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| Knowledge Based Article  SAP S/4HANA Cloud –Aug-20 | public |
| Quality Management in Make-to-Stock  Process Manufacturing |

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# Purpose

This Knowledge Based Article enables you to extend the scope item **BJ8 Make-to-Stock Process Manufacturing Based on Process Order** with quality management.

The extension starts with the replication of the master data of **BJ8** with enhancements to the used product master, the creation of a new batch class and the extension of the used master recipe with newly created master inspection characteristics as well as the creation of an inspection plan. Instead of replicating the existing master data, self-created master data with Master Data Scripts can be also be used based on this article.

The process starts with the creation of a demand forecast for finished goods represented by Planned Independent Requirements (PIRs). Based on PIRs, Material Requirements Planning (MRP) creates a production plan for finished goods, semi-finished products, and raw materials. Production planners can analyze and change the planned-order-based production plan manually. Raw material demand leads to purchase requisitions that trigger alternative procurement scenarios referenced in this article.

The production process itself is covered by the conversion of planned orders into process orders, order release, direct material issue or backflush, confirmation of operations and goods receipt posting. Quality Inspections are enabled as in-process inspections as well as for goods receipt from production.

This article provides a detailed procedure for enhancing master data and testing this process. Each process step, report, or item is covered in its own section, providing the system interactions (test steps) in a table view. Steps that are not in scope of the process but are needed for testing are marked accordingly. Project-specific steps must be added.

# Prerequisites

This section summarizes all the prerequisites for conducting the test in terms of systems, users, master data, organizational data, other test data and business conditions.

## System Access

| System | Details |
| --- | --- |
| System | Accessible via SAP Fiori launchpad. Your system administrator provides you with the URL to access the various apps assigned to your role. |

## Roles

Create business roles using the following business role templates delivered by SAP and assign them to your individual test users.

|  |  |
| --- | --- |
| Name | ID |
| BOM Engineer | SAP\_BR\_BOM\_ENGINEER |
| Master Data Specialist - Product Data | SAP\_BR\_PRODMASTER\_SPECIALIST |
| Production Engineer - Process Manufacturing | SAP\_BR\_PRODN\_ENG\_PROC |
| Production Operator - Process Manufacturing | SAP\_BR\_PRODN\_OPTR\_PROC |
| Production Planner | SAP\_BR\_PRODN\_PLNR |
| Production Supervisor - Process Manufacturing | SAP\_BR\_PRODN\_SUPERVISOR\_PROC |
| Quality Engineer | SAP\_BR\_QUALITY\_ENGINEER |
| Quality Planner | SAP\_BR\_QUALITY\_PLANNER |
| Quality Technician | SAP\_BR\_QUALITY\_TECHNICIAN |
| Warehouse Clerk | SAP\_BR\_WAREHOUSE\_CLERK |

## Master Data, Organizational Data, and Other Data

The organizational structure and master data of your company have been created in your system during activation. The organizational structure reflects the structure of your company. The master data represents materials, customers, and vendors, for example, depending on the operational focus of your company.

Use the following predelivery master data based on scope item **BJ8** to extend with quality management (see chapter 2.5).

Organizational Structure

| Data | Sample Value | Details | Comments |
| --- | --- | --- | --- |
| Plant | 1710 |  | Plant 1 US |
| Storage Location | 171A |  | Std. storage for finished products |
| Storage Location | 171B |  | Std. storage for production Less |
| Storage Location | 171C |  | Raw material storage location |

Manufacturing

|  |  |  |  |
| --- | --- | --- | --- |
| Data | Sample Value | Details | Comments |
| Material | FG29 | Reuse from scope item BJ8 | MTS processing for process industry with batch processing |
| Material | SG24 | Reuse from scope item BJ8 as template | Semi-finished Product PI, batch managed |
| Material | SGQM | to be created | Semi-finished Product PI, batch managed |
| Material | RM15 | Reuse from scope item BJ8 | Packaging material, no batch, external procured |
| Material | RM09 | Reuse from scope item BJ8 | Raw material, batch-managed, external procured |
| Material | RM19 | Reuse from scope item BJ8 | Raw material, batch-managed, external procured |
| Material | RM30 | Reuse from scope item BJ8 | Raw material, batch-managed, external procured |
| Batch Class |  | to be created | Batch Class of SGQM |
| Master Recipe |  | Reuse from scope item BJ8 as template, to be extended | Master Recipe for production of SGQM |

Quality Management Data

|  |  |  |  |
| --- | --- | --- | --- |
| Data | Sample Value | Details | Comments |
| Master Inspection Characteristic | YPIQN01 | to be created | MIC, quantitative, with reference to class characteristic |
| Master Inspection Characteristic | YPIQL01 | to be created | MIC, qualitative, with reference to class characteristic |
| Master Inspection Characteristic | YPIQNSPC | to be created | MIC, quantitative, enabled for SPC |
| Sampling Procedure | YPERCIN1 |  | 10% Inspection w/o Inspection Points, valuation according to char. attrib. code |
| Sampling Procedure | YPERCIN2 |  | 10% Inspection w/o Inspection Points, valuation based on mean value within tolerance range |
| Sampling Procedure | YSPCFIX5 |  | SPC Shewh., Sampl., Fix5 pc, InspPoints |
| Inspection Plan |  | to be created | Inspection Plan for Goods Receipt from Production |

