BUSINESS OPERATING PROCEDURE

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REF: AS9100 8.5	**PLANT:** HES	**Page 1 of 5**
OWNER: MANAGER, SUPPLIER QUALITY		

TITLE: PRODUCT, MATERIAL FIXED PROCESS CONTROL PLAN

1. PURPOSE:

The purpose of this procedure is to establish a fixed process control plan for Howmet approved material and / or products.

2. SCOPE:

This procedure applies to Howmet suppliers when stipulated in a Howmet purchase order.

3. REFERENCES:

3.1	IQS ASL	IQS Approved Supplier List (ASL)
3.2	PPIs	Howmet Procurement Policies and Instructions Manual (USA)
3.3		Applicable Howmet customer quality and technical specifications
3.4		Howmet Non-disclosure Agreements (NDA)
3.5	SPI 1306.00	Proprietary Information, Disclosure Limits
3.6	SPI 1307.00	Technology Disclosure Limits - Castings
3.7	SPI 1309.00	Technology Information Export Control Restrictions
3.8	SPI 1309.01	Approval for Presentation and Publication of Technical Information
3.9	700.004.001	Supplier Quality Flowdown Documents
3.10	710.005.001F01	Product, Material Fixed Process Control Plan Form
3.11	710.005.001F02	Product, Material Fixed Process Control Plan Revision History Form
3.12	710.005.001F03	Raw Material Fixed Process Control Plan Form
3.13	Supercedes and replaces SCM 504 and SCM 504-C	

4. DEFINITIONS:

4.1 Howmet– also known as Howmet

4.2 IQS Approved Supplier List (ASL) - Database where approved supplier listing is maintained and performance data is logged.

4.3 Non-disclosure Agreements (NDA) - A legal document between Howmet and its suppliers used to protect proprietary technical data and other intellectual property.

4.4 SQA – Supplier Quality Assurance (Howmet Business Unit)

4.5 FPCP – Fixed Process Control Plan

4.6 Product – Ceramic Core, casting, die, etc

4.7 Material – Power blends, fused alumina, chemical solutions, etc.

5. PROCEDURE:

5.1 The words “shall” and “will,” indicate mandatory requirements. The word “should” indicates a preferred approach. Suppliers choosing an approach other than those described in this specification **shall** be responsible for demonstrating their approach meets the requirements in this specification. All reference to SQA is Howmet Business Unit Supplier Quality Assurance.

5.2 The appropriate Howmet Plant will work with the supplier to establish and evaluate the process control plan for the Howmet approved material or product.

5.3 The supplier shall submit a fixed process control plan and process flow chart along with 710.005.001F01, Product, Material Fixed Process Control Plan or 710.005.001F03 Raw Material Fixed Process Control Plan Form to Howmet Business Unit Supplier Quality Assurance (SQA) to assign a control plan number and forward to Appropriate Howmet Plant Quality Engineer and Process Owner for Review and approval.

5.3.1 The following steps will be used to submit a Fixed Process Control Plan (FPCP):

Submit the Fixed Process Control Plan to Howmet Business Unit SQA to assign an FPCP control number. APPSupplierQuality@Howmet.com.
Howmet Business Unit SQA will forward the FPCP to the appropriate Howmet plant Quality Engineer and Process Owner for review and approval.
Once the Quality Engineer and Process Owner approval is completed, the approving plant will return the FPCP to Howmet Business Unit SQA.
Howmet Business Unit SQA will retain the confidential FPCP in the supplier file and send a copy to the supplier and the approving plant Quality Engineer and Process Owner.

5.3.2 Once approved (signed by supplier and applicable Howmet personnel), all applicable Howmet purchase orders shall reference the latest revision of the applicable FPCP. For all products covered by Product Criteria, the FPCP will be called out in the Product criteria.

5.4 Each fixed process control plan shall describe the actions that are required at each step of the process, with references to the specific applicable procedures, specifications and / or work instructions. A single control plan may apply to a family of products that have commonality and are produced by the same process at the same manufacturing location and shall be available at all times. Each fixed process control plan shall contain comprehensive documentation of product and process characteristics, process controls, tests, and a measurement system that will occur throughout production.

5.5 The initial fixed process control plan and all subsequent revisions with significant changes shall be submitted to Howmet Business Unit Supplier Quality Assurance (SQA). Each revised fixed process control plan shall reflect all addition, deletion and or changes of controls and measurement systems. Where outside processers are used, process controls shall be flowed to subcontractors.

