

# شرکت فولاد خوزستان - سهامی عام

## فرم درخواست

شماره درخواست : ۴۴۸۶۵۸ ریفرم تیوب زبزم یک و دو  
 کارشناس خرید : محمد تاجمیری  
 تعداد ردیف : ۱  
 تاریخ صدور : ۱۴۰۱/۰۱/۲۷  
 تاریخ شروع : ۱۴۰۱/۰۱/۲۴

مرکز هزینه : ۲۱۰۲۰۱  
 سرفصل هزینه : قطعات یدکی انباری (مصرفی)  
 نوع درخواست : خرید معمولی  
 تاریخ پایان : ۱۴۰۱/۱۲/۰۱

شرح	مقدار	واحد اندازه گیری	ردیف	کد کالا/خدمات
ریفرم تیوب زبزم یک و دو طبق اطلاعات آرشیو شده	۵۰۰	عدد / قطعه	۱	2DZM176A011
شماره سریال : شماره نقشه : CA-۴۲۳-۱... تامین کننده : تایپی / ردیف نقشه : شماره قطعه : MZZZ سازنده اصلی : واحد مربوطه : فولاد خوزستان				
دلیل توجیهی خرید:				
امضاء مدیر واحد خرید تجهیزات و قطعات یدکی				

Date: July 26, 2012

To: Khouzestan Steel Company  
KM10 Bandar Imam Khomeini, Rd.  
Ahwaz, I. R. of Iran  
Tel: + 986112279152, Fax: +986112279153

**Subject:**

Dear Sir,

Refer to your abovementioned inquiry no.; we are pleased to submit our quotation as follows:

**504 Pcs of Reformer Tube Assemblies, acc. drawing 110310MA3839002 in total consisting of:**

Qty/Tube	Description	Material
❖ 1 Piece	Top tube, ID 200 x MSW 11,2 x Lg 4695 mm	G4879 Micro
❖ 1 Piece	Bottom Tube, ID 200 x MSW 11,2 x Lg 4695 mm	G4852 Micro
❖ 1 Piece	Top Welding Neck Flange, Lg 160 mm	G4852
❖ 4 Pieces	Lug, G 4 Pins welded to the bottom tube	G4852
❖ 1 Piece	Alignment Sleeve, 80 mm	Carbon Steel

Manufacturer: Schmidt + Clemens (S+C)

**Technical Description: Tubes:**

Centrifugally cast, outside as cast, inside machined to max. 3,2 Ra. As per the above mentioned dwg., Schmidt-Clemens equivalent CA-863-1 Rev.0. Please take note that we are offering Schmidt-Clemens latest metallurgy specifically designed for Direct Reduction Application for the centricast tube (RD), with proven improved creep resistance properties.

Inspection: According to S+C standard specification.  
S+C will include mill test certificate 3.1 according to EN 10204.  
**Charges for Third Party Inspection are not included in the quotation.**

Please Note: S+C price are based on the weights given in your inquiry. If the real weights of the goods differ from these weights, S+C reserves the right to adjust the prices accordingly.

S + C	Designation acc. To DIN EN 10027 Part 1	ASTM Standard
Centralloy @ G 4852 Micro	G-X45NiCrSiNbTi 35-25	HP+Nb MA
Centralloy @ G 4879	G-NiCr 28W	
Centralloy @ 60HTD		S+C proprietary alloy

**Specifications:**

**1. Configuration and Arrangement**

the tube shall consist of a top part (flange), a tube upper section and a tube-lower section, drawing (1): The tube assemblies are vertically suspended from the top outside the reformer. Bottom flange is arranged outside the reformer as well.

**2. Operating Condition**

Gas inlet temperature	400°C
Gas outlet temperature	930°C
Gas inlet pressure	2 bar
Max. tube skin temperature :	
Upper section	1070°C
Lower section	1050°C
Reformer roof temperature :	1130°C

**3. Materials**

	Top ( Flange) HP-Nb 160mm	Upper Section HV 4695mm	Lower Section HP-Nb 4695mm
C%	0.35 - 0.45	0.35 - 0.55	0.35 - 0.45
Ni%	34.0 - 36.0	47.0 - 50.0	34.0 - 36.0
Cr%	24.0 - 26.0	27.0 - 30.0	24.0 - 26.0
W%		4.0 - 5.5	
Nb%	1.2- 1.8	-	1.2- 1.8
Si%	Max. 1.5	0.5 - 1.5	Max. 1.5
Mn%	1.0 - 2.0	1.0 - 1.5	1.0 - 2.0
P%	Max. 0.03	Max. 0.03	Max. 0.03
S%	Max. 0.03	Max. 0.03	Max. 0.03
Mo%	Max. 0.5	Max. 0.5	Max. 0.5
Al%	Max. 0.05	Max. 0.05	Max. 0.05
Ti%	Max. 0.05	Max. 0.05	Max. 0.05
Cu%	Max. 0.15	Max. 0.15	Max. 0.15
Sn%	Max. 0.01	Max. 0.01	Max. 0.01
Pb%	Max. 0.005	Max. 0.005	Max. 0.005
Mechanical Properties			
Yield strength	245 N/mm <sup>2</sup>		245 N/mm <sup>2</sup>
Tensile strength	450-650 N/mm <sup>2</sup>	440 N/mm <sup>2</sup>	450-650 N/mm <sup>2</sup>
Elongation	8%	4%	8%