Bill of Materials Structure

This overview shows the bill of materials structure and the usage of each component.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Material | Level | Material Type | Unit | Characteristic of material |
| FG29 | 0 | FERT | BT | MTS processing for process industry with batch processing |
| RM15 | 1 | ROH | PC | Packaging material, no batch, external procured |
| SGQM | 1 | HALB | CCM | Semi-finished Product PI, batch managed |
| RM09 | 2 | ROH | KG | Raw material, batch-managed, external procured |
| RM19 | 2 | ROH | L | Raw material, batch-managed, external procured |
| RM30 | 2 | ROH | L | Raw material, batch-managed, external procured |

## Business Conditions

Before the described steps can be executed, the following business conditions must be met.

| Scope Item | Business Condition |
| --- | --- |
| BEG - Standard Cost Calculation | You have completed the steps described in the test script. |
| BNZ - Create New Open MM Posting Period | You have completed the step described in the master data script. Posting Period is up to date. |

## Extend Predelivery Master Data

Before the test procedures can be executed, the master data of scope item BJ8 Make-to-Stock – Process Manufacturing Based on Process Order must be replicated and extended with new Quality Management master data.

The following Master Data Scripts can be are referred in this chapter:

| MDS | Description |
| --- | --- |
| BNS | Create Semi-Finished Good ("HALB") |
| BNY | Create Quality Management Attributes for Material/Product Master |
| 2ZW | Create Batch Specification Master Data |
| BNK | Create Material BOM for Engineering, Production and Sales |
| 3X9 | Create Master Recipe |
| BLD | Create Production Version |
| BNQ | Create Quality Inspection Plan (excl. Process Step Create Inspection Plan) |

### Create Batch Class and Class Characteristics

Purpose

The material master is assigned to a batch class. The additional class characteristics are created and linked to master inspection characteristics, which enables the automatic transfer of inspection results to the batch classification. The class characteristics from the batch class are automatically valuated at inspection completion (usage decision), based on the inspection results.

When you enter a class characteristic and link it to a master inspection characteristic, certain control indicators and values from this class characteristic are transferred to the master inspection characteristic. Note that you can only have a 1:1 relationship between a class characteristic and a master inspection characteristic, therefore you cannot reference the same class characteristic in several master inspection characteristics.

Procedure

Execute Master Data Script **2ZW - Create Batch Specification Data**, Process Step **Create Characteristic** and **Create Class**.

This article requires at least two Class Characteristics for further processing:

* One class characteristics of Data Type Numeric format, e.g. Density
* One class characteristics of Data Type Character Format, e.g. Color comparison  
  Note: Assignment of Selected Set is required. On the Values tab, in the Other Value Check, choose Catalog Char. (copy) and enter the value allowed for this characteristic.

Use the created class characteristics to assign these to the class. Optionally, you can also assign further available characteristics e.g. YB\_BATCH\_NUMBER (Batch Number).

### Create Master Inspection Characteristic for SPC

Purpose

To enable Statistical Process Control (SPC) a master inspection characteristic with corresponding control indicators is created.

Procedure

Create one quantitative reference Master Inspection Characteristic based on Master Data Script **BNQ - Create Inspection Plan**, Process Step **Create Master Inspection Characteristic**. Additionally, set the following parameters for the quantitative Master Inspection Characteristic (e.g. <YPIQNSPC>) in Characteristic Control Indicators:

* SPC Characteristic

### Create Master Inspection Characteristic with Reference to Class Characteristic

Purpose

The link between master inspection characteristics and class characteristics allows you to transfer results of a quality inspection to the batch classification.

