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|-------|---|--|
| | <i>effective vacuum connection to each shed of the insulator cavity</i> | <i>Vacuum connections should be provided in the mould such that every shed is connected to vacuum and the suction point in the mould. Design of vacuum provisions shall be such that vacuum holes shall not get blocked. For ejection of component from the Mould without bending and shed damage internal ejector must be provided in the cavities suitably. Must have ejector to facilitate release of molded component from top & bottom half of the mold. If applicable Core puller pins (sync with the injection moulding cycle software) to keep the FRP Rod at center without moving during injection molding. This shall not leave any undulation on the finished component.</i> |
| 18.12 | <i>Material</i> | <i>Material used in mould should be – Base Steel C-45 OR equivalent Inserts in the mould should be Steel P-20 (Impax Supreme or Thruhard Hi Hard) OR NAK 80 or equivalent. Supplier should indicate the material of construction of mould, in their offer.</i> |
| 18.13 | <i>General</i> | <i>Alignment of All the sheds should be proper. Addition and Removal of inserts from the mould should be easy and must be able to add and remove inserts without removing mold from the machine upto flexi sheds arrangement. Tear groove must be provided around the article, in the inserts for easy removal of flash from injection molded component. Cavity surface should be induction hardened and treated, polished, smooth mirror finished to facilitate easy ejection preferably with mate finished with nitriding. End inserts of Mold must be suitable to Metal fittings design and must have biting ring to avoid damages to the component and provide proper sealing.</i> |
| | | <i>Supplier has to take necessary drawing approval of the mold drawing showing all the features in the submitted drawing before taking up mold manufacturing.</i> |

19.0 Cold Runner Block

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| 19.1 | <i>Purpose</i> | <i>It shall provide optimum temperature to the flowing rubber and designed optimally such that minimum rubber wastage should be there as runners during injection molding process and also provide optimum</i> |
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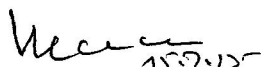
Yogesh Sharma
15/7/2015
Sr Manager / CI & NP

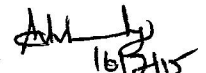
Seshapathi S
Sr Manager / IE

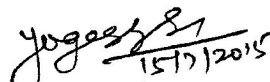
Y Ravi
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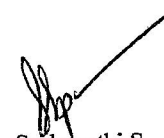
| | | |
|------|---------------------------|---|
| | | temperature to facilitate proper flow of runner through these channels, just before entering into the mold cavities. CRB must maintain the temp to avoid rubber curing in these channels during operation. |
| 19.2 | Description | Oil circulation zone to control runner temperature, insulating plate, Heating plate having 3 zone heating arrangement. Machine, CRB, through nozzles should be able to inject different volume of silicone compound at different injection point in the mold, through software or by any manual adjustment according to the mold cavity setting. It must have feature to block individual Cold runner nozzle through machine control / manually for fast cleaning and compound change. It shall keep the runner channels heated up and also control the flow of the silicone compound satisfactorily for mould settings for different length of cavities. Must be able to clean CRB easily as and when needed. |
| 19.3 | Scope of supply | Complete CRB system consisting of suitable silicone rubber flow control (Auto or manual), Oil circulation pump, oil tank with electrical heaters for thermo control water circulation system for cooling including electrical piping and soft ware |
| 19.5 | Dimensions | Matching to Injection mould and machine platen |
| 19.5 | No of Nozzles | Vendors to mention in the offer, |
| 19.6 | Total connected Load | Bidders to specify |
| 20 | Compatibility | Machine must be compatible with Flow control CRB and molds available at BHEL EPD, Bangalore. |
| 21 | Domestic maintenance team | The machine manufacturer must have service agency in India to attend the problem associated with the machine on need bases. |

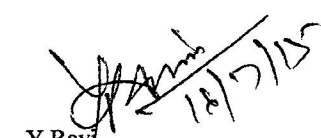
**Note : 1. Any technical deviation should be brought out in a separate sheet
2. Offers must consist of basic Injection moulding machine, CRB and moulds.
The offer will be summarily rejected for non compliance of this criteria.**



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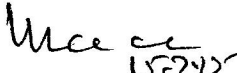

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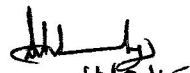

