

SOUTHWESTERN OIL & REFINING COMPANY

CORPUS CHRISTI, TEXAS

September 16, 1964

J. T. Thorpe Corporation
Houston, Texas

Attn: Mr. Collins

Subject: Fireproofing - Vessels

In line with our conversation, we are attaching hereto vessel sketches and UOP Specification #338 as required for subject vessels.

For your information and convenience, we tabulate below vessel number and sketch number of items for consideration in your quotations.

Quotations are to be addressed to H. H. Harding, Purchasing Agent, Southwestern Oil & Refining Company.

It is anticipated that Southwestern Oil & Refining Company will furnish and install the necessary standoff brackets and wire mesh required for the application of your Gunnite material.

8277-301-Rev. 2	Feed Dryers, A-V1A & A-V1B
8277-301-Rev. 6	Acid Storage Drum, A-V3
8277-301-Rev. 3	Acid Mixer-Settler, A-V4
8277-301-Rev. 2	Acid Regenerator, A-V5
8277-301-Rev. 1	Polymer Surge Drum, A-V6
8277-301-Rev. 4	Isostripper Column, A-V7
8277-301-Rev. 3	Depropanizer, A-V10
8277-301-Rev. 2	H.F. Stripper Column, A-V12
8277-301-Rev. 2	Propane KOH Treater, A-V13
8277-301-Rev. 1	Relief Gas Scrubber A-V15, Relief Header A-V14
8277-301-Rev. 1	Butane KOH Treater, A-V17

UOP Spec. 338, Rev. 1 June 29, 1962 - Fireproofing

Very truly yours,

Doyle Williams

Construction Project Engineer

DW:ph

cc: H. H. Harding



THORPE PRODUCTS COMPANY
DIVISION OF J T THORPE COMPANY

DISTRIBUTORS OF INDUSTRIAL INSULATION

P. O. BOX 33399

644-2391

HOUSTON, TEXAS 77033

July 28, 1972

Mr. Pat Griffin
MONSANTO COMPANY
P. O. Box 711
Alvin, Texas 77511

Subject: OSHA Asbestos Dust Standard
Effective July 7th, 1972

Thorpe has had many requests for information regarding compliance with these new standards and in regard to asbestos containing insulating materials which we are furnishing to industry.

This letter is to make available to you our latest information and to offer any assistance possible where and when needed to assist you in compliance.

Attached is a copy of a news release from the U. S. Department of Labor which summarizes this new standard.

Also attached is a listing by type of material stocked or fabricated by Thorpe. Those having dry asbestos as a component are marked with an asterisk. Those most commonly used by industry are those included under Class I - Calcium Silicate and High Temperature Insulation.

We have taken steps to eliminate asbestos from all products which we stock and fabricate. By January 1st, 1973, we expect to have a new pipe covering produced by Johns-Manville which will have the same or better properties as Thermobestos but will contain no Asbestos or free Silica.

Until we have this new product we offer the following suggestions for compliance:

- (I.) Eliminate all field fabrication of Asbestos products. When frequent removal of insulation is required, Thorpe can furnish prefabricated Thermobestos covers or completely encapsulated removable metal covers.

continued

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Elbows can be insulated by the use of:

- A. Prefabricated or factory molded covers
- B. Aluminum covers filled with asbestos free insulating cement
- C. Zeston PVC covers with 1000° Fiberglas filler
- D. Zeston PVC covers with asbestos free insulating cement

II. Where cutting is required, the use of a respirator such as Safe-line Products No. 5441 Mask with No. 5905 Filter or any respirator carrying the U. S. Bureau of Mines Approval No. 21B-81.

III. Use substitute materials containing no asbestos as follows:

- A. Microlok Fiberglass Pipe Covering to 500° F
- B. Mineral Fiber Pipe Covering to 1200° F
- C. Ceramic Fiber to 2300° F

Thorpe is currently monitoring its operation with the use of Micronair Personnel Air Samplers Catalog No. 3900-10 as produced by the Bendix Corporation and carrying OSHA Approval No. 1A-102. Dust analysis can be made by Shilstone Testing Laboratories, Houston, Texas.

We have made extensive provisions for dust collection in our warehouses and fabrication facilities. Our cutting equipment have the most effective collection attachments that we can obtain. You are welcome to visit our Houston facility at any time. Arrangements can be made through the writer.

CAUTION: When considering Asbestos Free products, be sure also that they contain no Free Silica. Manufacturers will generally offer this information in writing.

The enclosed information is fragmentary. Please call us for additional information or assistance. Copies are available for your Safety Department or person responsible for OSHA compliance.

We appreciate your business and hope that the enclosed information will be beneficial to you and will help us earn your continued trust and confidence in our services.

THORPE PRODUCTS COMPANY



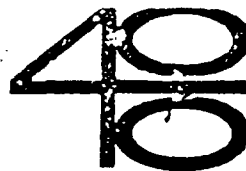
M. P. Proctor

MPP:pb

Enclosure

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January 1972

FORTY-EIGHT QUIK-SET CEMENT

QUIK-SET CEMENT is a one coat, hydraulic-setting, high temperature bonding cement that insulates and trowels or palms to a smooth, hard, white finish. QUIK-SET CEMENT is a dry mixture of high temperature fibers and a combination of adhesive bonding and hydraulic-setting binders and contains no asbestos. QUIK-SET CEMENT combines the high temperature resistance and excellent insulating qualities of uniformly nodulated mineral fibers with the high strength, low shrinkage and smooth finish of hydraulic-setting cement. After mixing with water, it will remain workable for up to two hours. QUIK-SET CEMENT takes a green set in two to four hours and will then withstand effects of rain or moisture without softening. Initial troweling produces a satisfactorily white surface. Subsequent steel troweling within 30 minutes after application will give a superior surface with a bright, attractive glaze.

QUIK-SET CEMENT is designed for use on valves, fittings and heated equipment, or as an insulating finish over other insulations. Outside applications must be protected with an appropriate weatherproofing.

THERMAL CONDUCTIVITY

MEAN TEMPERATURE	K-FACTOR
200°F	.60
400°F	.70
600°F	.80
800°F	.96

SERVICE TEMPERATURE: Up to 1200°F.

DENSITY: 40 lbs. per cubic foot.

