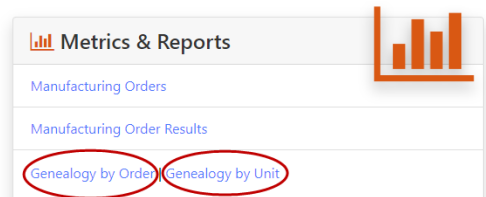
Chapter 6: Genealogy Reports

Integration

The genealogy reports require integration and programming with the local ERP or MES to obtain genealogy information (order, input units, and produced units). This integration and programming work is not included in the PatrolSuite license, and is performed on a time and materials basis should a customer desire the PatrolSuite genealogy reports to be functional.

Navigation to Genealogy Reports

20. To view a genealogy report, click the desired report in the Metrics & Reports card on the PatrolSuite homepage.

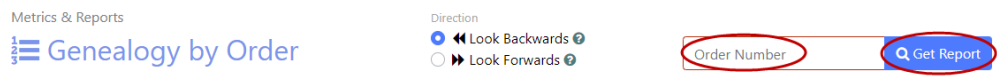


Genealogy by Order: Displays the related orders as raw materials are turned into finished products. This may include purchase orders (for raw materials), manufacturing orders, and shipping orders. Provides the specific units produced for a given order.

Genealogy by Unit: For a subject unit looking backwards, displays the specific identity of the units that were consumed to produce the subject unit (inputs). For a subject unit looking forwards, displays the specific identity of the units that subsequently consumed subject unit (outputs).

Genealogy by Order

21. Enter the desired order number and click the Get Report button.



22. In the Genealogy section, the subject order will appear at level “0” (looking backwards by default). Each level identifies an order that produced product that was consumed in the subject order at level “0.” Each of the levels will have negative numbers to indicate a backwards view. Positive numbers indicate a forward view.
- a. Click the ‘Look Backwards’ or ‘Look Forwards’ radio button to change the view of the subject order.

Metrics & Reports

User Guide

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- b. Click on the double backwards or double forwards arrows to view the genealogy of the desired order.
23. In the Produced Units section, the operations and workcenters associated with the subject order (the order at level "0") are displayed, and the units produced by the subject order are listed.
 - a. Click on a desired unit to see the genealogy related to the unit.

Metrics & Reports

Genealogy by Order

Direction: ☒ Look Backwards ☐ Look Forwards

Order: 1762876 Get Report

Genealogy

Level	Order	Product
0	1762876	15093 TB FLATBREAD MELT 5"X6" 192/2.1OZ
-1	1982451	15993 GOURMETSUGAR CDO 140/2Z
-2	1758178	16109 DDSDRDMFNBLB96/5.25Z
-3	1752856	15898 WM16TNBSUPP26/50.5Z

Produced Units

FTN-Line-1-Mixer **FTN_Line_1_Mixer2**

1762876-0026C915-8F8	1762876-4CA22E34-7AE	1762876-62287245-118
1762876-00781FE8-038	1762876-4CB95FDD-865	1762876-B23FD952-A58
1762876-06D21E49-24A	1762876-4CE74547-A95	1762876-B2A3B363-052

Genealogy by Unit

24. Enter the desired unit number and click the Get Report button.

Metrics & Reports

Genealogy by Unit

Direction: ☒ Look Backwards ☐ Look Forwards

Unit Number: Get Report

Unit: 1850478-82B30409-B96 Look Backwards

Genealogy

Level	Unit Number	Operation	Workcenter	Product
0	1850478-82B30409-B96	ARL-Gallon	ARL_Gallons	03103 TRES RICHES(US)8.8LB
-1	1861387-2644AC32-810			15993 GOURMETSUGAR CDO 140/2Z
-2	1982451-180220112605			16109 DDSDRDMFNBLB96/5.25Z
-3	1758178-C00FBD1C-3E5			15898 WM16TNBSUPP26/50.5Z



Chapter 7: C&P Configuration

NEW Introduction

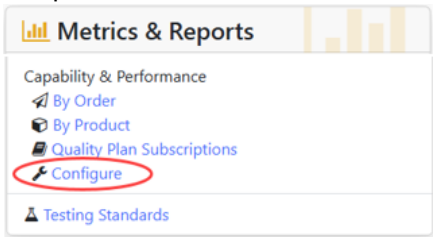
The Capability & Performance configuration page contains the index range values that correspond to the performance criteria (e.g. Great, Good, Acceptable, Poor, Bad, Very Bad).

Note: This is a “global” setting, so changes will apply to the Capability & Performance reports for all users.

NEW Edit

26. To view and edit the Capability & Performance index values, click on the “Configure” hyperlink in the Metrics & Reports card on the PatrolSuite homepage.

Note: Only users in the Metrics & Reports Administrator roles will be able to access Configuration.




a. Click on the ‘Edit’ button.

Note: The out-of-the-box range values are shown in the image below.

Capability & Performance

Setup

Define the global capability and performance index ranges



		Cp	Cpk	Pp	Ppk
Great	>=	1.66	1.66	1.89	1.66
Good	>=	1.33	1.33	1.33	1.33
Acceptable	>=	1	1	1	1
Poor	>=	0.66	0.66	0.66	0.66
Bad	>=	0.33	0.33	0.33	0.33
Very Bad	>=	0	0	0	0



b. Enter the desired index values and click the 'Save Changes' button.

Note: A value for each criterion is not required. The result from the below image is the use of only four colors to reflect Cp criteria.

Purple = > 1.66
Green = 1.0 – 1.66
Orange = 0.33 – 1.0
Red = 0 – 0.33

Metrics & Reports
Configure
Define the global capability and performance index ranges

	Cp	Cpk	Pp	Ppk
Great	>= 1.66	1.66	1.66	1.66
Good	>= <input type="text"/>	1.33	1.33	1.33
Acceptable	>= 1.00	1.00	1.00	1.00
Poor	>= <input type="text"/>	0.66	0.66	0.66
Bad	>= 0.33	0.33	0.33	0.33
Very Bad	>= 0	0	0	0

27. Also note that the criterion labels can be changed via the PatrolSuite Admin/Translation page (requires permissions to access).

Note: Changing these labels will affect all other facilities using the same instance of PatrolSuite. See the PatrolSuite Core user guide for instructions on how to search for and change the criterion labels.

