

**REYNOLDS METALS COMPANY**

SHERWIN PLANT
P. O. BOX 109
CORPUS CHRISTI, TEXAS 78403

INQUIRY NO.

2001

DATE

7/23/69

REQUISITION NO.:

6525**REQUEST FOR QUOTATION
THIS IS NOT AN ORDER**

GENTLEMEN: Please quote us on the material listed below, submitting your signed quotation by completing this form, it being understood that there will be no extra charges for patterns, tools, dies, or other preparatory expenses, or for packing, drayage, transportation, or any other additional costs, unless specifically stated hereon. It is also understood that in the absence of a written agreement to the contrary, all drawings, patterns, tools, dies, etc., that are paid for by us as separate charges, thereby become our property and subject to our order. If you quote F. O. B. our plant, transportation charges must be prepaid.

Thorpe Insulation Co.
P. O. Box 1477
Corpus Christi, Texas

FOR SHIPMENT TO Gregory, Texas	DATE REQUIRED 8/15/69	RETURN QUOTATION BY 7/30/69	BY mgs Billy M. Mason
	AT DESTINATION	TO BE CONSIDERED	BUYER

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
		Please furnish your quotation to cover the cost of furnishing all tools, materials, equipment, supervision, supplies and all services required for the installation of refractory lining in a flue gas heater and duct in accordance with attached Work Specification SP-LQ-104 and its referenced drawings. If awarded this work, we would be able to commence within <u>15</u> calendar days after date of notice to proceed and complete the work within an additional <u>27</u> calendar days. For any additional information regarding this installation, please contact our Project Engineer, J. L. Stephens, at 643-6531, Extension 452. LETTER-PROPOSAL IS ATTACHED		

**PLAINTIFF'S
EXHIBIT****TIC-11**

TERMS	F. O. B.	CAN SHIP BY
VENDOR J T THORPE COMPANY	BY LEE A. KLEEMAN	DATE AUGUST 1, 1969

J T THORPE COMPANY

ENGINEERS - CONSTRUCTORS

REFRACTORY, INSULATED AND ACID PROOF STRUCTURES

P. O. BOX 33399 MI 4-1247 HOUSTON, TEXAS 77033

August 1, 1969

Reynolds Metals Company
Sherwin Plant
P. O. Box 109
Corpus Christi, Texas 78403

ATTENTION: Mr. Billy M. Mason

REFERENCE: INQUIRY #2001, REQUISITION #6526 - REFRACTORY LINING FOR FLUE
GAS HEATER AND DUCT

We are very pleased to submit our proposal in response to your subject inquiry.

SCOPE OF WORK

We propose and agree to furnish all materials as outlined below, labor, tools, equipment, scaffolding, forms, job expense items, insurance, payroll taxes, travel time, subsistence, and supervision necessary to install the refractory lining within one flue gas heater and ducts in accordance with the following specifications, general conditions, exceptions, terms and price.

SPECIFICATIONS

The linings which we propose to furnish and install are as shown on Reynolds Metals Company's drawings 225-M-3272, Rev. 0, 225-M-3249, Rev. 4, 225-M-3250, Rev. 3, and 225-M-3251, Rev. 3 - and as outlined in Work Specification WS-LQ-184, Rev. 0. Inasmuch as we understand that some changes have been made in the forementioned Work Specification since inquiries were mailed, we attach hereto a copy of referenced specification which shall be considered a part of this proposal.

Having carefully reviewed your specifications and having discussed same, together with revisions which have been made, we are offering a base bid and several alternates, and we elaborate as follows:

Base Proposal: As a base proposal we propose to install a $4\frac{1}{2}$ " lining of refractory brick in the heater and $4'-0"$ diameter duct from the heater to the $5'-0"$ square duct, backed up with $3\frac{1}{2}$ " of 2800° castable. The brick would be a combination of Alfrax and Mulfrax. We are offering this combination for your consideration because no supplier seems to be in position to furnish 99% Al2O3 brick in time for your mandatory August 15 construction schedule. We believe that the combination of Alfrax and Mulfrax will serve you very well. The shapes which we propose to use would be standard $9 \times 4\frac{1}{2} \times 2\frac{1}{2}$ " arch brick in the proper combinations.

Reynolds Metals Company
August 1, 1969
Page 2

The back-up castable that we propose to use in the heater and in the 4'-0" round duct would be 3½" H-W Lightweight Castable-28. This material is recommended for 2800° service temperature.

For the balance of the ductwork, specifically for the 5'-0" square duct from the recovery kiln to the #1 electrostatic precipitator and from, but not including the electrostatic precipitator, to the stack, we propose to install 4" H-W Lightweight Castable-28 by gunning. Specifications transmitted to us indicate that gunning would not be acceptable, but we have been told verbally that it will be acceptable.

