

PROCON (GREAT BRITAIN) LIMITED

SPECIFICATION NO. L5377V-BES-1700-3

REVISION 0 MAY 1975

SINES  
Received on:  
23 JUN 1975  
TECHNIP  
PROCOFRANCE

PETROSUL  
REMIKAFIA  
14 JUL 1975  
SINES

SPECIFICATION FOR CONCRETE AND CONSTRUCTION OF SULPHUR PIT

SPECIFICATION FOR: CONCRETE AND CONSTRUCTION OF SULPHUR PITGENERAL

All concrete, reinforcing steel, formwork, curing, workmanship etc., shall be in accordance with Specification No. 5377V-BES-1780-1 unless modified by the requirements below.

1. CONCRETE

- (i) Cement                      The cement for all concrete used in the construction of the Sulphur Pit shall be Sulphate Resisting conforming strictly to the requirements of B.S. 4027.
- (ii) Aggregate                      The aggregate for the concrete shall be naturally occurring angular siliceous gravels and sands conforming to B.S. 882.
- (iii) Water                      The water used for mixing the concrete shall be potable quality and shall not contain any substances likely to cause a detrimental reaction within the concrete in its intended high temperature environment.
- (iv) Mix Design                      The concrete shall be a designed mix giving a minimum strength of 350 Kg/cm<sup>2</sup> at 28 days.  
The minimum cement content shall be 385 Kgs. per cubic metre and this shall not be reduced under any circumstances. The concrete shall have a maximum free water/cement ratio of 0.42 (by weight). The maximum aggregate size shall be 20mm.
- (v) Workability                      A thoroughly workable concrete shall be obtained by proper mix design, and increased workability shall not be obtained by neither increasing unduly the cement content nor by 'over sanding' of the mix. The use of a plasticiser to increase the workability, and the use of an admixture for any purpose, will not be permitted under any circumstances.
- (vi) Trial Mixes                      Within an adequate period of time before work commences on the Sulphur Pit, trial mixes shall be made on the proposed concrete mix. The mixes shall be made using the cement, aggregate and water from the sources that will be used for the construction concrete, in order to prove the design of the mix with particular regard to strength and workability. The mix selected for the permanent works will be the one that gives a strong, dense, homogeneous concrete. Sufficient Slump Tests shall be carried out on the chosen mix to determine the agreed maximum slump that will be permitted for construction concrete to be included in the permanent works.

## 2. CONSTRUCTION JOINTS

The pit shall have a maximum of two construction joints:-

- (1) between floor and walls
- (2) Between roof and walls

Each of the three items; floor, walls and roof shall each be cast as one pour.

The construction joint shall be formed as indicated on the drawing and shall have an external p.v.c. water bar such as Serviseal by Servicised or equal. The internal face of the joint shall be sealed using Embeco 636 grout.

The concrete shall be placed in the formwork in such a manner that any face that is to receive more concrete is kept alive, and is not allowed to attain to initial set, to prevent the formation of a cold joint.

## 3. FORMWORK

The use of lined or coated shutters is recommended to present a concrete face free of air holes and smooth. All joints in the shutters, and around build in items shall be watertight to prevent any leeching of grout from the concrete.

The finished surface of the concrete shall be free from: air holes, fins and grout loss. Through ties of any description between shutters will not be permitted. The forms shall be designed as self supporting using external braces and struts. Temporary braces between faces of shutters will be permitted but they must be removed well in advance of the concrete.

## 4. COMPACTION

The concrete shall be thoroughly compacted using immersion poker vibrators to produce a dense, air free homogeneous concrete. Due care shall be exercised to prevent over vibration of the concrete and the formation of sand pockets.

## 5. CURING

Curing of the concrete shall start as soon as possible after the concrete has set. Curing shall be done by using wet sand or wet hessian, and shall be carried on for at least 7 days. The use of a patent spray applied curing membrane will not be permitted.

## 6. STRIKING OF FORMS

The forms for the walls to the pit shall not be struck sooner than 24 hours nor later than 3 days after placing of the concrete. The forms for the roof slab shall not be struck sooner than 14 days, and temporary shores shall be used for a minimum of 28 days after placing the concrete to the roof.

## 7. SPACER BLOCKS

Spacer blocks for maintaining the cover to the reinforcement shall be made from the same mix of concrete as proposed for the sulphur pit. Proprietary, plastic or other types of spacer blocks will not be permitted.