When you enter a class characteristic and link it to a master inspection characteristic, certain control indicators and values from this class characteristic are transferred to the master inspection characteristic. Note that you can only have a 1:1 relationship between a class characteristic and a master inspection characteristic. This means you cannot reference the same class characteristic in several master inspection characteristics.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comments |
| 1 | Log On | Log onto the SAP Fiori launchpad as a Quality Planner. |  |  |
| 2 | Access the SAP Fiori App | Open Create Master Inspection Characteristic. | Create Master Inspection Characteristic: Initial view appears. |  |
| 3 | Create Quantitative Master Inspection Characteristic | In the Create Master Inspection Characteristic: Initial view, make the following entries:   * Plant: 1710 * Master Insp. Charac: <value> e.g. YPIQN01 * Valid From: <current date> * Class Characteristic: <Characteristic Name 1> (numeric format)   Choose Master inspection Characteristic | Create Master Inspection Characteristic: General Data view appears.  **Note:** Some data is copied from the class characteristic to the master inspection characteristic. Furthermore, depending on the class characteristic settings, some control indicators of the master inspection characteristic cannot be changed. |  |
| 4 | Enter General Data for Quantitative Characteristic | From Create Master Inspection Characteristic: General Data, set Status: Released. |  |  |
| 5 | Edit Control Indicators for Quantitative Characteristics | In the Edit Characteristic Control Indicators, flag the following options:   * Sampling procedure * Summ. recording * Required char.   Choose Continue and flag these additional options:   * Fixed Scope * No documentation * Record measured vals * RR change docs   Choose Continue |  |  |
| 6 | Enter Target Value | On the Tolerance Keys view, make the following entry:   * Target Value: for example, 0.94   and choose Continue |  |  |
| 7 | Save Your Data | Choose Save | Your data is saved. |  |
| 8 | Create Qualitative Master Inspection Characteristic | In the Create Master Inspection Characteristic: Initial view, make the following entries:   * Plant: 1710 * Master Insp. Charac: <value> e.g. YPIQL01 * Valid From: <current date> * Class Characteristic: <Characteristic Name 2> (character format)   Choose Master inspection Characteristic |  |  |
| 9 | Enter General Data for Qualitative Characteristic | From Create Master Inspection Characteristic: General Data, set Status: Released. |  |  |
| 10 | Edit Control Indicators for Qualitative Characteristics | In the Edit Characteristic Control Indicators view, flag the following options:   * Sampling procedure * Summ. recording * Required char.   Choose Continue to flag more options.   * Fixed scope * No documentation * RR change docs   Choose Continue to exit edit. |  |  |
| 11 | Save Your Data | Choose Save | Your data is saved. |  |

For each master inspection characteristic additional steps can be executed according to Master Data Script **BNQ - Create Inspection Plan**, Process Step **Create Master Inspection Characteristic** e.g. Assign Inspection Method or Enable Defect Recording.

### Create Product Master with Quality Management

Purpose

The following procedure provides instructions for replicating the semi-finished, batch-managed good product master of scope item **BJ8** with quality management. This is required to activate the usage of in-process quality inspection and quality inspection for goods receipt from process order and enable the continued usage of both scope items.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comments |
| 1 | Log On | Log onto the SAP Fiori launchpad as a Master Data Specialist - Product Data. |  |  |
| 2 | Access the SAP Fiori App | Open Create Material. | The Create Material displays. |  |
| 3a | Alternative 1:  Create your own semi-finished material | Execute Master Data Script **BNS - Create Product Master of Type “Semi-Finished Good”.** |  |  |
| 3b | Alternative 2:  Copy semi-finished material from scope item | In the Initial Screen enter   * Material Number <SGQM> * Material Type Semi-Finished Good * Copy From <SG24> (semi-finished good that is used in scope item **BJ8**)   Choose Continue.  In the Select View(s) window, select all (excl. Classification, Quality Management and Forecasting) and choose Org. Level.  In the Organizational Level window, enter the following:   * Plant: <1710> and Copy from <1710>. * Stor. Loc.: <171B> and Copy from <171B>. * Sales Org.: <1710> and Copy from <1710>. * Distr. Channel: <10> and Copy from <10>.   Choose continue (enter).  Validate each view and navigate forward by clicking enter. Once all views are validated, you are asked to save the data. Choose yes (save). |  |  |
| 4 | Add or Change Batch Class Assignment | Open Create Material.  In the Initial Screen enter Material Number <SGQM>. Hit Continue and choose Continue.  In the Select View(s) window, select Classification and choose continue (enter).  Enter Class <Class Name> and hit enter.  Choose Save. |  |  |
| 5 | Extend material with Quality Management | Execute Master Data Script **BNY - Create Quality Management Attributes for Material/Product Master** for semi-finished material <SGQM> with two Inspection Types:   * 03 in-process inspection * 04 goods receipt from production   Note: Insp. Type Details Screen varies per Inspection Type. Entering of procurement data is not required. |  |  |
| 6 | Save Your Data | Choose Save | Your data is saved. |  |

