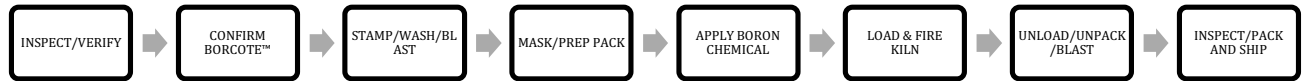


BorCote™ Process Overview

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|------------------------|----------------|-------|--------------------------------|
| Authors: | Kelly Kykkanen | | Replaces Form(s) / Version(s): |
| Reviewed By: | Kim Edgar | Date: | August 21, 2015 |
| Approved By: | Anthony Honke | Date: | August 24, 2015 |
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1. Flowchart of the Coating Process**2. Customer Part received**

- 2.1. Inspect all parts upon receipt for mechanical damage (e.g. Threads) and advise customer if any observed.
- 2.2. Part is compared to Customer's Order Entry Form to ensure proper quantity, part description and if possible part material.
- 2.3. BorCote™ version is confirmed:
 - 2.3.1. BC1700 – Regular
 - 2.3.2. BC1900 – Premium

3. Stamping Run Log

- 3.1. If required, part is stamped with "BorCote" run date and kiln number (eg. BorCote™ Run 100725-1)
 - 3.1.1. Run date is set as Year/Month/Day

4. Cleaning and Inspection

- 4.1. Areas requiring BorCote™ must be free of slag or scale. Surface finish of 64µin or better is recommended to ensure proper coating of part.
- 4.2. Part must be cleaned and dried prior to BorCote™ process. All areas subjected to BorCote™ process must be cleaned using approved methods such as: Burn off oven, pressure washer, glass bead blaster.
- 4.3. Verify ID tolerances of all Silver Fox flow control product such as Nipples and Slick Joints by drifting seal bores.

5. Preparation

- 5.1. Specific areas that do not require BorCote™ are masked off. This is accomplished using stainless steel foil, high temperature ceramic wool, or EKrit powder.

6. Packing

- 6.1. Part is packed inside tube or on post depending on geometry of part. BorCote™ powder is then added to areas of part that require BorCote™ coating.
- 6.2. Similar material test coupon is etched with date and packed with same lot powder.
- 6.3. BorCote™ powder is compacted using vibratory table; more is added as necessary ensuring proper coverage of part.
- 6.4. Part is weighed and documented along with powder lot number on Silver Fox Run Log.

7. Kiln Procedure

- 7.1. Part is loaded into electric kiln
- 7.2. Similar material test coupon is loaded
- 7.3. BorCote™ process program is uploaded into Kiln interface
- 7.4. Retort lid and Kiln lid are closed
- 7.5. Protective Inert Gas is added into retort chamber
- 7.6. HVAC is turned on
- 7.7. Kiln program and data log are started

8. Post Firing Procedure

- 8.1. Kiln temperature is allowed to cool to less than 600°C before outer lid is opened.
- 8.2. Remove parts once they can be handled in a safe manner while using protective gear

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- 8.3. HVAC and Protective Inert Gas are turned off.
- 8.4. Program run time and max temperature are documented on Silver Fox Run Log.
- 8.5. Data log graph is reviewed and saved
 - 8.5.1. If program does not meet Silver Fox Completion Services specifications then test coupon is sent to be analyzed for diffusion coating integrity

9. Cleaning and Inspection

- 9.1. Part is unpacked from used BorCote™ powder and then post cleaned via glass bead blaster or suitable means to remove powder
- 9.2. Detailed inspection of part is performed; this includes areas that required and did not require coating as well as full visual inspection
- 9.3. Verify ID tolerances of all Silver Fox flow control product such as Nipples and Slick Joints by drifting seal bores to ensure part still conforms to Silver Fox standards
- 9.4. Part is dipped in oil

10. Final sign off

- 10.1. Parts are inspected one final time and are either placed on inventory shelf or sent for packaging for shipment
- 10.2. All paperwork is to be completed at this time