Admin

Configuration
Manufacturing Ecosystem
Translation
Security | Roles | Permissions

(Default) > (Default)
Translation

Search Text

Search Text **Great**

From Language (Default)	To Language (Default)
Great	Great
Values must be greater than or equal to the values below them	



Chapter 8: C&P Subscriptions

End of Manufacturing Order

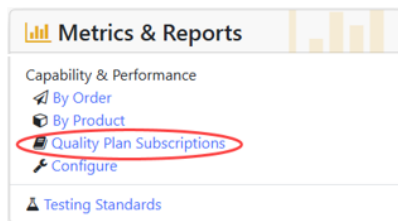
The capability and performance module allows users to receive a notification at the end of a manufacturing order for a product of interest. However, an 'end of order' signal needs to be sent to PatrolSuite to enable notifications. This signal needs to be created the client, and is typically built into the client's ERP or MES, to call a stored procedure within PatrolSuite called "SetProductionDates."

28. Supply the following parameters to the SetProductionDates stored procedure:
- @ProductionOrderNumber = ____ (required)
 - @ProductionCompleteDate = ____ (datetime) (required)
 - @ProductionStartDate = ____ (datetime) (optional)

Note: This stored procedure should be called only one time per manufacturing order (at the end of the production run). If the stored procedure is called more than once, then more than one notification will be sent to subscribers.

NEW Quality Plan Subscriptions

29. To subscribe to a Capability & Performance report, click on the "Subscriptions" hyperlink in the Metrics & Reports card.



The Quality Plan Subscriptions page will open. This page contains a list of all the quality plans that have been created in QualityPatrol. A quality plan defines the product testing and process parameter requirements and specifications for a given product/customer combination at each applicable manufacturing operation.

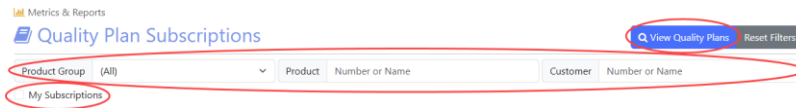
- To locate a quality plan of interest, select the desired product group from the Product Group filter, or enter the Product or Customer number and click the 'View Quality Plans' button.

Note: Check the My Subscriptions checkbox to see the quality plans to which you are subscribed.

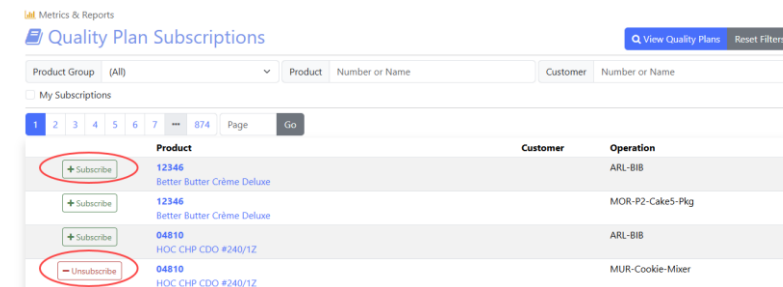
Metrics & Reports

User Guide

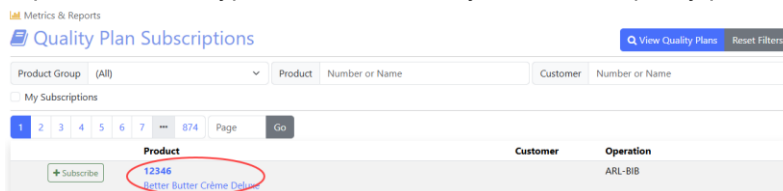
Version 2025-10



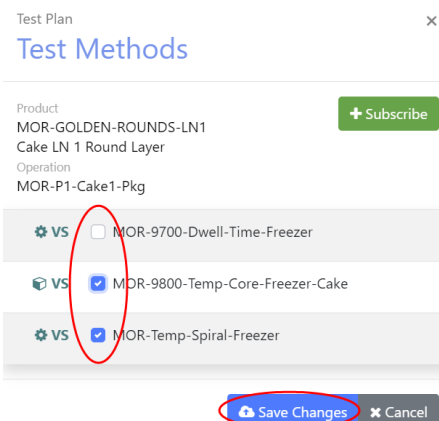
30. To receive notifications each time a manufacturing order is completed, click on the Subscribe button for the desired product/customer/operation. To cancel a subscription, click on the Unsubscribe button.



31. To define a personalized set of data that will appear (or not appear) in your Capability & Performance report, click on the product name hyperlink for a currently subscribed quality plan.



32. A list of the *variable* test methods within the chosen quality plan will appear. Click the checkbox for the test methods that you want to be included in your Capability & Performance reports. Then click the 'Save Changes' button.



Note: Subscribe or unsubscribe to the quality plan by clicking on the Subscribe or Unsubscribe button.

Note: Test methods selected within this window are automatically selected in other quality plans to which the user subscribes.



Chapter 9: C&P Notifications

NEW Introduction

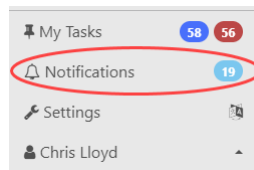
Notifications advise users of events that originate in PatrolSuite modules, including Metrics & Reports, that do not *require* action and do not have a due date. A capability report is a good example. The report does not require a user to take any action and there is no due date.

When a notification is received, a number will appear next to “Notifications” in the main menu bar. The number represents how many unacknowledged notifications you have.

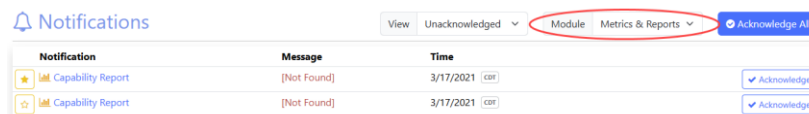
See the PatrolSuite Core user guide for more information about the notification system.

NEW User Notifications

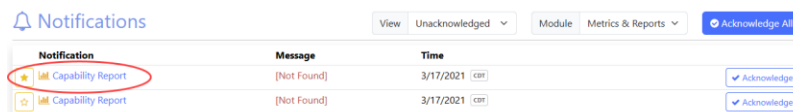
33. To view your notifications, click on “Notifications” in the main PatrolSuite menu.



34. By default, the Notifications page displays a user’s unacknowledged notifications in bold text. To view your capability notifications, click on “Metrics & Reports” in the Module filter.