### Create Bill of Materials

Purpose

New Bill of Materials are created to structure the components that are used for manufacturing. The list contains components, with the quantity and unit of measure for each. A component might be a raw material or a semi-finished material. The Bill of Material structure is copied from existing scope items and adapted to include the newly created semi-finished material.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comments |
| 1 | Log On | Log on to the SAP Fiori launchpad as a Production Engineer - Discrete Manufacturing. | The SAP Fiori launchpad displays. |  |
| 2 | Access the SAP Fiori App | Open Maintain Bill of Material - Create, change & display BOMs. |  |  |
| 3 | Select exiting BOM for copy | In the Filter Section enter   * Plant <1710> * BOM Usage Production * Material material number of semi-finished product of re-used scope item e.g. <SG24> for scope item **BJ8**   Choose Go. |  |  |
| 4 | Copy existing BOM | Select the to be copied BOM and choose Copy BOM.  In the Copy BOM Screen, enter the following data:   * Plant <1710> * BOM Usage Production * Material <SGQM>   Choose ok. |  |  |
| 5 | Save Your Data | Choose Save | BOM for semi-finished material is saved. |  |
| 6 | Access the SAP Fiori App | Open Maintain Bill of Material - Create, change & display BOMs again. |  |  |
| 7 | Select exiting BOM for copy | In the Filter Section enter   * Plant <1710> * BOM Usage Production * Material <FG29> re-used of scope item **BJ8**   Choose Go. |  |  |
| 8 | Copy existing BOM | Select the to be copied BOM and choose Copy BOM.  In the Copy BOM Screen, enter the following data:   * Plant <1710> * BOM Usage Production * Material <FG29> re-used of scope item **BJ8**   Choose ok. |  |  |
| 9 | Replace semi-finished component | Replace semi-finished material component SG24 with semi-finished material component <SGQM>. |  |  |
| 10 | Save Your Data | Choose Save | BOM for finished material is saved. |  |

Alternatively, you can execute Master Data Script **BNK - Create Material BOM for Production and Sales**, Process Step **Create Production Bill of Material** (Change Number is optional) to create your own Bill of Material structure.

### Create Master Recipe with Quality Management

Purpose

The master recipe to describe an enterprise-specific process in process industries without relating to a specific order. You can either create your own master recipe (Alternative 1) or replicate the master recipe of **BJ8** of material SG24 (Alternative 2). The procedure describes how any is extended with one phase that represents the in-process quality inspection.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comments |
| 1 | Log On | Log onto the SAP Fiori launchpad as a Production Engineer - Process Manufacturing. | The SAP Fiori launchpad displays. |  |
| 2 | Access the SAP Fiori App | Open Create Master Recipe. | The Create Master Recipe: Initial Screen displays. |  |
| 3a | Alternative 1:  Create your own master recipe | Execute the Procedure of Master Data Script **3X9 - Create Master Recipe** for semi-finished material xx.  Note: Insp. Material Assignment / Production Version is not required, this will be done in the next step of this article. |  |  |
| 3b | Alternative 2:  Copy master recipe from scope item | In the Initial Screen enter the following data and then go back.   * Material: <SGQM> * Plant: <1710> * Profile: YPI1   Choose Choose Template, select Type Master Recipe and continue. Select recipe group to be copied and continue.  Note: You can use the value help and e.g. search using material.  Set the status of the master recipe to 4-released (general) and press enter. |  |  |
| 4 | Set Up for QM data for recipe | In the Recipe Header sub-tab, choose Quality Management, enter the following data and then go back.   * Insp. Points: <101 Time-based>   Dynamic Modification is optional. |  |  |
| 5 | Add a Phase | In the Operations Sub-tab choose Insert Operation   * Activity: <0025> * Phase Indicator: X * Superior Operation: Operation ID 0010 * Control Key: QM01 * Description: <Enter a description for the operation>.   Hit Enter and double-click the phase you created. |  |  |
| 6 | Set Up of Quality Data of Phase | In the General Data Sub-tab, choose QM Data, enter the following data and then go back.   * Inspection Point Completion: Automatic valuation based on insp. point definition * Time-related: <select> TFac. < 30> <MIN>   Hit Enter and go back. |  |  |
| 7 | Set Up for Inspection Characteristics of Phase | In the General Data Sub-tab, choose Insp. Characs, enter the following data and then go back.  Master Inspection Characteristic: <YPIQNSPC> (quantitative master inspection characteristic enabled for SPC from previous step) and hit enter. Enter the following data:   * Sampling Procedure <YSPCFIX5> * Sample Unit of Meas.: <CCM> * SPC Criterion <Task List Characteristic/Inspection Lot> and hit enter. | **Note:** The sampling procedure determines the chart type. Evaluate if the chart type of the pre-delivered sampling procedure fulfils your requirements. |  |
| 8 | Save Your Data | Save your entries. | Master Recipe is extended with Quality Management.  Master Data set up for in-process inspection with SPC is completed. |  |

### Create Production Versions

Purpose

A production version that is created using the newly created master data for processing production processes to avoid replicating the finished material,

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comments |
| 1 | Log On | Log onto the SAP Fiori launchpad as a Production Engineer - Process Manufacturing. |  |  |
| 2 | Create Production Version for Semi-Finished Good | Execute Master Data Script **BLD - Create Production Version** for semi-finished material<SGQM> including the newly created master recipe and BOM. |  |  |
| 3 | Create Production Version for Finished Good | Execute Master Data Script **BLD - Create Production Version** for finished materialFG29 including the existing master recipe for FG29 and the newly created BOM. |  |  |
| 4 | Lock existing Production Version for Finished Good. | Open Manage Production Versions. Enter   * Material: FG29 * Plant: <1710>   And hit enter. Select the pre-delivered production version and set it to Lock for any usage. Choose Save  **Note:** After executing this article, unlock this production version again. | The production process is executed based on the newly created master data. |  |

### Create Inspection Plan

Purpose

If material quality is supposed to be inspected upon goods receipt from production, one of the prerequisites is that an inspection plan is available. The inspection plan is newly created for goods receipt from production of material SGQM.

