

## Technical Pre-Qualification Requirement (PQR) for Process of hardfacing (HS75-25 + Stellite 6/Stellite 21/Alloy 625)

Sl.	PQR Condition	Documents to be submitted	Vendor's remarks
<b>1</b>	<b>Experience Criteria:</b>		
1.1	Vendor must have experience of carrying out thermal spray coating of Cr <sub>3</sub> C <sub>2</sub> +NiCr by HVOF process or detonation gun process on components made of alloy steel.	<ul style="list-style-type: none"> <li>- Purchase order copy alongwith its tax invoice for the work of thermal spray coating of specified material any alloy steel grade.</li> <li>- Test certificate of the work carried out as per above purchase order specifying the details of coating, base material, Coating DPT results, thickness. The certificate must be duly endorsed by third party inspector or customer.</li> <li>- Process qualification of HVOF coating containing details of base material, coating material, hardness, bond strength, porosity and coating thickness.</li> </ul>	
1.2	Vendor must have experience of carrying out hardfacing using arc welding (SMAW, GMAW, SAW, GTAW, PTAW) with filler material of stellite 21 (CoCr-E) / stellite 6 (CoCr-A) / Alloy 625 (Inconel 625) over base material of high alloy steel, for e.g., X22CrMoV12-1, X10CrMoVNb9-1, X12CrMoWVNBn10-1-1, X19CrMoVNbN11-1, X13CrMoCoVNB9-2-1, GX10CrMoVNb9-1, GX12CrMoWVNBn10-1-1, etc.	Valid WPS & PQR (Performance Qualification Record) developed by vendor for the specified filler material-base metal combination, duly endorsed by third party inspector.	
<b>2</b>	<b>Manufacturing and testing Facilities Criteria:</b>	-	
2.1	Vendor must have in-house facility of thermal spray coating by HVOF or detonation gun process	Details of facilities to be submitted.	
2.2	Vendor to confirm that they have adequate in-house facility for hardfacing: arc welding (SMAW / GMAW / SAW / GTAW / PTAW) and furnace for heat treatment/PWHT.	Vendor to confirm adequacy of equipment and also provide details of arc welding and heat treatment/PWHT facility (size, maximum operating temperature, etc) to be submitted.	
2.3	Vendor must have in-house facilities for machining / surface finishing sufficient to meet the requirements of enquired items. These facilities can also be outsourced.	Details of in-house facilities to be submitted. If any of the process is outsourced, same to be specified.	






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2.4	Vendor must have either in-house facilities or outsourced through NABL accredited laboratory for carrying out all testing on coated/hard-farced component.	Details of in-house testing facilities to be submitted. Testing requiring outsourcing through NABL accredited laboratory to be specified.	
3	<b>Technical Criteria:</b>		
3.1	In case of order placement and before start of work on actual job, Vendor to submit following documents for approval of BHEL: (1) Applicable WPS (Welding Procedure Specification), PQR (Performance Qualification Record) & WPQ (Welder Performance Qualification) as per enquired jobs, duly approved by third party inspector. (2) Coating process qualification as per BHEL enquiry specification duly approved by Third party inspector.  All testing required in WPS/PQR and coating process qualification should be got done through NABL accredited laboratory only.	Vendor to confirm submission of document after placement of order.	
3.3	Vendor must confirm to supply enquiry items as per enquiry specification and drawing without any deviation	Vendor to confirm	

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