35. To view a capability report, click on the desired notification hyperlink.





Chapter 10: C&P Metrics by Order

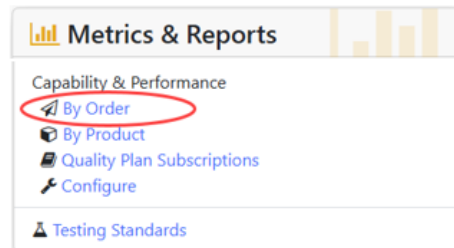
Access

36. To view the Capability & Performance metrics by Order page, click on a notification hyperlink.

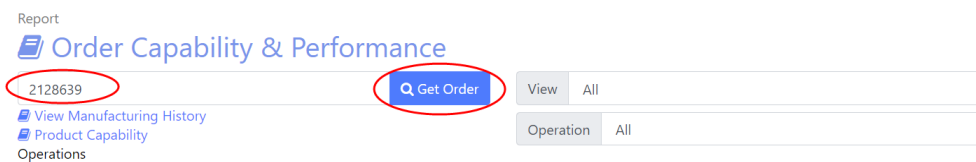


Note that clicking on the Order Number hyperlink in the notification will take the user to the Manufacturing History page.

- a. Or click on the Order hyperlink in the Capability & Performance menu.



- b. Enter the desired order number and click on the 'Get Order' button.



Overview

This page enables a user to analyze capability & performance metrics for a single manufacturing order.

37. The Order Capability & Performance page is organized into nine areas:

- Order Number Search – Enables users to retrieve metrics for a desired order number.
- Filters – Filters the test methods and operations displayed within the report.
- Navigation menus – Enables navigation to other report pages, or refinement of the test methods displayed within the report.
- Order Information.
- Performance Criteria key for the colors displayed within the metrics.
- Average capability scores for the entire order.

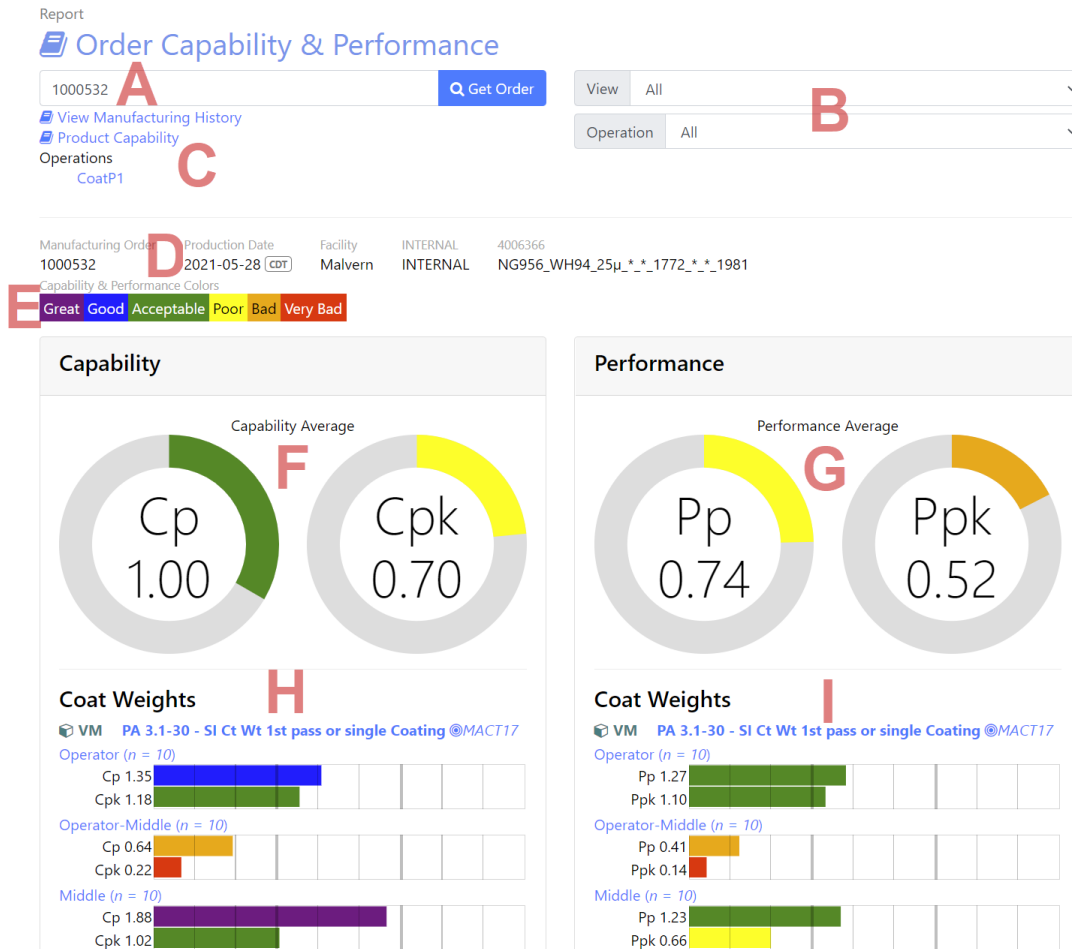
Metrics & Reports

User Guide

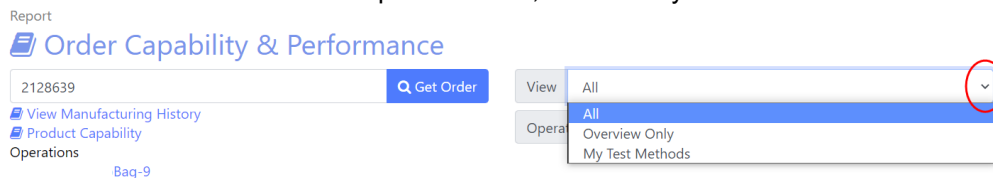
Version 2025-10



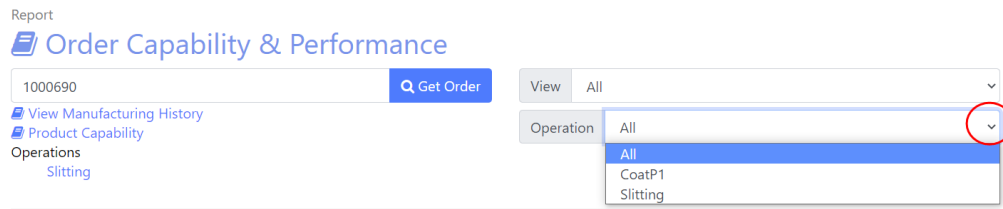
- g. Average performance scores for the entire order.
- h. Capability scores for each test method.
- i. Performance scores for each test method.



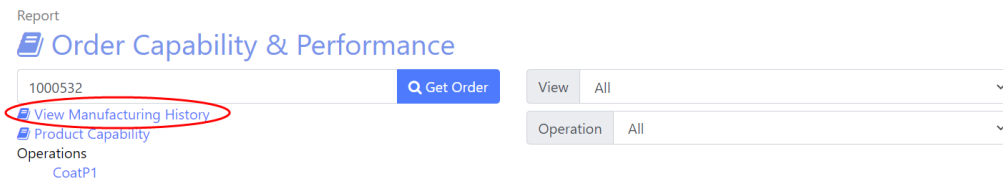
38. Click on the View dropdown. "All" test methods is the default. To view only the "Overview" test methods (as defined for DashPatrol for the applicable facility), choose "Overview Only." To view only the personalized test methods chosen in steps 12 and 13, choose "My Test Methods."