Procedure

Execute Master Data Script **BNQ - Create Inspection Plan**, Process Step **Create Inspection Plan** with the following parameters:

* Usage: 5 Goods Receipt
* Plant: 1710
* Material: SGQM.

To complete the example described in this article, assign the Master Inspection Characteristic with reference to Class Characteristics created in the previous step:

* YPIQN01 with Sampling Procedure YPERCIN2
* YPIQL01 with Sampling Procedure YPERCIN1

With this the assigned batch characteristic are used and can be valuated within this example.

Further Process Steps of Master Data Script **BNQ - Create Inspection Plan** can be executed optionally.

# Overview Table

This article consists of several process steps provided in the table below.

| Process Step | Business Role | Transaction/App | Expected Results |
| --- | --- | --- | --- |
| [Preliminary](#unique_9) Steps and Process Order Processing | See Scope Item **BJ8** |  | Process Order is released. |
| [Display](#unique_10) Open Inspection Lot (optional) | Quality Technician | Manage Inspection Lots | Inspection Lot is available. |
| [Results](#unique_11) Recording towards Inspection Points before Activation of Control Chart | Quality Engineer | Record Inspection Results – Hierarchical Worklist | Inspection Results for several Inspection Points are recorded, enough data is available for activation of control chart. |
| [Analyze](#unique_12) and Activate Control Chart | Quality Engineer | Manage Control Charts | Control Chart is activated |
| [Results](#unique_11) Recording towards Inspection Points after Activation of Control Chart | Quality Engineer | Record Inspection Results – Hierarchical Worklist | Inspection Results for several Inspection Points are recorded with automatic valuation based on SPC. |
| [Record](#unique_14) Usage Decision | Quality Engineer | Manage Usage Decisions | Usage Decision for In-Process Inspection recorded. |
| [Confirm](#unique_15) Production | See Scope Item **BJ8** | Confirm Process Order Phase | Process Order is confirmed. |
| Post Goods Receipt for Process Order | See Scope Item **BJ8** | Post Goods Movement | Goods Receipt for Process Order into inspection stock executed. |
| Open Inspection Lot (optional) | Quality Technician | Manage Inspection Lots | Inspection Lot for Goods Receipt from Production was created automatically. |
| Record Inspection Results | Quality Engineer | Record Inspection Results | Inspection Results are recorded. |
| [Record](#unique_14) Usage Decision | Quality Engineer | Manage Usage Decisions | Usage Decision for Inspection recorded, and Goods Movement executed. |
| [Review Batch](#unique_20) Data (optional) | Quality Technician | Manage Batches | Inspection Results are transferred to Batch. |
| [Concluding](#unique_21) Process Order Processing | See Scope Item **BJ8** |  | Manufacturing of finished good executed. |

# Test Procedures

This section describes test procedures for each process step to execute Quality Management in a Make-to-Stock Process in Process Manufacturing.

## Preliminary Steps and Process Order Processing

Purpose

This article is focusing on in-process quality inspections and inspections upon goods receipt from production as extension to scope item **BJ8 Make-to-Stock Process Manufacturing Based on Process Order**. Not all steps that are required to run through this end-to-end process differ due to the introduction of quality management. Hence, the following procedures of scope item **BJ8** must be executed.

Procedure

Execute the following procedures of **BJ8 Make-to-Stock Process Manufacturing Based on Process Order.**

Instead of material SG24, the newly created material SGQM is used.

|  |  |  |
| --- | --- | --- |
| Step | Description | Comment |
| Preliminary Steps | Initial Raw Material Stock |  |
| 4.1 | Anonymous Forecast and MRP (including all sub steps) |  |
| 4.2.1 | Create Process Order | Only create Process Order for Material SGQM instead of SG24 |
| 4.2.2 | Review Process Order |  |
| 4.2.3 | Goods Issue of Batch-Managed Components (including all sub steps) | Only execute for Process Order of Material SGQM |
| 4.2.4 | Monitor Order Progress |  |

**Note: In case of any changes to scope item BJ8, execute all steps until the process order is released.**

## In-Process Inspection for Semi Finished Good

### Display Open Inspection Lot (Optional)

Purpose

In this optional step, the references to the Order and the status are verified.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On | Log onto the SAP Fiori Launchpad as a Quality Technician. | The SAP Fiori Launchpad displays. |  |
| 2 | Access the App | Open Manage Inspection Lots. | The Manage Inspection Lots screen displays. |  |
| 3 | Enter Filter Fields | Make the following entries and choose Go.   * Plant: 1710 * Material: <SGQM> * Inspection Lot Origin: Production * Inspection Lot Status: Open |  |  |
| 4 | Select the Corresponding Inspection Lot | In the inspection lot list, select the inspection lot with column Order equals to the Order: XXX from previous step. | If the Order does not appear, please choose the button Settings. In the View Settings dialog box, select Production Order and choose OK. |  |
| 5 | Check Inspection Lot | In the Header, check the status. | Inspection Lot is Released. |  |

