

LUMMUS NEDERLAND B.V.

JN 6877

Petrosul  
Sines, Refinery

M-101

ENGINEERING SPECIFICATION  
FOR  
FIREPROOFING

CODE OF ACCOUNTS CLASSIFICATION - MA

Rev. 0 - "Approved for Construction" - 22-2-1973

ADDENDUM L5377V-BES-1700-2		Procon Technip
REVISION	DESCRIPTION	DATE
0	ISSUED.	
1	ADDENDUM INDEX SHEET AND PAGE NO. 2 REVISED	20.5.74 8.7.74
2	ADDENDUM INDEX SHEET AND PAGE NO. 2 REVISED.	19.7.74

## INDEX FOR ADDENDUM NO. L5377V-BES-1700-2

PAGE	ADDENDUM REVISION DESCRIPTION	LATEST REV	DATE
1	Index	2	19.7.7
2	Para IIC Added.	2	19.7.7

Form 3926 Rev A 5/74

**Procon-Technip**

PETROSUL · SINES REFINERY · PORTUGAL

ADDENDUM NO. L5377V-BES-1700-2

ADDENDUM TO LUMMUS NETHERLAND B.V. SPEC. M-101  
ENGINEERING SPECIFICATION FOR FIREPROOFING

1. Para 2.0.  
Substitute:  
"Drg. No. L5377V.HGS-1700-005" for UOP Specification 360.
2. Para 3.0.  
Delete Clause 3.1.  
Add:  
"U.O.P. specification 360 modified to incorporate metric conversions and compliance with Portuguese codes of practice."
3. Para III. C1 and C2.  
Substitute:  
"L5377V.HGS-1700-005" for "L5377VPG-16-1".
4. Para II C.  
Add:  
7. Sphere legs shall be fireproofed.

1. GENERAL

A. SCOPE

1. This specification is for manually or pneumatically applied portland cement concrete fireproofing on steel supports for process equipment and piping in hydrocarbon service.
2. 50mm thickness of fireproofing is suitable for a three hour fire resistance rating.

B. REFERENCES (Latest Editions)

Reglamento de Estructuras de Aço Para Edificios.

11. 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 10.6m 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 10.6m shall be completely fireproofed.
2. Saddles supporting process equipment and measuring more than 300mm 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 1220mm in diameter and the bottom heads of uninsulated vessels on skirts over 1220mm in diameter shall also be fireproofed within the above limits.
5. The inside of skirts 1220mm or less in diameter and the bottom heads of insulated vessels on skirts 1220mm or less in diameter shall be fireproofed within the above limits only when access opening in skirt is over 406mm in diameter or when there is more than one access opening.

6. Skirts on process vessels with a design temperature of 457°C 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.

111. ANCHORAGE

A. MATERIALS

1. Galvanized electric welded wire fabric beam wrapper, 50mm x 50mm x 2.5mm
2. 1.5mm soft galvanized wire.
3. 20mm steel nuts, square or hexagonal.
4. Welding Electrodes to "Regulamento de Estruturas de Aço Para Edifícios

B. PREPARATION

1. Steel surfaces to be fireproofed are not to be painted.
2. All surfaces to be in contact with the fireproofing concrete shall be cleaned of all oil, loose rust or mild scale and other foreign matter by wire brushing or by sandblasting.

C. INSTALLATION

1. Attach the beam wrapper firmly in place on structural steel members as shown in Drg. No. L5377V PG-16-1. Exposed ends of members shall also be covered with beam wrapper securely tied.
2. Attach the beam wrapper firmly in place on vessel skirts and other equipment supports as shown in Drg. No. L5377V PG-16-1. The beam wrapper shall be tied to the nuts so that it is held 20mm to 25mm from the face of support.