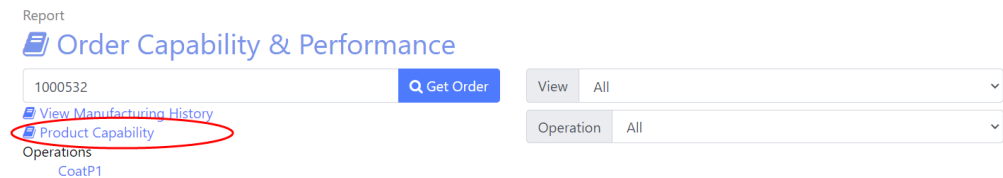
39. If a manufacturing order is completed across multiple operations, then to view test methods from a certain operation, click on the Operation dropdown and choose the desired operation.



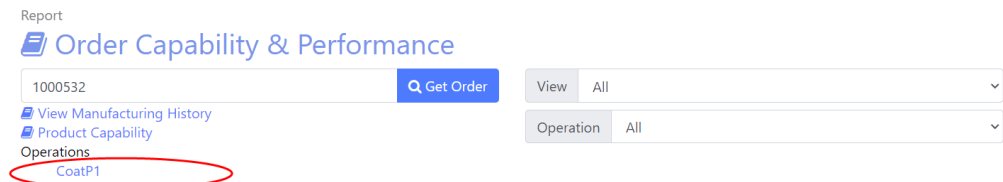
40. Click on the View Manufacturing History hyperlink to view the manufacturing history report for the order.



41. Click on the Product Capability hyperlink to view the Capability & Performance report for the applicable product.



42. Click on the desired Operations hyperlink to view and manage the personalized test methods for the applicable quality plan, or to subscribe/unsubscribe to the applicable quality plan.



Order Capability

The metrics and statistical data relating to the capability of the order are found in the Capability card.

The content in this card is organized as follows:

- Cp for the entire order** – This is the average of Cp for all test methods displayed on the page. Note that the Cp value will change depending on the “View” selection (i.e. My Test Methods vs. Overview Only). In the image below, the Cp is displayed in green, which corresponds to “acceptable” performance as can be seen in the color key.
- Cpk for the entire order** – This is the average of Cpk for all test methods displayed on the page. Note that the Cpk value will change depending on the “View” selection (i.e. My Test Methods vs. Overview Only). In the image below, the Cpk is displayed in yellow, which corresponds to “poor” performance as can be seen in the color key.
- Test Family** – The individual test method indices are organized by test family.
- Test Method** – The test method type (VMI in the above example), number, and name.
- Sample Location** – For VMI test types, the indices are displayed by sample location.

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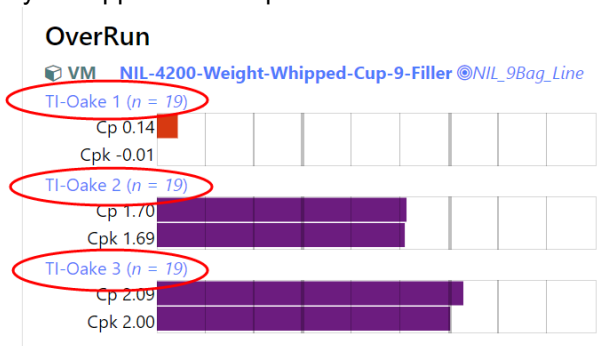
- F. **Cp and Cpk values for the test method/sample location.** A color-coded bar chart is provided to indicate the performance level.



43. Click on the test method name to view the SPC Charts page which displays all of the test result data for the test method for the applicable order.



Note: For VMI data, Clicking on the test method hyperlink will take the user to the SPC Charts page for “all” the sample locations. Clicking on the sample locations hyperlink will take the user to the SPC Charts page for only the applicable sample location.



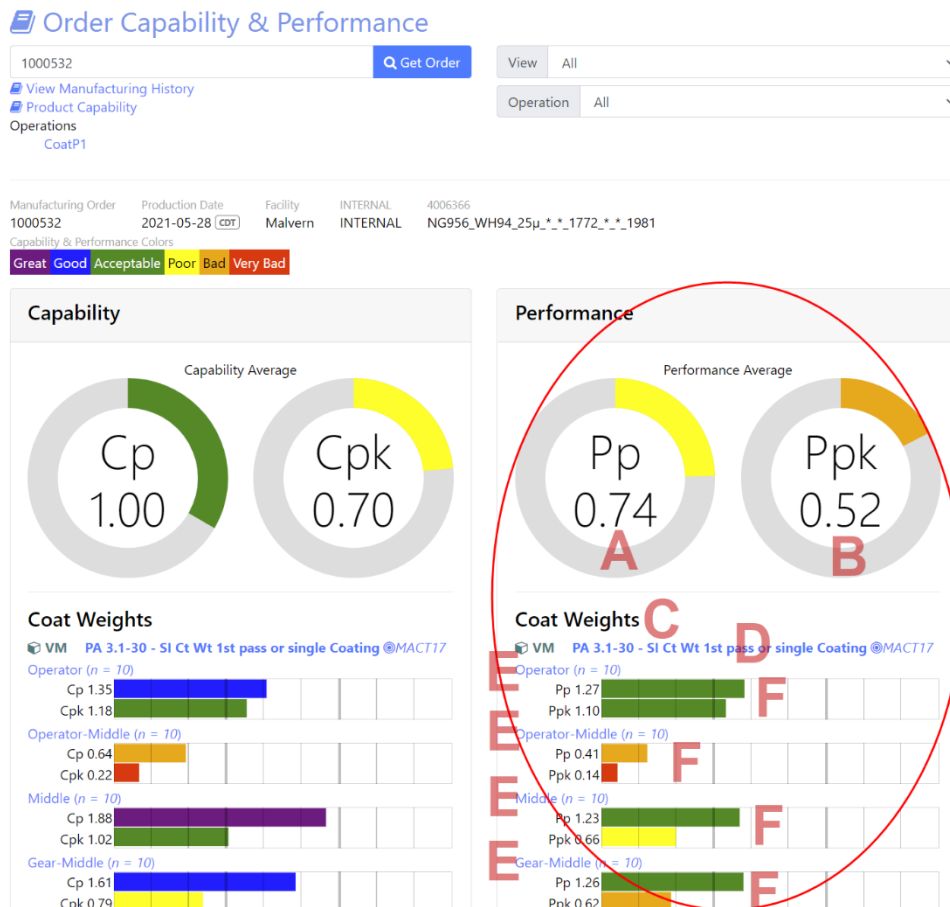


Order Performance

The metrics and statistical data relating to the performance of the order are found in the Performance card.

