

ANNEX-1

TECHNICAL SPECIFICATIONS

MATERIAL REQUIRED FOR:

STRUCTURAL MATERIAL FOR PROCESS GAS PRE-HEATER E-201 REPLACEMENT

SR.	ITEM DESCRIPTION	UOM	QUANTITY
A	Structural Beam, MATERIAL : S275JR+M as per EN 10025-2 <i>As per EN 10025-1, Dimensions as per EN 10365, Tolerances as per EN10034</i>		
	Structural Beam Description Straight Length (min.)		
(i)	HEB 300 12 meters	Meter	48
(ii)	HEB 280 12 meters	Meter	60
(iii)	HEB 260 12 meters	Meter	72
(iv)	HEM 200 12 meters	Meter	24
(v)	HEB 200 12 meters	Meter	120
(vi)	HEA 200 12 meters	Meter	192
B	Structural C-Channel, MATERIAL : S275JR+M as per EN 10025-2 <i>As per EN 10025-1, Dimensions as per EN 10365, Tolerances as per EN 10279</i>		
	Structural C-Channel Description Straight Length (min.)		
(i)	UPN 160 12 meters	Meter	48
(ii)	UPN 100 12 meters	Meter	204
C	Structural Angle Iron, MATERIAL : S275JR+AR as per EN 10025-2 <i>As per EN 10025-1, Dimensions as per EN 10056-1, Tolerances as per EN 10056-2.</i>		
	Structural Angle Iron Description Straight Length (min.)		
(i)	L 51 x 51 x 7,9 6 meters	Meter	120
D	Smooth Plate/Sheet, MATERIAL : ASTM A-516 Gr. 70 <i>As per ASTM A-20</i>		
	Size Condition		
(i)	1000 mm x 2000 mm x 30 mm Thk. Hot Rolled	SH	3
(ii)	1000 mm x 2000 mm x 10 mm Thk. Hot Rolled	SH	2
E	Smooth Plate/Sheet, MATERIAL : S275JR+AR as per EN 10025-2 <i>As per EN 10025-1, Tolerances as per EN 10029, Surface Condition as per EN 10163 ClassB/Subclass3</i>		
	Size Condition		
(i)	4000 mm x 3000 mm x 40 mm Thk. Hot Rolled	SH	1
(ii)	3000 mm x 2000 mm x 40 mm Thk. Hot Rolled	SH	1
(iii)	2000 mm x 1000 mm x 40 mm Thk. Hot Rolled	SH	1
(iv)	1000 mm x 2000 mm x 20 mm Thk. Hot Rolled	SH	3
(v)	1000 mm x 2000 mm x 15 mm Thk. Hot Rolled	SH	4
(vi)	4000 mm x 2000 mm x 10 mm Thk. Hot Rolled	SH	1
F	Chequered Plate, MATERIAL : S275JR+AR as per EN 10025-2 <i>As per EN 10025-1, Tolerances as per EN 10029, Surface Condition as per EN 10163 ClassB/Subclass3</i>		
	Size Condition		
(i)	2000 mm x 1000 mm x 6 mm Thk. Hot Rolled	SH	49
G	Flat Bar, MATERIAL : S235JR+AR as per EN 10025-2 <i>As per EN 10025-1</i>		
	Flat Bar Description Straight Length (min.)		
(i)	150 mm x 5 mm thk 6 meters	Meter	36
(ii)	50 mm x 6 mm thk. 6 meters	Meter	36
H	Handrailing Pipe, MATERIAL : ASTM A-53 <i>As per ASME B36.10M</i>		
	Pipe Description Straight Length (min.)		
(i)	NPS 1-1/4" x 3 mm thk 6 meters	Meter	36