### Results Recording for Inspection Point Before Activation of Control Chart

Purpose

In this step the result is recorded in the inspection lot according to the defined inspection parameters in the recipe. The master inspection characteristic enabled for SPC is valuated leveraging a SPC control chart. Since the control chart has not been activated yet, the user must valuate the characteristic manually. After activation of the control chart, the respective characteristic is automatically valuated according to the control charts action limits. As it is currently not possible to specify the control charts limits manually, a minimal amount of data points must have been collected before the chart can be activated.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On to SAP Fiori launchpad | Log onto the SAP Fiori launchpad as a Quality Engineer. | The SAP Fiori launchpad displays. |  |
| 2 | Access the App | Open Record Inspection Results – Hierarchical Worklist | The Results Recording screen displays. |  |
| 3 | Enter Filter Fields | Make the following entries and choose Execute.   * Plant: 1710 * Insp. Lot Origin: 03 (Production) * Material: SGQM * Default Next Inspection Point: flagged | The inspection point is displayed. |  |
| 4 | In Process Result Recording | In the Record Results: Characteristic Overview, enter an inspection result for the characteristic and press enter.  **Note:** Ensure that the standard deviation (Std. Dev.) is entered. This is required for the used control chart type and must be done manually for characteristics with summarized results recording. |  |  |
| 5 | Characteristic Valuation | Valuate the entered inspection result manually. | Characteristics is accepted. |  |
| 6 | Save | Save the result recording. | Inspection Point is valuated and saved. |  |
| 7 | Record Results for next Inspection Point | Repeat Step 2-6 for next inspection points. |  |  |

### Analyze and Activate Control Chart

Purpose

If you have collected enough data that describes the statistical variation of your manufacturing process, you can execute this step to activate a control chart. After activating a control chart, the corresponding inspection characteristics will be valuated against this control chart.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On | Log on to the SAP Fiori launchpad as a Quality Engineer. | The SAP Fiori Launchpad displays. |  |
| 2 | Access the App | Open app Manage Control Charts. |  |  |
| 3 | Enter Selection Fields | Make the following entries and choose Go.   * Plant: 1710 * Material: SGQM |  |  |
| 4 | Select the corresponding control chart | In the Table View, select a control chart for your inspection. | The control charts page displays. |  |
| 5 | Display and Analyze Control Chart Data | In the header, time progression of recorded results and statistical information are displayed.  In the chart part, a respective graph with all the inspection results recorded is displayed.  Statistical Information, Bill of Operations, Characteristic are also available for analysis. |  |  |
| 6 | Activate Control Chart | In the header, choose Calculate and Activate. | Control chart is active and can therefore be used for automatic valuation of inspection characteristics. |  |
| 7 | Deactivate Control Chart (Optional) | If a control chart has become obsolete, it can be deactivated. Select the respective line item in the list table and choose Complete. | Control chart is deactivated.  Note Execute this step only when this control chart is obsolete. |  |

### Results Recording for Inspection Point After Activation of Control Chart

Purpose

After activating the control chart, the corresponding inspection characteristics will be valuated against this control chart.

Procedure

Execute Procedure **4.2.2 Results Recoding towards Inspection Point before Activation of Control Chart**. Manual Characteristic Valuation will now be obsolete as the characteristic is valuated automatically against this control chart.

### Record Usage Decision

Purpose

The inspection is completed, and the inspection results have been recorded. This step is used to perform the usage decision for the inspection lot. As the inspection lot of origin 03 is not stock-relevant, there is no follow-up action assigned to the usage decision code that triggers a goods movement.

Prerequisites

The usage decision for the batch-managed inspected material requires the assignment of the batch within the inspection lot. Within the in-process inspection the batch number is transferred from the process order into the inspection lot during inspection lot creation.

Based on the customizing of the production scheduling profile used in scope item **BJ8 Make-to-Stock Process Manufacturing Based on Process Order** the batch is not automatically created and cannot be manually added in the process order before its release because the process order gets released automatically. Hence the batch must be assigned manually to the inspection lot.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On | Log onto the SAP Fiori Launchpad as a Quality Technician. | The SAP Fiori Launchpad displays. |  |
| 2 | Access the App | Open Manage Inspection Lots. | The Manage Inspection Lots screen displays. |  |
| 3 | Enter Filter Fields | Make the following entries and choose Go.   * Plant: 1710 * Material: SGQM * Inspection Lot Origin: Production * Inspection Lot Status: Open |  |  |
| 4 | Select the Corresponding Inspection Lot | In the inspection lot list, select the inspection lot with column Order equals to the Order: XXX from previous step and choose Change Inspection Lot. | If the Order does not appear, please choose the button Settings. In the View Settings dialog box, select Production Order and choose OK. |  |
| 5 | Assign Batch | In the Header, choose Create Batch or enter a batch manually. |  |  |
| 6 | Save Inspection Lot | Choose Save. | Batch is assigned to Inspection Lot. Note Batch Number. |  |