44. The content in this card is organized as follows:

- A. **Pp for the entire order** – This is the average of Pp for all test methods displayed on the page. Note that the Pp value will change depending on the “View” selection (i.e. My Test Methods vs. Overview Only). In the image below, the Pp is displayed in yellow, which corresponds to “poor” performance as can be seen in the color key.
- B. **Ppk for the entire order** – This is the average of Ppk for all test methods displayed on the page. Note that the Ppk value will change depending on the “View” selection (i.e. My Test Methods vs. Overview Only). In the image below, the Ppk is displayed in orange, which corresponds to “bad” performance as can be seen in the color key.
- C. **Test Family** – The individual test method indices are organized by test family.
- D. **Test Method** – The test method type (VMI in the above example), number, and name.
- E. **Sample Location** – For VMI test types, the indices are displayed by sample location.
- F. **Pp and Ppk values for the test method/sample location**. A color-coded bar chart is provided to indicate the performance level.



- ## Roll Characteristics
- VS PA 5.0-15 - Roll Diameter Slitting (mm) ©MASL65
- (n = 17)
- | | | | | | | | | | |
|----------|------------------------------|--|--|--|--|--|--|--|--|
| Pp 0.42 | [Bar chart showing Pp 0.42] | | | | | | | | |
| Ppk 0.22 | [Bar chart showing Ppk 0.22] | | | | | | | | |

COF

PA 2.1-17 - Kinetic (print / print) Slitting sampl ©MASL65

1 ($n = 2$)

Pp 9.17									
Ppk 8.20									

2 ($n = 2$)

Pp 82.50									
Ppk 76.13									

3 ($n = 2$)

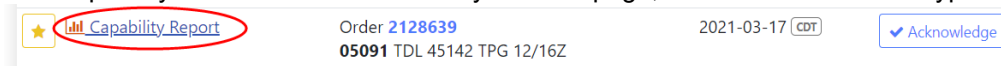
Pp 11.79									
Ppk 11.15									



Chapter 11: C&P Metrics by Product

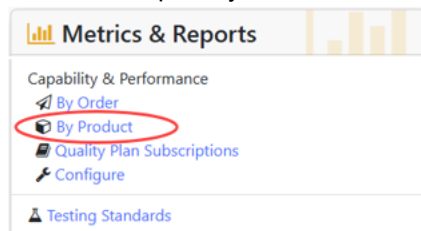
Access

46. To view the Capability & Performance metrics by Product page, click on a notification hyperlink.

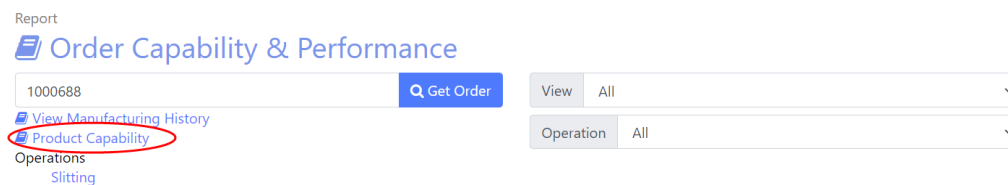


Note that clicking on the Order Number hyperlink in the notification will take the user to the Manufacturing History page.

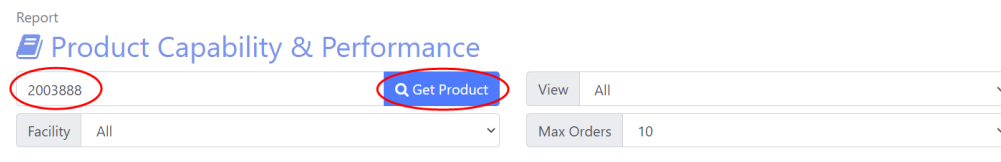
a. Or click on the Product hyperlink in the Capability & Performance menu.



b. Within the Order Capability & Performance page, click on the Product Capability hyperlink.



c. Enter the desired product number and click on the 'Get Order' button.



Overview

This page enables a user to analyze capability & performance metrics for one product across multiple manufacturing orders.

The Product Capability & Performance page is organized into eleven areas:

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- A. **Product Number Search.** Enter a product number and click on the Get Product button to retrieve metrics for a desired product number.
- B. **Filters.** Filters the content displayed within the report.
 - i. **Facility:** Choose a facility to limit the data to orders produced at a certain facility.
 - ii. **View:** “All” test methods is the default. To view only the “Overview” test methods (as defined for DashPatrol for the applicable facility), choose “Overview Only.” To view only the personalized test methods chosen in steps 12 and 13, choose “My Test Methods.”
 - iii. **Max Orders:** Select the numbers of orders to be displayed and included in the calculations.
- C. **Product Information.** Displays the chosen products family, number, and name.
- D. **Performance Criteria** key for the colors displayed within the metrics.
- E. **Test Property.** Test methods on this page are grouped by test property.
- F. **Test Method** number and name.
- G. **Capability and Performance index values.** The values displayed are calculated using all orders in section H for the applicable test method.
 - iv. Click on either the Cp or Pp circles to toggle the data displayed in section H between capability and performance.
- H. **Capability and Performance bar charts.** Displays the capability or performance index for each order for the applicable test method. The Cp and Pp bar is in the background in an opaque color. The Cpk and Ppk bar is in the foreground in a solid color.
 - v. Clicking on bars of interest will highlight the applicable order and open the Order Information bar at the bottom of the page.
- I. **Order Information Bar.** Displays the highlighted order information.
 - vi. Click on the Capability hyperlink to return the order’s capability page.
- J. **Order Information Bar Indices.** Displays the average capability and performance indices for all test methods within the highlighted order.

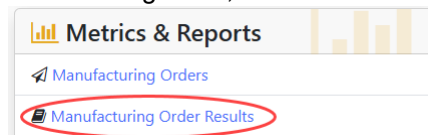




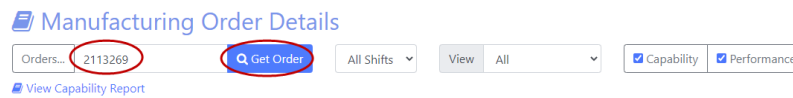
Chapter 12: SPC Metrics Page

Access

47. To access the SPC chart for a manufacturing order, click on the Manufacturing Order Details link.



a. Enter the manufacturing order and click the 'Get Order' button.



b. From the Manufacturing History report, Click on the "N" value for the desired test method (VSI methods) or from the desired sample location (MVI methods).