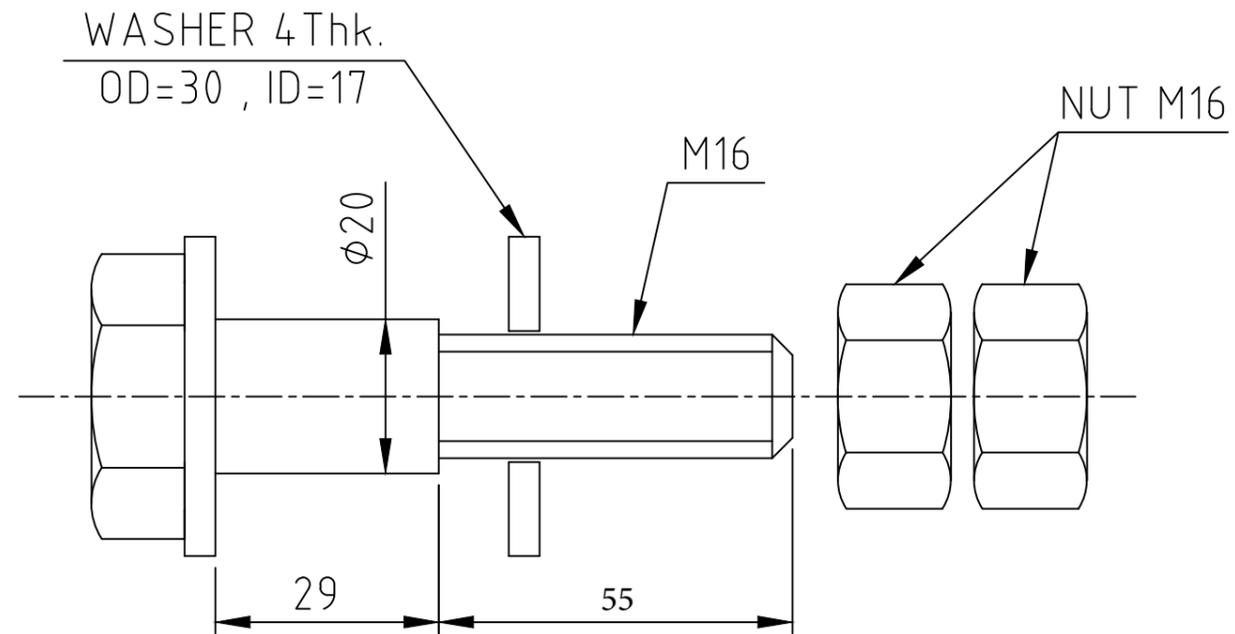
TECHNICAL SPECIFICATIONS

MATERIAL REQUIRED FOR:

STRUCTURAL MATERIAL FOR PROCESS GAS PRE-HEATER E-201 REPLACEMENT

SR.	ITEM DESCRIPTION	UOM	QUANTITY						
I	FULL THREADED Heavy Hexagonal Head bolts + 01 Circular Washer + 01 Nut, MATERIAL: ASTM A-193 Gr. B7 (For Bolts) + ASTM A-194 Gr. 2H (For Nuts) + ASTM F436 Type 3 (For Washers) <i>As per ASME B18.2.3.6M, ASME B18.2.4.6M, ASME B1.13M threads (6g threads for bolts / 6H threads for nuts)</i>								
(i)	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Size</td> <td style="width: 30%;">Length</td> <td style="width: 30%;">Pitch</td> </tr> <tr> <td>M22</td> <td>90 mm</td> <td>2.5 mm</td> </tr> </table>	Size	Length	Pitch	M22	90 mm	2.5 mm	Set	196
Size	Length	Pitch							
M22	90 mm	2.5 mm							
(ii)	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Size</td> <td style="width: 30%;">Length</td> <td style="width: 30%;">Pitch</td> </tr> <tr> <td>M22</td> <td>125 mm</td> <td>2.5 mm</td> </tr> </table>	Size	Length	Pitch	M22	125 mm	2.5 mm	Set	64
Size	Length	Pitch							
M22	125 mm	2.5 mm							
(iii)	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Size</td> <td style="width: 30%;">Length</td> <td style="width: 30%;">Pitch</td> </tr> <tr> <td>M16</td> <td>90 mm</td> <td>2 mm</td> </tr> </table>	Size	Length	Pitch	M16	90 mm	2 mm	Set	20
Size	Length	Pitch							
M16	90 mm	2 mm							
J	Heavy Hexagonal Head bolts + 01 Circular Washer + 02 Nuts , MATERIAL: ASTM A-490 Type 3 (For Bolts) + ASTM A-563 DH3 (For Nuts) + ASTM F436 Type 3 (For Washers) <i>As per ASME B18.2.3.6M, ASME B18.2.4.6M, ASME B 1.13M threads (6g threads for bolts / 6H threads for nuts) and attached Annex-A</i>								
(i)	<table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Size, Length and Dimensions</td> <td style="width: 40%;">Pitch</td> </tr> <tr> <td>As per attached Annex-A</td> <td>2 mm</td> </tr> </table>	Size, Length and Dimensions	Pitch	As per attached Annex-A	2 mm	Set	30		
Size, Length and Dimensions	Pitch								
As per attached Annex-A	2 mm								
<p>NOTES:</p> <ol style="list-style-type: none"> 1 Origin of raw material and manufacturing location : Western Europe / Chinese (First Class Quality)/UAE/ Oman/Turkey 2 Vendor shall provide origin of raw material, name of manufacturer and location of manufacturing in the quotation 3 MTCs of manufacturer as per EN10204/3.1 for all items shall be provided prior to shipment. 4 Plates shall be smooth and free from burrs. 5 Vendor shall provide dimensional charts / details of steel structural members and bolts along with the quotation. 6 Price to be quoted on CFR Karachi basis. 7 Standard Seaworthy export packing to be ensured. Material shall be packed against mechanical damage and environmental encroachment during transportation. 8 Threads of bolts and nuts shall be protected against any damage. 9 All material shall be brand new. Vendor to ensure good dimensional control and surface finish of all material. 10 Weld repair is not allowed. 11 Vendor shall provide signed and stamped copy of FFC Technical Specifications as token of acceptance. Deviations, if any, to be clearly marked on the same. <p>ABBREVIATIONS : SH : SHEET</p>									

Annex-A



NOTES:

- 1- ALL THE DIMENSIONS ARE IN MILLIMETERS UNLESS OTHER WISE SPECIFIED.
- 2- DRAWING IS NOT TO SCALE.