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On | Log onto the SAP Fiori launchpad as a Quality Engineer. | The SAP Fiori Launchpad displays. |  |
| 2 | Access the App | Open Manage Usage Decisions. | The Manage Usage Decisions screen displays. |  |
| 3 | Enter Filter Fields | Make the following entries and choose Go.   * Inspection Lot Origin: Production * Plant: 1710 * Material: SGQM * Usage Decision Made: No |  |  |
| 4 | Click the Corresponding Inspection Lot | In the inspection lot list, select the inspection lot with column Order equals to the Process Order: XXXX from previous step. | If the Order does not appear, please choose the Settings button. In the View Settings dialog box, select Production Order and choose OK. |  |
| 5 | Review of Inspection Points | Select the tab Inspection Points and review the detailed inspection results recorded previously. |  |  |
| 6 | Display Defects (optional) | Scroll down to the Defects area. Check the details of Defects. | Only available you have activated defects recording in master data and recorded a Negative result. |  |
| 7 | Enter UD code | Choose Edit and select the tab Usage Decision. The UD code you select depends on the Inspection Result, please select one of the following two options:  Positive Result  UD code: UD03 A (Accepted)  Negative Result  UD code: UD03 R (Rejected) |  |  |
| 8 | Save Usage Decision | Choose Save. | Usage decision has been made for in process control inspection lot. |  |

## Confirm Production

Purpose

The confirmation documents include the processing status of order, operations, phases and individual capacities. It is an instrument to control the order. The time ticket confirmation allows recording either the default times for machine and labor usage, or actual times for major deviations. Backflushed materials will be posted automatically during respective phase confirmations. This process step shows you how to confirm production. You can post scrap quantities as an optional. If no major deviations occurred, only the last phase (milestone) must be confirmed. Using milestone confirmation, all prior phases are confirmed automatically.

Procedure

Execute the procedure of **BJ8 Make-to-Stock Process Manufacturing Based on Process Order**, Chapter **4.3.6 Confirm Production Operations** for Process Order of Material SGQM**.**

## Post Goods Receipt for Process Order

Purpose

With Quality Inspection of type 04 activated, this activity triggers the Quality Inspection on Goods Receipt from Production. The semi-finished good is posted to quality inspection stock and an inspection lot is created.

Procedure

Execute the procedure of **BJ8 Make-to-Stock Process Manufacturing Based on Process Order**, Chapter **4.3.7 Post Goods Receipt for Order** for Process Order of Material SGQM**.**

Reuse the batch number from the inspection lot (explained in **Record Usage Decision**) and assign in manually during the goods receipt posting.

## Goods Receipt from Production Inspection for Semi Finished Good

### Display Open Inspection Lot (Optional)

Purpose

In this optional step, the references to the Order and Batch are verified as well as the material documents and sample size used for quality inspection reviewed.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On | Log onto the SAP Fiori Launchpad as a Quality Technician. | The SAP Fiori Launchpad displays. |  |
| 2 | Access the App | Open Manage Inspection Lots. | The Manage Inspection Lots screen displays. |  |
| 3 | Enter Filter Fields | Make the following entries and choose Go.   * Plant: 1710 * Material: SGQM * Inspection Lot Origin: Goods Receipt from Production * Inspection Lot Status: Open |  |  |
| 4 | Select the Corresponding Inspection Lot | In the inspection lot list, select the inspection lot with column Order equals to the Order: XXX from previous step. | If the Order does not appear, please choose the button Settings. In the View Settings dialog box, select Production Order and choose OK. |  |
| 5 | Check Inspection Lot | In the Header, check the batch number.  Under Origin, check the material document and sample size.  Under General, check the task group/counter. | Batch Number is visible. |  |

### Record Inspection Results

Purpose

In this process step, the in-inspection results on goods receipt from production are recorded for material SGQM. This allows you to inspect the goods received from production before they are posted out of inspection stock when you make the usage decision.

Procedure

| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| --- | --- | --- | --- | --- |
| 1 | Log On to SAP Fiori launchpad | Log onto the SAP Fiori launchpad as a Quality Engineer. | The SAP Fiori launchpad displays. |  |
| 2 | Access the App | Open Record Inspection Results | The Results Recording screen displays. |  |
| 3 | Enter Filter Fields | Make the following entries and choose Go.   * Plant: 1710 * Insp. Lot Origin: 04 (Goods receipt from Production) * Material: SGQM * Batch: As noted in previous chapter   If Batch is not displayed in the Filters, please choose Filters. On the popup screen Filters, choose Materials. Select Batch and choose OK. Choose Go | Note the inspection lot number. |  |
| 4 | Select the Corresponding Inspection Lot | In the inspection lot list, select the inspection lot and click on Record Multiple Results. |  |  |
| 5 | Enter Inspection Result | On the Record Results: Characteristic Overview screen enter an inspection result for the characteristics. | Green tick appears as the characteristics get valuated. |  |
| 6 | Save Inspection Lot | Choose Save. | The inspection lot is saved. |  |