Manufacturing Order Details

Orders...1000532Get OrderAll ShiftsViewAll☒ Capability☒ Performance

View Capability Report

Malvern Coating - All Shifts

Production Date2021-05-28 (COT)

Manufacturing Order1000532

Product Number4006366

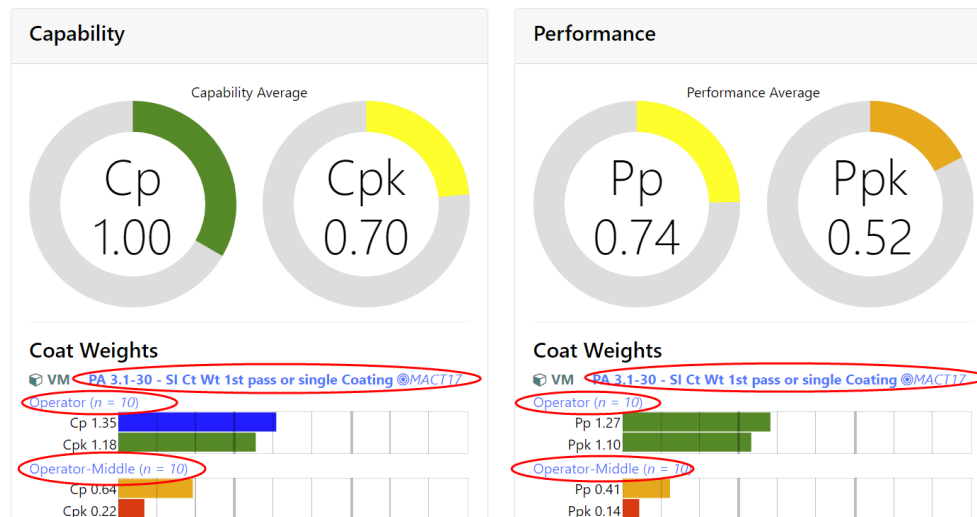
ProductNG956.WH94.25µ_*_*_1772_*_*_1981INTERNAL

Customer NumberINTERNAL

CustomerINTERNAL

Test Family / Test Method				Quality Specifications						Capability				Performance	
Operation	Workcenter	Location	N	LSL	Target	USL	Avg	Avg VFT	Exc	Cp	Cpk	Pp	Ppk		
VM Coat Weights / PA 3.1-30 - SI Ct Wt 1st pass or single Coating															
CoatP1	MACT17	Multi	50	0.900	1.000	1.100	0.959	-0.041	5	0.82	0.49	0.72	0.43		
		Average	10	0.900	1.000	1.100	0.959	-0.041		1.45	0.86	1.15	0.68		
		Range	10				0.094								
		Operator	10	0.900	1.000	1.100	0.987	-0.013		1.35	1.18	1.27	1.10		
		Operator-Middle	10	0.900	1.000	1.100	0.935	-0.065	5	0.64	0.22	0.41	0.14		
		Middle	10	0.900	1.000	1.100	0.954	-0.046		1.88	1.02	1.23	0.66		
		Gear-Middle	10	0.900	1.000	1.100	0.949	-0.051		1.61	0.79	1.26	0.62		
		Gear	10	0.900	1.000	1.100	0.972	-0.028		1.30	0.94	1.08	0.78		

c. From the Order Capability & Performance report, click on the hyperlink for the desired VSI test method, or the sample location for VMI methods.



The SPC page will open.

SPC Page Overview

This page provides SPC metrics and statistics for a chosen product/customer/operation (quality plan) across one or more manufacturing orders.

48. The SPC Metrics page is organized into eight areas:

- A. **Test method** information.
- B. **Product/Customer/Workcenter** information.
- C. **Control chart**.
- D. **Control chart controls**.
- E. **Sample information** (applies to the selected data point).
- F. **Statistical summary** (applies to all the data displayed within the control chart).
- G. **Histogram** (applies to all the data displayed within the control chart).
- H. **Box & Whiskers** plots (applies to each manufacturing order displayed within the control chart).



Control Chart, Histogram, Box & Whiskers

49. Click on a data point of interest within the control chart. The data point will become highlighted and the sample information and value (i.e. test result(s)) will be displayed in the sample information frame. Note that if a data point represents a pattern rule violation, the applicable violation(s) will be displayed in the sample information frame.

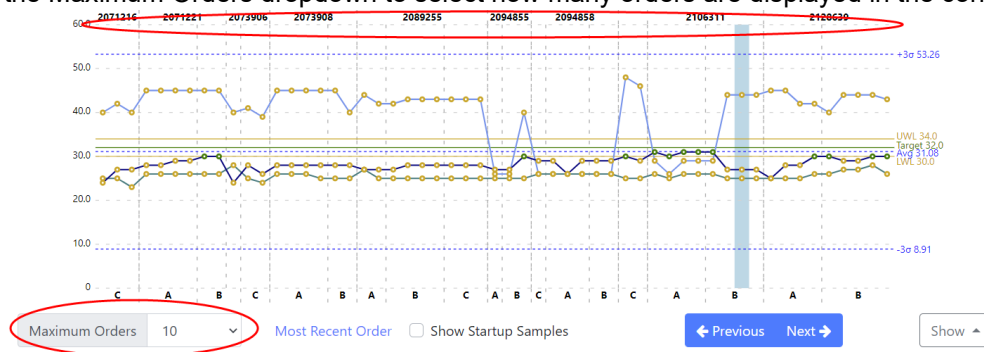
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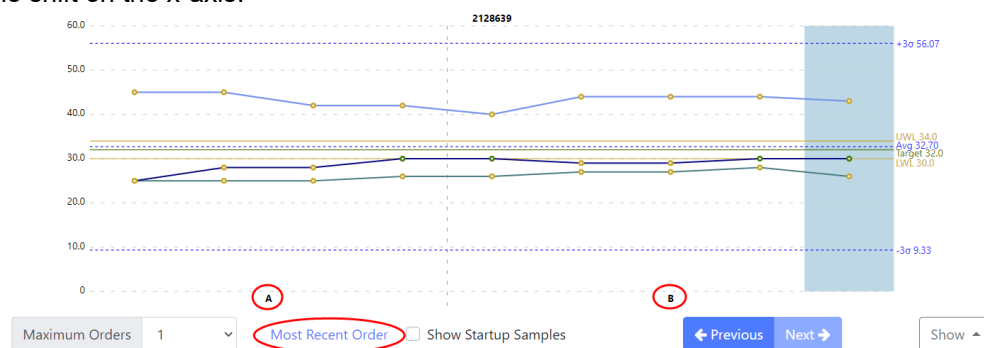
Version 2025-10



50. Click on the Maximum Orders dropdown to select how many orders are displayed in the control chart.



51. Click on the Most Recent Order hyperlink to view the most recent order. Note that, if the ERP/MES integration is configured to send shift information to PatrolSuite, then the control chart will display the applicable shift on the x-axis.