COVERAGE: 30 sq. ft., 1" thick per 100 lbs.

INITIAL SET: Approximately 2 hrs.
after application.

ADHESION: Good.

WEATHER RESISTANCE: Will not soften
after initial set.

SHRINKAGE: Negligible.

LEACHABLE CHLORIDES: Less than 25 ppm.

SPECIFICATIONS: Federal: MIL-C-2908A, Type II
MIL-I-24244(SHIPS)
SS-C-160, Type III, Grade F
A.S.T.M.: C-449

PACKAGING: Packaged in moistureproof multiwall bags of 50 lbs. for longer warehouse storage life and additional on-site quality protection.

Values shown are subject to our normal manufacturing and testing methods and tolerances.



THORPE PRODUCTS COMPANY

DIVISION OF J T THORPE COMPANY

DISTRIBUTORS OF INDUSTRIAL INSULATION

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HOUSTON, TEXAS 77033

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Until we have this new product we offer the following suggestions for compliance:

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Thorpe is currently monitoring its operation with the use of Micronair Personnel Air Samplers Catalog No. 3900-10 as produced by the Bendix Corporation and carrying OSHA Approval No. 1A-102. Dust analysis can be made by Shilstone Testing Laboratories, Houston, Texas.

We have made extensive provisions for dust collection in our warehouses and fabrication facilities. Our cutting equipment have the most effective collection attachments that we can obtain. You are welcome to visit our Houston facility at any time. Arrangements can be made through the writer.

CAUTION: When considering Asbestos Free products, be sure also that they contain no Free Silica. Manufacturers will generally offer this information in writing.

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We appreciate your business and hope that the enclosed information will be beneficial to you and will help us earn your continued trust and confidence in our services.

THORPE PRODUCTS COMPANY



M. P. Proctor

MPP:pb

Enclosure

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THORPE PRODUCTS COMPANY

HOUSTON

DALLAS

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THE FOLLOWING IS A LISTING BY TYPE OF INSULATING MATERIALS STOCKED OR
FABRICATED BY THORPE

I. CALCIUM SILICATE AND HIGH TEMPERATURE INSULATIONS

- A. Thermobestos - Pipe Covering and Block *
- B. Metal-On Pipe Insulation *
- C. Superex Block

II. FIBERGLASS INSULATIONS

- A. Micro-Lok Pipe Insulation (snap-on)
- B. Microlite Blanket
- C. Duct Liner - Lina Coustic

III. MINERAL WOOL

- A. Spinglas 1000° Blanket
- B. #10 Blanket
- C. Griptex Block
- D. MF Pipe Covering
- E. Minibond - Stress Relieving Blanket
- F. Cerafelt
- G. Cerafiber

IV. FOAM INSULATIONS

- A. Urethane - Pipe Covering and Block
- B. T-Foam - Two Component Pour Urethane
- C. Styrofoam
- D. Ceramic Foam

V. UNDERGROUND INSULATION

- A. Witcolite
- B. Trisulite

VI. CELLULAR GLASS INSULATION

- A. Foamglas - Pipe Covering and Block

VII. INSULATION ACCESSORIES

- A. Cements
 - 1. 48 Insulation, Inc.
 - a. Quik Set (One Coat) 1000° Temp.
 - b. Super 48 1800° Temp.
 - 2. Johns Manville
 - a. 352 Cement *

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Continued

7/1/72 - Page 1 of 3

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FORTY48 EIGHT SUPER "48" CEMENT

SUPER "48" CEMENT is an all purpose, high temperature insulating and bonding cement for the full range of temperatures to 1800°F. It is manufactured from a controlled blend of resilient, 1600°F refractory fibers and special high temperature binders. SUPER "48" CEMENT contains no asbestos, is actively rust-inhibitive and will not cause or accelerate corrosion when properly applied to iron or steel surfaces. SUPER "48" has exceptional bonding adhesion, trowels smooth, has minimum shrinkage, and maximum thermal efficiency. Not hydraulic-setting, it is reclaimable at temperatures up to 1200°F. Simply re-mix with clean water and use again.

SUPER "48" is recommended for use on irregular surfaces, general insulating and maintenance work, ducts, breeching, turbines, valves, fittings, or as a leveling material over other insulations. Application subjected to outside weathering must be protected.

THERMAL CONDUCTIVITY

MEAN TEMPERATURE	K-FACTOR
200°F	.585
400°F	.64
600°F	.73
800°F	.85

RECOMMENDED THICKNESSES:

<u>Hot Face</u>	<u>Thickness</u>	<u>Hot Face</u>	<u>Thickness</u>
200°F	1"	750°F	2½"
350°F	1½"	950°F	3"
550°F	2"	1200°F	4"

SERVICE TEMPERATURE: Up to 1800°F.

DRY COVERAGE: 45-50 sq. ft. 1" thick
per 100 lbs.

INSTALLED DENSITY: Approx. 28 lbs.
per cubic foot.

VOLUMETRIC SHRINKAGE: (Wet to dry)
Approx. 15%.

CORROSION TO STEEL: Non-corrosive.

LEACHABLE CHLORIDES: Less than
25 ppm.

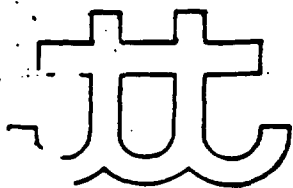
SPECIFICATIONS: Federal: HH-C-168
SS-C-160, Type III, Grade U
MIL-C-2861D; MIL-I-24244(SHIPS)
A.S.T.M.: C-195

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PACKAGING: Strong, multiwall bags of 50 pounds.

6002342

EXHIBIT “I”



THORPE



OFFICE CORRESPONDENCE

FROM M. P. Proctor

DATE November 10, 1972

TO Board of Directors
J T THORPE COMPANY

SUBJECT Proposed OSHA Compliance
Procedure for Thorpe Products
Company Asbestos Dust

We are setting out below steps that have been taken and proposed methods for future compliance with current OSHA Asbestos Dust Standards.

Standard effective July 7, 1972

The 8 hour time-weighted average airborne concentration of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than 5 micrometers, per cubic centimeter of air.

METHODS OF COMPLIANCE

I. Engineering Controls

Our fabrication shop has an effective dust collection system carefully maintained. In addition, we have added booster collectors to saws which cut asbestos containing materials.