5.6 Control Plan Significant Product/Material Fixed Process Change Approval

5.6.1 Significant Product/Material Fixed Process Changes include but are not limited to the following:

Change in manufacturing location.
Change in the sequence of an operation
Change in the method of an operation.
Adding or deleting an operation.
Change of material or product
Changing the source of a material, sub-component or out-sourced operation.
Changes in chemical or physical properties and changes to specification limits for chemical and physical properties
Changing types of equipment.
Changes in tooling & rework to tooling (Ceramic Cores) & changes in tooling/die wear control.
Changes in dimensional target/tolerance of material to make final product (Ceramic Cores).
Change in product inspection or test methods.
Change in packaging and / or identification.
Change in material or batch numbering method.
Change in software program, which affect product features, characteristics or properties, and upper and lower specification limits for ceramics.
Changes in packing media (Ceramic Cores) & changes in part orientation during thermal cycle.
Changes to thermal cycle for ceramics.

5.6.2 All changes to an approved fixed process shall be submitted to Howmet Business Unit SQA, using 710.005.001F02, Product & Material Fixed Process Control Plan Revision Request form. All fixed process changes shall be reviewed and approved by the Howmet Plant Quality Engineer and Process Owner prior to being incorporated. All fixed process control changes must include a copy of the current approved fixed process control plan and flow chart along with the proposed revised fixed process control plan and revised flow chart.

5.6.3 The supplier shall summarize the fixed process control change request on 710.005.001F02, Product & Material Fixed Process Control Plan Revision Request form.

5.6.4 The appropriate Howmet Process Owner or Product Engineer, will review the 710.005.001F02, Product & Material Fixed Process Control Plan Revision Request form and either approve or disapprove, with dispositions/comments in section 16. Sign and forward to SQA.

5.6.5 Howmet Business Unit SQA will distribute the revised, approved and signed fixed process control plan, flow chart and any substantiating change revision documentation as stated in section 5.3.1.

5.6.6 If there is any doubt regarding (the significance of change) to a product/material or process, the supplier representative will contact the appropriate Howmet Plant personnel or Howmet Business Unit SQA for concurrence prior to incorporating any change.

5.7 Howmet Castings/Supplier Nondisclosure Agreements

Nondisclosure agreements are required when business activities involve any customer, supplier or Howmet proprietary information, intellectual property, processes or product information exchange. The Howmet plant

purchasing representative or engineering representative shall contact the Research Center Director or Administrator to initiate the NDA.

5.8 Export Control

Some Howmet process technologies and products are controlled as “unclassified” technical data and United States export regulations must be followed. Refer to SPI 1309, Technical Information, Export Control Restrictions where required.

5.9 Subcontract Control

Subcontracting of products, materials or services is prohibited unless the subcontractor, location and scope of work are defined within the fixed process control plan and flow chart submitted for approval. The supplier shall ensure control of all Subcontractors compliance in accordance with 700.004.001, Supplier Quality Flowdown Document section 7 requirements.

5.10 Retention of Product & Material Fixed Process Control Plan Records

5.10.1 The supplier shall maintain a Howmet approved copy of the current fixed process control plan, flow chart and any related product/process approval records as well as all previous revisions and related approval records. Records of all subcontracted work shall also be maintained in accordance with 700.004.001, Supplier Quality Flowdown Document section 12.

5.10.2 Howmet Business Unit SQA will retain the master copy of all fixed process control plan & flow chart in the confidential supplier files. Refer to section 5.3.1.

5.11 Process Inactivity

5.11.1 When a fixed process control plan has not been utilized for 12 months, the supplier must review the fixed process control plan sequences for process change variation. All proposed changes shall be documented on 710.005.001F02, Product & Material Fixed Process Control Plan Revision Request form and submitted as stated in section 5.3.1.

5.11.2 If the fixed process has been unaffected (no changes introduced) during the period of inactivity, the supplier shall document this on form 710.005.001F01, Product & Material Fixed Process Control Plan Form or 710.005.001F03 Raw Material Fixed Process Control Plan Form and submit for authorization prior to restarting the fixed Process.

6. RECORDS:

6.1	710.005.001F01	Product, Material Fixed Process Control Plan and Flow Chart.
6.2	710.005.001F02	Product, Material Fixed Process Control Plan Revision History form and Flow Chart.
6.3		Fixed Process Control Plan Number Log.
6.4	710.005.001F03	Raw Material Fixed Process Control Plan Form

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