### Record Usage Decision

Purpose

The inspection is completed, and the inspection results have been recorded. In this process step, the appropriate batch is evaluated concerning its usage. With Inspection Type 04 the material movement is done based on the usage decision codes.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On | Log onto the SAP Fiori launchpad as a Quality Engineer. | The SAP Fiori Launchpad displays. |  |
| 2 | Access the App | Open Manage Usage Decisions. | The Manage Usage Decisions screen displays. |  |
| 3 | Enter Filter Fields | Make the following entries and choose Go.   * Inspection Lot Origin: Goods Receipt from Production * Plant: 1710 * Material: SGQM * Usage Decision Made: No |  |  |
| 4 | Click the Corresponding Inspection Lot | In the inspection lot list, select the inspection lot with column Order equals to the Process Order: XXXX from previous step. | If the Order does not appear, please choose the Settings button. In the View Settings dialog box, select Order and choose OK. |  |
| 5 | Display Defects (optional) | Scroll down to the Defects area. Check the details of Defects. | Only available you have activated defects recording in master data and recorded a triggering result. |  |
| 6 | Enter UD code | Choose Edit and select the tab Usage Decision. The UD code you select depends on the Inspection Result, please select one of the following two options:  Positive Result, posting to unrestricted stock  UD code: UD04 A1 (Accepted unrestricted stock)  Negative Result, posting to blocked stock  UD code: UD04 R1 (Rejected blocked stock) |  |  |
| 7 | Save Usage Decision | Choose Save. | Usage decision and goods movement have been made for inspection lot. |  |
| 8 | Review Material Stock (optional) | Scroll down to the Material Document area. Go to Stock Overview and evaluate the current stock. |  |  |

## Review Batch Data (optional)

Purpose

The batch class is assigned to the batch-managed material SGQM. The batch class contains characteristics for information related to the inspection characteristics. By transferring inspection results to classification data, the data can be used for example in a batch-search strategy to find products with specified characteristics.

Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Step # | Test Step Name | Instruction | Expected Result | Comment |
| 1 | Log On | Log on to the SAP Fiori Launchpad as a Quality Technician. | The SAP Fiori Launchpad displays. |  |
| 2 | Access App | Open Manage Batches. | The Manage Batches screen displays. |  |
| 3 | Execute Search | Maintain the following search fields and choose Go:   * Material: SGQM * Batch: <Batch Number> * Plant: 1710 | Search result displays. |  |
| 4 | Navigate to Batch Details | Choose the line item of the respective batch by clicking the triangle displayed on the right. | Batch details are displayed on screen Batch. |  |
| 5 | Review Data | Review tabs:   * General Information displays the manufacturing date entered during goods receipt * Classification displays the classification data of the batch. The created and assigned class characteristics in step 2.5.4 and 2.5.5 are populated at the valuation of an inspection point (if multiple inspection points have been captured, data originates from the last inspection point) or respectively from Post-Process Inspection. | Batch information is reviewed. |  |

## Concluding Process Order Processing

Purpose

This article is focusing on in-process quality inspections and inspections upon goods receipt from production as extension to scope item **BJ8 Make-to-Stock Process Manufacturing Based on Process Order**. The quality inspections focus on the semi-finished good SGQM. Not all steps that are required to run through this end-to-end process differ due to the introduction of quality management. Hence, the following reference of scope item **BJ8** must be executed to conclude process order processing and production of finished goods (FG29).

Procedure

Execute the procedures of **BJ8 Make-to-Stock Process Manufacturing Based on Process Order**, Test Procedure **4.2. Process Order Processing** for Material FG29**.**

**Note:** Remember to unlock the pre-delivered production version of material FG29.

# Appendix

## Succeeding Processes

After completing the activities in this test script, you can continue testing the following business processes:

| Process | Business Condition |
| --- | --- |
| BEI - Period-End Closing - Plant (Optional) | These activities are executed collectively as a part of month-end closing. For more information about the month-end closing procedure, see the Period-End Closing - Plant (BEI) test script.   * Month-end closing can only be executed once a month. |
| 2V0 - SAP Fiori Analytical Apps for Quality Management |  |
| 1MP - Quality Management in Sales |  |
| KBA 2805020 | This Knowledge Based Article enables you to set up a Quality Certificate in S/4HANA Cloud. |

Typographic Conventions

| Type Style | Description |
| --- | --- |
| Example | Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options.  Textual cross-references to other documents. |
| Example | Emphasized words or expressions. |
| EXAMPLE | Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE. |
| Example | Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools. |
| Example | Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation. |
| <Example> | Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system. |
| EXAMPLE | Keys on the keyboard, for example, F2 or ENTER. |

|  |
| --- |
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