The warehouse floors are vacuumed daily to remove loose fibers. Rail cars are vacuumed periodically as they are being unloaded. Delivery vans are vacuumed daily.

II. Personal Protective Equipment

A. Air purifying respirators

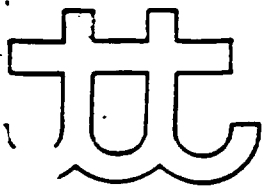
Approved respirators are provided each warehouse and shop employee. These are carried during working hours. They are worn when the following duties are performed and when Engineering Controls are not possible.

1. Unloading or loading rail cars.
2. Unloading or loading delivery vehicles.
3. Repackaging
4. Cutting

NOTE:

Wearing of respirators will be required until we have documentary proof of compliance.

continued.....



THORPE

OFFICE CORRESPONDENCE



FROM

DATE

TO

SUBJECT

Page 2

II. Personal Protective Equipment (Cont'd)

- B. Special Clothing - Does not apply.
- C. Change Rooms - Does not apply.
- D. Laundering - Does not apply.

NOTE:

B, C & D not required unless exposure limits are exceeded.

III. Monitoring

A. Personal monitoring

We have purchased a Micronaire air sampler No. 3900-10 produced by the Bendix Corporation and carrying OSHA Approval No. 1A-102. Dust collection Filters are as produced by Millipore Corporation Aerosol Cat. No. MAWP 037A0. An Aerosol Adapter No. XX6200004 is necessary for use with the Micronaire sampler.

Personal samples will be taken from those employees exposed to asbestos materials. Sampling frequency will be at least once each six months.

B. Environmental monitoring

Same as for personal monitoring but sampler will remain stationary at work station for full eight hours. All work stations with asbestos exposure will be monitored at least once each six months.

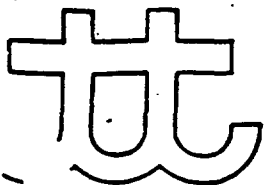
NOTE:

Dust Analysis will be done by J-M Industrial Hygiene Engineering Services Division.

IV. Caution Labeling

- A. Repackaging and Fabricated Materials are marked with Caution label containing exact label specifications as set out in OSHA Standard.

continued.....



THORPE



OFFICE CORRESPONDENCE

FROM

DATE

TO

SUBJECT

Page 3

IV. Caution Labeling (Cont'd)

- B. Waste Disposal - all waste is sealed in impermeable bags and tagged with caution label.

V. Record Keeping

- A. All monitoring records will be maintained for a period of three years.
- B. Each employee will have access to his personal record upon request.
- C. Any employee found to be in excess of exposure limits will be notified in writing within 5 days of the finding.

VI. Medical Examinations

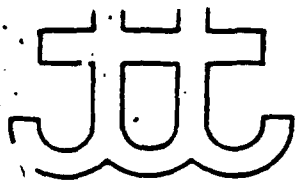
- A. Each warehouse and shop employee exposed to asbestos dust will be given a medical examination in accordance with OSHA requirements prior to January 31st, 1973 and annually thereafter.
- B. New employees will be examined within 30 days of employment.
- C. A medical examination will be made available to any employee within 30 days of termination.
- D. Medical records will be maintained for 20 years.
- E. Access to these records will be available to OSHA, NIOSH and to the employee or former employee.

Comment:

We believe that we have taken steps as required by the law and in some instances beyond those required by the law to insure that our employees have a healthy atmosphere in which to work.

We believe that we are in full compliance with the law and have no dust exposures which exceed the standard. We will prove this with monitoring and our first complete analysis will be available prior to January 6th, 1973.

continued.....



T H O R P E

OFFICE CORRESPONDENCE



FROM

DATE

TO

SUBJECT

Page 4

The obvious long term solution is to eliminate asbestos fiber containing materials from our warehouses. We expect to do this by December, 1973. ✓

THORPE PRODUCTS COMPANY

M. P. Proctor

MPP:pb

EXHIBIT “J”

J T THORPE COMPANY

ENGINEERS - CONSTRUCTORS

REFRACTORY, INSULATED AND ACID PROOF STRUCTURES

P. O. BOX 33399 (713) 644-1247 HOUSTON, TEXAS 77033

November 16, 1972

Mr. F. C. Sheldon, Jr., Director
Board of Directors
J T Thorpe Company
6833 Kirbyville Street
Houston, Texas

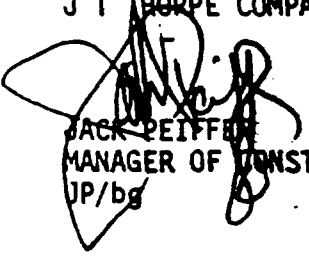
PROGRESS REPORT ON IMPLEMENTATION OF 1971 FEDERAL OCCUPATIONAL SAFETY & HEALTH ACT

At the request of Mr. F. C. Sheldon, Jr., a report has been prepared to outline our efforts thus far to comply with the Federal Occupational Safety & Health Act of 1971, and the work remaining to be done in this area.

The attached report is in four parts. The first outlines in general the major areas of impact of the law on J T Thorpe Company's contract operations. This is followed by our overall plan for implementation of the law and the steps we have taken thus far. Finally, we have outlined the work remaining to be done with particular emphasis of the year 1973.

Please advise if you have any specific questions on the foregoing, or wish to have any additional specific information.

J T THORPE COMPANY



JACK PEIFFER
MANAGER OF CONSTRUCTION
JP/bg

PROGRESS REPORT
IMPLEMENTATION OF 1971 FEDERAL OCCUPATIONAL SAFETY & HEALTH ACT
IN
J T THORPE COMPANY CONTRACT OPERATIONS

NOVEMBER, 1972

I. Major Areas of Impact

Physical Facilities

Jobsite Practices

Field Labor Productivity

Contract Profitability & Estimating Procedures

Type of Work & Materials Used

As you are aware, OSHA announced two programs at the outset, a target industries program and a target health hazards program.

The target industries program was to concern itself with the five top injury prone industries; longshoring, roofing and sheetmetal, meat and wood products, lumber and wood products, and miscellaneous transportation equipment. We, of course, perform sheetmetal work although probably not in the sense that OSHA was zeroing in on.