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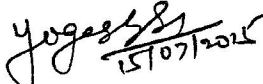
| | | |
|--|---|--|
|  EPD - BANGALORE | Purchase Specification For Silicone Rubber Injection Moulding Machine- 450 T | SPECIFICATION NO. EP-WEX-IM/2015-16 |
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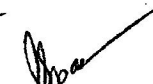
Qualification criterion:


| Sl. No | BHEL Standard Terms & Conditions | Supplier's confirmation Yes / No | If Yes , Documentary Evidence provided for Compliance |
|---------------|--|---|--|
| 1 | The vendor shall be an Original Equipment Manufacturer (OEM).Dealers have to submit authorisation certificate from OEM | | |
| 2 | The vendor shall have qualified personnel, their own adequate manufacturing / integrating and testing facilities for the equipment offered. | | |
| 3 | The vendor shall have proven track record for manufacturing, supplying and successful commissioning of Injection Molding Machine for manufacturing of Composite insulators with a clamping force of Minimum 4500 kN and Injection volume of 10000 CC, Injection moulding length of 1350 mm minimum per shot, in the last 2 years | | |
| 4 | The vendor shall submit audited balance sheet or tax returns or profit loss account for the last 3 years | | |


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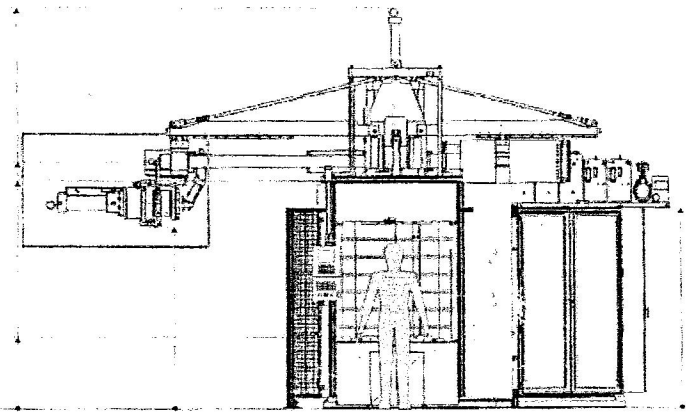

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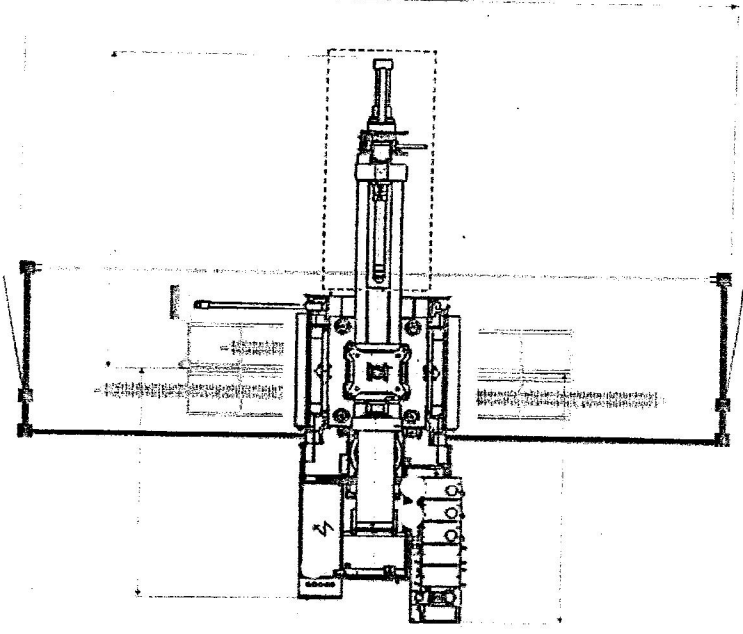
Annexure - I

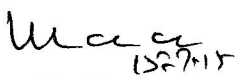
GENERAL ARRANGEMENT OF INJECTION MOULDING MACHINE

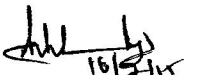



Annexure - II


GENERAL ARRANGEMENT OF INJECTION MOULDING MACHINE

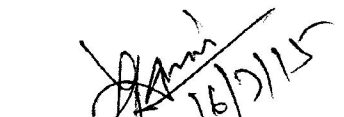



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