Alternate 1

Based on information given to us verbally to the effect that the heater might operate at 3400°F, we have made some temperature calculations based on the combination of brick and castable outlined above in our Base Proposal. We find that this combination is an interface temperature of 2690°F and a shell temperature of 470°F. We feel, therefore, that this interface temperature places the H-W Lightweight Castable-28 in a marginal position, and Alternate 1 is based on the substitution of Alfrax 57 bubble alumina castable for the backup material in the heater and the round duct to the square duct. This alternate does not cover any other changes; that is, the square duct would still be lined with H-W Lightweight Castable-28, as outlined above.

W

Alfrax 57 Castable is a 3300°F castable, which has a thermal conductivity essentially the same as the H-W Lightweight-28. Therefore, the interface and cold face temperatures would be the same with either material, but the margin of safety with the Alfrax 57 would be greater.

Alternate 2

While the H-W Lightweight Castable-28 proposed for the square duct lining meets the specifications, we are inclined to believe that a more rigid or stronger castable might give longer service. Accordingly, Alternate 2 is based on the substitution of Harcast castable in the square duct. The combination for the heater and round duct remain as outlined in Base Proposal above, namely 4½" Alfrax and Mulfrax plus 3½" H-W Lightweight Castable-28. Harcast castable is manufactured by Harbison-Walker Refractories Company and is recommended for a service temperature of 2800°F. The increase in price for this alternate is indicated under Price, below.

Alternate 3

This alternate is based on the substitution of Harcast ES (extra strength) for 4" lining in the square duct. We have indicated under Price, below, the additional price for this substitution.

Reynolds Metals Company
August 1, 1969
Page 3

GENERAL

We are to be provided adequate working space adjacent to the heater and ducts as well as adequate storage space for materials adjacent to the work area. Others will furnish free to us all utilities of power, water, conveniences for our men, and hook-up and disconnect of our electrical equipment. Our proposal includes furnishing of necessary compressed air for the gunite operation.

Our work is that done by the bricklayers and their helpers only, and all other work shall be performed by others. Specifically, this includes the installation of all stainless steel anchors for the castable refractory and the physical placement of the ductwork itself.

We propose to line the two flanged sections of 48" duct on the ground, and we understand that you will be able to place them in position after they are lined, without any difficulty. Lining on the ground is much more economical to you. Any necessary turning of the two flanged duct sections on the ground will be performed by others.

The heater and ducts are to be turned over to us clean and dry, ready to receive our work without any preliminary preparation work on our part.

OUR BID IS CONDITIONED UPON

Our bid is conditioned upon a five-day work week with one eight-hour shift per day, availability of labor and materials at the time of installation, and projected labor rates effective through the 4th quarter of 1969. Our proposal is further based on present day material costs, which will be protected if an order is placed within one week.

It is understood and agreed that additional compensation shall be paid by you to reflect increases in the cost of labor and materials beyond the dates indicated above, premium pay for overtime deemed necessary for the work, or necessary in order to man the job, cost of lost efficiency due to such overtime work, and the cost of delays or interference in the work not due to our fault.

It is further understood that the heater and all ductwork will be turned over to us simultaneously so that our work may proceed in more than one area at the same time.

EXCLUSIONS

Our proposal includes the State of Texas sales tax on materials, but does not include any local sales or use tax. It is our understanding that there is none.

Our proposal includes the installation of a burner ring, but does not include the material for this burner ring because we do not have any details to indicate what is required. Normally, the burner is supplied by the manufacturer with the burner ring. The burner itself should not be placed on the heater until the refractory lining of the heater is complete.

Reynolds Metals Company
August 1, 1969
Page 4

TIME OF COMPLETION

We estimate that 20 working days would be required to complete the work. Assuming that the work could commence on a Monday, such as August 18, it could be completed in 27 calendar days.

PRICE

Base Proposal

FORTY THOUSAND FIVE HUNDRED THIRTY FIVE DOLLARS.....\$40,535.00

Alternate 1

Add to Base Proposal:

THREE THOUSAND SEVEN HUNDRED THIRTY EIGHT DOLLARS.....+ \$ 3,738.00

Alternate 2

Add to Base Proposal:

ONE THOUSAND SEVEN HUNDRED TWENTY DOLLARS.....+ \$ 1,720.00

Alternate 3

Add to Base Proposal:

ELEVEN THOUSAND ONE HUNDRED FORTY SEVEN DOLLARS.....+ \$11,147.00

We are attaching hereto data sheets on each of the materials referred to above for your use and consideration.

We sincerely appreciate this opportunity to submit our proposal on your requirements, and hope that we may have the pleasure of being of service to you. Please do not hesitate to communicate with us if you have any questions concerning our proposal.

J T THORPE COMPANY


LEE A. KLEEMAN
lak/mw