Their target health hazards program included lead, carbon monoxide, silica, asbestos and cotton dust. We, of course, are very much involved in the asbestos problem as has previously been outlined to you Mr. M. P. Proctor in his compliance procedures for Thorpe Products Company. In addition, certain of our operations put us in direct contact with the silica health hazard. In the very near future, we will be developing a detailed program to combat these latter two hazards in our field operations on a broad scale. We also anticipate the construction industry will become one of OSHA'S prime targets in the very near future.

The potential impact of the law is so great, it is difficult or nearly impossible to instantaneously implement all aspects of the law. Accordingly, our approach has been to make a beginning on a broad basis, correct immediate and obvious violations of the Act, undertake an educational program for our employees, and develop a plan for the longrange.

Mentioned above were five areas of our activities where we anticipate significant change or effects due to the new Law. Physical facilities are the most obvious and the most easily inspected, and certain efforts and expenditures have been and will be undertaken to bring our warehouses and offices into compliance with the Law. As time progresses, and the Act becomes fully implemented in the construction industry, certain practices that have prevailed in the past on construction jobs will no longer be permitted, as indeed some of our past practices have already been changed or prohibited. Hand-in-hand with this implementation of the Law, will be a potential affect on field labor productivity. In some instances, productivity may actually increase due to improved working conditions. However, the effort and expense required to bring about this condition may adversely affect contract profitability. To account for this eventuality, we will need to maintain a close watch over contract costs and possibly modify our estimating

Procedures to account for this impact. You are certainly aware of the asbestos problem, and thus the materials we use in our work will be affected, and we may even need to reconsider the types of work we are now engaged in. On the brighter side of this picture, we feel companies such as Thorpe that are intending fully to comply with the law and are cognizant of its requirements, will have their services in greater demand in the coming years.

II. Overall Plan For Implementation Of The Law In Thorpe Contract Operations.

Our plan to implement compliance can be simply stated: Comply with the Law in all aspects. However, as mentioned previously, the scope of the law is so broad and its effects so far reaching, that it is virtually impossible for a company of our size to effect overnight total compliance. Accordingly, we have pursued a rather informal plan thus far which has consisted of taking the immediate necessary steps to bring about compliance in our operations, particularly in areas that have been well publicized and are the more obvious items. For the longer range, we are beginning to develop specific policies in certain areas such as environmental testing, personnel training, and facilities modifications. Also required will be reminders of the importance of certain items which need to be followed on a day-to-day basis, and tend to be forgotten with the passage of time. As we continue to approach complete compliance

with the existing law, we will also need to implement the new standards as promulgated by the Federal Government and State Agencies.

One of the most publicized problems with the new law has been the difficulty of small companies, and companies the size of Thorpe to familiarize themselves with the many facets of the law and bring about compliance. We feel this is a very real problem and have exerted considerable effort toward this end. Where the real problem exists in our organization to a greater degree is in our branch office locations and subsidiary company locations. To combat this problem, we will endeavor to keep the supervisory personnel in those locations abreast of new developments and policies as they are available.

III. Actions Taken To Date To Bring About Compliance With The Law

This section of our report will consist of a listing of most of the more significant things done thus far, with a following elaboration on certain items and examples.

1. Program of Memorandums
2. Supervisors Meeting
3. Review of physical facilities

September 16, 1964

J. T. Thorpe Corporation
Houston, Texas

Attn: Mr. Collins

Subject: Fireproofing - Vessels

In line with our conversation, we are attaching hereto vessel sketches and UOP Specification #338 as required for subject vessels.

For your information and convenience, we tabulate below vessel number and sketch number of items for consideration in your quotations.

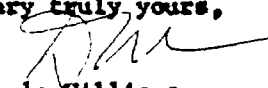
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UOP Spec. 338, Rev. 1 June 29, 1962 - Fireproofing

Very truly yours,


Doyle Williams,
Construction Project Engineer

DW:ph
cc: H. H. Harding

UOP SPECIFICATION 338

REV. 1 JUNE 29, 1962

FIREPROOFING

PROPRIETARY CEMENT
MANUAL APPLICATION



UNIVERSAL OIL PRODUCTS COMPANY
DES PLAINES, ILLINOIS, U.S.A.

I. GENERAL

A. SCOPE

1. This specification is for manually applied light weight, hydraulic setting proprietary fireproofing cement on steel supports for process equipment and piping in hydrocarbon service.
2. The thickness of fireproofing shall be suitable for a 3 hour fire resistance rating.

B. REFERENCES (Latest Editions)

1. ASTM Specifications.
2. AWS-ASTM Joint Specifications for Welding Electrodes.

II. REQUIREMENTS

A. STRUCTURAL STEEL

1. All structural steelwork, including all bracing, supporting process equipment within the battery limits shall be completely fireproofed up to a minimum height of 35' above grade.
2. Platform, runway or stairway supports need not be fireproofed.
3. Structures outside the battery limits shall be fireproofed as above if any adjacent process equipment would be endangered by the failure of the equipment supported.

B. PIPE RACKS

1. Pipe rack bents supporting process piping within the battery limits shall be completely fireproofed except for the top flange of pipe bearing beams and knee braces. (The use of knee braces shall be minimized).
2. Pipe rack bents outside the battery limits need be fireproofed as above only if adjacent to process equipment.

C. EQUIPMENT SUPPORTS

1. All lugs, brackets and legs supporting process equipment located within the battery limits and below a minimum height of 35' shall be completely fireproofed.
2. Saddles supporting process equipment and measuring more than 1' in height at their lowest points shall be fireproofed within the above limits.
3. The outside of skirts supporting process vessels shall be fireproofed within the above limits.

4. The inside of skirts over 4'-0" in diameter and the bottom heads of uninsulated vessels on skirts over 4'-0" in diameter shall also be fireproofed within the above limits.
5. The inside of skirts 4'-0" or less in diameter and the bottom heads of uninsulated vessels on skirts 4'-0" or less in diameter shall be fireproofed within the above limits only when access opening in skirt is over 16" in diameter or when there is more than one access opening.
6. Skirts on process vessels with a design temperature of 850°F. or over which require insulation to maintain a temperature gradient shall be fireproofed on the uninsulated portions only.