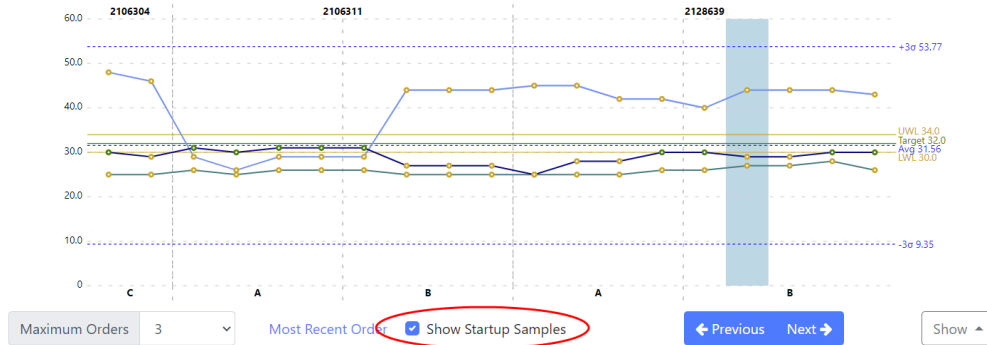


52. By default, the control chart displays “Production” samples only. Check the Show Startup Samples checkbox to include start-up samples in the control chart. Uncheck the checkbox to remove the start-up samples.

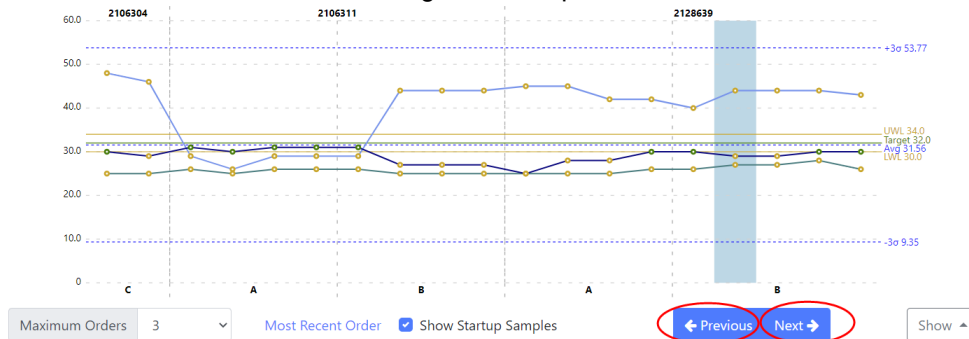
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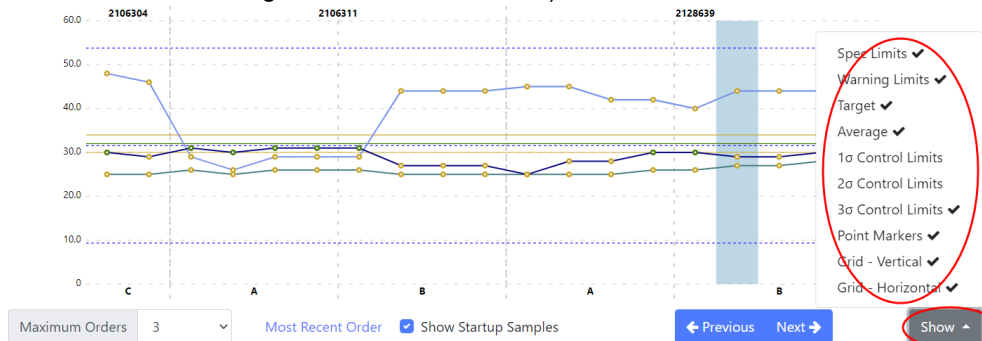
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53. Click on the Previous or Next arrows to change the data point selected in the control chart.



54. Click on the Show button and then check (or uncheck) the desired control chart display settings. Changes to the display settings will not affect the sample information, statistical summary, or any of the SPC metrics (the control chart, histogram, or box & whiskers).



55. The Sample Information frame is not actionable. It is a read-only reflection of the data point selected in the control chart.

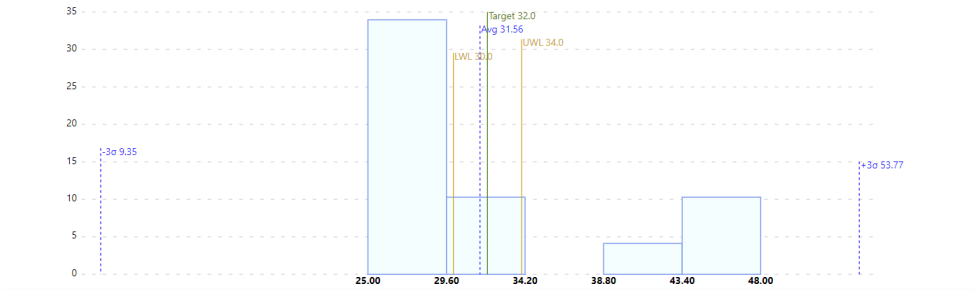


Manufacturing Order	Sample Date/Time	Sample Number	Shift	User Id
2128639	2019-04-15 4:11 PM (CDT)	2128639-F943CE8E-327	B	RPC3_WHQDM\lniaexb
	Sample Location	Value	Rule Violations	
■	TI-Oake 1	44.0		
■	TI-Oake 2	27.0		
■	TI-Oake 3	29.0		

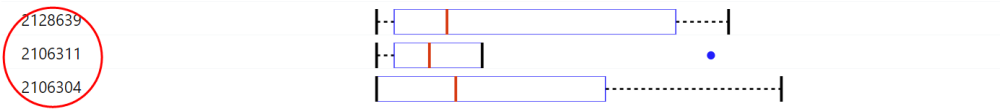
56. The Statistical Summary frame is not actionable. It is a read-only reflection of *all* of the data points displayed in the control chart.

