

### Galvanization Process technical Card

Process Flow

**Spelter --> Water bath--> Burnishing--> Water bath(twice)--> Passivation--> Water bath(twice)--> Dip hydrothermal--> Shake to dry--> Bake to dry--> Finish**

Requirement Condition per each process

Serial number	Description	Solution Composition	Equivalent concentration g/l	Operation temperature°C	Operation Time (s)
1	Spelter bath	Zn	8-14	15-20	50-65
		NaOH	100-150		
		7900A	5-10ml/L		
		7900BS	0.5-2ml/L		
2	Products In				
3	Water bath	H2O		Natural	20-30
4	Delete hydrogen(If need)	According to DIN267 delete hydrogen,then make passivation			

Serial number	Description	Solution Code	Operation temperature°C	Operation Time (s)
5	Burnishing	HNO3	Natural	2-5
6	Water bath(twice)	H2O	Natural	2-4
7	Passivation	OML-668	Natural	20-25
8(11)	Water bath(twice)	H2O	Natural	2-4
9		White Blue	65-85	2-3
10		Yellow	45-55	25-45
11		Black	Natural	18-25
12	Dip hydrothermal	Yellow Cr3+	45-60	2-3
13	Shake to dry	Shanke Dry Machine	Natural	5-10
14	<b>Bake to dry</b>	<b>Bake Machine</b>	<b>50-70</b>	<b>White Blue 600 Yellow 600 Black 1200</b>
15	Finish			

USED MACHINES	No.	Description	Model	Q'TY
	1	Shanke Dry Machine	270MM	3
	2	Bake Machine	10X1.2X1M	2
	3	White blue, Yellow Passivation Tank	70X70CM	3
	4	Black Passivation Tank	50X50CM	2
	5	Spelter bath	20x1.5x1M	4
	6	Washer Machine	GBWE4270-TYPEA	3
	7	Percolation Machine	TS-7232	2
	8	Refrigerant Machine		2

USED ARTICLE	No.	Description	Model	Q'TY
	1	Nylon netting	100X100CM	10
	2	Thermometer	0-100°C	1
	3	Mechanical separator timer	1-60S	1
	4	Measuring cup	250ML	1

INSPECTION ITEMS	No.	Description	Items	Measuring tools	Test frequency
	1	Exterior	Surface should smooth, clear, clean, bright, without tears, blisters, rough spots or excessive coating mass	10X Magnifier	Each lot random 50Pcs
	2	Neutral salt spray test	DIN267 Part 9	Neutral salt spray test box	Each lot 5-10Pcs
	3	Binding capacity	GB5270-85	Ball rod(6#)	Random
	4	Thread Dimension	6h, 6H	The GO/LO thread ring gage	Each lot random 75Pcs

- Notes:**
- No.1:Preparation  
The operator must protection casing, check each process situation to be good, especially Passivation machines.
- No.2:Operation instructions  
1:Used the parts with Nylon netting do the passivation process, the parts which for Class 10.9&above parts must delete hydrogen before passivation process.  
2: Operate Passivation process situation must overturn or wave 2-4 times to avoid coating mass, flat washers must be keep waving.  
3:The products must be pay more attentino to the temperature after shanke dry process.  
4:If the fastener have any dip hole, the temperature must be 50-70 °C keep 2-4hours.  
5:Add the natural water must add suitable nitric acid.  
6:Operator must make the liquid of passivation according to instruction book.
- No.3:Quality Control  
1:Check the temperature of each process per 2hours.  
2:The water must be natual water, 2hours change one time.  
3:White blue passivation time contrl by Mechanical separator timer, Yellow, Black passivation according to the color board.  
4:each liquid turnover periodicity as follows:
- | HNO3   | White blue Passivation | Yellow Passivation | Black Passivation |
|--------|------------------------|--------------------|-------------------|
| 4Hours | 10days                 | 10days             | 10days            |
- 5:Make sure the thread tolerance before Galvanized, confirm the GO/LO after galvanized with customer.  
6:Make the Chemical Composition with Spelter bath per 24hours, degrease/acid wash/electrolytic bath to be test each 72hours, and pulish the result to Quality department, Quality department make the adjust after then confirm the result.  
7:Burnishing bath add nitrous acid 1L per 2hours, change all nitrous acid twice per 24hours, passivation bath to be changed per 30days.  
8:All water use in the process must be clear flow natural water.  
9:The temperure with bake process can't be more than 80 °C, if some special products need must approved by engineer first.  
10:Quality department test the exterior/thread at least by 3 peoples, then make the record, the content of record are: Standard Code or Drawing No., Lot No., Surface color, Quantity, the quality reports must be checked by quality manager, then signed the reports.  
11:All quality record documents must keep in safe place, the head office engineer should random check the documents 3-5times per 30days.