D. HEATERS

1. Main supports and bracing on fired heaters in all locations shall be fireproofed up to the firing floor level.
2. Members supporting heavy convection tube banks or stacks shall also be fireproofed when construction permits.
3. For UOP type heaters where casing plate extends to the foundation near grade, no fireproofing is required.

III ANCHORS

A. MATERIALS

1. 3/8" rib metal lath, 3.4 lbs. per sq. yd., painted.
2. 26 gage galvanized steel expansion corner beads (2-5/8" wing).
3. 1/4" diameter reinforcing bars in accordance with ASTM Specification A 15, intermediate grade.
4. Galvanized electric welded wire fabric beam wrapper, 2" x 2" x 12 gage x 12 gage.
5. 16 gage soft galvanized wire.
6. 3/4" steel nuts, square or hexagonal.
7. Covered welding electrodes in accordance with Joint Specification AWS A5.1, ASTM A 233, Classification E60XX-15 or E60XX-16.

B. PREPARATION

1. Steel surfaces covered by the rib lath are to be painted.
2. All surfaces to be in contact with the fireproofing cement shall be cleaned of all oil, loose rust or mill scale and other foreign matter by wire brushing or by sandblasting.

C. INSTALLATION

1. Attach the rib lath firmly in place on structural steel members as shown in Fig. 338-1. Exposed ends of members shall also be covered with rib lath securely tied.
2. Attach the beam wrapper firmly in place on vessel skirts and other equipment supports as shown in Fig. 338-2. The beam wrapper shall be tied to the nuts so that it is held $3/4$ " to 1" from the face of support.

IV. APPLICATION

A. MATERIALS

1. Fireproofing cement shall be a proprietary formulation of high temperature aggregates, fibers and hydraulic binders, blended to a uniform dry mixture that is ready for application after mixing with water. It shall provide a hard, durable, weather resistant and light weight fire-retardant covering for steel supports, be able to withstand high pressure water streams and have a continuous service rating of 2000°F. It shall have a 3 hour classification for $1-3/4$ " thickness applied as outlined in this specification, confirmed by tests made in accordance with ASTM Specification E 119 and certified by Underwriters Laboratories, Inc.
2. Water shall be fresh, clean and cool.
3. Weatherproof coating consisting of a fibrated mastic material in ready mixed form, non-flammable when cured, durable under extreme weather conditions and suitable for temperatures to 250°F.

B. MIXING

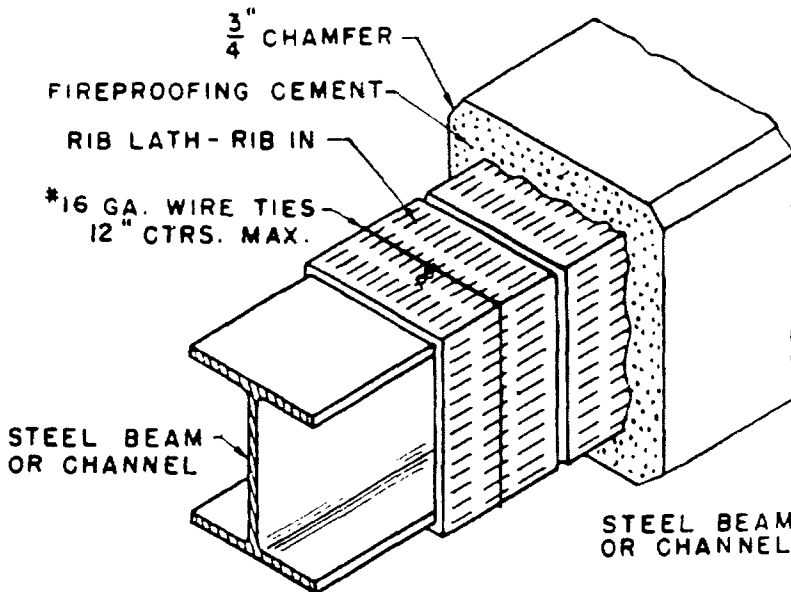
1. Thoroughly mix the proprietary cement with water in proportions recommended by the supplier. Mixing time shall not exceed that recommended by the supplier.
2. Do not mix more cement than can be applied in 2 hours, or in a lesser time if recommended by the supplier.
3. Do not mix cement at temperatures under 40°F or when the temperature may be expected to fall below 40°F within 8 hours after application.

C. PLACING

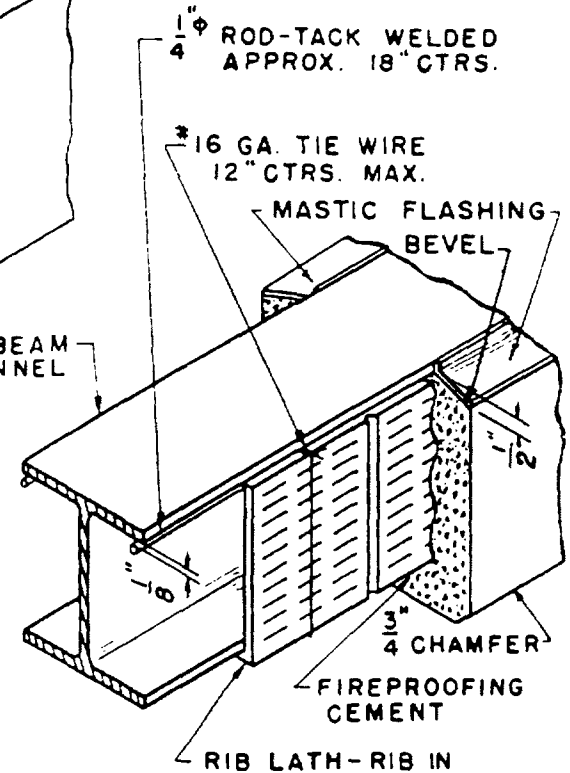
1. For structural beams and angles, trowel the cement mixture thoroughly into the rib lath for good anchorage, and build the cement up to a full $1-3/4$ " coverage over the rib lath as the work progresses to avoid laminations. Use a screed so that the minimum thickness is obtained, trowel the surfaces and chamfer the corners uniformly.

