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CEMENT INDUSTRY IN LIBYA[1/]

by

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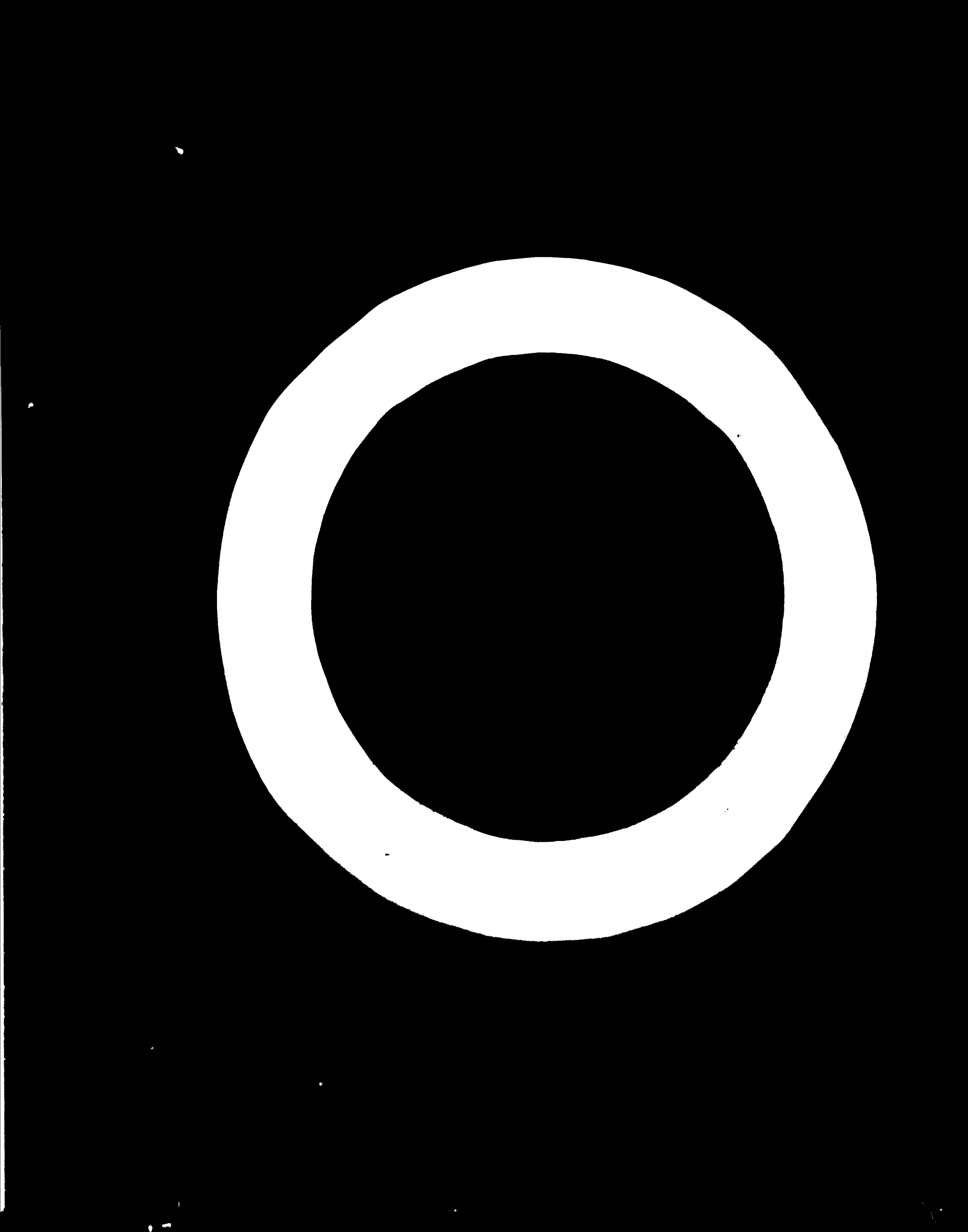


I. Raw Materials

Raw materials for cement have been found in many places in Libya. Due to the rapid increase in cement consumption during the period 1960-1972 particular attention was paid for the establishment of a cement industry in the country. Thus a program for exploring and evaluating raw materials for cement was set up and it was approved that limestone clays and gypsum are available in sufficient quantities to support a cement industry in some areas.
Here we give a summary about each of the main cement raw materials available in Libya:

I.1. Limestone.