54.10	10.12	0.32	10.06	30.0	31.20	10.06	10.06
-10	-50	-30	Lower Whisker Limit	Lower Whisker Limit	Upper Whisker	CL	PL
38.80	40.30	23.10	10.06	34.0	35.0	10.06	10.06
10	+10	+50	+30	Upper Whisker Limit	Upper Whisker Limit	CL	PL

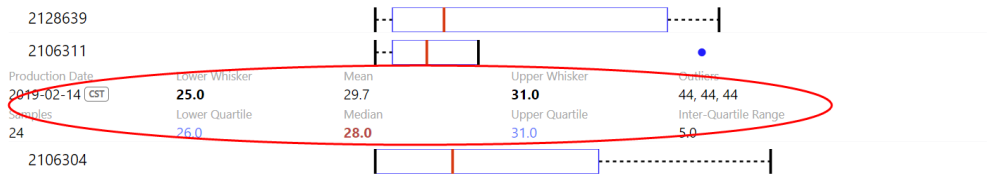
57. The Histogram is not actionable. It is a read-only reflection of *all* of the data points displayed in the control chart



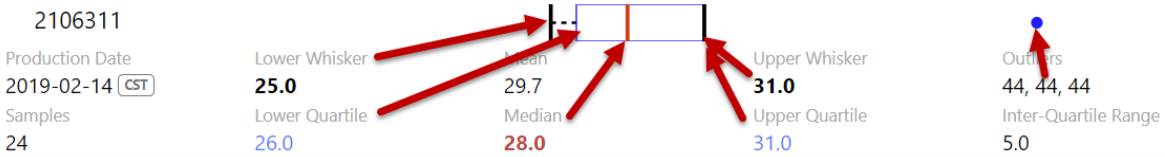
58. The Box & Whiskers diagrams reflect *all* of the data points displayed in the control chart. The applicable manufacturing order number is displayed to the left of the box & whisker diagram.



59. Click on a Box & Whisker diagram of interest to open the corresponding statistical summary.



60. The map of the statistical data relating to a box & whisker diagram is as follows. In the example below, the upper quartile and upper whisker have the same value, and there are three outliers, each of which have the same value (44), thus only one outlier point.



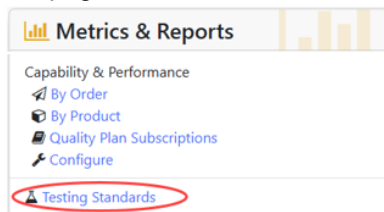


Chapter 13: Testing Standards Report

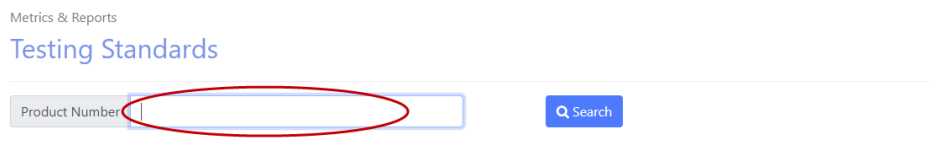
Access

The purpose of the testing standards report is to allow users to quickly view the quality plan for a product of interest without going into the QDMS Admin Panel. This report is often used for customer or product quality reviews because it provides visibility into all manufacturing steps for a given product number.

61. To view the Testing Standards report page, click on the “Testing Standards” hyperlink from the Metrics & Reports card on the PatrolSuite homepage.



62. Enter the desired product number and click the ‘Search’ button.



Organization

The testing standards report is organized as follows:

- A. **Filters**
- B. **Product information**
- C. **Operation.** The report will display all operations where test plans have been defined to product the applicable product. The quality state which is automatically assigned for a sample where all testing is complete, and all results are in spec, is displayed. Additionally, the quality plan comments are displayed.
- D. **Test Property.** The test methods are grouped by test property.
- E. **Test Method** and the corresponding testing requirements and specs.



Metrics & Reports
Testing Standards

Product Number: 0194, Change Product, Customer: None, Test Type: All, View only certificate methods, Operation: All

Product: 01946 BK .TBRD12

SAA-Line-1-Die-Cutter-Proofer

Automatically Assigned Quality State: None

Quality Plan Comments: 6.75" x 6.75" FLAT 3.3 oz ALLERGEN: MILK

Test Method	Units	Frequency	Sample Locations	Specifications
Dimensions				
VM SAA-3000-Diameter-X-Raw-Product-n3(6)	in	Prod Start	Lane 1	USL 7.00
			Lane 3	Target 6.75
			Lane 6	LSL 6.50
VM SAA-3000-Diameter-Y-Raw-Product-n3(6)	in	30 Min	Lane 1	USL 7.75
		Prod Start	Lane 3	Target 7.50
			Lane 6	LSL 7.25
Weights				
VM SAA-4004-Weight-Raw-Product-n(6)	Oz	30 Min	Lane 1	USL 3.80
		Prod Start	Lane 2	Target 3.60
			Lane 3	LSL 3.40

- 63. Apply the filters as desired to change the report contents.
a. Test Type.
b. View Only CoA. This will display only those test methods reported on the corresponding customer CoA. Such test methods are identified by the CoA badge.
c. Customer. The dropdown displays those customers for which a customer-specific test plan has been created. If "None" is the only choice provided in the dropdown, then no customer-specific test plans have been created.
d. Operation.

Table with 6 columns: Test Method, Units, Frequency, Sample Locations, Specifications, and a CoA badge. Row 1: VM SAA-3001-Thickness-Edge-X, in, 1 Hr, First Lane, USL, 0.26. Row 2: Thickness Edge of finished product from X axis, Prod Start, Middle Lane, LSL, 0.16.

64. To save the report, right-click anywhere on the report body and select "Print..."

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Test Method	Units	Frequency	Sample Locations	Specifications
Dimensions				
VM SAA-3000-Diameter-X-Finished-Product-L3(ABC) Diameter X of finished product by piece required from lanes A, B, and C for Flatbreads and Pita products	in	30 Min	Lane A-1	USL 7.25
			Prod Start	Lane A-2 Target 6.75
			QA - Prod	Lane B-1 LSL 6.25
			Start	Lane B-2
			Lane C-1	Lane C-2
VM SAA-3000-Diameter-Y-Finished-Product-L3(ABC) Diameter Y of finished product by piece required from lanes A, B, and C for Flatbreads and Pita products	in	30 Min	Lane A-1	USL 7.25
			Prod Start	Lane A-2 Target 6.75
			QA - Prod	Lane B-1 LSL 6.25
			Start	Lane B-2
			Lane C-1	Lane C-2

65. Choose “Save as PDF” as the Destination. Choose the desired Options to display the headers and footers or background graphics. Click the Save button.



66. To print the report, right-click anywhere on the report body and select “Print...” Choose the desired destination printer and options to display the headers and footers or background graphics. Click the Save button.