2. For structural columns, apply a first coat approximately $3/4$ " thick, troweling the cement thoroughly into the rib lath for good anchorage. Scratch the entire surface and allow to set for 8 hours or more. Support and hold the corner beads away from the first coat by gobs of cement spaced about 2' centers and tie them securely as indicated in Fig. 338-1 so as to obtain a $1-3/4$ " minimum coverage of the lath. Fill the space between the wings with cement by hand, and trowel the final coat flush with the beads as the filling progresses. The upper portion of tall columns may be covered in the same manner as beams above the 8' elevation measured from finished grade.
3. For vessel skirts, trowel the cement into the wire fabric to full contact with the steel surface. Build the cement up to the full 2" thickness as the application progresses, starting at the bottom and spiraling upward to completion without undue interruption. Trowel to a uniform surface; no further finishing is required.
4. Unless specified by the cement manufacturer, the curing of the cement by continuous wetting is not required for applications up to 2" thick. Under normal drying conditions allow 3 days for firm setting and drying.
5. The top edges of the fireproofing shall be flashed with a mastic weatherproof coating when not otherwise shielded.

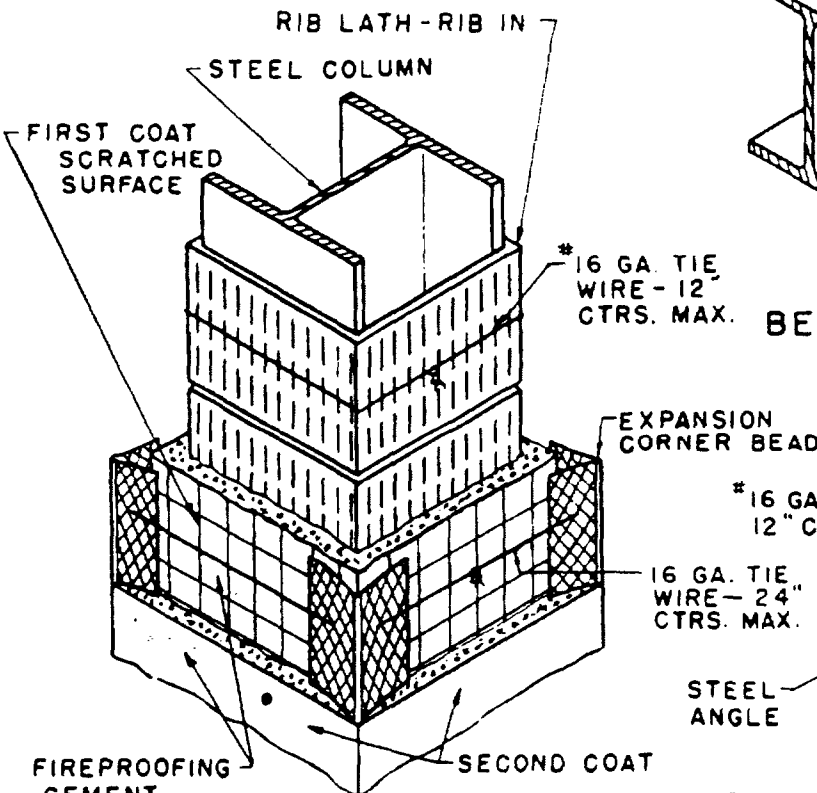
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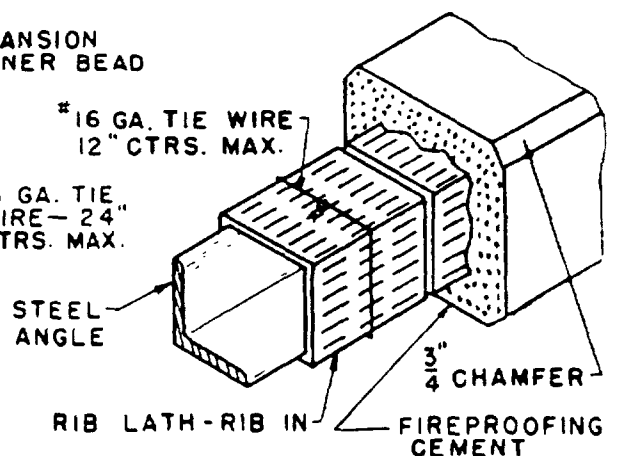
BEAM DETAIL