As it can be expected due to the geological constitution of the country huge deposits of limestone suitable for cement manufacture were discovered in Homs, Benghazi, Benina, Derna and El-Marj areas.(see the sketch map No.1) Probably such deposits are available in many other places in Libya. But due to the fact that what have been discovered is sufficient for the development of the cement industry for several hundred years no further investigations are needed now.

Two of the above mentioned deposits namely Homs and Benghazi were stuaied in details and they are quarried for the time being.

In Homs the exploited material consists of succession of limestone and mari with intercalations of silt and clays lenses. The reserves are estimated to be sufficient for a period of more than 50 years.

The average chemical composition of these material is as follow :

SiO_2	Al_2O_3	Fe_2O_3	CaO	MgO	SO_3
13,42	2,31	1.30	44.45	1.05	0.03

Beauxite and iron ore are necessary as additifs with these materials.

In Benghazi a detail study for limestone was also carried out to evaluate the limestone deposit.

The limestones in this deposit show a very high carbonate content. The average CaO value lies around 55%. The proved reserverses of limestone are sufficient for a period of not less than 60 years.

I.2. Clays.

Clays occurences are exposed in Jabel Nafousa, Jabel Ahkdar, Wadi Shatti, Benghazi, ---etc. (see sketch map) Unfortunately, except in Benghazi, these clays are not found near to the limestone deposits and thus their use for cement industry is not developped. In Benghazi area the clays used in the cement factory are lateritic residual soil with high content of CaO. Their average chemical composition is the following:

L.O.I	SiO_2	Al_2O_3	Fe_2O_3	CaO	MgO	Alkalis
17.18	47.59	13.43	4.95	12.52	1.96	2,46

I.3. Gypsum

Gypsum occurs in several areas in Libya, in Jabel Nafusa escarpment, Arrajma, Mizda, Bu Njem---(see sketch map)

The gypsum formation in Jabel Nafousa has been studied and it is quarried since several years for Homs cement factory. The reserves of gypsum in this area are very large (about 60.10^9 tons).

In Arrajma (20 Kms east of Benghazi) gypsum is also exploited for Bengazi cement factory. The proved reserve in this area sufficient for the cement industry in the region for at least ten years.

II. Cement Production

Two cement factories are existing in Libya: One in Benghazi having a capacity of 600 t/day of clinker and the second in Homs (120 Kms east of Tripoli) with 300 t/day of clincker capacity. Both are producing ordinary portland cement for building purposes.

Benghazi factory has started production this year (1972) and its production is covering Benghazi area and the eastern parts of Libya.
Last year it was decided to add a new kiln to this factory in order to increase its capacity by 1200 t/day of clincker. This extension will enable also the production of special cements. It is foreseen that the new extension will start by the end of the year 1973.
Homs factory is producing since three years. It was decided the last year to extend this factory in order to increase its capacity by 1000 t/day of clincker. It is expected that by the end of the year 1973 the extension works will be finished.
Both factories are using the dry process.
The main problem facing the cement industry in Libya is the lack of experienced technical staff. This problem is a serious one in particularly Libya where the totals population does not exceed two million and there is a high demand for technical staff in all the sectors.

