



Date: 98/05/15		Material Specification for Inner Nozzle		 IRAN ALLOY STEEL CO.																															
Rev.: 00																																			
ID code : 7005030007		Area : Ladle		Storage site : PU17																															
General properties																																			
Basic Components: Tabular Alumina and Refractory Cement				Bonding System: Hydraulic Bond																															
Classification: Low Cement Castable (Precast Shape)																																			
Chemical composition (wt. %) : <table border="1"> <thead> <tr> <th></th> <th>Zone A</th> <th>Zone B</th> <th>Zone C</th> </tr> </thead> <tbody> <tr> <td>Al₂O₃</td> <td></td> <td>96-98</td> <td></td> </tr> <tr> <td>SiO₂</td> <td></td> <td>Max 0.2</td> <td></td> </tr> <tr> <td>Fe₂O₃</td> <td></td> <td>Max 0.2</td> <td></td> </tr> <tr> <td>CaO</td> <td></td> <td>1.8-2.2</td> <td></td> </tr> </tbody> </table>				Zone A	Zone B	Zone C	Al ₂ O ₃		96-98		SiO ₂		Max 0.2		Fe ₂ O ₃		Max 0.2		CaO		1.8-2.2		Fig. 												
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Sieve analysis /Dimension: - Physical properties : <table border="1"> <tbody> <tr> <td>Bulk Density</td> <td>kg/m³</td> <td>2.8-3.0</td> </tr> <tr> <td>Appearance Porosity</td> <td>%</td> <td>17-19</td> </tr> </tbody> </table> Mechanical/Thermal properties: <table border="1"> <tbody> <tr> <td>Permanent Linear Shrinkage at 1600 ° C</td> <td>%</td> <td>(-0.26)</td> </tr> <tr> <td>Cold Crushing Strength</td> <td>kg/cm²</td> <td>Min 500</td> </tr> <tr> <td>Refractoriness Under Load</td> <td>° C</td> <td>-</td> </tr> <tr> <td>Hot Modulus of Rupture</td> <td>kg/cm²</td> <td>-</td> </tr> <tr> <td>Thermal Conductivity</td> <td>W/m . ° k</td> <td>-</td> </tr> <tr> <td>Thermal Expansion</td> <td>%</td> <td>-</td> </tr> <tr> <td>Thermal Shock Resistance</td> <td>cycle</td> <td>-</td> </tr> <tr> <td>Max Service Point</td> <td>° C</td> <td>1750</td> </tr> </tbody> </table>						Bulk Density	kg/m ³	2.8-3.0	Appearance Porosity	%	17-19	Permanent Linear Shrinkage at 1600 ° C	%	(-0.26)	Cold Crushing Strength	kg/cm ²	Min 500	Refractoriness Under Load	° C	-	Hot Modulus of Rupture	kg/cm ²	-	Thermal Conductivity	W/m . ° k	-	Thermal Expansion	%	-	Thermal Shock Resistance	cycle	-	Max Service Point	° C	1750
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Remark: - Packing: Pallet Shelf life: <input checked="" type="checkbox"/> 1 Year NA <input type="checkbox"/> Life time: - Quality Check: Certificate from supplier and laboratory test																																			
Edited: 1-Mehdi Eslampour		Checked: 1-Ahmad Jafarian		Approved: 1- Mohammad Ali Jafarzadeh																															