BEAM DETAIL-TOP BARE



COLUMN DETAIL



ANGLE DETAIL

NOTE: MINIMUM COVERAGE OF ALL RIB LATH
SHALL BE 1-3/4" OF FIREPROOFING CEMENT

FIG. 338-1 FIREPROOFING DETAILS
FOR STEEL STRUCTURES

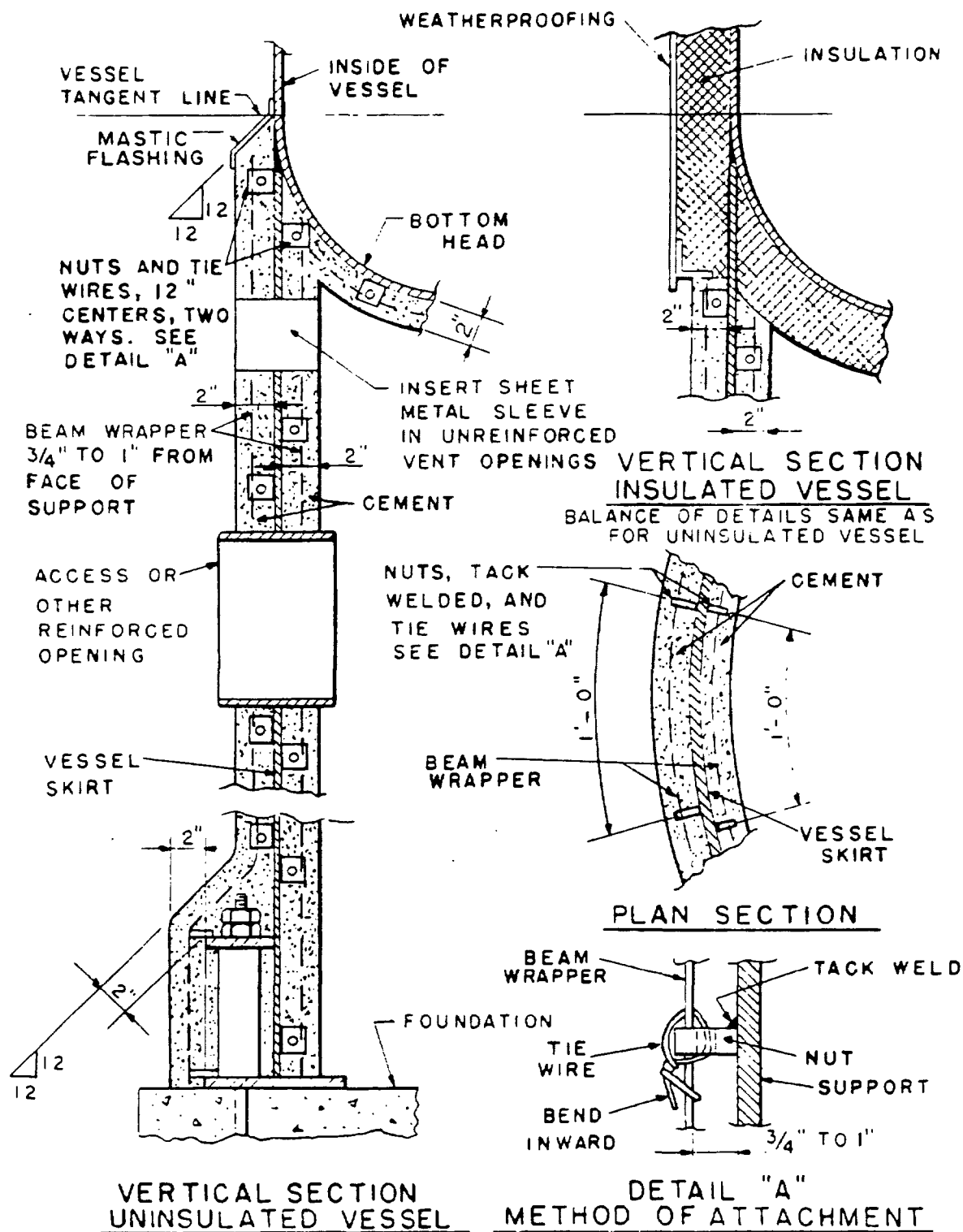


FIG. 338-2 FIREPROOFING DETAILS
FOR VESSEL SKIRTS

9/28/64

DB

Job 1976 - Gen

Per conv. w/ Doyle William @ SW Ref.
This Am. job will be ready to start
about 10/12/64 - William said
he'd ck Air Available in meantime
but didn't think plant Air in Area
was sufficient for our needs -

J P

FCS - 15
IDS - TB
WNC -

8/31/64

PC 512
TV 48863

Southwestern Refining Prospect - Corpus

Dutch called today to inform that he had gotten his first job from SW Ref., about \$15,000 for tower insulation.

They also have a large skirt F.P. job coming up. Dutch said Mr. Doyle Williams @ SW Ref. had some info. on Attachments for F.P. & I called him some info. on crimped rods and Nelson studs - type mesh etc.

This will be a sizeable job I would + & according to Williams calls for SM insulating cement. He talked like they would just have us come do job. I have Disc. this w/ WNC & think he should go see Williams.

JSP

UNIVERSAL OIL PRODUCTS COMPANY

30 ALGONQUIN ROAD



DES PLAINES, ILLINOIS, U.S.A.

PROJECT SPECIFICATION VESSELS

NO.

REV.

8277 - 301 - 2

SHEET 2 OF

BY MUNSON, APP'D

DATE

NAME OF VESSEL: FEED DRYER (TWO REQ'D) ITEM A-VI-A & A-VI-B

CODE	ASME	SEC. VIII
DESIGN SPEC.	250	REV. 11
DESIGN	250	PSI @ 150°F
		PSI @ 70°F
		PSI @ 0°F
SHORT HYDROSTATIC TEST	375	PSI
RADIOGRAPH	50%	
STRESS RELIEF	400	°F, 85%
MATERIAL	ASME	
SPEC.	NO. & GRADE	QUALITY
HEADS	A-212-B	FB
SHELL	A-212-B	FB

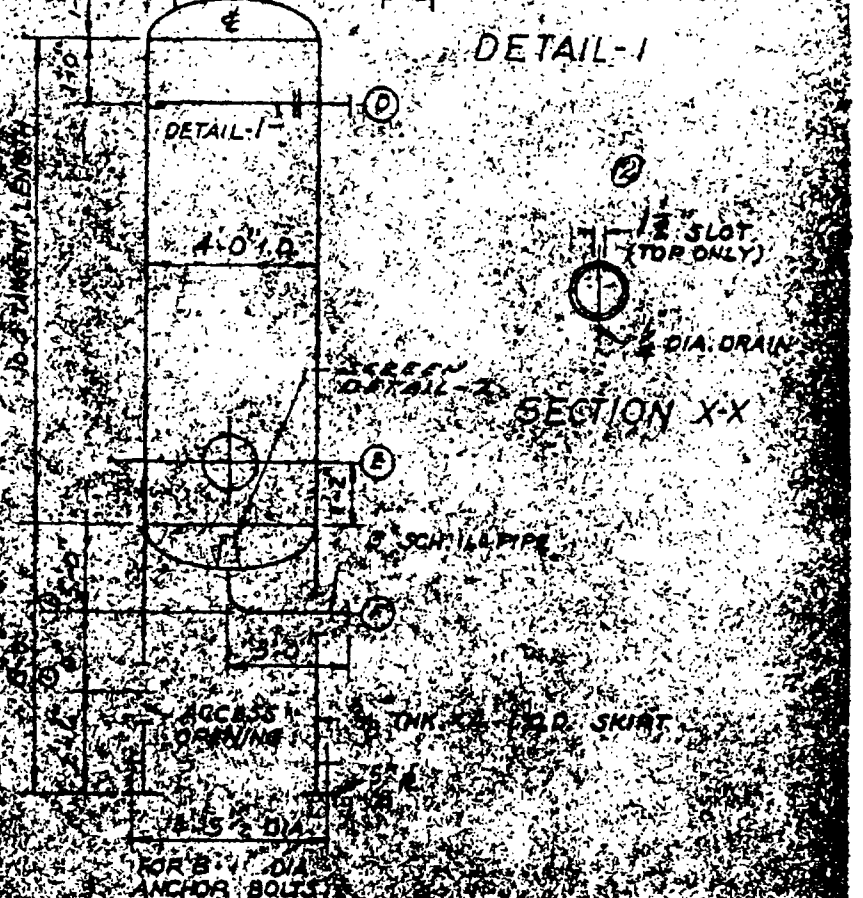
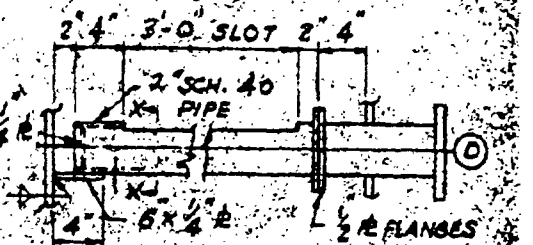
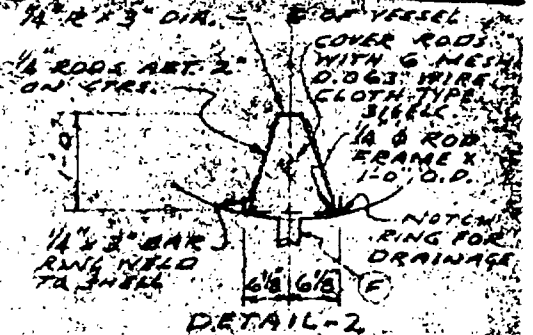
SHELL	TOTAL THICKNESS INCHES	CORROSION ALLOWANCE INCHES
	2.15	1.65
HEADS TYPE		
ELLIP.	5/16	1/16