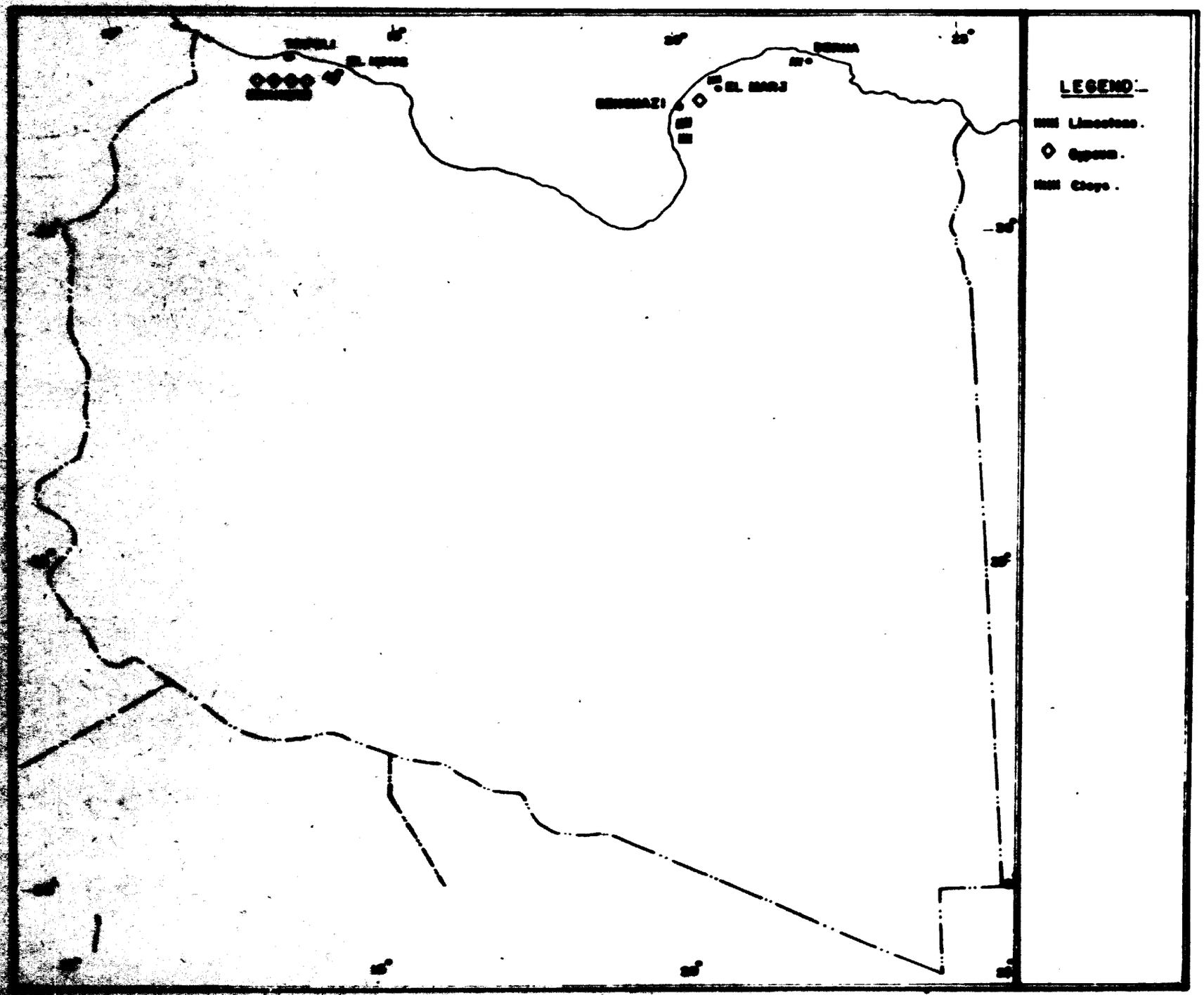
III. Imports and consumption

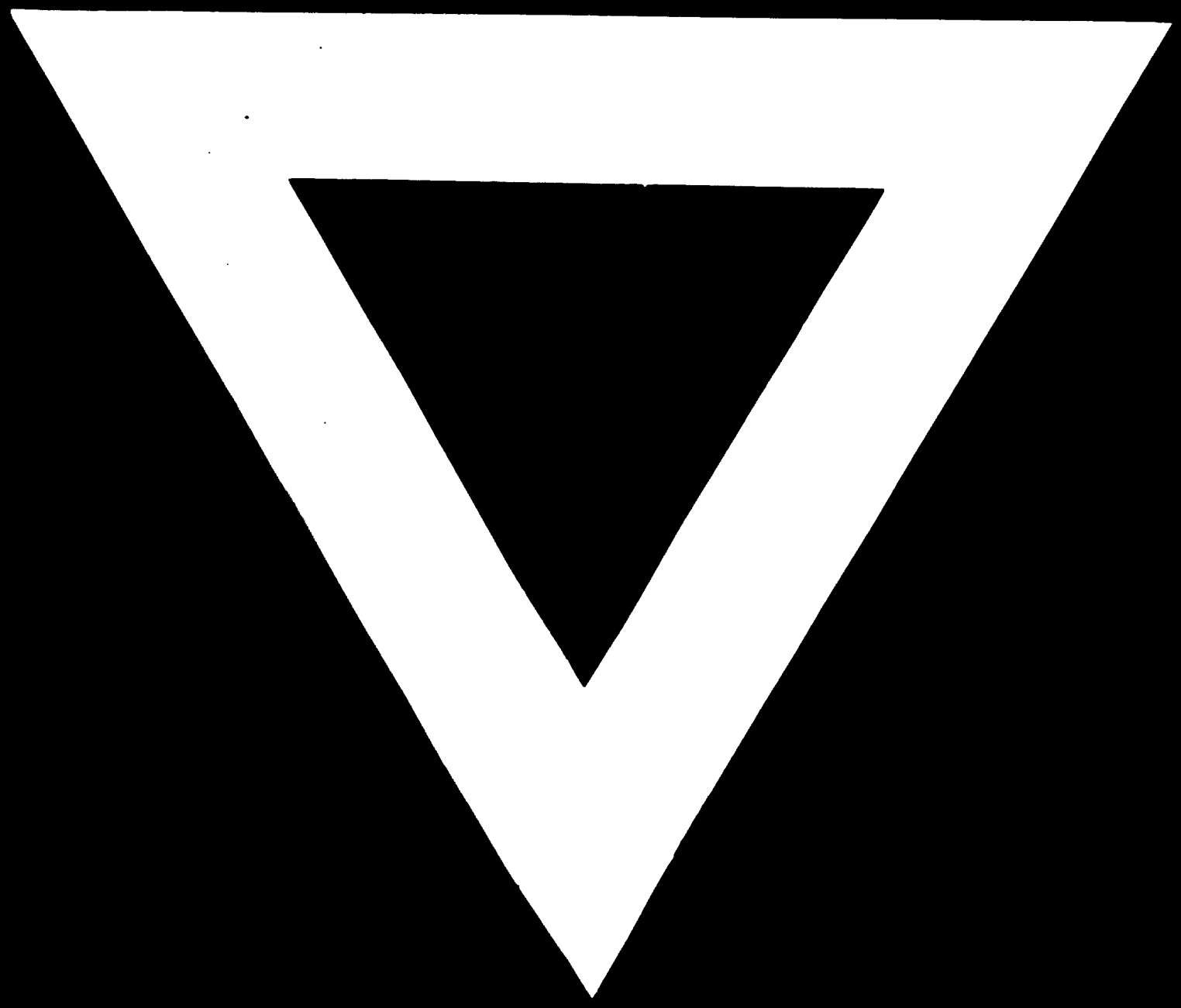
As mentioned hereabove the cement industry in Libya is a new one. The total annual production coming out of Homs factory was 100.000 ton in the year 1971. This year the total production is expected to reach 200.000 tons and it represents less than 20% of the expected total consumption.

Up to the year 1969 no cement had been produced in Libya and so the entire consumption had been covered by imports. The imports figure for the years preceeding 1969 correspond to the national consumption. The following table shows the cement imports during the period 1959-1969.

Year	Total import (tons)	Total cost (L.D.)
1959	96 949	
1960	140 773	856 118
1961	157 124	904 107
1962	241 054	1373 638
1963	288 067	1756 998
1964	328 794	1739 358
1965	472 959	2461 302
1966	619 903	3161 625
1967	701 325	3587 595
1968	720 986	3707 075
1969	597 516	3076 495

As the development programme has been accelerated during the two last year and one may safely expect that the new trend in accelerating the economical development will persist the cement consumption will continue increasing.


LEGEND:-
Limestone.
Gypsum.
Clays.



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