ACCESSORIES APPLIED BY FABRICATOR
LADDER & PLATFORM CLIPS: YES
INSULATION CLIPS: YES
DAVIS SUPPORT: YES

NOZZLES	MARKING	RATING	FLANGE	SERVICE
A	1/2"	1500	RF	HEAVY
B	1/2"	1500	RF	VENT
C	1/2"	1500	RF	HEAVY
D	1/2"	1500	RF	HEAVY
E	1/2"	1500	RF	HEAVY

Head thicknesses are minimum.
Elliptical heads are 2" thick.

F.P. N. 1000
(2 focus)



DETAIL-1: 1/2\"/>

UNIVERSAL OIL PRODUCTS COMPANY

30 ALGONQUIN ROAD



DES PLAINES, ILLINOIS, U. S. A.

NO. REV.

8277 - 301-6 ✓

SHEET 3 OF

BY APP'D

DATE

PROJECT SPECIFICATION VESSELS

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NAME OF VESSEL ACID STORAGE DRUM

ITEM A-43

CODE ASME SEC VIII

UOP SPEC. 250 REV. 11

DESIGN TEMP. 150 TOP PSI @ 150 °F.

EX. 15 PSI @ 150 °F.

SHOP HYDROSTATIC TEST 355 PSI

RADIOGRAPH FULL X

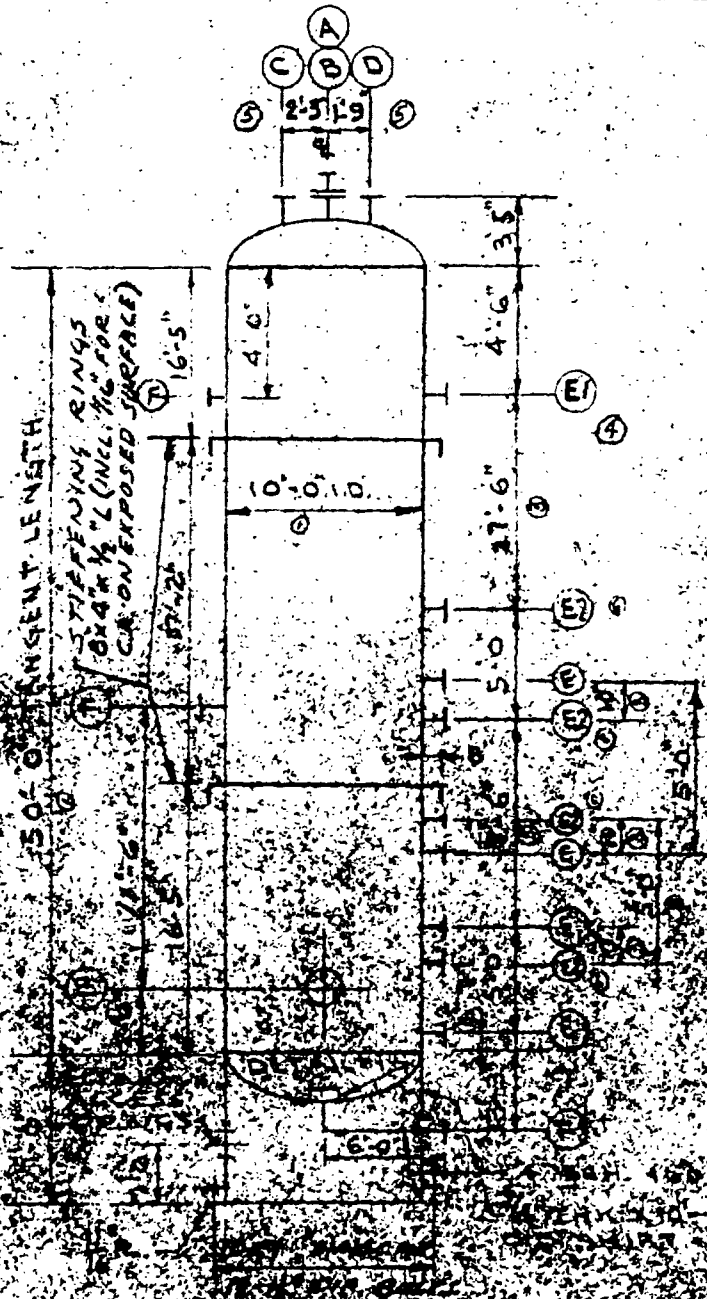
STRESS RELIEF 100% EFF. 100%

MATERIAL SPEC. ASTM

NO. & GRADE QUALITY

HEADS A 212-B FB

SHELL A 212-B FB



Head thicknesses are minimum
Elliptical heads are 2:1 ratio.
Field legs - gauge at juncture
of bottom head and shell.
Corrosion allowances and total
thicknesses include any cladding
or applied alloy lining.
Wind
Seismic Factor 5
REQUIRED FOR PROCESS

NOTE: THIS DRAWING IS A PRELIMINARY SHEET
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